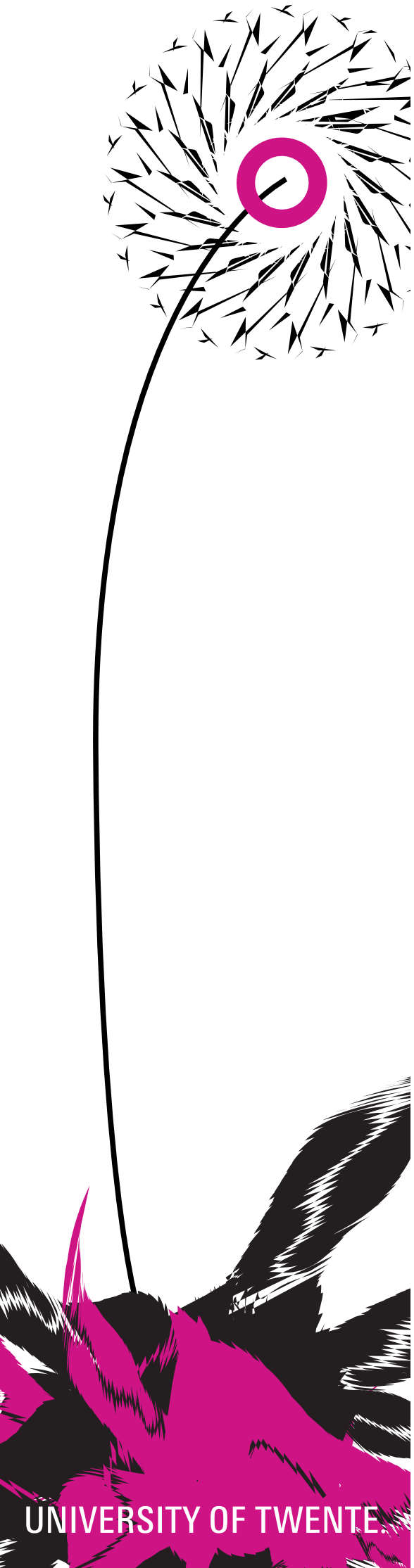

LEADING CHANGE IN HIGHER EDUCATION: CHALLENGES, STYLES AND CHARACTERISTICS

Andrei Botnariuc *s2030004*
Vishwajit Kulkarni *s1894951*
Nimish Shah *s2088894*

Group Paper: Change Leaders And Management

UNIVERSITY OF TWENTE.

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Contents

Chapter 1

Introduction

In the 21st century, the world is changing and becoming increasingly complex as the flow of information increases and becomes more accessible day by day. The world is radically different than it was just a few years ago. It is hard to imagine that in such a short period of time - the world and its people, economies and cultures have become inextricably connected, driven by the Internet, new innovations and low-cost telecommunications technology. And a radically new system for creating wealth has evolved that depends upon the creation and application of new knowledge. In this 'Age of Knowledge', the key strategic resource necessary for economic prosperity and national security has become knowledge itself– educated people and their ideas.

Taking into account such advancements, current educational systems need a transition from traditional ways of imparting knowledge to innovative, inclusive and effective ways. Currently, higher education institutes are going through a fascinating period of change and envisioning for the future. This can be seen from, to name a few, MIT's NEET (New Engineering Education Transformation) model[1], Charles University's topic tree model[2]. Such models strive to provide personalized, industry-specific and learn-by-doing environment to students.

Also, to facilitate learning by doing, it is necessary for the teaching institutions to get in contact with various companies and organizations that would facilitate it. This might appear as an easy task at first, but it proves to be quite a challenge with all the competition advertised through the media nowadays. Besides trying to grab the attention of companies, universities also need to keep their curricula up-to-date to facilitate a bright future for the students and be within regulations defined by the local government to continue their operations. All these factors make governing the university into a cumbersome task which requires special characteristics. From an evolutionary point of view, surviving means constant change and adaptation. To facilitate such a change and keep the organization on relevant track to achieve organizational goals and mission, organizations need an effective leader. Throughout this paper, we review available literature which discusses challenges faced by educational institutes, different leadership styles and characteristics of effective leaders which may help leaders and educational organizations to tackle current issues.

[1] `https://neet.mit.edu`

[2] `https://www.csu.edu.au/engineering/curriculum`

Furthermore, it can also be seen from the available literature that leaders have to innovate and implement change keeping in mind that the primary aim of any educational institute is to provide quality education.

Being student ourselves, we experience and understand the current trends and university's attempts to get hold of these changes to provide up to date curriculum while maintaining quality of education. This study can be considered as a small contribution from our side as one of the stakeholders of the educational system.

In this paper we try to analyze and answer the following questions:

1. What are the key challenges faced while governing universities?
   (a) What are the reasons behind these challenges?
   (b) Are there any solutions available to overcome these challenges?
   (c) What leadership qualities that are required in such situations?
2. What are the different leadership styles available to govern a university?
   (a) How relevant are these to the educational institutes?
   (b) How change leader can make effective use of these leadership styles?
3. What characteristics enable an effective leader to drive a change in a higher educational setting?
   (a) Why are these qualities relevant while governing educational institutes?
   (b) How these qualities are substantiated throughout the literature?
   (c) How these qualities can be adapted by change leader to drive the change?

This document initially provides informal summaries of the literature reviewed and then tries to cross-link the gist of reviewed literature. While cross-linking it is observed that leaders should have people skills to overcome organizational challenges. Further, this document provides some recommendations for stakeholders to prosper organization by implementing a successful change and maintaining a productive culture within the organization.

Chapter 2

Methodology

Leadership in education is often overshadowed by the research in leadership and management of industries and corporate sector. And also, as rightly stated by dr. van Dun during our initial meeting, conducting case studies, analysing results, drawing conclusions and formulating these in a research paper consumes span of at least 1-2 years. This makes finding relevant substantial contemporary research in this field a difficult task. While writing this document our focus was on reviewing published papers, but we also got a considerable kick start from reading the articles in magazines, blogs as it gave us an idea about the latest and in-process research. We searched magazines, web portals such as Forbes, HBR, Academy of Management Insights and McKinsey & Company. The articles from these media helped us in formalizing our mindset about the evolving nature of educational leadership as well as helping us in getting acquainted with the terminologies used in the field. However, most of these websites require a paid subscription and provide a limited number of free articles. Hence, we decided to focus on finding relevant published research papers further on.

We started our literature research by aligning it to the structure of our research and started searching for papers about current challenges faced by the educational system, followed by the general as well as specific leadership styles in the educational setting.

Our initial approach was to crawl through websites of different journals by dividing work among ourselves. But we quickly converged to the conclusion that searching individual journal is inefficient and time-consuming. While searching for papers individually, in some cases everyone picked up the same paper(s), thus, reflecting a common understanding of the chosen topic. We divided the set of keywords into small subsets and used for searching on Google Scholar and Microsoft Academic. These bibliographic databases index a vast amount of academic research from a variety of sources and hence searching on these websites is far more effective and less time-consuming. The University of Twente Library also has access to a wide variety of literature through FindUT.

After gathering sufficient information, papers, articles we made very short summaries of the literature and fixed an appointment with dr. Desirée van Dun. She provided her suggestions and cleared our doubts regarding the selection of papers and course of actions to be followed. She also provided us with a few interesting papers. After skimming through

the papers, we the identified a few keywords that can be used to refine our search criteria. Furthermore, we started exploring the bibliographies or references section of each paper to identify potential candidates for our research. We utilized this strategy in a recursive manner i.e., using the bibliography to obtain new papers and use their bibliography to widen the research even further. When we accumulated around twice the required number of papers (15 required in our case) we stopped exploring further.

Filtering of these papers was a two-step process. In the first step, we divided papers among ourselves and each one of us was tasked to go through the paper to get the *feel* of the paper. This allowed us not to merely rely on keywords, which can be deceiving if we blindly go ahead with the selection. We found two papers which were not related to our area of interest in this process. We had round-table discussions where each of us gave brief summaries. This helped us to be on the same page while selecting paper as well as tremendously helped us in writing informal summaries and cross-linking chapters. We used the following criteria (not strictly) to filter the obtained papers:

1. Papers that are directly relevant to our topic are mostly chosen with more focus on leadership and change management characteristics over the problems in front of education.
2. We also used the number of citations paper has and as well as the number of references provided in the paper as first indicates acceptance of the paper in academia and later gives a generic idea about research done while writing that paper.
3. We also tried to use the recent researches as much as possible but this was not a strict criterion as we did not find enough recently published papers that directly relate to the topic whereas ideas in some of the old papers were still found to be relevant.

Selected papers comprise research done both in developed as well as in developing countries. Particularly we found that major research studies being conducted in developing countries due to the nature of challenges faced by these countries. Providing affordable and quality education to people is one of the biggest problems in developing countries and is now getting promptly highlighted through various mediums like UN, NGOs and other governmental organizations. Selecting researches from different areas of the world gave us a more diverse and clear picture of current trends in educational systems and the characteristics required by the leadership to undertake change management in these educational institutes.

By no means, this is a very thorough literature search methodology but it is well suited for the depth and extent of the research expected from us at this stage. This results in one of the drawbacks in our review as mentioned in the Limitations and Future Scope chapter. However, this research methodology helped us to identify the required number of most relevant literature with optimum utilization of available resources.

Some of the keywords used while searching[1]:

change management, organizational change, educational management, knowledge management, leadership styles, leadership in education, challenges in higher education, educational planning, change leadership, future of higher education, governance in educational institutions,

[1]This is not an exhaustive list used while searching but a mere subset of one list

Chapter 3

Informal Summaries

3.1 Institutional change and leadership associated with blended learning innovation: Two case studies

(Garrison & Vaughan, 2013)

This paper majorly focuses on *Blended Learning* and provides two interesting case studies while managing this transition to blending learning approach. Keeping in mind higher education institutions are notorious resisters to innovation, this paper discusses the challenges faced and approached required to adopt such a mechanism. Paper further mentions that clear organizational plans, strong leadership, and sustained commitments are required to implement such change and discusses it in brief.

Garrison and Vaughan (2013) define blended learning as "the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies", i.e. learning by evidence-based practice and the underlying organic need of the context. Further such an experience is a mix of face-to-face and online means of communication to increase the strength of each.

While implementing such organizational change, critical self-reflection of an organization as a whole is very important to asses the change quantitatively and qualitatively. Such a self-reflection also consider all the stakeholders to frame the change associated with them. For example, students and faculty to frame the institutional change associated with learning technologies. Availability of strong leadership is the key element to incorporate such a change. Such leadership should be of a sustained and collaborative nature.The leader should raise awareness of benefits and necessity of adopting blended learning approach. The leader should *empower* faculty by providing ongoing technical support. This can be done by setting up support departments and assuring them that they do not have to learn and manage technology alone.

The article provides two case studies specific to higher education institutes in Canada, and the outcomes of both studies are in close conformation with each other. In both studies, policies, strategic action plans and well-resourced, achievable and sustainable

shared goals were set up to provide a clear direction. This was done in taking into account various stakeholders in the institute. Finally, authors conclude that educational institutes should have collaborative and distributed institutional leadership which shows sustained commitment towards shared goals, empowers subordinates (here, faculty) and motivates them to facilitate successful change.

3.2 Educational leadership and management: theory, policy, and practice

(Bush, 2007)

This paper theoretically examines educational leadership and management, assesses different leadership models, and discusses their relative effectiveness.

Need of educational leadership

Today more governments are realizing the fact that their main assets are their people and becoming competitive depends upon having a highly-skilled workforce. This requires professionally trained and committed teachers but they, in turn, require highly effective leaders (say, principals, chancellors etc.) and other senior and middle managers (say, department head or dean etc.) to support them and this leadership and management has to be mainly concerned with purpose and aims of education. This process if deciding aims of the organization in long (vision) and short term is at the heart of educational management.

Bush (2007) further says leadership is associated with *change* and *management* is seen as a maintenance of it. These both are important dimensions of organizational activities. For effective operation of schools leadership and management should be given equal prominence. Further authors quote that "The challenge of modern organizations requires the objective perspective of the manager as well as the flashes of vision and commitment wise leadership provides." The paper even mentions that people leading the educational institutions are rarely aware of whether they are leading or managing.

Bush (2007) provide brief information about different leadership models acknowledging the fact that each theory has something to offer and there is much less clarity about which leadership behaviours are most likely to produce most favourable outcomes. It is also mentioned that the perspectives favoured by managers, explicitly or implicitly, inevitably influence decision-making.

Managerial Leadership assumes that the focus of leaders ought to be on functions, tasks and behaviours and that if these functions are carried out competently the work of others in the organization will be facilitated. Managers and leaders of the self-managing educational institute must be able to develop process involving managerial functions such as *goal setting, needs identification, priority-setting, planning, budgeting implementing and evaluating*. This type of model is focused on managing existing activities successfully rather than visioning a better future.

This approach is very suitable for leaders working in centralized systems as it prioritizes the efficient implementation of external imperatives, notably those prescribed by higher levels within the bureaucratic hierarchy. Managerial leadership has certain advantages, notably for bureaucratic systems, but there are difficulties in applying it too enthusiastically to schools and colleges because of the professional role of teachers. If principals and educators do not own' innovations but are simply required to implement externally imposed changes, they are likely to do so without enthusiasm, leading to possible failure.

Transformational Leadership assumes that the central focus of leadership ought to be the commitments and capacities of organizational members. Higher levels of personal commitment to organizational goals and greater capacities for accomplishing those goals are assumed to result in extra effort and greater productivity. Following are the important dimensions of transformational leadership applied to education systems: building school vision, establishing school goals, providing intellectual stimulation, offering individualized support, modelling best practices and important organizational values, demonstrating high-performance expectations, creating a productive school culture; and developing structures to foster participation in school decisions. Such leadership is essential for autonomous schools.

This model is comprehensive in that it provides a normative approach to school leadership, which focuses primarily on the process by which leaders seek to influence school outcomes rather than on the nature or direction of those outcomes. Further, it is alleged that transformational leadership has the potential to become 'despotic' because of its strong, heroic and charismatic features. But, this leadership has the potential to engage all stakeholders and students in the achievement of educational objectives.

Participative Leadership assumes that the decision-making processes of the group ought to be the central focus of the group. This model is based on assumptions such as This model is underpinned by three assumptions: *participation will increase school effectiveness; participation is justified by democratic principles;* and *in the context of site-based management, leadership is potentially available to any legitimate stakeholder.*

This type of leadership succeeds in bonding staff together and easing pressures on leaders. Basham (2012) says "The burdens of leadership will be less if leadership functions and roles are shared and if the concept of leadership density were to emerge as a viable replacement for principal leadership."

Transactional Leadership is based upon an exchange of some valued resource. Hence, the head requires the co-operation of educators to secure the effective management of the institution. The major limitation of this style is that it does not engage staff beyond the immediate gains arising from the transaction. Hence, transnational leadership does not produce a long-term commitment to the values and vision being promoted by school leaders.

Post-modern Leadership closely aligns with the subjective model of management and based on assumption that organisations have no ontological reality but are simply the creatures of the people within them, who may hold very different views. This

style suggests a leader should respect and give attention to the diverse and individual perspectives of all stakeholders.

Moral Leadership has a focus on values, beliefs, and ethics of leaders themselves. Moral leadership can be categorized as *spiritual* and *moral confidence*. Former relates to higher order perspectives of the leaders and later related to the capacity to act in a way such that is consistent with an ethical system and is consistent over time.

Instructional Leadership focuses on the direction of influence, rather than its nature and source. In the case of educational systems, this kind of leadership focuses on teaching and learning and on the behaviour of teachers in working with students. Leaders' influence is targeted at student learning via teachers. This type of leadership is very important because it targets the central activities of the educational system.

In short, leadership can be understood as a process of influence based on clear values and beliefs and leading to a 'vision' for the institute. Such vision can be articulated by leaders who seek to gain the commitment of staff and stakeholders to the idea of a better future for the institute, its learners and stakeholders. The author further mentions that each of the leadership models discussed in this article is partial. They provide distinctive but uni-dimensional perspectives on educational leadership.

3.3 Transformational Leadership Characteristics Necessary For Today's Leaders In Higher Education

(Basham, 2012)

This study addresses the significance and current widespread appeal of transformational leadership and its practical application to higher education; but equally important, it profiles the group and individual qualities that are necessary for individuals to have, as their acumen, in order to introduce a climate of change utilizing transformational leadership.

Historically, organizations have been viewed as learning systems in which success depends on the ability of leaders to become direction-givers and on the organization's capacity for continuously learning. And quality leadership is demonstrated if effective results are recognized and realized. The traits for effective leadership can be divided into two categories *group* and *individual*. Group traits include collaboration, shared purpose, disagreement with respect, division of labour, and a learning environment. Individual traits include self-knowledge, authenticity/integrity, commitment, empathy/understanding of others, and competence.

Transformational leadership is based on clear vision statements that provide the bidirectional path for the organization. Supplementing it with an inspiring and energizing mission statement allows all members of the organizations to achieve organizational objectives and goals. Such statements help to set long-term goals, become a basis for the organization's strategy and provides for identification if methods for implementing the

Table 3.1: What is Effective Leadership?

Group Qualities	Individual Qualities
Shared purpose–reflects the shared aims and values of the groups members; can take time to achieve	Commitment–the passion, intensity, and persistence that supplies energy, motivates individuals, and drives group effort
Collaboration–an approach that empowers individuals, engenders trust, and capitalizes on diverse talents	Empathy–the capacity to put oneself in another's place; requires the cultivation and use of listening skills
Division of labor–requires each member of the group to make a significant contribution to the overall effort.	Competence–the knowledge, skill, and technical expertise required for successful completion of the transformation effort
Disagreement with respect–recognizes that disagreements are inevitable and should be handled in an atmosphere of mutual trust.	Authenticity–consistency between ones actions and ones most deeply felt values and beliefs.
A learning environment–allows members to see the group as a place where they can learn and acquire skills	Self-knowledge–awareness of the beliefs, values, attitudes, and emotions that motivate one to seek change.

strategy. Such leaders are the ones who find clear and feasible ways to overcome obstacles and concerned about the quality and inspire others to do so. Historically, such leaders are depicted as *heroes* with charismatic personalities expressing and promoting the mission of major organizational change.

Transformational leadership is value driven. The leader sets high standards and purposes for followers, engaging them through inspiration, exemplary practice, collaboration, and trust. Transformation leadership aims at responding to change quickly and at bringing out the best in people. Such leadership is change-oriented and central to the development and survival of organizations in times of environmental turmoil when it is necessary to make strategic changes to deal with both major threats and opportunities. It derives its power from shared principles, norms, and values. Leaders who encourage and support transformation pay specific attention to intellectual stimulation. Transformational leaders share powers, are willing to learn from others, and are sensitive to each team member's needs for growth and achievement.

This leadership is drawn from deeply held personal values. They build followers together to pursue collective ambitions by expressing and disseminating their personal standards. But, transactional leaders can most certainly bring constructive outcomes, transformational leaders can extract performance beyond expectations due to charisma, consideration, motivation and simulation.

Authors conclude, on the basis of a study conducted on 52 university presidents that university presidents should,

- recognize the critical need for devoting time in providing all stakeholders with a clear and consistent vision, values and purpose.
- be able to go beyond the traditional and historical structures, accompanying policies and procedures to realize the major change.
- have the individual quality of commitment demonstrated with passion, intensity and persistence which provides energy and momentum, to motivate and stimulate the stakeholders to strive toward a group effort.
- have competent knowledge, leadership skills and technical expertise necessary to realize the change.
- have *authenticity* within his acumen so that there is consistency between his or her actions and most deeply felt values and beliefs.

3.4 Issues and Challenges in Higher Education Leadership: Engaging for Change

(Drew, 2010)

It is proposed from the study that engaging productively with others to achieve *change* has never been critical in educational settings, such as universities. This paper explores perceptions of the cohort of senior leaders (from Australian universities) of key issues and challenges faced in their work. These leaders were part of a 'by innovation' accelerated succession leadership program at an Australian university. The study finds that most significant challenges revolve around the need for strategic leadership, flexibility, creativity and change-capability etc. Further, it was also found that sound interpersonal engagement in terms of change leadership capability is critical to meeting the key challenges. In short, this paper discusses some of the points of tensions for academic and administrative staff pertaining to leadership in higher education.

Offering a quality higher education experience fit for the needs of both the individual student and society can be broadly seen as the goal of university educators. To achieve this, most effective leaders should repudiate boundaries to engage in innovative solutions. Drew (2010) further mentions that a recent study of Australian universities confirm that relationship-building qualities of engagement are most potent in leadership roles. Similarly partnering around a common sense of vision is important and necessary in the ever-increasingly complex academic environment of leadership.

The need to navigate change and adapt is widespread. It has been suggested from the study that a capacity to support and develop leaders capable of handling complexity, engaging people in vision, partnering effectively and leading through change is "not a luxury but a strategic necessity" for today's universities. Further *ability to guide change* as the ultimate test of a leader.

While discussing the findings of this study, the author explicitly mentions that the "study was set in Australia and it is anticipated that the finding may have implications for the other university settings given some similarities in the higher education environment globally." Findings of the study are grouped together in five themes:

- Fiscal and people resources
- Flexibility, creativity and change-capability: university's key challenge is the ability to be flexible, adaptable and to know how to problem-solve in order to "meet the demands of an increasingly complex and dynamic environment". Hence there is a need for leadership development to gain consensus among constituents that change is needed.
- Responding to competing tensions and remaining relevant: Achieving a balance between research and teaching and achieving the right balance intellectually and financially is a major challenge. But remaining relevant to organizational goal, mission while maintaining this balance is a bigger challenge and also needs to be addressed. In terms of remaining relevant, setting up mechanisms by which to receive

feedback from a range of sources may help individual leaders tailor development effort most effectively for continuous improvement.

- Maintaining academic quality: While tackling other existing or foresighted issues, leaders should be able to maintain academic quality as it is a vital goal of any academic institution,
- Effective strategic leadership: A need for change leadership is that it fosters innovation, collaboration and ability to influence is important for organizational success.

Further, author mentions that there are two main limitations to this study. Firstly, the findings of the study need to be treated with some caution because of the small sample size. The second limitation and a point worthy of exploration in further research is whether the views of the sample might have been unduly favourable given that research participants were chosen as individuals receiving accelerated development in a successful leadership development program.

3.5 Campus Leadership and the entrepreneurial university: A dynamic capabilities perspective

(Leih & Teece, 2016)

The paper explores the relation between campus leadership and organizational-level dynamic capabilities that establish the management structure within the research universities. The study suggests that the presence of leaders who have a high level of strategic thinking and are flexible and fast learners benefit the development of the universities.

For this study, two universities were compared: University of Stanford and the University of California Berkeley. Basically what the researchers analysed was the need of more strategic and entrepreneurial leadership that would result not only in a technological transfer but also would assure that the necessary changes are made that would assure it's competitive fitness and make it evaluate to enhance its performance in a longer term. The main question was: How do campus leadership and governance in research-based universities affect the development and maintenance of excellence in core research and teaching activities, as well as in ancillary services such as technology commercialization activities?

Throughout the paper, the researchers brought up a framework: The Dynamic capabilities framework. (Leih & Teece, 2016) It focuses on creating and sustaining long term competitive advantage for which it could be understood how the campus leaders are able to make the right decisions and put the right processes in place to reinforce the organizational capabilities and maintain the competitiveness.

It is based on three main activities, namely: Sensing, Seizing and Transforming. They identify these three activities as crucial, stating that a leader in a university should be able to sense the opportunities by gathering the critical insights about the future trends and developments, be able to prioritize the investments and make fast decisions that seize

the most promising opportunities and doing all this while constantly transforming the university to keep it aligned with the ecosystem that supports it now and in the future. This actions would be a combination of asset orchestration and a good strategy for a university to be able to compete and do well.

Through the paper, numerous examples were presented as the leaders of both universities used the above mentioned set of assets to raise the university's level and make them what they are today.

In conclusion we could say that this is a highly relevant article, especially because throughout the paper a question was addressed that proved to be a key question in generating the dynamic capabilities framework, it is similar to our research question and exactly: what management/leadership skills are most needed for a 21st-century president/chancellor/rector. The cause of developing such a framework is clear, nowadays there are many factors that might put universities in a dangerous position: the technology is developing according to Moore's law, globalisation, continuous competition from online learning and offshore entities along with opportunities to team up with new actors.

This framework is especially useful because it's the main point is not based on planning because in such a dynamic environment the plans depreciate too quickly making the time so precious that it is not even worth formulating them. That is why it is named the Dynamic capabilities framework, it implies that a good leader in the 21st century should follow all the 3 assets *sense*, *seize* and *transform*, have a strategic thinking, be dynamic and adaptive, have a high level of responsiveness and intuition, assure that he has a management team that all agree to each other and is effective in the decision making with a strong culture within, address the concerns of a large stage of stakeholders and ensure the proper financial management systems are in places and being properly implemented but also get better at strategic management while simultaneously enhancing the entrepreneurial activities around the campus as a complement to research and teaching. In short he should be omnipresent which is technically impossible, but still, some people manage to grasp at list a part of this omnipresence and achieve great things.

3.6 The changing nature of work: career, identities, and work lives in the 21st century

(Barley, Bechky, & Milliken, 2017)

This paper explores the changing nature of work and how individuals are dealing with it in today's economy, that offers fewer opportunities for a secure income. They explain that lately a growth of the contingent work is observed which means that a lot of people are high or low skill freelancers that find work by themselves in fields they often were not really thought of at school. These entrepreneurs often are turning their hobbies into a paid job and gain insights and their professional identities through daily work.

Their careers are constructed at the boundaries between the individual and social world where they activate. The paper researches the offshore trend of the companies and the self-

worth of the workers of those companies. This trend of seeking cheaper labour elsewhere is making highly skilled professionals feel worthless, they question themselves, what a professional exactly is? In our context of research, this paper has to do with the ways scholars are educated and will find work in the future, because of the rapidly changing world, many of them might never get to use their skills in real life, therefore they choose the entrepreneurship way which in their vision is a way of getting great riches, but, in fact it is a way of managing a small business that most often stays small till the end. The paper also indicates that future research should be made also on the future of the professional identities, the ways the work will be changed in future with the progress of the technology, it gives the example of self-driving cars "that might and will take a huge percentage of jobs. Using the materials of this paper, we can gather some information on what can be done with the educational systems to avoid the future job loss of the scholars, what skills should they gain and how to develop self-worth in them.

3.7 Re-inventing shared governance: Implications for organizational culture and Institutional Leadership

(Stensaker & Vabø, 2013)

In this article, the implication of the leadership development on the governance capacity and effectiveness within the universities is studied. The paper gives a short explanation of what is the meaning of governance within the academic world and exactly it is the decision-making process that is shared among various academic staff. It studies how academics are involved and the range of actors they involve in the decision-sharing and to what extent the students are included in the governance arrangements. It argues that nowadays the so-called marketisation and inclusion of other stakeholders into the decision-making process is rising, therefore, sometimes this external representation of the university, combined with a strengthened institutional leadership may trigger "managerialism a sort of generic narrative about the need for strategic change and institutional transformation where the university is in need of becoming an organizational actor that respond to environmental challenges in a coherent way. Some findings are presented that state that shared governance is too slow when fast and tough decisions are made. It should also be taken into the consideration that the teaching institutions are regulated by laws and guidelines at the national and international level but inside, the institution is governed by their own standards of academic work and quality. The papers also present some findings that state: Neither board size, allocation of power, union status, centralization or decentralization of decision-making, or other structural factors seem to have a particular influence on outcomes of decisions regarding their effectiveness, although they may have more impact on efficiency. Therefore the paper proposed a framework that would help to identify the future role of the governance systems in the strategic development process and the way decisions are taken and the types of actors involved. They came up with 4 role models: representative democracy, collegial, corporate enterprise, entrepreneurial.

Representative democracy the close relationship between students, administration

and academic staff in taking the decisions on how the decision process should be organized

Corporate enterprise external stakeholders and actors would be seen as a key to the connection and enhancement of the institutional links between the uni and the external world or environment

Collegial consensus and central characteristics for strategic development

Entrepreneurial need for leadership and discretion for the dynamic leaders to take action and form coalitions for change and the creation of networks both internally and externally

After the research done at a couple of universities they came up with the next statements:

- All universities emphasize the need for better leadership
- All universities argue for the need for systemic leadership training and skills enhancement
- All universities are launching changes in the personnel policies (payment and competence development)

What they explain is that leaders are held accountable to hierarchy above while the same time held responsible to creating trust at the shop floor and engaged stuff supporting the decision making process and also that more studies are needed to shed light on how the new generation of leaders in the universities organize the governance arrangements under their responsibility and what impact this may have on the academic and administrative functioning of universities.

Therefore we see this article as relevant to our topic because of the proposed framework that could be combined with various leadership styles and statements of the perceived role of a leader by the other staff members in the university which gives us insights and space to further elaborate on the topic.

3.8 An exploration of university leaders' perceptions of learning about leadership

(Drew, Ehrich, Hansford, et al., 2008)

This is a relatively small study that was conducted with eighteen new emerging middle-level university leaders who have been targeted for a senior leadership program. The goal of the study was to explore the perception of learning about leadership. The paper starts with an analysis on what are the possible difficulties that a university of today is forced to face: environmental issues, retiring faculty staff and divers, faculty appointments and also the dual role of the university, one that needs to fulfil the academic role where it

engages with other communities in knowledge creation and teaching and the other one where they must operate as a successful corporation that is able to withstand scrutiny to financial management practice

The paper discusses the enormous responsibility that is put upon leaders to make "wise decisions in a timely manner" and that there is a need for effective leadership practices within universities. For this paper they defined the meaning of leadership as a practical everyday process supporting, managing, developing and inspiring academic colleagues. They also defined 2 types of leadership styles "transformational and transactional leadership for which they gave a short explanation. Additional to that they researched the components of leadership that constitute leadership training within a university, and found out from related articles that they were: understanding of self; understanding of transformational leadership; establishing and maintaining relationships; leading teams; leading strategic planning and change; and connecting through the community. Also, the findings included a range of capabilities such as empathizing, self-regulation, self-organization, decisiveness, commitment to learning and teaching, strategy, diagnosis, influencing, flexibility and responsiveness and university operations. The researchers gathered a group of people from the university and asked them to respond on 2 questions:

- what constitutes effective leadership
- what are some significant or defining leadership experiences that have most assisted their learning in the leadership role

The responses that were given do not really represent anything new from what was is commonly known about effective leadership, but they still give an insight which is going to be discussed further in the paper.

3.9 Which Problems to Solve? Attention Allocation and Online Knowledge Sharing In Organizations

(Haas, Criscuolo, & George, 2014)

This article focuses on the importance of the attention allocation on the online knowledge sharing, they state that the decision for attention allocation depends on the length, breadth and novelty of the problem. To analyse why individuals allocate attention they choose a three steps model:

1. They provide a baseline which assumes that this process will be influenced by how close the knowledge expertise possessed by the knowledge provide will match the expertise required by the problem
2. They then consider the factors that can attract the attention of the providers such as problem length, breadth, novelty and cognitive load

3. Finally they propose that expertise matching can influence the attention allocation of the knowledge providers by reducing the costs created by cognitive load and competitive crowding of the posted online problems.

The study contributes to conversations on how attention allocation contributes to information sharing and processing in social technology environments. Also at the core of this study lays the question: Why some problems get solved while others not.

Throughout the paper authors propose 5 hypotheses:

- Hypothesis 1: The likelihood that a provider allocates attention to a focal problem will be positively related to the closeness of the provider-problem expertise match.
- Hypothesis 2: The likelihood that a provider allocates attention to a focal problem will be curvilinearly related to the problem's (a) length (b) breadth (c) novelty, in an inverse U-shape.
- Hypothesis 3: The likelihood that a provider allocates attention to a focal problem will be curvilinearly related to the number of concurrently posted problems, in an inverse U-shape.
- Hypothesis 4: Expertise matching will positively moderate the curvilinear relationship between the likelihood that a provider allocates attention to a focal problem and the problem's (a) length (b) breadth (c) novelty, such that the positive slope of the inverted U-shape curve becomes steeper and the negative slope becomes flatter with increasing closeness of the provider-problem expertise match.
- Hypothesis 5: Expertise matching will positively moderate the curvilinear relationship between the likelihood that a provider allocates attention to a focal problem and the number of concurrently posted problems, such that the positive slope of the inverted U-shape curve becomes steeper and the negative slope becomes flatter with the increasing closeness of the provider-problem expertise match.

After conducting some experiments and tests with the subject, they performed a mathematical analysis of the problems and demonstrated that all 5 hypotheses are true. What they eventually tried to say is that with the continuous growth of technology there is a demand for an explanation on why managers in organizations allocate attention to one problem instead of the other in digital environments. They demonstrated that within organizations, attention is channelled to one problem and form the other by the structural features of organizations, such as rules, resources and relationships. They also researched the "matching theory" into the intra-organizational context by examining how machining processes occur within a firm, as part of daily activity between the organizational members. One of the core insights of this theory is that complementary between resources or capabilities of partners increase the likelihood of a match, thus viewing attention allocation as a matching process helps them find new ways of understanding why organizational members tend to pay attention to some problems and not others. As predicted, their results revealed that problems that were longer, broader or more novel were more likely to attract attention from a potential knowledge provider – but only up to a point, after

which greater length, breadth, or novelty decreased the likelihood of receiving attention. In the context of our study, we hoped to achieve some insight into what influences the attention allocation of leaders within an organization and what are the best ways for them to choose on what to spend time on and how much time to spend on it.

3.10 The new face of leadership: Implications for higher education

(Brungardt, 1998)

This paper discusses the leadership in industrial and post-industrial era. In the industrial era, the leader can be described by decisive, efficient, unemotional and in-control. However, the author argues that this is not the case in 21st century as leadership has become a participatory process where leader and its followers both contribute towards leadership. According to Joseph Rost leadership is an influential relationship among leaders and followers who intend real changes that reflect their mutual purposes.

Hence new-age leader should be persuasive and empowering rather than the directive and decisive.

3.11 Strategic planning for higher education

(Kotler & Murphy, 1981)

In this paper, authors Kotler and Murphy (1981) assess the fundamentals of strategic thinking and how it relates to higher education. According to the authors, *planning concerns an ability that is awakened by the human appetite to better our condition.* In the business world, this means bettering one's condition with respect to market shares and improving profit. In higher education, this means hiring better faculty, enrol better students, update academic programs and facilities to suit the current environment while maintaining the market niche.

Historically strategic decisions in higher education were limited to facilities and space planning. This led to the foundation of Society for College and University Planning (SCUP). However, with changing times, the education industry started experiencing unsteadiness due to economic and demographic changes and technological advancements. This expanded definition of strategic decision making with topics such as governance, budgeting, faculty workload, assessments, market segmentation etc. This requires university leaders that challenge assumptions and think about radically changing existing processes and structures.

Furthermore, the authors underline the fact that devising a strategy is just a half part. Other half is performing the tasks to achieve the goals. They aptly put this as follows: *Purpose of planning is not to make a plan but to make a change.* This implies educational

leader should not only have a vision but he/she must also have the ability to enforce this into action and persuasiveness to take everyone on this journey of change.

Another important topic discussed in the paper is does strategic planning works in higher education? According to the authors the answer to this question is not clear. Strategic planning in higher education is a complex, dynamic real-world problem which is not available easily for controlled studies or quasi-experiment designs. Furthermore, it is also affected by leadership qualities, demographic and federal changes, policies, politics and socio-cultural forces. However, if used wisely, strategic planning can be a powerful tool from envisioning to actualizing the vision.

3.12 Epilogue: Change leadership and leadership development

(Cloud, 2010)

This article discusses qualities, goals and issues for the change leaders in education. Although the article focuses on leadership in community colleges, the conclusions are applicable for the change leaders in any type of educational systems.

Author refers to Denisa Wallin who defines change leadership as four-part process:

1. *Anticipate* changes.
2. *Analyse* environments.
3. *Act* based on data and strengths.
4. *Affirm* to organizational improvement.

Furthermore, the author insists that change leadership is different and complex form transactional or transformational leadership. Transactional leadership focuses on maintenance and management with incremental changes whereas Transformational management facilitate systematic change according to leader's vision. Change leadership, by contrast, facilitate changes in both employees and the organization.

Historically, educational staff we left out from administrative processes. However, with change in time, the inclusion of educational staff has become an integral part of administrative decision making. The author further argues that in addition to required academic credentials, professional and administrative skills, a successful leader should also possess certain personal qualities. These qualities are summarized as follows:

- Change leaders listen more than they talk
- They do not see themselves as the boss rather they see themselves as "first among equals" and motivate others to join continuous improvement efforts.

- They understand they lead with the consent to lead and also clear that all actions are accountable to stakeholders.
- They work as "servant leaders" i.e. they are committed to helping students and colleagues become wiser, healthier, productive and independent.
- Change leaders articulate vision and help in its implementation.
- They show a high degree of emotional intelligence and are highly motivated, self-disciplined empathetic individuals.
- Change leaders respect the institution's heritage and tradition and they are careful not to offend anyone who cherishes these traditions.

Apart from this article also reports competencies of Change Leaders as outlined by the AACC board of directors which are as follows:

1. **Organizational strategy** An effective change leader improves the quality of the institution, protects the long-term health of the organization, promotes the success of all students, and sustains the college mission.
2. **Resource management** An effective change leader equitably and ethically sustains people and processes as well as institutional assets to fulfil the mission, vision, and goals of the college.
3. **Communication** An effective change leader uses clear communication skills to engage in an honest, open dialogue at all levels of the college and its surrounding community, to promote the success of all students, and to sustain the college mission.
4. **Collaboration** An effective change leader develops and maintains cooperative, mutually beneficial, and ethical relationships that nurture diversity and sustain the college mission. Change leaders, in particular, must be adept at conflict resolution and consensus building.
5. **Community college advocacy** An effective change leader understands, commits to, and advocates for the mission, vision, and goals of the college.
6. **Professionalism** An effective change leader works ethically to set high standards for self and others, continuously improve self and surroundings, demonstrate accountability to and for the institution, and ensure the long-term viability of the college and community.

[AACC, Competencies for community college leaders, 2005, adapted].

Besides this, this article also outlines few a challenges in front of change leaders such as taxpayer's resistance, special interest groups (such as teacher's unions), partnerships between public and private institutions.

3.13 Building a leadership vision: Eleven strategic challenges for higher education

(Hanna, 2003)

In this paper, Hanna (2003), outlines the eleven strategic challenges faced by the educational institutions throughout the world. Due to the increasing demand for higher education accompanied by a shortage of space and limited resources have created a lot of challenges for the higher education system. According to a study by Sir John Daniel, an average of one new institution is required to be created somewhere in the world per week for three decades to sustain the current level of participation. Because of such high demands and low resources more and more institutes are reinventing themselves by utilizing new technology.

In the paper following eleven strategic challenges are outlined:

1. **Removing Boundaries:** Colleges and universities are making efforts to reduce the boundaries of higher education by making it available to wider the public. As this happens, what is *on campus* and what is not becoming less apparent. The challenge in front of institutions is to embrace these trends and become more accessible.

2. **Establishing Interdisciplinary Program** Currently societal problems cannot be solved by compartmentalizing educational courses by restricting them to a single department. As learning becomes more connected with personal and professional experiences, courses need to be redesigned to mirror this change and interdisciplinary programs are required.

3. **Supporting Entrepreneurial Efforts and Technology** Even with current advancements of the internet and other technologies, universities are not actively integrating it in the existing strategies. To utilize the full potential of such disruptive technologies, integration should be assigned higher priority and funds must be allocated for such activities.

4. **Redesigning and Personalizing Student Support systems** Universities must redesign the curriculum to serve students where they are - physically, economically and academically. For this to occur even student support systems such as admission, registration, counselling and placements must be designed to deliver flexibility with students being in control. This transition is a major challenge in front of the institutes.

5. **Emphasize Connected and Lifelong Learning** Current business practices and processes are changing at a fast pace and hence businesses are looking for people who know how to learn. Educational institutes must focus on developing such skills such as the ability to work in a team or critical thinking to prepare students to real-world challenges.

6. **Investing in Technologically Competent Faculty** Universities need to hire faculties that can cope up with fast-paced technical changes, add their experience and insights and pass on these teaching to a new generation of students.

7. **Building strategic alliances with others** Already universities throughout the world have created a network of collaborative projects. But competition is also increasing with the increasing demand for education. This calls for universities to strengthen their alliances with industries even further gain competitive advantage.
8. **Incorporate learning technologies into strategic thinking** Adapting new technologies is not not just limited to computer science, IT or communication science, its changes must be evaluated, reflected and integrated across the entire institution.
9. **Measuring Program Quality** As education is becoming more and more adapted to students need, quality assessments from students perspective should become more prominent
10. **Achieving Institutional advantage** Different institutes have different approaches to adapt to digital education. This abundance of opportunities demands institutes to analyse their strengths and formulate approaches with clarity to achieve their vision.
11. **Transforming Bureaucracy, culture and assumption** Transforming institutes requires transforming bureaucratic and university culture which is one of the biggest challenges in front of the institutes.

To tackle these challenges, authors suggest using "Appreciative Inquiry". Traditional approaches of organizational changes are based on the assumption that something is wrong or non-functional and hence must be fixed. Appreciative Inquiry instead focuses on organizational strengths and focuses on the areas where it is performing well and the reason for this performance. This data then can be analysed and used to initiate changes across the organization and to direct it towards success.

3.14 The Skills Future Higher-Ed Leaders Need to Succeed

(Mrig & Sanaghan, 2017)

Changing educational system is a complex and continuous process. In contrast with organizational changes, current educational changes is uncharted territory. This requires new approaches and skill-sets to be called as effective change leaders. In this paper, author categorize changes in education as 'adaptive challenge' i.e. one without clear answers. They further argue that such problems require experimentation, risk-taking and tolerance to failure. They argue that core leadership qualities such as competence, compassion and integrity are still important but not sufficient. They outline other important but less obvious qualities that are specific for higher education settings. These traits are summarized as follows:

Anticipatory Thinkers: Anticipatory thinking is the ability to understand and connect trends and potential opportunities in constantly changing environment or 'connecting the dots'. Anticipatory thinkers intentionally design conversations throughout

the campus. They know that harnessing multiple perspectives and continuous conversations with stakeholders are the key elements to attain clarity and capture the upcoming trends.

Tolerant of risk and failure: Time and time again, there will be decisions that require risk-taking. Some of such decisions might result in a failure. New age leaders should embrace these failures and try to learn from the failures and mistakes. They must also learn how to motivate others to take risks by motivating them by providing incentives and support.

Effective Conveners and Facilitators: Historic notion of a leader as the one to set and execute the vision is now changing. Current changes demand that vision should be inclusive and collaborative. To achieve this, leaders should act as conveners to engage the collective mind and will of stakeholders to set and achieve organizational goals. Qualities that help to play this role include being humble, willingness to trust others and ability to connect with and across the cultures.

Courageous Decision makers: In the process of change, leaders face resistance from different entities: stakeholders, traditions and economic conditions to name a few. Although they can initiate a conversation of changes to alleviate the situation, it is their courage to take a decision in the difficult situation sets them apart. The hardest part of any leadership is not knowing what to do but doing what needs to be done. For this, leaders must assess the risks associated with decisions and choose the battles accordingly.

Resilient: Changes and reforms faced by educational institutes are complex and unforeseen. This results in a lot of mistakes and failures along the way. To be an effective leader one should not only "bounce back" but should be able to "bounce forward". To be an effective resilient leader, one should accept the reality, get a clear sense of purpose of decision, and must develop the ability to improvise decisions as required.

Paper concludes with the observation that to be an effective leader in the current state of higher education sheer intelligence or functional expertise is not sufficient. A leader needs to be on a continuous learning journey. And individuals and organizations both make sure such leadership development as a priority.

Chapter 4

Cross-links and Synthesis

While doing thorough a review of the above literature, we found some interlinks between different papers either supporting or contradicting each other. Our approach is to refine the focus as we proceed through the literature by first recognizing the challenges in higher education followed by different management styles that are relevant for managing educational institute and finally, by analyzing characteristics required to lead educational institutes.

Challenges faced by higher education systems

Present-day universities are facing a tremendous amount of pressure that makes it hard for them to survive and compete with other universities. A university is an organization that is regulated by laws and guidelines at the national and international level, but inside, the institution is governed by its own standards of academic work and quality which it wants to achieve via technical and operational excellence. The ordinary capabilities are about doing the things right (Leih & Teece, 2016) and throughout the paper, we have explained the dynamic capabilities frame which is needed to overcome certain difficulties. Current universities face the multitude of challenges: the continuous need of technological transfer, the need of entrepreneurial leadership within them, need to preserve and expand their contributions to their stakeholders, build and reconfigure external and internal competencies in order to enhance longevity in this rapidly changing environment. These challenges are one of the reasons why managing universities is considered such an arduous task. As mentioned by Bush (2007) higher education institutions are notorious resisters to innovation, leaders should be able to direct organization flexibly to implement the change. Moreover, to satisfy ever-increasing demand for education, universities should focus on customizing the program to serve students (Hanna, 2003). As this happens, the boundaries between what is On campus' and what is 'off-campus' will get less and less apparent (Hanna, 2003). The result is activity boundaries will be increasingly blurred as a result of greater communication and interaction made possible due to technological advancements. Educational institutes should face these facts and embrace these changes.

Universities also face is the challenge of managing limited resources whether it is human

resources, financial resources or space availability. With fast-paced technological changes, universities require faculties that can adapt and improvise the way these technologies are being used. With the introduction of multidisciplinary programs universities now require faculties that can link previously separated disciplines (Hanna, 2003). Moreover, technological changes should reflect in the overall infrastructure of the institute to utilize its full potential. This requires considerable budget allocation for upgrading current systems as well as creating a culture to motivate its effective utilization. Such measures require considerable funding. There is a need for new skills as people in leadership roles in universities are not necessarily experienced in attracting funds, while it is perceived as an increase to the bureaucratic burden that sits somewhat uncomfortably on academic shoulders (Drew, 2010). Leaders should be able to use available resources, both fiscal and people, optimally to facilitate change. University embarkations also involves the inclusion of other stakeholders in the decision-making process, therefore, sometimes there is possibility to trigger the display of 'managerialism' which means that there is a need for strategic change and transformation within the institution where the university is in need of becoming an organizational actor that responds to environmental challenges in a coherent way. In this case, the academics are seen more as consultants in the decision-making process, therefore they do not have much power over the academic process which also might steer the university in the wrong way (Stensaker & Vabø, 2013). The later effects are usually obtained in a shared governance scenario which proves to be beneficial in many of the cases, as Stensaker and Vabø (2013) says, shared governance is also in need for strong leadership which is often difficult to obtain because of the different stakeholders and other various actors involved in the institutional governance, therefore we view it as one of the problems of the modern universities.

As educational systems undergo changes to adapt to the advancements in technology and utilize these advancements for broader outreach, quality of education can get sacrificed. A key challenge for an educational institute is striking a balance between effecting necessary efficiency changes and protecting academic quality (Drew, 2010). Providing quality education is the fundamental aim of any educational institution. While implementing or directing any change it is necessary to reflect upon the change by means of feedback mechanism. Such mechanisms ensure implementation of change is relevant to core values, goals and mission and quality of the service offered. Moreover, as universities adapt to more personalized learning approach, knowing what students want becomes an integral part of course design. And hence quality assessment and feedback mechanisms must be designed to reflect these requirements. Moreover, new education approaches demand new admissions, advising, registration and placement mechanism (Hanna, 2003). The overall quality of new education systems will be decided by the ease of access to these support services in addition to course contents.

As a teaching institution, there is also a threat that comes from the mutual collaboration of other universities, and collaboration between the institution and the stakeholders that the teaching institution might be interested in. Nowadays there is also a continuous competition from online learning platforms which are gaining popularity day by day and easy access to offshore entities (Leih & Teece, 2016). Continuous opportunities to team up with new actors appear which puts a lot of stress on the institution that would require a prudent leader who would be able to grasp those opportunities at the perfect time. Similar outcomes can also be seen from the results of a study conducted by Garrison and

Vaughan (2013), which concludes, educational institutes should have collaborative and distributed institutional leadership to facilitate successful change.

In today's world organizations can't really afford to look only at the short-term picture, but need to focus on the strategic, longer-view (Drew, 2010). To tackle current issues and adapt to future trends leaders must be able to take steps right direction. For such direction leaders need to plan strategically. Planning concerns taking correct measurements and actions for bettering one's condition. In higher education it includes hiring better faculty, recruiting stronger students, upgrading facilities, strengthening courses and student services and acquiring resources to accomplish these tasks (Kotler & Murphy, 1981). However educational planning is dependent on external factors such as demographic changes, fluctuations in government funding, politics and cultural changes. Taking the strategic decision in such situations becomes challenging as compared to strategic decisions in the corporate organization.

Besides above-stated, challenges there is another concern that might affect the future of the universities which is the changing nature of work in the 21st century (Barley et al., 2017). Due to rapidly changing technologies, a lot of courses that are given by the universities are becoming outdated and students might miss the opportunity to upgrade their skills to suit the current requirements. As per the research conducted by Barley et al. (2017), this can be attributed to the phenomenon of *Gig Economy*. In the past, the middle class had a well-paid job and hence financial stability. However current trends show that companies are looking for cheap but highly skilled labours. The gig economy refers to the phenomenon of contract workers who are being employed using different platforms on per project or for fixer duration of time.

Due to such process, hobbyist or people with only selective skill-sets are sometimes preferred by these platforms as they show a high degree of practical experience in an isolated field. However, this might inadvertently affect university students who have wider skill-set but still have to struggle to get the job. To overcome this effect universities should empower students by collaborating closely with the industries to understand the current demand and by designing courses to cater to these requirements.

Leadership Styles

To get a better understanding of the characteristics of a leader, we decided to compare and contrast the different leadership styles reviewed in the literature. Although there are multiple leadership styles mentioned in the reviewed literature, two of the most prominent once are transactional and transformational leadership.

Transformational leadership involves motivating and inspiring staff as well as satisfying their needs. It is also about stimulating and encouraging thinking and bringing out high performance in staff, beyond normal expectations. A key component of transformational leadership is the notion of enabling others to act' which refers to leaders who encourage and empower others to act, take ownership and strengthen their performance. Building an inclusive culture that supports genuine collaboration and effective teamwork has been identified also as an important leadership practice within organizations and schools (Drew

et al., 2008). According to Bush (2007) building school vision, establishing school goals, having productive school (work) climate are few of the important dimensions of transformational leadership. Bush (2007) also mentions that providing intellectual stimulation, providing support and demonstrating higher performance expectations are also vital dimensions of this type of leadership. We can clearly see that these dimensions are in close agreement with Drew et al. (2008). Hence according to Drew (2010) this leaders can be depicted as heroes.

Specifically, for higher education institutes this kind of leadership is essential because adaptation can be completed to meet the constantly changing economic and academic environment (Drew, 2010). Furthermore, Drew (2010) also mentions that the transformational leader is still a long way from being the leader for every situation.

Transactional leadership is concerned with the positional power of the leader to ensure compliance by followers. It views leadership as an exchange where rewards and punishments are handed out to acknowledge the performance of followers (Drew et al., 2008). Bush (2007) says that the major limitation of this style is that it does not engage staff beyond the immediate gains arising from the transaction. Hence, transactional leadership may not be able to produce a long-term commitment to values and vision being promoted by the leaders.

Although these are the two prominent leadership styles listed in the literature, change leadership represents a new perspective in this field. As mentioned by Cloud (2010), change leadership is more complex than either transactional or transformational leadership. The former focuses primarily on maintenance and management of the status quo with incremental changes as needed; the latter facilitates systemic change through the leader's articulated vision and a motivated workforce. In contrast to these, change leadership facilitates changes in employees and organization both. Change leadership, by contrast, facilitates changes in both employees and the organization.

As Goleman (2000) aptly describes, there is no one go to management style to fit every situation. Although there is a management style for every situation. Hence an effective change leader should be aware of these management styles and judiciously use them to obtain the desired effect (or result).

Characteristics

In the previous section, we discussed different leadership styles. Each leadership style focuses on its own set of qualities, but these are generic terms used to describe leadership style in any type of organization. Nature of challenges faced by leaders in education demands some specific set of skills to effectively combat these challenges. In this section, we have compiled a list of qualities that are discussed in the literature and aptly fit for the profile of a leader in the field of higher education.

Governing higher education is difficult as its course can be affected by various internal and external factors. There is very less chance of experimenting with a controlled environment and there are no definite guidelines to follow. Hence oftentimes envisioning is the difficult

task. Moreover changing education system is a time-consuming process and planning for the next decade must be done now to achieve the goal. However, Most of the changes that can transform education do not come unalarmed. To identify these changes, a leader must be an 'anticipatory thinker' (Mrig & Sanaghan, 2017). They should be able to grasp the signs of future trends very early in the process and analyse which factors of it can be controlled.

Moreover, the complex nature of challenges means the traditional picture of a singular leader to set vision might not work well. A leader must be able to convey his or her grasp of the future to the stakeholders and get everyone onboard to create a *shared vision* (Mrig & Sanaghan, 2017). This might require 'courage' as there will be few decisions that are against the set rules or traditions but nevertheless essential to bring the change. However, it must be also ensured that the institute's traditions and its appreciators are respected and been reasoned with to justify the nature of this change (Cloud, 2010).

Dynamic Capabilities Framework is a framework that helps to understand how the research universities need to be managed to preserve and expand their contributions to their stakeholders and being able to enhance their longevity at the same time (Leih & Teece, 2016).

The framework is based on the idea of separating the ordinary capabilities which bring technical and operational excellence to the campus from the dynamic capabilities which are described by having the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. At the base of the framework are 3 essential activities that a leader should be able to perform: *Sense*, *Seize* and *Transform*.

1. Sensing: Identification of global trends, recognition of opportunities to increase funding, and providing quality service. It is same as the anticipatory thinking mentioned earlier in this section.
2. Seizing: Implementation and support of new academic activities, resource acquisition and expenditure, supporting entrepreneurship, managing conflicts and double down on new research and teaching opportunities.
3. Transforming: Ability to build partnerships with unconventional constituents, change the campus culture. This results in greater linkages, innovation and new programs.

   (Leih & Teece, 2016)

All of the above skills require a leader to engage with different stakeholders at some stage. And hence these skills won't be as effective without the ability of the leader to handle different aspects of effective communication. These skills are scattered throughout the reviewed literature without any dedicated category. After compiling and cross-linking, we have enlisted them under an umbrella term - *People Skills*. In the next few paragraphs, these skills are explained and connected to form a coherent skill-set of its own. As we explain in limitations, this is not an exhaustive list and is strongly influenced by our referred literature.

Without a deep understanding of the campus culture and community, and without the support, buy-in, and contributions from the campus community, the leader's ability to

effect meaningful change or progress is significantly diminished (Mrig & Sanaghan, 2017). Acknowledging this fact, the effective leader tries to align everyone's interest to create a shared understanding of the goals.

To be a great convener, a leader must be *approachable*. They should *listen* what their subordinates tell and react rationally. They should also encourage people by giving support and power to perform their tasks effectively. This feeling of being empowered increases creativity, commitment and creates feeling respect for the leader. This also helps subordinates take steps in the direction of the organizational goals and mission. Leader should also be able to *motivate* and *inspire* and *intellectually stimulate* people to walk with him on the path of better organization (Basham, 2012).

Aptly put by Cloud (2010), leader should understand they can lead because they have *consent* to lead. This creates the attitude of 'servant leader' which works for the betterment of students, faculty and institute. They should also focus on collaborative work by including people of different departments and different levels. Rather than coercing stakeholders to follow them, an effective leader should reason and persuade stakeholders with a clear account of facts (Brungardt, 1998). This 'inclusiveness' helps them to gain different perspectives and a better understanding of the problem at hand. Moreover, once people realize they are being heard by the leader they tend to perceive him as *trustworthy* and hence are more likely to follow his decisions.

To summarize leaders with good people skill promote an environment that fosters the growth of leadership in others, open doors for staff and helps create opportunities; are credible and engender trust; act as role models; are ethical, inclusive and collaborative in their practices; are strategic and take responsibility for decisions; communicate the goals and vision of the organization clearly; understand organizational priorities; and are resourceful and have good connections.

Chapter 5

Conclusion

In the previous chapter, we cross-linked and analysed different problems, leadership styles along with qualities of an effective change leader. In this chapter, we would like to present the relevant points that we found as a result of this synthesis and also a few recommendations on how these points can be implemented in practice.

Current educational systems are undergoing through a turbulent phase of changes and universities across the world are struggling to cope up with the speed of these changes. Leading of such system is an arduous task and leader should be aware of the key challenges faced by the field to lay a clear strategic plan to achieve future goals and set a long term vision effectively. These key challenges can be summarized as follows:

- With the advent of online education, the line between what is online' and what is on campus' has started to get more and more blurred and universities have to reinvent themselves to remain relevant to their goals and invest in next age educational facilities. One of the approaches already discussed in this document is blended learning.
- To cater to the ever-increasing needs of education, universities need to serve student where they stand: academically, economically and physically. This involves customizing programs to suit the requirement of the students and also creating support infrastructure for it. Building infrastructure which will sustain the ever-advancing field of education is very difficult and requires organizational leaders to take courageous decisions and stay up-to-date with available contemporary systems, infrastructures and standards. This can also be seen from NEET model employed by MIT and Topic Tree Model of CSU, Australia.
- New complex technologies face complex problems that cannot be solved by confining it to any single department. This calls for interdisciplinary study programs targeted towards real-life problems.
- Universities have a limited number of resources which include: space, human resource and economic resources. Hence effective resource management is a key challenge.

- To keep up with the changes, universities have to invest lots of budget on infrastructure upgrades. This can be achieved by closely working with industries, strategic partners and government to sponsor the research and educational programs.
- Limited resource and funding are pushing universities towards more and more collaborations with universities around the world. However, this collaboration also comes with the competition and proper balance must be maintained.
- To survive the increasing competition an to set a mark in educational word, universities are focused on creating a niche for itself. This may include a focus on particular research fields, entrepreneurship and knowledge delivery mechanism etc.

While tackling these challenges change leaders will face different situations and each situation demands different behaviour. Hence a leader should understand different management styles and should exercise them effectively.

Although these are the prominent leadership styles listed in the literature, change leadership is more complex than any single style. As Goleman (2000) aptly describes, there is no one go-to management style to fit every situation. An effective leader should be able to perfectly blend different styles to achieve the benefits of different leadership styles. Effectively exercising perfect blend requires what we call above as people skills.

Although these leadership styles give a great overview of leadership behaviour these are genetic traits. Complex nature of the challenges requires an educational-change leader to possess a certain skill set. These qualities are summarised as follows:

Anticipatory thinker A leader should be able to grasp the early signs of future trends and analyse them.

Creating shared vision Traditional concept of single leader defining vision does not suit the nature of changes in educational systems. Hence leader must be able to take everyone with him/her to create a shared vision by taking inputs from each stakeholder

Courageous decision maker Unorthodox challenges require unorthodox solutions. To tackle such situations, the leader must be able to courageously and judiciously take chances and implement changes.

Resilient These courageous decisions might sometimes result in a failure. However, leader must be able to 'bounce back' or even 'bounce forward' and keep working on revising plans to achieve the goal.

Respecting traditions description While courageous decisions sometimes means going against the tradition, it does not point to disrespecting the traditions. The leader should respect the tradition and the one who cherish these traditions. They must be able to reason and substantiate the reasons for these changes and take everyone along to implement these changes.

Servant Leader Leader should be aware of and acknowledge the fact that "*they lead with the consent of the led*". Hence effective leader should be perceived as a servant leader rather than a boss. Consequently, they encourage cooperation and inclusion and make it clear that all administrative actions are accountable to stakeholders. (Cloud, 2010)

Facilitator Educational institute involves a multitude of stakeholders. A leader must be able to work as a facilitator between these stakeholders and must be able to get everyone aboard to create and achieve a shared vision.

People skills Finally a great leader is the one who knows how to handle the people around him/her, foster their growth by empowering them and must establish mutual trust and respect. This requires s set of skills mentioned in the synthesis part.

Recommendations for stakeholders

Most of the universities have well-defined hierarchies of authority and leaders at each level of the hierarchy. Leaders at these levels are one of the important stakeholders involved in the functioning of a university. We would like to recommend the following:

- Empower leaders, managers, subordinates by establishing a trust-based relationship. This shared sense of trust can create a feeling of belonging and encourages them to work passionately towards the organizational goal.
- Promote leadership qualities and training programs for self-improvement in different hierarchical levels. For example, early recognition of future leaders from existing faculties and providing subsequent training might result in a passionate leader with multidisciplinary knowledge, well versed with traditions and culture who shares the common goals for the betterment of the institution.
- Creation of platforms to share opinions and feedback - One of the important conclusion was about creating a shared vision. This requires listening to everyone's opinions and perspectives. A platform that can be used to share and reason opinions can help the leader to gain a better understanding of the ground reality. One of the important aspects of implementing change and nurturing an innovative environment is to inspect on implementation. This can be done my mechanism of feedback. Considering feedback seriously can provide with a clear picture of the reflection of a change in the organization and can provide for corrective actions to be taken if any.
- Encourage judicious risk-taking - The problem faced by educational institutes are new and it requires innovative measurements. However such measurements cannot be put in place without taking certain risks. A leader must be empowered to judiciously take such risks and support in this process and must be supported in this process.
- Improved people skills - Throughout this change process leader has to deal with different hierarchical levels and stakeholders. To successfully deal in these situations

a leader must have people skills such as trustworthiness, respecting opinions, intellectual stimulation along with emotional intelligence. The leader must be encouraged to exercise and improve and hone these skills.

It's worth noting that the conclusions and recommendations of our paper focus on additional or complementary qualities of the leader to be effective in transforming educational institutes. These qualities are recommended on top of usual leadership qualities such as charisma, emotional intelligence etc.

The challenges and changes faced by educational institutes are unique and hence such situations don't have a lot of empirical data to support any decision. We think the following quote perfectly captures the essence of this situation:

> "The organizational adaptability required to meet a relentless succession of challenges is beyond anyone's current expertise. No one in a position of — authority none of us in fact — has been here before." – Heifetz, Grashow, and Linsky (2009)

Chapter 6

Limitations and Future Scope

Every study has its limitation and this study is no exception. However, we think analysing these limitations and its implications not only provide the context for study from which to be looked but also provides a reader with a direction to comprehend the presented facts more accurately and its extensibility to other situations. It also helps future studies by giving a base to overcome these drawbacks.

According to us, these can be divided into three distinct categories: limitations in the availability of data, limitations in available data and limitations due to interpretations and bias of the reviewers.

As we have mentioned it often in this paper, the challenges faced and challenges faced by educational institutes today are radically different from the challenges faced earlier. This directly affects the availability of empirical evidence and case studies to analyse. Moreover, the amount of time invested in conducting the research, cross-validation and drawing conclusion is outpaced by the changes demanded due to rapidly evolving technology. However, these studies can still be used to draw guidelines for such situation. Embracing this spirit we would recommend the findings of this paper to be used as guidelines and its shortcoming must also be taken into account.

This brings us to analyse the limitations of the literature we reviewed. The first limitation can be a narrow focus of the studies. (Cloud, 2010) is focused on community colleges and (Bush, 2007) focuses on school environment and do not refer to problems in higher education institutes. Although some of the findings are still appropriate in our context, its findings can be affected due to its narrow scope and hence it must be taken into account while analysing these finding in our context.

Another limiting factor is an effect due to demographics and culture.Studies by Cloud (2010) and Kotler and Murphy (1981) are based on the studies and case studies based in the United States, study (Bush, 2007) is based in South Africa and study (Drew, 2010) is based on universities in Australia. These studies are greatly affected by inherent bias due to practices followed in teaching, in managing educational institutes and government policies and culture, acceptable practices. It must be also noted that different countries have different challenges and priorities and it can affect the state of education. In our literature survey, we found that the number of new researches are being performed in developing

nations. There late venture into this field and initiative from world organizations have fostered the number of experiments being conducted in these countries. The effects of these factors must be taken into consideration when applying these findings to other demographics.

Research conducted by (Drew, 2010) on university senior leaders, involve participants from the development program, hence the views of the sample might have been unduly favourable as a reason for participation in the development program.

Different cultures have their own views of leadership. Besides that, leaders can implement their own cultures within the teaching institutions, like the organizational culture that is implemented in a lot of Nordic institutions (Stensaker & Vabø, 2013) through which was found that a lot of emphasis within the organizational culture is put on leadership development as a key to strengthen their governance capacity. But yet again, different cultures think differently and we cannot implement that would suit them all, at least for now.

Another limitation is the bias to the place where research is being conducted. Researches conducted are esteemed universities such as Berkeley, Stanford and MIT are credible and ground-breaking but this does not mean that conclusions drawn from these studies can be applied everywhere in a similar manner. Different universities have their own culture, resource availability and niches. Findings of studies such as dynamic capabilities framework (Leih & Teece, 2016) must be modified to suit the given institute before applying.

Research by (Haas et al., 2014), (Barley et al., 2017) and (Brungardt, 1998) are not directly related to our topic of review. But problems and solutions explored in them are pretty generic and can be extended to our case. But this extension is limited to solving generic problems available in the field rather than addressing the specialized ones. Study (Barley et al., 2017) does not provide views from the leadership point rater it provides views from the point of other stakeholders. It would be better to use this study to get some concrete findings for university leadership if it would have done through the university point of view. However, this also provides an opportunity to analyse the perspective of stakeholders which is then can be used to understand broader perspectives of the challenges.

Because of the complex of nature of the challenges faced by the education industry, in our review, we focused on papers that deal with controllable factors of these changes. However, it must not be forgotten that changes in education and hence the way to govern these changes are also affected by external factors such as governmental policies and politics. We briefly mentioned this while discussing challenges in education.

This brings us to a final limitation which is due to the bias of the reviewers. We are well aware that each person has his/her set of beliefs and these beliefs greatly affect how we perceive things. This might have inadvertently affected our conclusions. However by forming an inclusive group representing different cultures and thorough cross-checking we tried to keep contain the effect of this limitation to the minimum.

Keeping these limitations in mind we propose the following recommendations for future studies:

- Set of similar studies in different demographics should be conducted and cross-linked to document how demographics affect these studies.
- More case studies must be performed to generate empirical evidence to substantiate the findings.
- Studies on type and extent of the effect of external factors on governing of educational institutes must be carried out.
- Collaborative studies with different universities can provide empirical contemporary data to compare and contrast the findings carried out at different universities. This will also nurture the change as universities will be able to learn from each other's mistakes and try to avoid these pitfalls.
- Lastly these reviews and cross-linking can be done by an inclusive group of people representing different cultures and demographics to avoid cultural biases.

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Appendices

Internet and Higher Education 18 (2013) 24–28

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Institutional change and leadership associated with blended learning innovation: Two case studies

D. Randy Garrison [a,*], Norman D. Vaughan [b,1]

[a] Faculty of Education, University of Calgary, 2500 University Dr. NW, Calgary, Alberta, T2N 1N4, Canada
[b] Department of Education & Schooling, Faculty of Teaching & Learning, Mount Royal University, 4825 Mount Royal Gate SW, Calgary, Alberta, Canada T3E 6K6

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ABSTRACT

This article documents the institutional change and leadership associated with blended learning innovation in higher education. Two case studies are provided that demonstrate how transformational institutional change related to blended teaching and learning approaches is predicated upon committed collaborative leadership that engages all levels of the institution.

1. Introduction

Nearly a decade ago it was argued that leaders in higher education were being challenged to position their institutions to meet the connectivity opportunities and expectations for higher quality learning experiences. At that time, blended learning approaches were being seriously considered as the means to effectively and efficiently transform higher education institutions (Garrison & Kanuka, 2004). The early research strongly supported blended learning to actively engage students in collaborative and higher learning experiences (Twigg, 2000). Moreover, the focus on engagement was consistent with the traditional values and principles of higher education. However, implementing blended learning approaches has proven to be daunting considering that higher education institutions are notorious resisters to innovation. For this reason, the adoption of transformational blended learning approaches demand clear organizational plans, strong leadership, and sustained commitment.

2. Blended learning defined

Before we address the organizational and leadership challenges of implementing blended learning approaches in institutions of higher education, let us take a moment to discuss what we mean by blended learning. The concise definition that guides us is that blended learning "is the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies" (Garrison & Vaughan, 2008, p. 148). What is meant by this is that blended learning designs are informed by evidence based practice and the organic needs of the specific context. Based then on the grounded needs of the intended educational experience, the face-to-face and online means of communication are fused in a way that capitalizes on the strengths of each. Beyond this we prefer to not restrict what constitutes blended learning. The more productive innovation strategy is to be more inclusive than restrictive as to what constitutes blended learning.

3. Organizational change

The great challenge is to understand the nature of higher education institutions and the possibilities of change associated with blended learning. One of the great resistors to the adoption of technological change in higher education is the argument that there is not sufficient evidence for such innovation. With regard to blended learning, this is not a defensible position (Garrison & Vaughan, 2008; Picciano & Dziuban, 2007; Twigg, 2003). The fact is that blended learning has been shown to have an advantage to face-to-face learning experiences (Means, Toyama, Murphy, Bakia, & Jones, 2010). Blended learning is a legitimate teaching and learning approach that has been adopted by a vast majority of higher education institutions (Arabasz & Baker, 2003).

While blended learning is common to higher education, it has not resulted in organizational change that significantly enhances the effectiveness and efficiency of the teaching and learning transaction. In analyzing change and technology in higher education, Marshall (2011) makes the observation that there is little evidence of critical self-reflection despite the obvious affordances of information and communications technology. Institutions have relied too often on

* Corresponding author. Tel.: +1 403 220 6764.
E-mail addresses: garrison@ucalgary.ca (D.R. Garrison), nvaughan@mtroyal.ca (N.D. Vaughan).
[1] Tel.: +1 403 440 5587.

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the early adopter, "but have failed to provide systems and environments that result in wider adoption of successful ideas" (Marshall, 2011, p. 31). Critical self-reflection must begin with using the experiences of students and faculty to frame institutional change associated with learning technologies. In this regard, the key element to institutional change is strong leadership.

4. Leadership

Significant pedagogical benefits of blended learning can be achieved with commitment. The reality is that blended learning approaches that capitalize on engagement and the technological means are readily apparent and accessible. The key is sustained collaborative leadership. There are, however, institutional challenges that include policy, resource, action plans, and faculty support issues. The process must begin with raising awareness of the benefits and necessity of adopting blended learning approaches. This can be initiated by bringing to campus credible experts who have provided the theoretical and practical blended learning leadership. Raising awareness can be done concurrently with drafting policy documents but must be done in an open and collaborative manner.

As important as the drafting of policy and position papers, the rubber hits the road through specific strategic action plans. Such action plans must be properly resourced, achievable, and sustainable. There must be evidence of early successes that senior leaders can use to address the inevitable resistance to change and sustain the innovation. From the perspective of the faculty member, there must be instructional development support, and incentives that include academic recognition. While many blended learning projects will rightly focus on individual course redesign and support, considerable strategic advantage can be gained by considering blended approaches to program (re)design (i.e., a combination of face-to-face and online courses).

At the core of blended learning approaches are new and emerging developments in information and communications technology. It is these technological affordances that have created the enormous potential for blended learning to address the deficiencies of large lectures that have become the norm in undergraduate higher education. Notwithstanding this fact, it is imperative for leaders to focus on the teaching and learning transaction. Moreover, it is important that technology does not become a barrier to the adoption of blended learning. Faculty must be provided ongoing technology support and be assured that they will not have to learn and manage the technology alone. Faculty must be able to focus on the educational benefits of blended learning designs that would include increased personal interaction with students.

5. Case study I

To help understand leadership implications of implementing blended learning designs at a strategic level, we first focus on a four year project at a Canadian higher education institution. This institutional initiative began with raising awareness within the campus community through public presentations by recognized international experts. Concurrently, an instructional development committee began to draft an institutional learning plan and blended learning position paper. This process was not rushed and in the second year a funding program was initiated based upon proven design methodology (collaborative approach, evidence based, thoughtful adoption of technology, rigorous evaluation). This was a competitive program based on clear criteria and a request for proposals. The emphasis was on enhancing and extending engagement in the teaching and learning transaction. An average of 13 projects was funded over the next four years (Vaughan & Garrison, 2006).

The next challenge was to provide the instructional support that would guide instructors who had little experience with blended learning approaches and the technology that made it possible. In order to facilitate this process an inquiry through blended learning (ITBL) approach was adopted (Vaughan, 2010). This approach consisted of four phases that were adapted from Garrison, Anderson, and Archer's (2001) Practical Inquiry model (see Fig. 1).

5.1. Triggering event

Garrison et al. (2001) describe a triggering event as a "state of dissonance or feeling of unease resulting from an experience" (p. 21). Discussions with instructors indicated that the triggering event for participation in this blended learning program was the motivation to redesign an existing course to improve student learning and instructor satisfaction. An initial project meeting was held with each instructor and their teaching assistants as well as representatives from the institution's teaching and learning centre, library, and information technology department. The purpose of this meeting was to clarify the project goals, timelines, roles, and responsibilities for those involved in supporting the redesign process. This meeting also helped to identify the professional development support needs and requirements of the project team members. The three questions that were used to stimulate the discussion were:

1. What is your definition of blended learning and how will this concept be operationalized in your course redesign project?
2. What will be the advantages (for both students and professors) of your course redesign?
3. What do you perceive will be some of the challenges you will encounter with your project?

5.2. Exploration

The second phase of the Practical Inquiry model is exploration, characterized by "searching for clarification and attempting to orient one's attention" (Garrison et al., 2001, p. 21). The exploration phase of this blended learning program consisted of a series of integrated face-to-face and online experiential learning activities that allowed the instructors to become immersed in a blended learning environment from a student's perspective. This process took place over an extended period of time, a minimum of six months, and the activities were developed based on the feedback from the initial project meetings and in collaboration with the faculty participants in the program. These program activities were designed to provide participants with experience and expertise in the areas of curriculum design, teaching strategies, and educational technology integration (see Fig. 2).

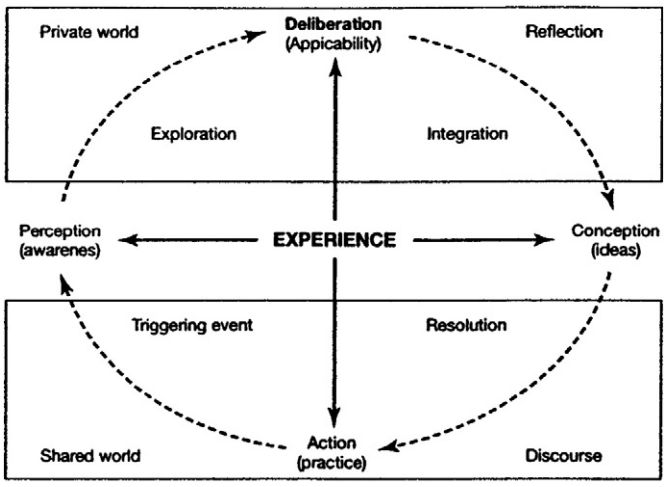

Fig. 1. Practical Inquiry model.

5.3. Integration

The third phase was integration, which involved "reflecting upon how the new information and knowledge discovered could be integrated into a coherent idea or concept" (Garrison et al., 2001, p. 22). A common challenge for instructors involved in this blended learning program was the transition from the exploration to the integration phase. Many faculty members were comfortable sharing, discussing, and debating course redesign concepts but often a greater effort was required to transfer these new ideas into practice. One strategy used in this program involved monthly lunch meetings where instructors were required to regularly present project artifacts, such as their course outline or an assessment activity, to the rest of the community. This forced the instructors to make redesign decisions and to create course-related resources. This "show and tell" process also allowed them to get valuable feedback from their peers about the artifact. In addition, opportunities were provided to pilot portions of the projects with students who could provide insightful comments about the usability and educational value of a learning activity or resource.

5.4. Application/resolution

The resolution of the dilemma or problem is the fourth phase of the Practical Inquiry model. Garrison and Anderson (2003) suggest that the results from this phase often "raise further questions and issues, triggering new cycles of inquiry, and, thereby, encouraging continuous learning" (p. 60). The application and resolution phase of this blended learning program involved the implementation and evaluation of the course redesign project. This is the phase that is often overlooked in professional development programs. In many programs, instructors receive support for the design and development of their projects but the implementation stage takes place after the program has been completed (Murray, 2002). Thus, instructors are left on their own to struggle through the initial implementation of their course (re)design and, in most cases, little or no evaluation is conducted to determine the effectiveness of the project from either a student or instructor perspective.

To overcome these deficiencies, blended learning program support was maintained throughout this phase and the participants intentionally engaged in the process of the scholarship of teaching and learning (SoTL) (Hutchings, Huber, & Ciccone, 2011). In order to facilitate this process, a discussion about the SoTL approach was conducted in one of the early face-to-face monthly luncheon meetings. These conversations involved other instructors who had prior experience with SoTL projects and thus could demonstrate their study processes and results. Instructors were encouraged to engage in the SoTL process from the outset of their course (re)design projects. By receiving institutional ethics approval at the beginning of the course (re)design process, project teams were able to collect data in the form of surveys, interviews, and focus groups with students, instructors, and teaching assistants who had been involved in past iterations of the course. Several projects were also able to obtain data regarding student grades and withdrawal/drop rates for comparison with the traditional sections. The collection and analysis of this data allowed the project team to make informed course design decisions, such as the proper selection and integration of face-to-face and online learning activities.

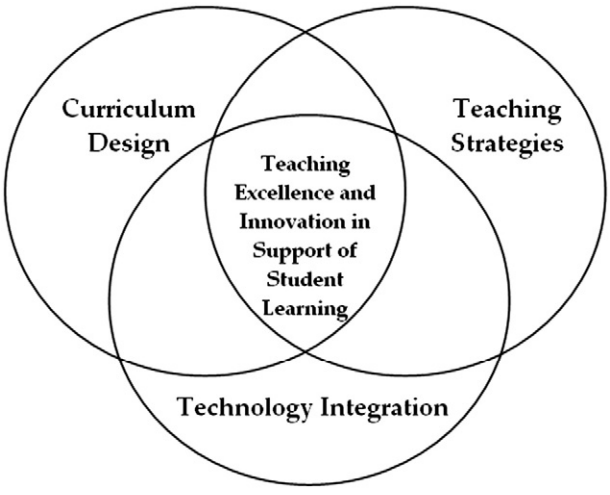

Fig. 2. Course redesign outcomes for faculty participants.

Early evaluation findings revealed that faculty most liked the increased access and flexibility as well as the variety of approaches. The single dislike, notwithstanding the considerable design support they received, was the increased workload on the front end. None of these findings were unexpected. What is apparent is that significant course (re)design is an enormous challenge and it is unrealistic to ask most faculty members to participate in these activities without release time and/or resources such as a teaching assistant.

On the other hand, students reported that the most significant positive outcome was the quantity and quality of interaction with both fellow students and the instructor. This was satisfying for both students and faculty since it reflected the core goal of the blended learning initiative. Negative results pointed to unclear expectations for students and heavy workload for faculty members. Both of these concerns were likely related to the fact that this was a very different approach to what they were used to (i.e., passive lecture). Students were now expected to take greater responsibility for their learning and engage in reflective discourse. Moving forward, the challenge was to provide clear expectations and direction.

A year after the four year initiative was discontinued, a survey was conducted with the instructors of each of the 51 blended learning projects (across all faculties). The findings of the survey indicated that 95% of the faculty found the program useful; 89% of faculty changed their course design (63% substantially); 89% of faculty thought that student learning was enhanced; and 89% thought the course redesign had a long-term impact on the success of the course. These findings confirm the consistent results of other blended learning design initiatives.

Finally, this project would not have been possible without strong institutional and collaborative leadership. At the same time, this highly successful blended learning initiative abruptly ended with changes in the senior leadership responsible for teaching and learning. New leadership did not have the same commitment to blended learning and a great opportunity was lost just as the initiative was reaching a tipping-point in terms of institutional transformation. The main insight here and realization is the challenge to sustain leadership and commitment in an institution of higher education where leadership changes relatively frequently. This is essential with the inherent focus on research and the reluctance of faculty to move away from the lecture. To be fair, faculty members are not sufficiently recognized and rewarded for adopting more engaged approaches to teaching and learning nor are they provided sufficient professional development support to incentivize them to significantly transform their teaching. The bottom line is that significant change is dependent upon collaborative leadership who can provide a clear vision, specific action plans, teaching recognition, and the resources to make this happen.

6. Case study II

The second case study describes a blended learning initiative that has taken place over a ten year period at another Canadian higher education institution. This program was originally championed by the institution's Teaching, Learning, and Technology Roundtable (TLTR — http://www.tltgroup.org/tltr.htm). The TLTR was chaired by the Academic Vice President and was composed of students, faculty members,

and representatives from the teaching and learning centre, library, information technology department, bookstore, and the registrar's office. This group had observed that faculty members were beginning to use the institution's learning management system to support a number of online learning activities. Based on this trend, the TLTR developed an institutional definition for blended delivery:

> Blended delivery courses combine the best features of classroom-based teaching and learning with the best features of online learning in order to enhance the educational experience and give students added scheduling flexibility. A key feature of blended delivery courses is a reduction in scheduled classroom or lab time, usually by 25 to 50%.

Funding was then secured from the Office of the Academic Vice President to help the teaching and learning centre support ten faculty members a year in the redesign of one of their courses for blended delivery. Each of the faculty members was supported on an individual basis by an instructional designer. The evaluation feedback received from students and faculty members after implementation of the redesigned courses was mixed. Students indicated that these blended courses provided them with more flexibility but they expected that less class time would equate to less work and were frustrated to discover the opposite. Faculty members commented that the blended courses provided them with multiple opportunities to increase communication with the students but they encountered a number of technical challenges with the learning management system. In addition, a major concern that the TLTR had with this approach to course redesign was the lack of sustainability. The faculty members involved in the program only received an initial funding grant (usually in the form of a course release) and very few continued offering their redesigned course in a blended format once they finished the grant program citing concerns over workload and lack of ongoing support.

Based on these outcomes the blended learning initiative was substantially revised. The first key element was to strategically focus on redesigning high enrollment first year courses for blended learning rather than on just selecting a random set of courses based on faculty interest. The second component was to employ a faculty learning community rather than an individual faculty member approach to the redesign process. And, the third element was to clearly link the program to the institution's academic plan, which focuses on student success and engagement in undergraduate programs of studies.

Through discussions with students, faculty members, administration, and the institution's office for institutional analysis and planning, seven courses were identified for redesign. These were all first year high enrollment courses and represented all six Faculties in the institution (Arts, Business, Communications, General Education Science, Health & Community Studies, Science). Garrison, Anderson, and Archer's (2000) Community of Inquiry (CoI) framework was utilized by the teaching and learning centre to support the faculty members involved in redesigning the seven courses (Vaughan, 2004). When this framework was applied to a faculty learning community the focus of the cognitive presence became an inquiry process into one's teaching practice. The ability of the community to support and sustain this inquiry forms the social presence. And, the opportunities for blended learning are encapsulated within teaching presence. The following figure and table illustrate how the CoI framework was applied to this faculty learning community (see Fig. 3 and Table 1).

In order to evaluate levels of student engagement, the institution annually conducts the National Survey of Student Engagement (NSSE) for both the first year and graduating year students. The NSSE defines student engagement as the amount of time and effort that students put into their academic studies that lead to experiences and outcomes that constitute student success, and the ways the institution allocates resources and organizes learning opportunities and services to induce students to participate in and benefit from such activities. Five clusters of effective educational practice have been identified based on a meta-analysis of the literature related to student engagement in higher education. These benchmarks are (NSSE, 2011):

1. Active and collaborative learning
2. Student interactions with faculty members
3. Level of academic challenge
4. Enriching educational experiences and
5. Supportive campus environment.

The first three benchmarks were used to evaluate student perceptions of engagement in the high enrollment courses redesigned for blended learning using the Classroom Survey of Student Engagement (CLASSE — source). These perceptions of engagement were then compared to the students' final grades in the blended courses. To probe the association between grades and these three benchmarks of engagement, one-way ANOVA was conducted to test for differences in final grade by scale score quartile. As shown in Fig. 4, differences in final grade were statistically significant for the Academic & Collaborative Learning Benchmark score quartile. A 10% differential in mean final grade is noted between students in quartile 1 and students in quartile 4. Effect size (Cohen's d) was moderate in magnitude. No causal relationship is implied but it is interesting to note that those students who perceived a higher level of active and collaborative learning in the redesigned courses were also those who were the most successful (Vaughan, Zimmer, & Villamar, 2011).

In order to sustain these seven redesigned courses, each of the six Faculties has taken over responsibility for maintaining these courses by working in partnership with the institution's teaching and learning centre, information technology department, and the library.

Similar to Case I, this blended learning program would not have been possible, or most importantly sustained, without collaborative and distributed institutional leadership. Other key themes include directly linking the blended learning initiative to the institution's vision and mission, taking a community approach to faculty development, and including an experiential learning component for faculty members involved in the redesign process.

7. Conclusion

Blended learning (re)design initiatives have enormous potential to address a number of teaching and learning challenges facing higher educational institutions. There is a growing recognition that institutions need to engage students in more active, inquiry based

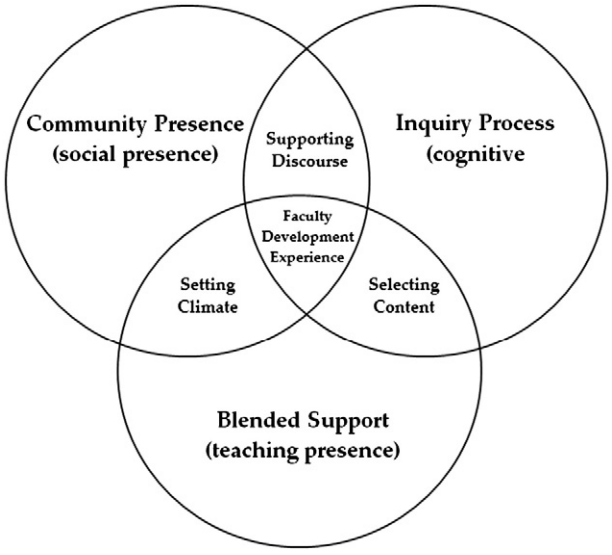

Fig. 3. Community of inquiry framework applied to a faculty learning community (modified from Garrison et al., 2000).

Table 1
Community of inquiry framework applied to a faculty learning community (modified from Garrison et al., 2000).

Sphere	Description	Category/phase	Indicators
Inquiry process (cognitive presence)	The extent to which faculty are able to construct and confirm meaning through sustained reflection, discourse, and application within a critical community of inquiry.	1. Triggering event	1. Inciting curiosity and defining key questions and/or issues for investigation
		2. Exploration	2. Exchanging and exploring perspectives and information resources with faculty colleagues
		3. Integration	3. Connecting ideas through individual project construction
		4. Resolution/application	4. Applying new ideas directly within one's teaching practice
Community (social presence)	The ability of faculty in a community of inquiry to project themselves socially and emotionally as 'real' people (i.e., their full personality), through the medium of communication being used. Faculty learn best from each other.	1. Establishing trust and respect	1. Expressing emotions
		2. Open communication	2. Risk-free expression
		3. Group cohesion	3. Fostering collaboration
Blended model (teaching presence)	The design, facilitation and direction of the inquiry and community processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes for faculty within an environment which carefully integrates face to face and online sessions and activities.	1. Organization & design of the faculty development program	1. Setting curriculum and methods
		2. Facilitating discourse within the community	2. Stimulating and sustaining the sharing of personal meaning and insights
		3. Providing direct instruction for faculty participants	3. Modeling and focusing discussion, activities and project construction

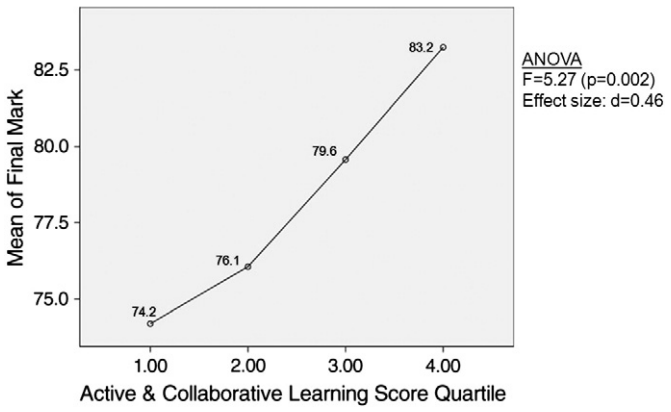

Fig. 4. Final course grades by Active and Collaborative Learning (ACL) benchmark score quartile.

educational experiences. This is becoming more evident as undergraduate class sizes increase along with student dissatisfaction with their learning experiences. In the final analysis, transformational institutional change related to blended teaching and learning approaches is predicated upon committed collaborative leadership that engages all levels of the institution. It has been noted that innovative institutions are driven by thoughtfulness and creativity to realize potential (Collis, 2001). That is, leaders collaboratively create strategic direction and have the courage and commitment to implement and sustain specific action plans. Blended learning innovation demands nothing less.

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Educational leadership and management: theory, policy, and practice

Tony Bush
tony.bush@ntlworld.com

There is great interest in educational leadership in the early part of the 21st century because of the widespread belief that the quality of leadership makes a significant difference to school and student outcomes. There is also increasing recognition that schools require effective leaders and managers if they are to provide the best possible education for their learners. Schools need trained and committed teachers but they, in turn, need the leadership of highly effective principals and support from other senior and middle managers. While the need for effective leaders is widely acknowledged, there is much less certainty about which leadership behaviours are most likely to produce favourable outcomes. I examine the theoretical underpinnings for the field of educational leadership and management, assess different leadership models, and discuss the evidence of their relative effectiveness in developing successful schools.

The significance of educational leadership and management

There is great interest in educational leadership in the early part of the 21st century. This is because of the widespread belief that the quality of leadership makes a significant difference to school and student outcomes. In many parts of the world, including South Africa, there is recognition that schools require effective leaders and managers if they are to provide the best possible education for their learners. As the global economy gathers pace, more governments are realising that their main assets are their people and that remaining, or becoming, competitive depends increasingly on the development of a highly skilled workforce. This requires trained and committed teachers but they, in turn, need the leadership of highly effective principals and the support of other senior and middle managers (Bush, in press).

The field of educational leadership and management is pluralist, with many competing perspectives and an inevitable lack of agreement on the exact nature of the discipline. One key debate has been whether *educational* leadership is a distinct field or simply a branch of the wider study of management. The author's view is clear and consistent, having been articulated for more than 20 years. While education can learn from other settings, educational leadership and management has to be centrally concerned with the purpose or aims of education. These purposes or goals provide the crucial sense of direction to underpin school management. Unless this link between purpose and management is clear and close, there is a danger of 'managerialism', "a stress on procedures at the expense of educational purpose and values" (Bush, 1999:240).

The process of deciding on the aims of the organization is at the heart of educational management. In most schools, aims are decided by the principal,

often working in association with the senior management team (SMT) and perhaps also with the school governing body (SGB). However, school aims are strongly influenced by pressures from the external environment, and particularly from the expectations of government, often expressed through legislation or formal policy statements. Schools may be left with the residual task of interpreting external imperatives rather than determining aims on the basis of their own assessment of learner needs. The key issue here is the extent to which school managers are able to modify government policy and develop alternative approaches based on school-level values and vision. Do they have to follow the script, or can they *ad lib*? (Bush 2003:1-2).

Distinguishing educational leadership and management

The concept of management overlaps with that of leadership, a notion of great contemporary interest in most countries in the developed world. It is also reflected in contemporary South African discourse, notably in the establishment of the Matthew Goniwe School of *Leadership* and Governance (MGSLG) in 2003 and in the title of the new pilot national qualification for school principals, the Advanced Certificate in Education: School *Leadership*, being piloted from 2007. However, despite these developments management remains the dominant term in the debate about aspects of school organisation.

Cuban (1988:xx) provides one of the clearest distinctions between leadership and management. He links leadership with change while management is seen as a maintenance activity. He also stresses the importance of both dimensions of organisational activity:

> By leadership, I mean influencing others' actions in achieving desirable ends. Leaders are people who shape the goals, motivations, and actions of others. Frequently they initiate change to reach existing and new goals ... Leadership ... takes ... much ingenuity, energy and skill.
>
> Managing is maintaining efficiently and effectively current organisational arrangements. While managing well often exhibits leadership skills, the overall function is toward maintenance rather than change. I prize both managing and leading and attach no special value to either since different settings and times call for varied responses.

Day *et al.*'s (2001) study of twelve 'effective' schools leads to the discussion of several dilemmas in school leadership. One of these relates to management, which is linked to systems and 'paper', and leadership, which is perceived to be about the development of people. Bush (1998; 2003) links leadership to values or purpose while management relates to implementation or technical issues.

Leadership and management need to be given equal prominence if schools are to operate effectively and achieve their objectives. "Leading and managing are distinct, but both are important ... The challenge of modern organisations requires the objective perspective of the manager as well as the flashes of vision and commitment wise leadership provides" (Bolman & Deal, 1997:xiii-xiv).

Leithwood *et al.* (1999) make the important point that, in practice, principals in their day-to-day work are rarely aware of whether they are leading or managing; they are simply carrying out their work on behalf of the school and its learners. However, the nature of that work should reflect the school context and, in particular, its needs at any one time. For example, South Africa's underperforming schools (Ministerial Review, 2004; Pandor, 2006) require a greater emphasis on basic management, making the organisation functional, rather than a visionary approach. This may involve ensuring regular and timely attendance by learners and educators, maintaining order and discipline in classrooms, and proving adequate resources to enable learning to take place. Once schools are functional, leaders can progress to developing vision, and outlining clear aims and policies, with the confidence that systems are in place to secure their implementation.

Conceptualising educational leadership and management

While there is global interest in leadership and management, because of its perceived importance in developing and maintaining successful schools and education systems, there is much less clarity about which leadership behaviours are most likely to produce the most favourable outcomes. Awareness of alternative approaches is essential to provide a set of tools from which discerning leaders can choose when facing problems and dealing with day-to-day issues. This section provides an overview of the main models of educational leadership and links them to similar models of educational management (Bush & Glover, 2002; Bush, 2003).

The implementation of the South African Schools Act (SASA) (1996) and similar moves towards self-management in many other countries, have led to an enhanced emphasis on the practice of educational leadership and management (Huber, 2004). Principals are inundated with advice from politicians, officials, academics and consultants, about how to lead and manage their schools. Many of these prescriptions are atheoretical in the sense that they are not underpinned by explicit values or concepts (Bush, 1999; Bush, 2003). As we shall see later, however, governments may use conceptual language while shifting its meaning to support their own politically inspired intentions.

The models discussed in this section should be regarded as alternative ways of portraying events. The existence of several different perspectives creates what Bolman and Deal (1997:11) describe as 'conceptual pluralism: a jangling discord of multiple voices'. Each theory has something to offer in explaining behaviour and events in educational institutions. The perspectives favoured by managers, explicitly or implicitly, inevitably influence or determine decision-making. Morgan (1997:4-5) uses 'metaphors' to explain the complex character of organisational life and notes that 'any theory or perspective that we bring to the study of organization and management, while capable of creating valuable insights, is also incomplete, biased and potentially misleading'.

The various theories of educational leadership and management reflect

very different ways of understanding and interpreting events and behaviour in schools and colleges. In this sense, they demonstrate the different origins and epistemologies of the discipline. They also represent what are often ideologically based, and certainly divergent, views about how educational institutions ought to be managed. The models discussed in this section are broad compilations of the main theories of educational leadership and management and are based on a systematic review of the international and South African literature and research (Bush & Glover, 2002; Bush, 2003; Bush *et al.*, 2006).

Models of educational leadership and management

The author has presented and classified theories of educational management for over 20 years (Bush, 1986; 1995; 2003). This work categorises the main theories into six major models: formal, collegial, political, subjective, ambiguity, and cultural (see Table 1).

More recently, he has reviewed concepts of educational leadership, notably in work undertaken for the English National College for School Leadership (Bush & Glover, 2002). The literature on leadership has generated a number of alternative, and competing, models. Some writers have sought to cluster these various conceptions into a number of broad themes or 'types'. The best known of these typologies is that by Leithwood, Jantzi and Steinbach (1999), who identified six 'models' from their scrutiny of 121 articles in four international journals. Bush and Glover (2002) extended this typology to eight models. These are among the nine leadership models shown in Table 1, alongside the management models mentioned earlier.

Table 1 Typology of management and leadership models (Bush, 2003)

Management model	Leadership model
Formal	Managerial
Collegial	Participative Transformational Interpersonal
Political	Transactional
Subjective	Post-modern
Ambiguity	Contingency
Cultural	Moral Instructional

In the rest of this section I examine the leadership models considered to be most relevant to the South African context.

Managerial leadership

Leithwood *et al.* (1999:14) define this model as:

> Managerial leadership assumes that the focus of leaders ought to be on functions, tasks and behaviours and that if these functions are carried out competently the work of others in the organisation will be facilitated. Most approaches to managerial leadership also assume that the behaviour of organisational members is largely rational. Authority and influence are allocated to formal positions in proportion to the status of those positions in the organisational hierarchy.

This definition is remarkably close to that given for 'formal models' in the author's trilogy of books on this topic (Bush, 1986; 1995; 2003).

Caldwell (1992:16-17) argues that managers and leaders of self-managing schools must be able to develop and implement a cyclical process involving seven managerial functions:

- goal setting;
- needs identification;
- priority-setting;
- planning;
- budgeting;
- implementing; and
- evaluating.

It is significant to note that this type of leadership does not include the concept of vision, which is central to most leadership models. Managerial leadership is focused on managing existing activities successfully rather than visioning a better future for the school. This approach is very suitable for school leaders working in centralised systems as it prioritises the efficient implementation of external imperatives, notably those prescribed by higher levels within the bureaucratic hierarchy.

Bureaucracy, and by implication managerial leadership, is the preferred model for many education systems, including *Apartheid* South Africa (Sebakwane, 1997). One example of managerial leadership is 'scientific management' (Taylor, 1911). This dated model still 'predominates in the writing on education management in South Africa' (McLennan & Thurlow, 2003:7-9). In a review of other literature, they say that this approach is associated with 'authoritarian, hierarchical and inaccessible management styles' and that the principal's authority is perceived to be 'god-given' and 'juridical'. This model can be regarded as the starting point for the study and practice of educational management, in South Africa, Europe, and North America.

Sebakwane (1997:394), based on research conducted in the 1980s, claims that scientific management was transferred from industrial corporations to South African black schools 'to bring control over teachers and students at a time when the system of education of blacks was characterized by massive student and teacher protests'. This evidence is consistent with the model described by McLennan & Thurlow (2003).

Despite its association with the previous dispensation, managerial leader-

ship remains important for 21st century South Africa. As noted above, achieving functional schools is an essential requirement if learning is to take place. Effectiveness requires calm and orderly schools and classrooms.

Managerial leadership has certain advantages, notably for bureaucratic systems, but there are difficulties in applying it too enthusiastically to schools and colleges because of the professional role of teachers. If principals and educators do not 'own' innovations but are simply required to implement externally imposed changes, they are likely to do so without enthusiasm, leading to possible failure (Bush, 2003:46).

Transformational leadership

Bush (2003) links three leadership models to his 'collegial' management model. The first of these is 'transformational leadership'.

> This form of leadership assumes that the central focus of leadership ought to be the commitments and capacities of organisational members. Higher levels of personal commitment to organisational goals and greater capacities for accomplishing those goals are assumed to result in extra effort and greater productivity (Leithwood *et al.*, 1999:9).

Leithwood (1994) conceptualises transformational leadership along eight dimensions:

- building school vision;
- establishing school goals;
- providing intellectual stimulation;
- offering individualised support;
- modelling best practices and important organisational values;
- demonstrating high performance expectations;
- creating a productive school culture; and
- developing structures to foster participation in school decisions.

Caldwell and Spinks (1992:49-50) argue that transformational leadership is essential for autonomous schools:

> Transformational leaders succeed in gaining the commitment of followers to such a degree that ... higher levels of accomplishment become virtually a moral imperative. In our view a powerful capacity for transformational leadership is required for the successful transition to a system of self-managing schools.

The transformational model is comprehensive in that it provides a normative approach to school leadership, which focuses primarily on the process by which leaders seek to influence school outcomes rather than on the nature or direction of those outcomes. However, it may also be criticised as being a vehicle for control over teachers and more likely to be accepted by the leader than the led (Chirichello 1999). Allix (2000) goes further and alleges that transformational leadership has the potential to become 'despotic' because of its strong, heroic and charismatic features. He believes that the leader's power ought to raise 'moral qualms' and serious doubts about its appropriateness for democratic organisations.

As we noted earlier, politicians and bureaucrats are inclined to use the language of 'transformation' to achieve their own policy objectives. The English system, for example, increasingly requires school leaders to adhere to government prescriptions, which affect aims, curriculum content and pedagogy as well as values. There is "a more centralised, more directed, and more controlled educational system [that] has dramatically reduced the possibility of realising a genuinely transformational education and leadership" (Bottery, 2001:215).

In South Africa, 'transformation' has a special meaning linked to the need to convert the previous stratified system into a new framework stressing equity and redress.

> It was a case of a new government having to take on restructuring and redefining a whole system, to achieve the major aim of quality education for all ... the initial way the task was addressed was positive, holistic and put up-front the values of equity, access, transparency and democracy (Department of Education, 2007).

However, there is a chasm between the rhetoric and the reality of transformation. Lemon (2004:269) is one of several writers who claim that national policies have been rich in the political symbolism of equity and redress but with 'very limited implementation of change on the ground'.

The Task Team on Education Management Development (Department of Education, 1996:29) observes that 'real transformation will depend on the nature and quality of internal management. Self-management must be accompanied by an internal devolution of power within the school and by transformational leadership'.

A transformational leadership approach has the potential to engage all stakeholders in the achievement of educational objectives. The aims of leaders and followers coalesce to such an extent that it may be realistic to assume a harmonious relationship and a genuine convergence leading to agreed decisions. In the South African context, 'transformation' requires action at all levels and there are limits to what principals can achieve in the absence of appropriate physical, human, and financial resources.

Participative leadership

"Participative leadership ... assumes that the decision-making processes of the group ought to be the central focus of the group" (Leithwood *et al.*, 1999:12). This model is underpinned by three assumptions:

- participation will increase school effectiveness;
- participation is justified by democratic principles; and
- in the context of site-based management, leadership is potentially available to any legitimate stakeholder (*Leithwood et al.*, 1999:12).

Sergiovanni (1984:13) points to the importance of a participative approach. This will succeed in 'bonding' staff together and in easing the pressures on school principals. "The burdens of leadership will be less if leadership functions and roles are shared and if the concept of leadership density were to emerge as a viable replacement for principal leadership".

The participative model is consistent with the democratic values of the new South Africa. The introduction of SGBs for all schools, and the greater prominence given to SMTs, suggests a firm commitment to participative decision making. McLennan and Thurlow (2003:6) refer to an emerging paradigm, 'a growing emphasis on building relationships in education'. The development of SMTs in South African schools provides the potential for participative leadership but there is little empirical evidence to suggest that it is supplanting, or even supplementing, the principal's singular leadership.

Bush and Heystek (2003), Karlsson (2002) and Harber and Trafford (1999) point to the need for co-operation between principals and SGBs if governance is to be effective. Maile (2004) notes the importance of setting up democratic structures, but this requires thoughtful planning and parents need to be supported and informed. Karlsson (2002:332), in a study of six schools, states that principals are dominant in all meetings because of: "their power position within the school, level of education in contrast to other members, first access to information taken from education authorities, and because it is the principal who executes the decisions taken".

The Ministerial Committee's (2004:85) Review of School Governance shows that SGBs experience difficulties with SMTs in respect of lack of communication, failure to implement decisions taken at SGB meetings, and conflicts over spending priorities. However, SMTs report problems with the SGBs about members' availability, a lack of implementation of decisions taken at SGB meetings, a blurring of the distinction between SGB and SMT, and spending priorities. This authoritative report suggests that the ideal of participative decision-making is not yet a reality in many South African schools. The new ACE: School Leadership programme for aspiring principals (Department of Education, 2007) stresses participative leadership but it will take many years before such attitudes permeate the whole system.

Political and transactional leadership

Bush (2003) links transactional leadership to his political model. In political models, there is conflict between stakeholders, with disagreement being resolved in favour of the most powerful protagonists:

> Transactional leadership is leadership in which relationships with teachers are based upon an exchange for some valued resource. To the teacher, interaction between administrators and teachers is usually episodic, short-lived and limited to the exchange transaction (Miller & Miller, 2001: 182).

Miller and Miller's (2001) definition refers to transactional leadership as an exchange process. Exchange is an established political strategy for members of organizations. Principals possess authority arising from their positions as the formal leaders of their schools. However, the head requires the co-operation of educators to secure the effective management of the school. An exchange may secure benefits for both parties to the arrangement. The major limitation of such a process is that it does not engage staff beyond the immediate gains arising from the transaction. As Miller and Miller's definition

implies, transactional leadership does not produce long-term commitment to the values and vision being promoted by school leaders.

Political theories have obvious relevance to the extended period of struggle against the *Apartheid* regime (Bush 2003:58). Badat (1995:151) argues that

> a constant feature of educational resistance has been what may be termed the politics of opposition. Key aspects of this politics have been mass mobilization and organization and mass action in pursuit of particular policy objectives and a non-racial and non-sexist democratic social order.

Teacher unions act to protect the perceived interests of their members. One example of such action concerns the constitution of school governing bodies (SGBs). The South African Democratic Teachers' Union (SADTU) embarked on protest actions concerning the provision that parents should constitute a majority on the SGB (Sayed & Carrim, 1997:93-95). The SGB itself is a political forum because it provides for the representation of sectional interests, creating the conditions for the increasing fragmentation of the education system.

Bush *et al.*'s (2006) review of the literature, for the Matthew Goniwe School for Leadership and Governance (MGSLG), provides ample evidence of political activity. The issue of learner discipline, for example, is widely regarded as having its roots in the era of protest against the *apartheid* government (Bush & Anderson, 2003:95). The desegregation of former white, Indian, and 'coloured' schools created certain disciplinary problems and cultural clashes (De Meillon, 2001).

The Ministerial Committee's (2004) review of school governance notes that 20% of the schools in their survey experienced conflict among members of the SGB while Shilote (2000) also reports conflict between SGB members and the principal. Bush and Joubert's (2004) large-scale research in Gauteng, for CfBT, shows that SGBs in seven of their 29 schools were perceived to be ineffective. This was often because of 'open conflict' between parents and educators.

Post-modern leadership

Bush (2003:127) notes that post-modern leadership aligns closely with his subjective model of management. Such theories, promulgated most vigorously by Greenfield (1973), assume that organisations have no ontological reality but are simply the creatures of the people within them, who may hold very different views. Similarly, Keough and Tobin (2001:2) say that "current post-modern culture celebrates the multiplicity of subjective truths as defined by experience and revels in the loss of absolute authority".

The post-modern model suggests that leaders should respect, and give attention to, the diverse and individual perspectives of stakeholders. They should also avoid reliance on the hierarchy because this concept has little meaning in such a fluid organisation. Starratt (2001:348) aligns post-modernity with democracy and advocates a "more consultative, participatory, inclusionary stance", an approach consistent with participative leadership.

Sackney and Mitchell (2001:13-14) stress the importance of 'voice' in

post-modern leadership. Stakeholders have a right to be heard. This fits the aspirations of 21st century South Africa. Principals need to facilitate participation by educators, parents, learners and the school community in all issues that affect their interests. The SGB is one vehicle for achieving this objective.

Moral leadership

This model assumes that the critical focus of leadership ought to be on the values, beliefs, and ethics of leaders themselves. Authority and influence are to be derived from defensible conceptions of what is right or good (Leithwood *et al.*, 1999:10). Sergiovanni (1984:10) says that "excellent schools have central zones composed of values and beliefs that take on sacred or cultural characteristics". Subsequently, he adds that 'administering' is a 'moral craft' (Sergiovanni, 1991:322).

West-Burnham (1997:239) discusses two approaches to leadership, which may be categorized as 'moral'. The first he describes as 'spiritual' and relates to "the recognition that many leaders possess what might be called 'higher order' perspectives. These may well be … represented by a particular religious affiliation". Such leaders have a set of principles, which provide the basis of self-awareness. The second category is 'moral confidence', the capacity to act in a way that is consistent with an ethical system and is consistent over time.

Sergiovanni (1991:329) argues that both moral and managerial leadership are required to develop a learning community:

> In the principalship the challenge of leadership is to make peace with two competing imperatives, the managerial and the moral. The two imperatives are unavoidable and the neglect of either creates problems. Schools must be run effectively if they are to survive … But for the school to transform itself into an institution, a learning community must emerge … [This] is the moral imperative that principals face.

The South African ACE: School Leadership materials (Department of Education, 2007:91) refer to the importance of spiritual intelligence and leadership. They also note Fullan's (2005:92) concept of 'moral purpose'. They conclude that "African society is built on a spiritual world in which answers and meaning are found". I will turn to African models of leadership at the end of this section.

Instructional leadership

Instructional leadership differs from the other models reviewed in this chapter because it focuses on the direction of influence, rather than its nature and source. The increasing emphasis on managing teaching and learning as the core activities of educational institutions has led to this approach being endorsed, notably by the English National College for School Leadership, which includes it as one of its ten leadership propositions.

Southworth (2002:79) says that "instructional leadership … is strongly concerned with teaching and learning, including the professional learning of teachers as well as student growth". Bush and Glover's (2002:10) definition

stresses the direction of the influence process:

> Instructional leadership focuses on teaching and learning and on the behaviour of teachers in working with students. Leaders' influence is targeted at student learning via teachers. The emphasis is on the direction and impact of influence rather than the influence process itself.

Southworth's (2002) qualitative research with primary heads of small schools in England and Wales shows that three strategies were particularly effective in improving teaching and learning:

- modelling;
- monitoring; and
- professional dialogue and discussion.

Instructional leadership is a very important dimension because it targets the school's central activities, teaching and learning. However, this paradigm underestimates other aspects of school life, such as sport, socialisation, student welfare, and self esteem (Bush, 2003:16-17).

The South African Task Team report (1996:27) stressed that management is important because it provides a supportive framework for teaching and learning:

> Management in education is not an end in itself. Good management is an essential aspect of any education service, but its central goal is the promotion of effective teaching and learning ... The task of management at all levels in the education service is ultimately the creation and support of conditions under which teachers and their students are able to achieve learning ... The extent to which effective learning is achieved therefore becomes the criterion against which the quality of management is to be judged.

Despite this authoritative comment, which would be echoed in many other countries, there is only limited evidence of principals and other school leaders being developed for the central function of schools promoting learning. Bush and Heystek's (2006) research in Gauteng showed that only 27.2% of survey principals identified this topic as a training need. These findings suggest that principals are not conceptualising their role as 'leaders of learning'. Given the radical changes in school governance and management, it is understandable that principals wish to give priority to financial and staff management, and to relationships with governing bodies. However, school improvement ultimately depends on school leaders accepting their responsibility for developing learning.

McLennan and Thurlow (2003:5) refer to the absence of a 'culture of teaching and learning' in South African schools: "The virtual collapse of the culture of teaching and learning in many urban and rural schools has eroded the confidence of education managers. They have little idea of what would be required to restore the culture".

Giving a prominent place to leadership for learning within principals' training and development programmes would make a valuable contribution to the restoration of an appropriate culture of teaching and learning and to the development of schools as learning organisations (Thurlow, 2003). This is

recognized by the South African Department of Education, which stresses the importance of learning in its ACE: School Leadership materials (Department of Education, 2007).

Contingent leadership

The models of leadership examined earlier in this section are all partial. They provide valid and helpful insights into one particular aspect of leadership. Some focus on the process by which influence is exerted while others emphasize one or more dimensions of leadership. However, none of these models provides a complete picture of school leadership.

The contingent model provides an alternative approach, recognizing the diverse nature of school contexts and the advantages of adapting leadership styles to the particular situation, rather than adopting a 'one size fits all' stance:

> This approach assumes that what is important is how leaders respond to the unique organizational circumstances or problems ... there are wide variations in the contexts for leadership and that, to be effective, these contexts require different leadership responses ... individuals providing leadership, typically those in formal positions of authority, are capable of mastering a large repertoire of leadership practices. Their influence will depend, in large measure, on such mastery (Leithwood *et al.*, 1999:15).

South Africa has one of the most diverse education systems in the world. It ranges from well-endowed city schools, comparable to the best in developed countries, to very poor schools without access to the most basic facilities, such as water, power, and sanitation. Given such disparities, it is unwise to prescribe one universal approach to school leadership and management. It is much better to equip principals with a 'tool kit' of skills and the wisdom to know which approaches should be applied in the particular circumstances they are required to manage.

Yukl (2002:234) notes that "the managerial job is too complex and unpredictable to rely on a set of standardised responses to events". Leadership requires effective diagnosis of problems, followed by adopting the most appropriate response to the issue or situation (Morgan, 1997). This reflexive approach is particularly important in periods of turbulence when leaders need to be able to assess the situation carefully and react as appropriate rather than relying on a standard leadership model.

African models of leadership

All the models discussed hitherto emerged from highly developed western countries. Bush's (1986; 1995; 2003) treatment of these models has been adapted for use in South African university programmes on school management, and in the ACE: School Leadership course (Department of Education, 2007). However, there is an emerging recognition that African models also have much to offer in interpreting management practice and in understanding the behaviour of school leaders and communities.

The most frequently cited African model is *Ubuntu*. According to Mbigi

(1997:2-3), *Ubuntu* means collective personhood and collective morality. "Our black African cultural heritage places a great emphasis on and has great concern for people. Emphasis is also placed on being a good person". He adds that *Ubuntu* "should be reflected in our modern education" (Mbigi, 1997:139).

Msila (in preparation) states that *Ubuntu* is one of the fundamental values of the South African constitution. *Ubuntu* is rooted in African traditional society and it espouses the ideal of interconnectedness among people. He links *Ubuntu* to democracy, claiming that it is the 'ideal democratic tenet' and contributes to 'a world of moral stability'.

The ACE: School Leadership course (Department of Education, 2007) introduces the concept of the *Lekgotla*. The leader or *kgosi* should adopt an approach that "inspires trust in the decision-making process". Such a leader "operates on the basis of a natural belief in humanity, who gives without expecting anything and listens without prejudice, creating a climate of trust. Trust is the basis of inspiration, motivation and creativity" (De Liefde, 2003: 72).

There has been little empirical work underpinning these African concepts but Msila (in preparation) has applied it to his study of management in township schools. A new principal took over a dysfunctional school and sought to adopt a more democratic approach. She "moved for a more inclusive approach to management. The idea of the collective is very basic to the *Ubuntu* philosophy, which she was consciously trying to implement. She was changing the leadership paradigm in the school". Msila concludes that the principles of *Ubuntu* are well suited to leadership in the new South Africa.

There are obvious connections between these African concepts and the western participative and moral leadership models. They share the emphasis on collective and humane values and on managing by consent. More research is required to assess whether, how, and to what extent *Ubuntu* and the *Lekgotla* influence school leadership in the new South Africa.

Conclusion

Leadership can be understood as a process of influence based on clear values and beliefs and leading to a 'vision' for the school. The vision is articulated by leaders who seek to gain the commitment of staff and stakeholders to the ideal of a better future for the school, its learners and stakeholders.

Each of the leadership models discussed in this chapter is partial. They provide distinctive but unidimensional perspectives on school leadership. Sergiovanni (1984:6) adds that much "leadership theory and practice provides a limited view, dwelling excessively on some aspects of leadership to the virtual exclusion of others".

The western and African models collectively suggest that concepts of school leadership are complex and diverse. They provide clear normative frameworks by which leadership can be understood but relatively weak empirical support for these constructs. They are also artificial distinctions, or 'ideal types', in that most successful leaders are likely to embody most or all of these approaches in their work (Bush, 2003).

Regardless of which approaches are used, there should be a focus on the key task of managing teaching and learning. Minister Pandor (in Department of Education, 2007) notes the extreme inequality in learning achievements and criticises the "hundreds of school principals and teachers throughout the country who appear satisfied with mediocrity". The Task Team set up by the South African government shortly after the first democratic elections in 1994 argues that addressing such attitudes needs new management strategies:

> Improving the quality of learning ... requires strategies which focus on change at the school and classroom levels ... Managers can no longer simply wait for instructions or decisions from government. The pace of change, and the need to be adaptable and responsive to local circumstances, requires that managers develop new skills and ways of working (Department of Education, 1996:13-14).

Improving learning outcomes requires an approach to leadership development, which focuses on 'instructional leadership'. This means attempting to change the mind-set of leaders to regard the processes of teaching and learning as central to their role rather than simply leaving such matters to educators.

This special issue is designed to address the conceptual confusion surrounding the study and practice of educational leadership and management. In discussing the main western and African models of leadership, we hope to have contributed to the process of demystifying the field and plotting a route to greater conceptual clarity.

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Tony Bush is Professor of Educational Leadership at the University of Warwick, a widely published author, and Editor of *Educational Management, Administration and Leadership*. His research interests include leadership and management development, educational leadership and management, comparative leadership and management, and self-managing schools.

The New Face of Leadership: Implications for Higher Education

Curtis L. Brungardt
Leadership Studies
Fort Hays State University
lscb@fhsu.edu

Although the following article has "Higher Education" in the title, I believe it is great reading for anyone striving to become a leader - Donald Clark.

The desire to understand, define, and explain the essence of leadership has interested researchers and scholars for most of the twentieth century. In their efforts to find an "accurate and precise" definition of leadership, thousands of studies have been published in the last several decades alone. Most of these explanations have focused on a single person and his or her personal qualities and skills. Social scientists have tried to identify what abilities, traits, behaviors, sources of power or aspects of the situation determine how effective a leader will be able to influence others.

Contrary to popular thinking, the term "leadership" is a recent addition to the English language. In fact the word did not come into usage until the late 19th Century. Although the words "lead" and "leader" have a much longer history, they usually referred only to authority figures. The birth and evolution of the idea of "leaderSHIP" focuses on a much more complex concept that reaches beyond the single leader. In fact, contemporary definitions most often reject the idea that leadership revolves around the leader's ability, behaviors, styles or charisma. Today, scholars discuss the basic nature of leadership in terms of the "interaction" among the people involved in the process: both leaders and followers. Thus, leadership is not the work of a single person, rather it can be explained and defined as a "collaborative endeavor" among group members. Therefore, the essence of leadership is not the leader, but the relationship (Rost, 1993).

One result of this transformation in the concept of leadership has been the rethinking of leadership definitions. Joseph Rost of

University of San Diego is one of the most popular writers in recognizing the shift from the industrial concept of leadership (leader-centered view) to a paradigm he calls the post-industrial concept of leadership. In his book Leadership for the Twenty-First Century (1991), he articulates a definition of leadership based on this post-industrial perspective. A definition he believes is more consistent with contemporary organizational life. Rost's definition says that leadership is an influence relationship among leaders and followers who intend real changes that reflect their mutual purposes.

This contemporary definition is composed of four basic components, each of which is essential and must be present if a particular relationship is to be called leadership. (1) The relationship is based on influence. This influence is multidirectional, meaning that influence can go any which way (not necessarily top-down), and the influence attempts must not be coercive. Therefore, the relationship is not based on authority, but rather persuasion. (2) Leaders and followers are the people in this relationship. If leadership is defined as a relationship, then both leaders and followers are doing leadership. He does not say that all players in this relationship are equal, but does say all active players practice influence. Typically there is more than one follower and more than one leader in this arrangement. (3) Leaders and followers intend real changes. Intend means that the leaders and followers promote and purposefully seek changes. Real means that the changes intended by the leaders and followers must be substantial. (4) The changes the leaders and followers intend reflect their mutual purposes. The key is that the desired changes must not only reflect the wishes of the leader but also the desires of the followers (Rost, 1991).

Rost reminds us that leadership is not what leaders do. Rather, leadership is what leaders and followers do together for the collective good. In today's society, leaders operate in a shared-powered environment with followers. No longer does a single leader have all the answers and the power to make substantial changes. Instead, today we live in world where many people participate in leadership, some as leaders and others as followers. Only when we all work together can we bring about successful changes for our mutual purposes.

Many organizational theorists would agree that Rost's definition is more consistent with the type of leadership needed in contemporary society. Slowly scholars and practitioners alike are giving up on the old ways of leadership, the industrial paradigm. This traditional approach to leadership is characterized by a top-down philosophy, where the leader is decisive, efficient, unemotional and in-control. The changes in the way we view leadership can also be found in other disciplines where descriptions of our world are objective, single, mechanical, hierarchical and controllable. The post-industrial

leadership paradigm, on the other hand, is characterized by collaboration, power-sharing facilitation and empowerment. This new view of the world is more complex and diverse, mutually shaping and spontaneously changing (Rogers, 1992).

Implications

A recent study by Howe and Freeman (1997) shows that an increasing number of institutions of higher learning are offering programs that prepare students for leadership. Nearly 600 colleges and universities now provide their students with leadership training opportunities ranging from short one and two hour workshops to full bachelor and master degree options. Although leadership educators see this growth as encouraging, research from the Center for Creative Leadership (1996) tells us that many of these programs are teaching the "old way" of leadership. While there are a few exceptions, many of the leadership development programs have failed to change their educational approach to reflect the new view of leadership and organizational behavior.

Rost reminds us that leadership development programs that are synonymous with the development of leaders are no longer appropriate. We know that today leaders are not the only people involved in the leadership process. Therefore, our developmental models (including both content and pedagogy) must accommodate the changing post-industrial paradigm of leadership. This means that leader development is no longer sufficient for the 21st century. If leadership is what leaders and followers do together, then it is logical that our educational environments reflect this collaborative perspective.

Rost (1993) provides several recommendations for those who are responsible for the operations of collegiate leadership development programs. (1) Stop concentrating on the leader. Leadership programs that only attempt to produce leader qualities among students are less useful. Programs must reach well beyond emphasizing leader traits, behaviors, and personal characteristics. (2) Prepare students to use influence within noncoersive relationships. Program activities should train students to use persuasive and rational strategies of influence. Students should be encouraged to work in leadership relationships that are based on mutual influence and that seek mutually beneficial outcomes. (3) Help students understand the nature of transformational change. Leadership development programs should

illustrate the key role organizational change plays in the post-industrial view of leadership. As change agents, our graduates should learn to challenge the status quo, create new visions, and sustain the movement. (4) Reconstruct students' basic view toward a collaboration orientation. Encourage students to challenge the basic assumptions about life that are based on self-interest and competition. Leadership in the new millennium will be much more collaborative, and therefore, our leadership program should encourage consensus, cooperation, and collaboration rather than competition and conflict.

If our goal is to prepare young people for leadership in the next century, it is imperative that our leadership development programs reflect this new paradigm. Our students will need the knowledge and skills necessary to be successful in the post-industrial view of the 21st century, not the leadership skills that served the 20th century. Thus, our programs should emphasize leadership development learning activities that truly foster the collaborative spirit.

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Notes
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Return to Big Dog's Leadership Page
Who is this guy? [About]
Donald R. Clark
donclark@nwlink.com

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FROM THE EDITOR

THE CHANGING NATURE OF WORK: CAREERS, IDENTITIES, AND WORK LIVES IN THE 21ST CENTURY

Few people would deny that the nature of work and employment has changed over the last four decades, not only in the United States but in many countries worldwide. Moreover, the nature of work is likely to continue to change as we move further into the 21st century. Consequently, it is surprising how little organization and management studies have had to say about the phenomenon. Our field's lack of attention to the ways in which work is changing is problematic because organization studies and organizational behavior grew out of industrial sociology and industrial and organizational psychology in the 1960s and 1970s. Both bodies of research were firmly rooted in the study of work in large organizations. For example, the classics of industrial sociology, such as Walker and Guest's (1952) and Chinoy's (1955) studies of automobile plants, Gouldner's (1954) study of a gypsum mine, Dalton's (1950) study of managers, and Blau's (1955) study of a social service agency were field accounts of routine work in organizations. In organizational psychology, the roots of job design lay in field surveys of workers' practices and attitudes toward their jobs (Hackman & Lawler, 1971; Hertzberg, Mausner, & Snyderman, 1959; Seeman, 1959). Together this body of work sought to elaborate Weber's theory of bureaucracy and, in the process, gave birth to modern organizational theory.

The story of how organization and management theory moved away from the study of work after industrial sociology split into the sociology of work and the sociology of organizations and how researchers in the latter turned their attention to the environment has already been told (see Barley & Kunda, 2001). However, it is worth re-emphasizing that forms of organizing, the institutional structures of employment, and the experiences of workers are intimately tied to what people do, how they do it, and to the social order that shapes and is created by work (Barley & Tolbert, 1997; Giddens, 1984). It is difficult to untangle whether the actions of the powerful who create and deploy new technologies and forms of organizing intentionally or unintentionally alter the nature of work or whether organizations and institutions morph as work changes. We suspect that both dynamics occur. Regardless of why the landscape of work and employment has changed, the changes are real and have social consequences.

In what ways is the nature of work changing? First, and perhaps foremost, has been the demise of manufacturing and other relatively well-paying middle class jobs associated with the bureaucratic employment contract in which employees exchanged labor and loyalty for security. Many of these jobs have been offshored to countries where labor is cheaper. The outsourcing or offshoring of manufacturing has attracted considerable attention in the literature on industrial and employment relations over the last two decades (Arindrajit & Kaplan, 2010; Bhagwati & Blinder, 2009; Davis-Blake & Broschak, 2009; Hickman & Olney, 2011; Urry, 2014) and the issue certainly figured prominently in the recent election of Donald Trump to the Presidency. What is rarely discussed is that work being offshored is no longer simply blue-collar work. Firms have begun to offshore professional and technical jobs as well, a phenomenon that provides the backdrop for Leonardi and Bailey's paper in this special issue.

Equally important has been the growth of contingent work, a general term for forms of employment tied to the completion of a specific task and, hence, of relatively short duration. Contingent work covers workers in a variety of employment relationships including independent contractors who are self-employed, contractors who "pass through" staffing agencies that act as employers of record (Barley & Kunda, 2004), and temporary workers who are also placed by staffing agencies (Parker, 1994). "Temps" usually have shorter stints of work and are generally less skilled than contractors. The newest additions to the family of contingent workers are those who work in the so-called "gig economy," which has recently attracted so much attention in the popular media. Like all contingent workers, those in the gig economy participate in spot labor markets except that "gig workers" typically land their jobs through online platforms and may never meet their "employer." Gig workers can be highly skilled such as those placed through Upwork (www.upwork.com) or relatively low skilled (such as Uber drivers, and workers who take jobs through TaskRabbit [www.taskrabbit.com] or Mechanical Turk [www.mturk.com/mturk/welcome]). Although the Bureau of Labor Statistics (BLS) ceased collecting

data on the number of contingent workers in 2005, Katz & Krueger (2016), using the same methods as the BLS, recently found that the number of Americans holding contingent jobs increased from 10.1 percent in 2005 (the BLS's last estimate) to 15.8 percent in late 2015. In this issue, Fisher and Connelly take on contingent work and attempt to answer a question that has rarely received empirical attention: what do contingent workers actually cost employers and what are the precise benefits of hiring these various forms of contingent workers, if any?

Given the expansion of contingent work, it is not surprising that project-based forms of organizing are spreading across employing organizations. Although once largely confined to the construction, consulting, aerospace, and defense industries, project work is now becoming a predominant form of organizing in high-tech industries, and it is spreading into banking, retail and other sectors of the economy. Yet, research on how project work affects the experiences of workers is scarce (but see Bechky, 2006; Kidder, 1981; Perlow, 1997;). Other topics of relevance to the changing nature of work include the prevalence and experience of part-time work. There is evidence that the percentage of Americans involuntarily employed as part-time workers has grown, at least since the great recession (Valletta & van der List, 2015). Holding two or more jobs simultaneously is also rarely discussed in organizational and management studies, although it is relatively common, as is alluded to in the papers in this issue by Demetry, Reilly, and Galperin.

Finally, a spate of new books by technologists and a number of economists raises questions about the effects that artificial intelligence (robots, intelligent devices, and applications of statistical learning theory) will have on the nature of work and the availability of employment opportunities (Brynjolfsson & McAfee, 2014; Ross, 2016; Susskind & Susskind, 2015). Although these technologies are still in their infancy, their development portends potentially radical changes in the status quo. To take just one example, if self-driving trucks were to become common, they would significantly threaten the employment of men in the United States. Few people recognize that truck driving is the most common occupation among men in the United States and that the median annual earnings of truck drivers in 2008 was $40,200 (Day & Rosenthal, 2008).

The *Academy of Management Discoveries* commissioned this special issue on the Changing Nature of Work, precisely because we need to know more about how work is changing and because we believe that the study of new forms of organizing must be linked more tightly to the study of work and how new forms of work are affecting people's lives. The papers in this volume speak to that premise. Each of the papers raises one or more issues of critical importance for organization and management scholars. Each leads us to ask whether ideas commonly held by scholars in our field are mistaken or at least outdated and in need of serious refinement. Taken as a whole, the papers raise questions that deserve debate and further study if we are to wrestle effectively with the implications of the monumental changes to the way people in our society work and live. In the remainder of this essay, we highlight some of those critical issues and themes.

The papers in this volume challenge widespread assumptions rooted in the study of systems that have been disappearing. We begin with the idea of identity. Students of organizations have long assumed that our identities are tied to the organizations for which we work. But, suppose people increasingly no longer work in organizations that offer stable jobs. How will people answer the questions: "Who am I?" and "How is what I am doing meaningful?" Identity construction without a solid organization foundation is a theme that unites a number of the papers in this issue. Galperin argues that tax preparers working for companies like H&R Block manage to develop a view of themselves as professionals despite the fact that most of the preparers are seasonally employed, are not Certified Public Accountants and have little formal training in tax law other than what is provided by brief training sessions or is encoded in the software they use. Demetry shows us that chefs who open pop-up and underground restaurants develop identities even though they do not follow the traditional pathways to becoming a chef. Reilly describes how comedians develop occupational identities based on a loosely organized and unpredictably structured series of transitions which entail crossing boundaries that are invisible to outsiders but meaningful to insiders. One interesting implication of all of these studies has to do with the persistence and creativity of people's efforts to identify with an occupational group. The construction of work-related identities and how it occurs in this new world of work strikes us as an important topic for management researchers interested in identity.

Relatedly, organizational and occupational sociology have pat answers to what it means to be a professional. Theorists argue that professionals require formal training, professional associations, and licensing. Galperin's paper on tax preparers who work for companies like H&R Block challenges the classic notion of professionalism which was originally modeled on the historical professions of law, medicine, and certified public accountants. It is worth noting that the organization of these occupations is also in flux (Scott, Ruef, Caronna, & Mendel, 2000;

Suddaby & Greenwood, 2005). The contingent, informally trained tax preparers Galperin describes lack the monopoly and autonomy power wielded by traditional professions, yet Galperin makes quite clear that such workers adopt a professional identity with respect to their clients and their work. Although part of the professional identity arises from indoctrination by the firms they work for, a more important part arises from the tax preparers' relationships with their clients. Galperin's work reminds us of a forgotten lesson championed by the Chicago School Sociologists: members of all occupations, including janitors (Gold, 1964), construct professional identities from the unique details and contextual variations in their jobs. Could it be that sociologists have misconstrued the sources and meaning of professional identities as the nature of work and the division of labor has changed (also see Barley, Bechky, & Nelsen, 2016)?

Advocates of contingent work generally argue that firms turn to contingent workers to increase flexibility or reduce employment costs. When firms hire contingent workers they do not have to pay benefits, they do not incur the costs of training workers, and they are exempt from paying employment taxes. Using simulations based on available data, Fisher and Connelly show that employing contingent workers does not always reduce employment costs. In a number of scenarios, employing contractors is more expensive than hiring full-time employees. Their paper underscores the value of simulation as an adjunct to empirical investigations, especially when empirical data are difficult to obtain. Their simulations also raise questions that require more careful empirical examination before we accept widely touted claims about the value of alternative employment relations.

Outsourcing is often portrayed as a way for organizations to rid themselves of less skilled work and to have that work done at a lower cost. Those who do the outsourced work are typically viewed as mere sources of labor who can contribute little more than the timely production of work of adequate quality. Leonardi and Bailey tell us that the automobile company they studied viewed the tasks that the company offshored to engineers in India in the same way. Of course, the Indian engineers were not unskilled. They were competent and well-trained engineers. Moreover, they were positioned in a flow of work and communication that enabled them to see more clearly than anyone else in the company which procedures and practices were more effective. Yet, the company did not understand the value and importance of the Indian engineers' structural position. Fortunately for the automobile company, the Indian engineers organized themselves in ways that not only allowed them to identify optimal work processes, but to communicate their discoveries to the company through relationships that some of the Indian engineers had developed with engineers at the company's regional engineering centers. That the Indian engineers could help the company identify and develop effective standard work processes provided the engineers with a sense of worth. But it is important to realize that these developments were shaped by the particular work arrangements and the division of labor (teams and consultants) that evolved at the Indian center. The company did not plan these arrangements and, in fact, top managers were unaware of the division of labor and the benefits it brought. The benefits were in this sense a serendipitous, unanticipated consequence of choices that were made about the organization of work. We know from other research that Indian engineers doing outsourced work are unable to make such contributions and fail to develop a sense of self-worth based on their work roles because of how they are perceived and treated by managers and engineers located in multinational headquarters (Metiu, 2006). At the moment, we know almost nothing about how different ways of organizing outsourced work can engender different outcomes both for firms and for the workers tasked with the work.

Students of management and organizations implicitly equate entrepreneurship with the founding of high-tech companies and the promise of great riches. Entrepreneurship as it is often conceived of in the management field overlooks the idea that some people are able to turn their hobbies into paying businesses and that some businesses stay small. Demetry's paper challenges most of the literature on entrepreneurship on this front. In her paper, we encounter individuals—chefs who open pop-up or underground restaurants—who manage to turn their hobbies and labors of love into paying jobs and ongoing businesses. How common are pathways to entrepreneurship that do not involve venture capitalists or hinge on new technological marvels? What could we learn by studying our neighbor down the street who turns a love of ceramics into a business or the person whose hobby of leatherworking evolves into a craft boutique? How do we make sense of the people on Ebay who create businesses by selling items at higher prices than they paid for the items they sell? What have we missed by ignoring these hidden entrepreneurs and what do their stories have to teach us about surviving in an economy that offers fewer opportunities for secure employment?

What does a career look like in lines of work where there are no clear jobs and where work goes unrecompensed? Reilly's research on comedians provides

a number of intriguing answers. Reilly's ethnography of comedians highlights the possibility of constructing careers even under these conditions. Comedians participate in a community organized by layers of colleagues and structures through which people never fully pass: even as they advance, they return to the earlier layers for further development and experience. Reilly reminds us that not all careers are "up or out" and more importantly that careers and identities can be built around activities that are tangential to the mainstream economy, or at least our visions of it. In this regard, Reilly's work resonates with Hughes' (1958) observation that careers are not necessarily hierarchically structured nor need they be tied to paying jobs. Careers are constructed at the boundary between the individual and the social world in which the individual participates. The same can be said of Galperin's tax preparers and Demetry's pop-up chefs, who are not fixed in a single job but forge their work lives around multiple, and sometimes simultaneous, forms of work. One wonders whether there are important similarities, in terms of both costs and benefits, among comedians, tax preparers, and those who work in the gig economy, such as Uber drivers, in terms of how they think of themselves as workers.

Finally and perhaps most importantly, the papers in this volume lead us to ask how people will make enough money in a postindustrial economy to sustain a life, much less a family. Comedians, chefs who establish pop-up and underground restaurants, seasonal tax preparers, and contingent workers cannot count on a steady, sufficient income even when they manage to establish an occupational identity and situate themselves in a supportive occupational community. What are we to do when our employment institutions no longer match the nature of work that people are pursuing? In the United States at least, our tax structure, retirement funds, social safety net, and access to health care revolve around laws and institutions developed in the mid-20th century that hinged on the presumption of stable employment and full-time jobs in formal organizations that offered a regular paycheck plus benefits. The question of how to put into place institutions that match the work arrangements that we are so rapidly evolving is in the end a question of policy about which we are unlikely to be able to speak with knowledge and authority unless we again join the study of work to the study of organizing.

We proposed the idea for this special issue to the *Academy of Management Discoveries* because each of us felt that there was an urgent need for the field of Management to begin to think differently about many of the topics in our field in light of the changes that are occurring in the nature of work, organizations, and employment relationships. Reading the research in this issue shows us some of the ways in which we need to begin to think differently about topics we thought we understood (e.g., the nature of careers, how people formulate meaningful professional identities, the nature of entrepreneurship in a world of smaller organizations). We hope the articles in this inaugural special issue of AMD encourage members of the Academy of Management to take on the challenge of trying to understand the nature of jobs and the management of organizations as they are evolving at the beginning of the 21st century and of updating and refining our ideas and theories.

Stephen R. Barley
University of California

Beth A. Bechky
Frances J. Milliken
New York University

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BUILDING a LEADERSHIP VISION

Eleven Strategic Challenges for Higher Education

By Donald E. Hanna

Higher education institutions around the world face the growing problem of relevance as they enter the twenty-first century. With the international economy evolving toward a global network organized around the value of knowledge, the capacity of people and organizations to use technological developments wisely, effectively, and efficiently has emerged as a critical societal concern. People and nations are relying on colleges and universities to help shape a positive future. However, to capture the advantage of this more central focus and role, higher education institutions will need to transform their structures, missions, processes, and programs in order to be both more flexible and more responsive to changing societal needs.

Donald E. Hanna served as Chancellor of the University of Wisconsin-Extension from 1993 to 1997 and as Associate Vice-Provost for Extended University Services at Washington State University from 1987 to 1993. He is currently Professor of Educational Communications with the University of Wisconsin-Extension. Hanna is the co-author and co-editor of Leadership for 21st Century Learning: Global Perspectives from Educational Innovators *(2001) and the principal author and editor of* Higher Education in an Era of Digital Competition: Choices and Challenges *(2000).*

A key factor in the changing societal needs is demand. Sir John Daniel, former chancellor of the Open University, United Kingdom, has argued that demand for higher education is dramatically outstripping the capabilities of nations to expand access due to already existing shortages of space in traditional colleges and universities, a growing young population in many areas of the world, and limitations on resources, both financial and human. He suggests that in order to sustain even the current level of participation in higher education globally, an average of one new major institution would need to be created somewhere in the world each week for the next thirty years.[1]

The problem of access is being approached from multiple institutional perspectives.[2] Traditional campus-based colleges and universities are extending their boundaries and are opening up access points through technology-enhanced distance learning, while the national "mega-universities" are beginning to build in more robust mechanisms, including student-faculty interactions that are both face-to-face and supported by advanced learning technologies. In some countries, especially in the United States, for-profit colleges and universities are being established to serve working adults, and online-only institutions and strategic consortia or alliances are emerging.

Clearly, higher education institutions must change—and, indeed, are changing—to meet future needs. As they continue to do so, they will face a number of broad-based strategic challenges. Colleges and universities will need to address each of these challenges as they transform themselves to meet the demands of an increasingly complex and dynamic environment.

Strategic Challenge #1: Removing Boundaries

Colleges and universities are facing the challenge of removing the boundaries between higher education institutions and their external publics while at the same time protecting the fundamental values and traditions associated with free academic inquiry, independence of thought, and rights and responsibilities of the faculty. What is "on-campus" and what is not will become less and less apparent. The result is that activities and boundaries will be increasingly blurred as a result of the greater communication and interactions made possible by increasingly powerful technologies. The ivory tower pictured below is becoming a relic of the past—of a time when knowledge was to be guarded in order to be preserved, when it served to separate those with "class" from those without, and when the primary medium for storing knowledge was physically and geographically bound books. College and universities must change their public image, from that of the protective ivory tower to one of a networked, communication-rich, and much more accessible environment.

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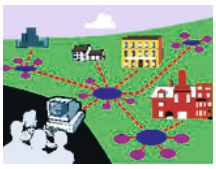


Strategic Challenge #2: Establishing Interdisciplinary Programs

Sir Douglas Hague has noted that society has problems whereas colleges and universities have departments and that the two very often do not match well.[3] He and many others call for institutions to provide better linkages between problems and disciplines and for academic departments to reformat and reorganize courses, programs, and structures to respond to increasingly sophisticated and market-knowledgeable students. As individual learning becomes more connected with personal and professional experiences, learning and instruction will need to become increasingly interdisciplinary to mirror and deal with real problems and real issues, which always involve integrating the perspectives of many disciplines and approaches. This trend is amplified by the general learner's desire to know more of the whole of things, not just a specialized discipline.[4]

As an example, the University of Wisconsin–Madison has implemented the concept of interdisciplinary cluster hires for new faculty members. This hiring process requires that academic departments, through which all promotion and tenure processes must pass, come together through consortium-like structures to hire new faculty members, who by design and focus will both cross and link previously separate disciplines. The goal is to achieve broader and more diverse perspectives around research problems; however, it remains to be seen if interdisciplinary thinking, theory-building, and interaction can be sustained without significantly changing and adapting traditional, well-developed processes and understandings regarding faculty reward, recognition, and prestige.[5]

Strategic Challenge #3: Supporting Entrepreneurial Efforts and Technology

Even with the power and capacity of currently available communications technologies such as the World Wide Web and the Internet, adapting and integrating these technologies with existing institutional and departmental strategies and initiatives has not been a priority in many institutions. Furthermore, the fixed instructional budget framework in place at many colleges and universities does not support entrepreneurial activity at the curriculum, department, or unit level. Frequently within this budgeting framework, adding students, using learning technologies, and creating new paths of access simply increase the workload of the faculty without providing significant new resources to the academic unit. Even when funds are added to departmental resources, they are often at the margin. As a result, faculty and academic departments are hesitant to commit to programs that

The industrial modern system of education will move to a post-modern perspective in which taking advantage of context, collaborating, and constructing knowledge will be valued skills.

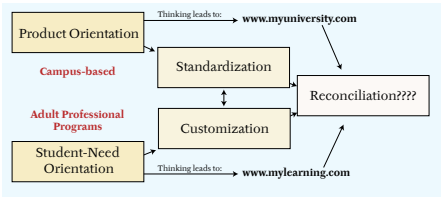
potentially add workload but few resources. This is especially true in research universities, where commitments toward securing research funding often return most if not all resources secured without adding to instructional workload. In many cases, the additional research dollars reduce the faculty member's instructional commitments, resulting in spreading the existing instructional commitments of the department across fewer full-time faculty members. It is little wonder that in these settings, the implementation of learning technologies to increase access has met with minimal support, if not direct resistance, from the faculty.

Strategic Challenge #4: Redesigning and Personalizing Student Support Services

College and university leaders are increasingly recognizing that to regain public support and participation, institutions will need to become more focused on customizing programs to serve students where they are—physically, economically, and academically. As this process occurs, student support services such as admissions, advising, registration, and placement are being redesigned to be delivered flexibly, through multiple pathways increasingly initiated and controlled by the student. These direct and immediate personalized contacts with students are becoming more central to organizational and educational quality, as perceived by the student.

This transition is a major challenge for many higher education institutions, where the focus has historically been on the product or core program design and on the building of quality through institutional improvements in faculty, facilities, and student qualifications, rather than on the processes or the specific customization of programs designed to meet individual student needs. However, the changing audiences for higher education—including adult professionals, who frequently combine complex career requirements with family responsibilities and geographic limitations (traffic in cities and rural isolation), and more and more students who are working part-time to make ends meet—are making customization and convenience a requirement for all programs and services. This blend of approaches and services will be critical to defining quality in the future, as illustrated in Figure 1.

Figure 1. Evolution of Program Design in Higher Education



Strategic Challenge #5: Emphasizing Connected and Lifelong Learning

Institutions are focusing more directly on helping students to develop the skills necessary to be successful in today's economy, which values and rewards the ability to work in teams, to develop creative approaches to problem-solving, and to learn constantly. Even though colleges and universities are being pressured to be more responsive to the demand for workforce development and to the training needs of the corporate sector, many industries are finding that their core business practices and production processes are changing so rapidly that their real bottom-line need is for people who are adaptable and who know how to learn and problem-solve. Since this need corresponds directly with the historical mission of higher education, those institutions that focus on helping students know how to learn and how to apply what they learn to real situations will be increasingly valued. Those that continue to measure learning in abstract and relatively unconnected assessment processes such as class-by-class content examinations, multiple-choice tests, and other forms of memorization and recall will increasingly be at a competitive disadvantage. The industrial modern system of education will move to a post-modern perspective in which taking advantage of context, collaborating, and constructing knowledge will be valued skills.

Strategic Challenge #6: Investing in Technologically Competent Faculty

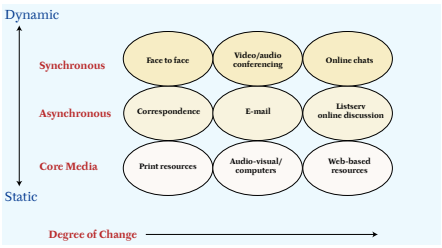
Colleges and universities will need to develop full-time faculty and staff dedicated

to engaging a diversity of learners with more complex learning needs. In a world dependent on technology for its communications, its economy, and, increasingly, its day-to-day organization, higher education institutions that are serious about meeting the challenges of technology will invest in faculty members who are experienced with technology and who can both model this experience and pass it on to students.

Institutions will also take seriously the need to bring other faculty members along in both using learning technologies and experimenting with learning environments that are oriented less around the activities and responsibilities of the instructor and focused more on those of the student. Multiple modes of enabling interaction among students and teachers will be critical. Colleges and universities in which the students are leading the faculty in adopting technology are already at a significant competitive disadvantage, and without a systematic strategic planning effort, these institutions will become less and less attractive to students. Figure 2 illustrates the increasing range of instructional and learning options that faculty members will need to be conversant with and competent in using.

As Figure 2 implies, technology support units in institutions that until recently have been concerned only with improvements in on-campus instruction in a primarily face-to face mode are finding that their work intersects with continuing education units whose role has been to extend access to programs through the use of technology.

Figure 2. Modes of Teaching and Learning Interactions



Strategic Challenge #7: Building Strategic Alliances with Others

Over the past decade, higher education institutions of all types have built expanded alliances with each other and with the corporate sector. These alliances are essential business strategies, and all colleges and universities will seek to expand their web of alliances with others in the future. Whereas demand for learning is growing and access to higher education is improving, competition is also increasing. This competition will cause campuses and corporations alike to focus on their unique programmatic and delivery advantages. Cooperate to compete, identified by William Graves as a strategy of "collabotition," will increasingly be a critical strategy for colleges and universities in the future.[6] Hague has suggested that for higher education institutions, the key is permeability, and that with respect to

The industrial modern system of education will move to a post-modern perspective in which taking advantage of context, collaborating, and constructing knowledge will be valued skills.

the question of whether or not to form alliances, the choice for many will be "alliance or annihilation."[7]

Corporate universities are beginning to broaden their mission to include certification and degree options for employees. Although in some cases, these corporations are developing and offering such programs internally, they are also forming new strategic alliances with colleges and universities. The corporation with hundreds of learning strategic alliances is becoming commonplace, as is the higher education institution with many partnerships and alliances, both with each other and with business and industry. And in the United States, a number of for-profit universities are engaged in experimenting with new assumptions about the possibilities and roles of enterprise in higher education.

Strategic Challenge #8: Incorporating Learning Technologies into Strategic Thinking

Higher education institutions will need to integrate learning technologies into their strategic planning and their setting of institutional priorities just as they currently integrate the planning of facilities, administrative processes, library support, and student services. Learning technologies are no longer the sole responsibility of the units responsible for computing, information technology, or telecommunications. They permeate the entire institution, and how they are utilized, implemented, and evaluated can significantly advance or retard the overall development and progress of an institution. This integration will need broad-based participation by the faculty and staff of the institution in order to be sustained and will also require a significant effort on the part of institutional leaders.

Strategic Challenge #9: Measuring Program Quality

Educational programs are being measured more and more often based on outcomes that matter to students and employers rather than on inputs that matter to faculty and administrators. Graves frames this dilemma as a tension between the view of education as operating for the "public good" (the traditional model) and the view of education as operating for the private "individual good" or "employer good."[8]

Major change in this perspective means a dramatic shift in how quality is measured—with flexibility, responsiveness, timeliness, efficiency, and applicability becoming new, important measures of quality. Criteria for institutional accreditation and program quality assessment are changing to reflect more specific measurements of learning. Some accrediting associations are already revamping their criteria and processes. For example, in the United States, the Higher Learning Commission of the North Central Association of Colleges and Schools (one of the six regional institutional accreditation organizations) has systematically engaged in reviewing and restructuring its criteria for awarding institutional accreditation through a comprehensively planned process for updating standards for and expectations of accredited institutions. Establishment of the new criteria has involved representatives from member institutions from across the North Central region, and an entirely new framework for accrediting institutions is expected to be in place by 2004.[9] In addition, a few institutions in the United States have begun to adopt and follow planning processes suggested by the Malcolm Baldrige National Quality Award, which emphasizes results-oriented goals and activities that focus on customers and markets, leadership, and strategic planning. In 2001, the University of Wisconsin–Stout became the first institution of higher education to receive this award.

Active engagement between learners, teachers, and content, between students and faculty, and between customers and institutions is increasingly an important element of measurement for accrediting associations. However, it is the performance of students in developing diverse perspectives and approaches to problem-solving, in gaining critical thinking skills, in honing the ability to work effectively in teams, and in establishing a pattern of continued learning in and out of the workplace that will define successful academic programs in the future.

Strategic Challenge #10: Achieving Institutional Advantage

For some colleges and universities, the new digital environment suggests focusing resources on just a few unique or particularly outstanding programs and delivering them globally. For others, it means organizing programs differently to take advantage of a combination of programmatic strengths. And for still others, it means developing the right partnerships to shore up weaknesses in programs, delivery, service to students, or other areas important to offering high-quality programs. The abundance of opportunities demands greater focus and clarity about purposes and competitive strengths as institutions compete in a larger, more complex marketplace. All colleges and universities operate within this larger environment, and even elite institutions are entering the competitive environment and are being challenged to adapt programs, structures, and processes.

Table 1. Evolving College/University Culture

The Traditional Academic Culture	The Continuum	The Emerging Academic Culture
Leaders and staff abide by time-honored rules, policies, procedures, and protocols.	⟷	Leaders and staff draw on their knowledge and experience but take risks, often without a pre-tested methodology.
Formal academic programs drive departmental decision-making.	⟷	Learners' needs drive departmental decision-making; academic programs are responsive to the needs of the individual learner.
Tenured faculty are primary academic decision-makers.	⟷	Faculty share academic decision-making with key customers/ stakeholders.
Administrative and academic structures support the delivery of programs and courses.	⟷	Academic support structures are tailored to the needs of the learner.
People who can work within given structures are most important.	⟷	People who can anticipate market shifts are most important.
Key message is "Don't rock the boat."	⟷	Key message is "Seize the day."
Communication strategies are - internal, - vertical, - formal.	⟷	Communication strategies are - external and internal, - horizontal, - informal.
Emphasis is on systems and resources "in hand."	⟷	Emphasis is on systems and resources "in waiting."
Strategic partnerships go unrecognized and untapped.	⟷	Strategic alliances and partnerships are sought out and implemented.
Segmented, specialized organizational structures are prevalent.	⟷	Integrated, cross-functional organizational structures are reinforced.
Budgets are stable and committed to existing programs; deficit financing is avoided.	⟷	Budgets are fluid and opportunity-seeking; deficit financing is common.
New academic programs complement existing programs.	⟷	New programs create openings for new markets.
New programs must fit with existing structures.	⟷	The best structure is determined for each new program.
Actions tend to be evolutionary.	⟷	Actions tend to be revolutionary.
Risk-adverse behavior seeks to minimize competition with others through regulation.	⟷	Risk-seeking behavior seeks to exploit competitive advantage over others.
Stewardship and preservation are the critical elements of leadership.	⟷	Vision and strategy are the critical elements of leadership.
Stewardship and preservation focus on assessing the impact of new activities on existing undertakings.	⟷	Strategies gravitate toward new market niches.
Change efforts focus on improving programs and activities deemed valid by competitors.	⟷	Change efforts focus on being first to develop a new program or activity.
Staff tend to work to their own agendas and act independently of their colleagues.	⟷	Staff often collaborate with each other and across disciplines in pursuit of organizational goals.
Appraisal, reward, and recognition are based primarily on individual scholarly performance.	⟷	Appraisal, reward, and recognition are based on individual and group scholarly and entrepreneurial performance.
Organizational recognition comes from interaction with, and recognition by, peers in other institutions and in terms of contribution to the discipline.	⟷	Organizational recognition may also come from interaction with, and recognition by, immediate colleagues and in terms of contribution to the organization.

The industrial modern system of education will move to a post-modern perspective in which taking advantage of context, collaborating, and constructing knowledge will be valued skills.

Strategic Challenge #11:
Transforming Bureaucracy, Culture, and Assumptions

In what may be the most difficult challenge of all, higher education institutions are being forced to transform decision-making processes and to radically change past operating assumptions. Processes appropriate for a stable environment in which markets were clearly defined, program structures were relatively uniform, and competition was limited are no longer effective in a networked world. Colleges and universities are discovering that major changes are necessary in order to serve students effectively and to compete with aggressive, for-profit institutions in an environment in which the concept of time-to-market for programs is becoming more critical. Table 1 identifies a number of cultural elements that are currently undergoing adaptation and evolution in many academic institutions.

The processes for achieving transformation have evolved: early efforts, in the previous two decades, focused on the strategic improvement of quality through the improvement of a variety of administrative and instructional processes, whereas current efforts emphasize the creation of more open, honest, and comprehensive assessments and the re-creation of vision, mission, culture, strategy, decision-making processes, and outcomes.

Appreciative Inquiry Leadership

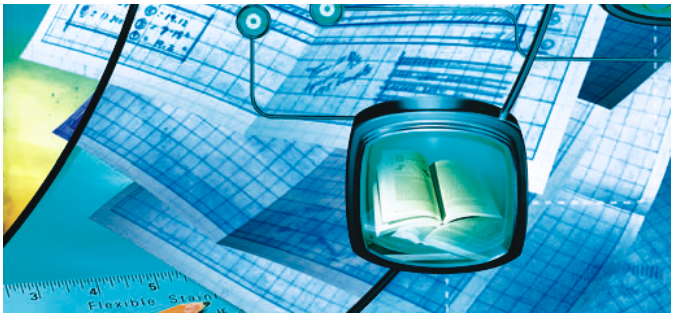
Addressing these eleven strategic challenges and creating a context supportive of innovation and experimentation will clearly require committed, passionate, and visionary leadership. Such leadership can help to shape higher education institutions in ways that will make them more human, more livable, and more ethical. A. Toffler has suggested that for sig-

nificant change to occur in developed organizations, three conditions must be present: "First, there must be enormous external pressures. Second, there must be people inside who are strongly dissatisfied with the existing order. And third, there must be a coherent alternative embodied in a plan, a model, or a vision."[10] In 1999, W. G. Tierney wrote about the lack of such a plan in higher education: "We recognize that problems exist, but we have yet to enact a plan of action about how to deal with these problems as an academic community bounded by a common purpose that is socially responsive. Over the past decade, organizational changes have been around the edges of higher education's communities rather than at the heart."[11]

How can we find this vision? One approach is to initiate an institution-wide conversation through a relatively new change process called "Appreciative Inquiry."[12] More traditional problem-solving approaches to strategic planning—such as organizational redesign, restructuring, and total quality management—emphasize identifying problems, analyzing causes and solutions, and taking action to address the problems. These approaches all begin from the perspective of a "deficit": something is wrong and needs to be fixed. Appreciative Inquiry, on the other hand, can be viewed as a process that involves discovering organizational strengths through creating conversations that focus on what people within the organization are doing well and on how they are achieving excellence.

As D. L. Cooperrider notes, for Appreciative Inquiry to be effective, its fundamental tenets must be honored. The first and most important is that organizations spend time and energy on the areas where the conversations are centered. The second important concept underlying Appreciative Inquiry is that organizations focus on the generative potential of positive images. If organizational conversations are centered on problems, the focus of the organization will be centered on problems as well and away from those areas and activities in which the organization is successful. Moreover, focusing on problems absorbs enormous organizational energy by unearthing seemingly unresolvable/intractable institutional roadblocks that have previously prevented change. By focusing instead on (1) the positive elements of organizational life and the broad-based sharing of organizational success stories, (2) the areas where outstanding performance and achievement can be documented, and (3) the integration of these accomplishments into organizational culture, the organization as a whole and its members will become better directed toward future success.

According to M. Mantel and J. Ludema, the experiences of organizations that have successfully used Appreciative Inquiry demonstrate that as the process becomes ingrained in organizational culture and life, time spent on dealing with organizational problems eventually diminishes and consumes much less organizational and emotional energy; the organization is able to build effectively on acknowledged successes.[13] Evidence regarding the impact of Appreciative Inquiry within higher education settings is



largely anecdotal at this stage. A major barrier to its broader utilization seems to be leaders' difficulty in enabling the early conversations necessary to set an appropriate context envisioning a more positive future. Preliminary experiences also suggest that once people in the organization begin to have open, honest conversations that focus on positive elements within the organization, the possibilities of dreaming a new and exciting future can emerge. Thus, Appreciative Inquiry is a strategy that can enable the college or university to reach forward to a more positive future. Process participants develop a vision of a preferred future they would like to bring into reality, allowing them to think outside the box of current institutional and cultural norms and processes.

Conclusion

Higher education institutions are clearly in the midst of rapid change in response to environmental, social, economic, technological, and political transformations sweeping the globe. As a result, colleges and universities face numerous broad-based challenges. New institutional strategies and decision-making processes must be created, articulated, and adopted to enable institutions to survive and prosper. In order to be effective and sustainable, these strategies and processes must be developed in an environment offering openness, intense and honest reflection, and opportunities for participation and action by all members of the academic community. College and university leaders cannot make these changes by themselves; they must engage the entire institution in their vision. One approach to doing so is the Appreciative Inquiry process, which starts from the perspective that the institution is already doing many things well, that knowledge of these successes is widespread among institutional members, and that a process for sharing widely and building on institutional successes is critical to engaging the entire college or university in planning for the future.

At the same time that decisions regarding the missions, structures, financing, curricula, students, pedagogy, and processes of higher education institutions are coming under constant review, the importance of colleges and universities to the well-being of nations, societies, communities, and individuals goes almost unquestioned. Addressing the eleven strategic challenges is thus critical not only for the future of institutions but also for that of the world at large. Appreciative Inquiry offers a planning framework for college and university leaders to utilize in creatively and positively meeting these challenges and in symbolically and practically shaping the vision for the higher education institution in the demanding and rapidly changing environment of the twenty-first century.

Notes

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9

Change leadership and leadership development are critically important to the continuing success of public community colleges everywhere. Transactional and transformational leadership, the more traditional models, are no longer adequate to meet the pressing financial and operational challenges in two-year institutions. Current and aspiring leaders must understand the culture of change that permeates community college campuses and embrace the opportunities inherent in that culture.

Epilogue: Change Leadership and Leadership Development

Robert C. Cloud

Current community college change leadership evolved from traditional public school bureaucratic models that emphasized control and oversight. In fact, many two-year colleges developed as an upward extension of local public schools (Cohen and Brawer, 2003). The school board approved the college budget and governed college operations, and the superintendent often served as the college president. Public school teachers taught college classes part-time in school facilities after regular school hours. As a rule, faculty members were not invited to participate in the management and leadership of the college. Teachers taught students, and administrators made the decisions. Having served as public school administrators before moving into two-year college administration, many presidents projected a paternalistic attitude toward teachers (Cohen and Brawer). There was little or no commitment to the principles of shared governance, participative management, and collaborative decision making that are mainstays of current change leadership. The centralized public school model was adequate so long as colleges were small, the curriculum was narrow, and operations remained relatively simple.

From their inception in the early twentieth century until the 1960s, most two-year institutions were known as junior colleges (Cohen and Brawer, 2003). During the late 1960s, however, many junior colleges adopted comprehensive mission statements, expanded their curricula, and negotiated partnerships with various constituencies (Cohen and Brawer). Consequently, the term "community college" was coined to describe these

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more complex, community-based colleges. Autocratic administrators were ill equipped to lead such comprehensive institutions, and the all-powerful presidents of the past retired or were replaced (Cohen and Brawer).

Community college leadership has since evolved into a dynamic process with a host of participants. Gone are the days when administrators act unilaterally and arbitrarily on college issues. Although the president retains the final authority to carry out assigned duties, prudent leaders insist on broad-based participation in the leadership process, for obvious reasons. Nationwide, the current trend is toward increased involvement and shared responsibility in college change leadership (Cloud and Kater, 2008).

Change Leadership

In Chapter One, Desna Wallin defines change leadership as a four-part process that *anticipates* change, *analyzes* the internal and external environments, *acts* on the basis of appropriate and timely data and the strengths of team members, and *affirms* institutional actions with the goal of continuous organizational improvement. In its finest form, change leadership is a moral act, based on ethical actions, that serves the long-term interests of the college and its constituencies. Change leadership is more complex than either transactional or transformational leadership. The former focuses primarily on maintenance and management of the status quo with incremental changes as needed; the latter facilitates systemic change through the leader's articulated vision and a motivated workforce (Roueche, Baker, and Rose, 1989). Change leadership, by contrast, facilitates changes in both employees and the organization. Community college change leaders create a "culture of change" where faculty and staff are encouraged to brainstorm current and anticipated issues and recommend changes. Change leaders seek out employees with leadership potential and prepare them for future leadership roles through a formal succession plan, thus ensuring stability and continuity in the college administration (Mathis and Jackson, 2009). They also develop leadership centers that analyze anticipated threats and opportunities and prepare college action plans accordingly. Change leaders think and act outside the box when appropriate and motivate others to do the same.

Leadership Development

Leadership development is a formal and informal process that is intended to maximize institutional and individual effectiveness. There are at least three components in the leadership development process: (1) university-based academic credit programs that enhance knowledge, skills, and competencies and that often lead to a master's or doctoral degree; (2) in-service or developmental programs for practicing leaders sponsored by professional

organizations, governmental agencies, or higher education institutions; and (3) informal and lifelong learning strategies that enable leaders at all levels to increase their knowledge of management and leadership processes and improve performance. These informal strategies may include professional reading, personal reflection, travel, writing for publication, and active involvement in professional organizations.

This volume reviews the range of leadership development opportunities available to community college professionals, from partnerships to the community college baccalaureate initiative to reflective learning strategies. Two exemplary doctoral leadership programs are profiled in Chapters Four and Six. Chapter Seven highlights local college efforts to "grow your own" leaders through various developmental activities for motivated middle managers. In Chapter Eight, the authors acknowledge that community college change leaders (agents) work in a risky environment and suggest that presidents consider the inevitable crises and personal attacks that wound them and their families as opportunities to grow personally and professionally—an interesting perspective indeed.

Necessary Personal Qualities of Change Leaders

Implementing the four components of change leadership in public community colleges is difficult and can be hazardous to the health and career of an administrative leader. In addition to the required academic credentials, professional experience, and administrative skills, successful leaders have certain personal qualities that are essential in fostering peaceful and productive change.

First, successful change leaders listen more than they talk or act.

Second, prudent leaders do not view themselves as "the boss" with the right to coerce subordinates or force institutional changes without appropriate dialog and planning. They consider themselves to be "first among equals" and invite others to join in a continuing effort to improve the college (Birnbaum, 1988). Effective change leaders understand that they lead with the consent of the led (Greenleaf, 1991). Consequently, they encourage cooperation and inclusion and make it clear that all administrative actions are accountable to stakeholders.

Third, successful change leaders are motivated to serve before they aspire to lead. As "servant leaders," they are committed to helping students and colleagues become wiser, healthier, more productive, and more independent because of their experiences at the college (Greenleaf, 1991). Ideally, change leaders view their positional authority as significant only as a means to the primary end of serving students, the community, and the profession.

Fourth, change leaders articulate a vision for their college and then persuade colleagues and supporters to help with its implementation. Because coercion invariably alienates those subjected to it, leaders do not coerce; their goal is cooperation, not control (Cohen and Brawer, 2003).

Fifth, as documented in Chapter Three of this volume, effective leaders have a high degree of emotional intelligence, meaning they are highly motivated, self-disciplined, empathic, and caring individuals (Goleman, 2004). Blessed with superior interpersonal skills, leaders with emotional intelligence treat others with respect and empower subordinates to carry out duties expeditiously and compassionately. Secure in themselves and confident in their purpose, change leaders question existing policies and practices and encourage colleagues to develop new and innovative ways to increase institutional effectiveness. Though advocating for improvement of college practices, emotionally intelligent leaders respect the institution's heritage and are as careful as possible not to offend alumni, faculty, and staff who cherish its related traditions.

Sixth and finally, change leaders are authentic individuals who eschew pretense. They are comfortable with themselves and open with others. Even though they respect power, they are not intimidated by it. Authentic leaders confront the phony when necessary. Gentle and kind by nature, authentic leaders treat everyone with respect—the powerful and the powerless, rich and poor alike (Starratt, 2004). Consequently, authentic change leaders are trusted and respected by their peers, who are then more likely to support leadership proposals for necessary changes in the college.

College leaders who do not possess all or most of these qualities will likely be very lonely once they are terminated, resign, or retire.

Necessary Competencies for Change Leaders

In addition to required personal qualities, community college change leaders must possess specific professional competencies if they are to lead responsibly and effectively. In recognition of that fact, the W. K. Kellogg Foundation awarded the American Association of Community Colleges (AACC) a grant titled Leading Forward to address the national need for community college leaders. AACC began the Leading Forward initiative in 2003 by hosting a series of four daylong leadership summits with different constituent groups. The purpose of the summits was to develop consensus around the key competencies and skills needed by two-year college leaders and determine how to best develop and support leaders. Experts in community college leadership from AACC affiliate councils, colleges in underserved areas, and university graduate programs convened in Washington, D.C., between November 2003 and March 2004. A total of 168 higher education professionals participated in the four summits. On April 9, 2005, the AACC board of directors approved the final *Leading Forward* document and encouraged college leaders to use six competencies in the report as standards for performance assessment:

1. **Organizational strategy.** An effective community college leader improves the quality of the institution, protects the long-term health of

the organization, promotes the success of all students, and sustains the college mission.

2. **Resource management.** An effective community college leader equitably and ethically sustains people and processes as well as institutional assets to fulfill the mission, vision, and goals of the college.
3. **Communication.** An effective community college leader uses clear communication skills to engage in honest, open dialogue at all levels of the college and its surrounding community, to promote the success of all students, and to sustain the college mission.
4. **Collaboration.** An effective community college leader develops and maintains cooperative, mutually beneficial, and ethical relationships that nurture diversity and sustain the college mission. Change leaders, in particular, must be adept at conflict resolution and consensus building.
5. **Community college advocacy.** An effective community college leader understands, commits to, and advocates for the mission, vision, and goals of the college.
6. **Professionalism.** An effective community college leader works ethically to set high standards for self and others, continuously improve self and surroundings, demonstrate accountability to and for the institution, and ensure the long-term viability of the college and community.

[AACC, Competencies for Community College Leaders, 2005, adapted]

Community college change leaders should embrace the personal qualities and professional competencies discussed in this chapter. They will have need of these talents as they grapple with current and predicted issues, many of which defy solution.

Issues Facing Change Leaders

A public community college is a microcosm of the society that funds it. Consequently, change leaders are confronted with a range of economic, social, political, and operational issues that complicate the leadership process. These examples reflect that range:

- Governing boards must be educated about the change leadership process through local, state, and national initiatives.
- Safety and security are primary concerns on all community college campuses. For obvious reasons, change leaders must make this issue a top priority.
- Community college enrollments, currently experiencing double-digit increases, will continue to escalate nationwide (N. G. Kent, AACC vice president for communications, personal conversation, Oct 13, 2009). A growing number of students will require remediation.

- Local taxpayer resistance is a reality in many college districts.
- Special interest groups, including taxpayers' associations and teachers' unions, will continue supporting candidates in governing board elections, creating potentially volatile situations for change leaders.
- The number of part-time teachers, now at approximately 66 percent of the total faculty workforce, will continue to increase, raising legitimate concerns about instructional quality and faculty participation in governance (Levin, Kater, and Wagoner, 2006).
- Community college faculty, already the most unionized of all faculties in postsecondary education, will press for better compensation and meaningful participation in administration and governance (Cohen and Brawer, 2003).
- College partnerships with public and private agencies will increase as pressures mount to do more with less.
- K–16 initiatives will require closer collaboration among the principals than ever before.
- Proprietary institutions will recruit more students away from community colleges with the promise of accelerated degree plans, job-specific training, and guaranteed placement at graduation.
- Single-issue and rogue board members will not be helpful to change leaders seeking necessary changes in the college.
- Finally, public community colleges exist in a highly litigious society. Consequently, change leaders must deal with the added threat of litigation as they implement needed, but controversial, changes in college policies and practices (Cloud, 2004).

In summary, community college change leaders serve in a dynamic environment that is no place for the timid or faint-hearted. In addition to the previously suggested qualities and competencies, a thick hide and a sense of humor will be helpful to leaders as they carry out assigned duties.

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ROBERT C. CLOUD is professor of higher education at Baylor University.

Transformational Leadership Characteristics Necessary For Today's Leaders In Higher Education

Lloyd Moman Basham, Texas A&M University-Commerce, USA

ABSTRACT

This study is concerned with the traits and characteristics of presidents of institutions of higher education who are considered transformational leaders. The study adds current data to the published and perceived characterization of leaders in higher education and their approaches to changing the learning environment at their institutions. This study addresses the significance and current widespread appeal of transformational leadership and its practical application to higher education; but equally important, it profiles the group and individual qualities that are necessary for individuals to have, as their acumen, in order to introduce a climate of change utilizing transformational leadership.

Keywords: Transformation; Leadership; Higher Education; Presidents

OVERVIEW OF LEADERSHIP AND ITS APPLICATION TO EDUCATION

Historically, organizations have been viewed as learning systems in which success depends on the ability of leaders to become direction-givers and on the organization's capacity for continuously learning (Garrat, 1987). Transformational leaders tend to have the attributes to learn across their specialist discipline. Transactional leaders are usually at the top of their functional specialty and have limited perspective to see that change is needed and what the consequences may be for continuing the same practices (Bass, 2003).

Elements of quality leadership are existent within every functional activity with representatives serving in any capacity that can influence change. Quality leadership is demonstrated if effective results are recognized and realized. Traits that define effective leadership are included in either a category of group or individual. Group traits include collaboration, shared purpose, disagreement with respect, division of labor, and a learning environment. Individual traits include self-knowledge, authenticity/integrity, commitment, empathy/understanding of others, and competence (Astin & Astin, 2000) as shown in Table 1.

Table 1: What is Effective Leadership?

Group Qualities	Individual Qualities
Shared purpose—reflects the shared aims and values of the group's members; can take time to achieve.	Commitment—the passion, intensity, and persistence that supplies energy, motivates individuals, and drives group effort.
Collaboration—an approach that empowers individuals, engenders trust, and capitalizes on diverse talents.	Empathy—the capacity to put oneself in another's place; requires the cultivation and use of listening skills.
Division of labor—requires each member of the group to make a significant contribution to the overall effort.	Competence—the knowledge, skill, and technical expertise required for successful completion of the transformation effort.
Disagreement with respect—recognizes that disagreements are inevitable and should be handled in an atmosphere of mutual trust.	Authenticity—consistency between one's actions and one's most deeply felt values and beliefs.
A learning environment—allows members to see the group as a place where they can learn and acquire skills.	Self-knowledge—awareness of the beliefs, values, attitudes, and emotions that motivate one to seek change.

Source: Astin & Astin, (2000). Copyright 2000 by W. K. Kellogg Foundation. Adapted with permission.
Note: From "Leadership Reconsidered: Engaging Higher Education in Social Change," by A.W. Astin and Helen S. Astin, 2000, Non-Published Report, Chapter II, p. 10-15.

Transformational Leadership

Transformational leadership is the current focus of concepts relating to organizational leadership. These concepts are based on vision statements that provide the directional path for the organization. In addition, the vision statement should be supplemented with a mission statement that energizes and inspires all members of the organization as they pursue obtainable organizational objectives. The vision and mission statements establish the long term goals of the organization and are the basis for the organization's strategy and identification of methods for implementation of the strategy.

Transformational leaders who develop and communicate a vision and a sense of strategy are those who "find clear and workable ways to overcome obstacles, are concerned about the qualities of the services their organization provide, and inspire other members to do likewise" (Swail, 2003, p. 14). Transformational leaders encourage development and change.

Historical definitions of transformational leaders have depicted the leaders as heroes, with accompanying charismatic personalities expressing and promoting a mission of major organizational change. Heightened scholarly attention surfaced in the 1990s addressing the merits and theories of transformational leadership. This increased interest by society in transformational leadership was driven by two major undercurrents. The first was the evolution of cynicism and disillusionment with the very idea of leadership and the changing climates of opinion endorsing various versions or types of leadership. The second was the constantly changing leadership styles that were the "order of the day" as attempts to adapt to the wider cultural and economic shifts and development occurring in society. Therefore, interest and research in transformational leadership began to boom (Bass & Avolio, 1993). The transformational leader is still a long way from being the leader for every situation and, as a result, few empirically documented case examples of capturing the transformational leaders' acumen exist.

Transformational leadership is value driven. The leader sets high standards and purposes for followers, engaging them through inspiration, exemplary practice, collaboration, and trust. Transformation leadership aims at responding to change quickly and at bringing out the best in people. Such leadership is change-oriented and central to the development and survival of organizations in times of environmental turmoil, when it is necessary to make strategic changes to deal with both major threats and opportunities. It derives its power from shared principles, norms, and values. Leaders who encourage and support transformation pay specific attention to intellectual stimulation. (Ramsden, 1998; Caldwell & Spinks, 1999; Bass & Avolio, 1993).

The transformational leader may be needed in the scholarly community (Bass & Avolio, 1990; Leithwood, 1992, Sergiovanni, 1990; Silins, 1994). A key factor is the introduction of entrepreneurialism to the public sector. This is due to higher education institutions attempting to adapt to the economic and organizational shifts in their environment. The last two decades declining support for higher education from its traditional sources of funding emphasizes this point. As a result, major short term goals have been established, and day-to-day focus has shifted to an environment of institution marketing or business development, and the focus is not on students.

Transformational leadership is essential within higher education so that adaptation can be completed to meet the constantly changing economic and academic environment. Leaders who encourage and support transformation leadership share power, are willing to learn from others, and are sensitive to each team member's needs for achievement and growth (Gous, 2003).

Transformational leadership draws from deeply held personal value systems. Transformational leaders bring followers together to pursue collective ambitions by expressing and disseminating their personal standards. While transactional leadership can most certainly bring about constructive outcomes within an organization, transformational leadership is held to promote performance beyond expectations by drawing from charisma, consideration, motivation, and stimulation (Carlson & Perrewe, 1995).

This current study highlights the identity of effective leadership in higher education by applying a matrix of group qualities and individual qualities to an expert panel of leaders in higher education. A Delphi study was used to obtain consensus and to determine if leadership utilized has in fact been effective or can be effective (Table 1).

STATEMENT OF THE PROBLEM

Significant changes in higher education have occurred due to taxpayer backlash (Alexander, 2000), the rapid growth of the Internet, increasing globalization of higher education, economic shifts in the demographics of society, and economic commerce. These influential factors are creating the need for a new definition and approach to the management of higher education institutions. Should presidents of institutions of higher education be utilizing transformational leadership management practices and concepts to benefit the stakeholders of higher education? Secondly, what leadership qualities are necessary for a university president to develop a vision and well-designed strategy to overcome funding limitations and to develop alternative and workable plans in a university setting? This study attempts to provide answers to these questions.

METHODOLOGY AND RESEARCH DESIGN

A Delphi study was used to obtain consensus and to determine if leadership utilized has in fact been effective or can be effective (Table 1). This Delphi study began with selecting 300 university presidents from both private and public higher education accredited institutions in the United States from the 25th anniversary Higher Education Directory®. These selections were made utilizing a random numbering selection criterion from the Random Number Generator in Excel™ software. Excluded from this selection were university presidents that represented higher education institutions classified as technical schools.

An invitation letter was sent to these 300 selectees with a positive response from 52 university presidents (representing a 17% acceptance). This broad-based representation became the expert panel for the initiation of round one of the Delphi study. The expert panel provided input to 41 distinct indicators that included a list of concerns, issues, management practices and concepts, and effective leadership qualities. These indicators were force rated through three rounds of surveys to determine the level of agreement and consensus determined from medians and interquartile ranges for each indicator.

The panel was asked to refine the list by the following methods:

1. indicating the relative significance of each major concern on the rating scale by force ranking
2. adding new concerns or practices and concepts to the list.

The result of the first round was 100% participation.

Round 2 had a response rate of 70% of the expert panel resulting in 36 panelists participating. Reasons for 10 of the panelists not responding were the retirement of 3, the resignations of 3, the deaths of 2, the transfer of one panelist to another institution, and the request of one panelist to withdraw from participation. No reason was given 6 of the panelists who ceased to participate and did not response to multiple attempts of communication follow-up.

Round 3 has a response rate of 97%, (35 panel members), of the adjusted panel from Round 3 of 36 participants. This was due to one panelist requesting to be removed from the panel.

DISCUSSION OF DELPHI RESULTS

The data from the expert panel were analyzed using two criteria, which were level of agreement and consensus. The level of agreement for each of the 41 indicators was expressed using the median as the unit of measure. Supplementing the median was the mean (average) and both taken together provided support for determining the level and order of importance. The level of consensus of each of the 41 indicators was expressed as the interquartile range. Supplementing the interquartile range was the standard deviation which, taken together, provided support for determining the level of consensus. The priority ranks (level of agreement) were combined with the degree of consensus to determine the overall importance of the major concerns.

Final ratings resulted in 25 (61%) of the 41 indicators receiving a median rating of 6 or less, indicating that the panelists agreed or strongly agreed the indicator was applicable, and 23 indicators (56%) reached a level of

statistical consensus with an IQR of 2 or less. Indicators reaching the highest and strongest level of consensus were 8 representing 20% of the total indicators.

FINDINGS, CONCLUSION, AND LIMITATIONS

Based on the findings of this study, the following conclusions were drawn:

- The climate and relationships with an atmosphere and environment of transformational leadership within higher education requires further research.
- The distinction within transformational leadership practices and concepts in higher education may not be as clear as traditionally believed.
- University presidents recognize the critical need for devoting time in providing all stakeholders of their higher education institution with a vision, purpose, and with values that result in a clear and consistent direction.
- University presidents recognize that establishing an environment of excellence in the performance of their institution for higher education inspires trust in their leadership as well as energizes the complete organization including faculty, staff, and students.
- University presidents realize that their major challenge in introducing change at their institutions of higher education is the traditional and historical structures of culture with its accompanying policies and procedures.
- Transformational leadership practices and concepts will have to be applied at an institution of higher education to ensure change due to the reluctance of tenured faculty and staff to consider changes due to personal impact.
- The situation and environment of reduction in state and/or government funding to higher education will require critical application of transformational leadership practices and concepts to ensure that an institution of higher education achieves its purpose of learning.
- For an institution of higher education to be successful, its president must have the individual quality of commitment demonstrated with passion, intensity, and persistence which will supply the energy and momentum, to motivate and stimulate the stakeholders to strive toward a group effort.
- A university president's competency in knowledge, leadership skills, and technical expertise is necessary to ensure the successful completion of a transformational effort.
- The attribute of authenticity must reside within the university president's acumen so that there is consistency between his/her actions and most deeply felt values and beliefs.

ACTIONABLE CONCLUSIONS

- Updating and refinement of institutions Strategic Plan which should include imperatives. These imperatives should be driven down into the Colleges and individual departments.
- Implementing a quality program of Six Sigma and subsequent application for the Malcolm Baldridge award.
- Immediate update of all policies and procedures to ensure that applicability is possible for current existing climate and environment.
- Implementing a rigorous program of post tenure review with high standards applied consistently and uniformly to all members of the faculty.
- An extensive embracement with Alumni and stakeholders in developing a participative Institution Development program.
- Contracts for presidents should be limited to 5 years with only one renewal.
- University search committees should begin requiring candidates for the President's position to have prior business and practical experience in addition to academia.

The following limitations pertain to this study:

- Research did not include management theory, as presented in Business colleges by educators or by management practitioners or theorists, prior to 1965.
- Restrictive boundaries were placed by the researcher on phenomena relating to institutions of higher education whose purpose is the development of technical skills, commonly referred to as technical schools, even though many of these have now become accredited and offer both bachelor and master's degrees.
- Restrictive boundaries were placed by the researcher on training schools developed by corporate America whose programs may have become accredited to offer degrees.
- The selection of the Delphi method in itself imposed limitations relating to the kind of communication process that was utilized. A major challenge included the selection of the people with expertise in the problem and where they might be located.

AUTHOR INFORMATION

Dr. Lloyd M. Basham: Professor (BBA, Accounting, MBA, M.A., International Management, Ed. D, Leadership is Department Head and Assistant Professor of Marketing and Management in the College of Business and Entrepreneurship at Texas A & M University – Commerce. His practical experiences are as an early corporate America executive retiree with 30 years of corporate background. These associations were with Fortune 200 firms in the Computer/Telecommunications -Motorola and Nortel - and Security/Risk and Financial Services -The Pittston Company- industries in various executive positions both in financial and operational capacities. E-mail: Lloyd.Basham@tamuc.edu

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NOTES

1

The authors present an overview of strategic planning, examine its history and mystique, and conclude that planning, if properly implemented, can have a powerful impact on advancing and transforming colleges and universities.

Strategic Planning in Higher Education

Michael J. Dooris, John M. Kelley, James F. Trainer

Homo sapiens is the classical term used by philosophers to elevate humankind from the remainder of creation. The term, of course, refers to our ability to think, conceptualize, mull, peruse, and innovate. It also extends to other defining functions and faculties, such as problem solving and imagination. Rationality certainly characterizes most jobs and professions, but it crescendos in the world of strategic planning.

The editors of this volume believe that the soul of strategic planning is this human capacity for *intentionality*—this ability to formulate goals and proceed toward them with direct intent.

Planning, Intentionality, and Human Behavior

The Frenchman Henri Fayol, a parent of organizational theory, implicitly dealt with the notion of "intentionality." In the early 1900s he described planning as assessing the future, setting goals, and devising ways to bring about these goals. Mintzberg and Quinn (1996, p. 10) were thinking along these same lines when, speaking about strategy as plan, they specified two essential characteristics about strategy: it is made in advance to the actions to which it applies, and it is developed consciously and purposefully.[1]

Herein, then, lies the essence of strategic planning. When we strip away the models, schema, and paradigms; when we discard the PowerPoint presentations; and when we look beyond the grids, scorecards and matrices, we confront our ability to think with intention. Planning concerns an ability that is awakened by the human appetite to better our condition. In the business world, bettering one's condition includes capturing market share and improving profits. In higher education, bettering one's condition

includes hiring better faculty, recruiting stronger students, upgrading facilities, strengthening academic programs and student services, and acquiring the resources needed to accomplish these things. Since most institutions of higher education share a similar mission and compete for these same objectives, an essential part of strategic planning involves shaping the institution in ways that ensure mission attainment by capturing and maintaining a market niche in the quest for resources, faculty, and students. Thus strategic planning has both external and internal faces.

Strategic Planning as Formal Practice

Considered in the context of human thought and behavior, planning is certainly not new. To the contrary—since planning embodies essential features of *Homo sapiens,* it is by definition as old as humankind.

On the other hand, when one views strategic planning as a structured management discipline and practice, it is barely out of its infancy. The date on the birth certificate of strategic planning is smudged, but it seems safe to say that it emerged as a distinct methodology sometime between the 1950s and the 1970s. Steiner (1979) asserted that formal strategic planning with its modern design characteristics was first introduced under the rubric of "long-term planning" in the mid-1950s by large companies and conglomerates; Mintzberg (1994a) wrote that it "arrived on the scene" in the mid-1960s when "corporate leaders embraced it as 'the one best way' to devise and implement strategies that would enhance the competitiveness of each business unit." Others attribute the emergence of strategic planning to the turbulent environment of the 1970s when, with the energy crisis and other unanticipated events, organizations scurried to find a more pertinant planning system (Rosenberg and Schewe, 1985).

Many would argue that searching for the birthstone of strategic planning is chimerical since planning is an evolutionary process. Certain dating stones can be located, but strategic planning possesses no single event of origin. What is clear, however, is that the last several decades have been a boom period for strategic planning—a development in which higher education has shared.

Strategic Planning in Higher Education

Higher education's courtship with strategic planning was originally focused on facilities and space planning during an era of rapid expansion. The first significant formal meeting of higher education planners was a 1959 summer program attended by twenty-five campus planners at the Massachusetts Institute of Technology. With sporadic meetings through subsequent years, key members of that group (all with physical planning backgrounds) eventually founded the Society for College and University Planning (SCUP) in 1966 with a base of more than three hundred members, most with a primary interest in campus physical planning (Holmes, 1985).

The environment for higher education began to experience notable unsteadiness in the 1970s with demographic, economic, and technological swerves. Higher education costs began to consistently outpace inflation, and foundational stress fractures were detected in the public's support for higher education. Ideas about planning began to change. The 1983 publication of George Keller's *Academic Strategy* marks a pivot for a shift that occurred around that time, as colleges and universities took a closer look at strategic planning. The 1980s' conception of planning emphasized its use as a rational tool for orderly, systematic advancement of the academic enterprise. Guided by an ennobling mission, institutional leaders could march through a series of prescribed steps and actualize their vision. Linear approaches flourished, featuring a cognitive procession of functions: identifying and prioritizing key stakeholders, environmental scanning, situational analysis such as SWOT, specification of core competencies and distinctive competencies, strategy formulation such as TOWS, goal setting, objective setting, action step setting culminating in alpha-omega activity, and evaluative feedback loops. There is much to be said for these rational models, and they continue to propagate fresh sprouts, notably the Baldrige Educational Criteria for Performance Excellence (for example, Baldrige, 2003) and the Balanced Scorecard (Kaplan and Norton, 1996).

From the 1980s through the end of the century, the visibility and volume of strategic planning in the academy continued to ascend. Keller's 1983 seminal work was named the most influential higher education book of the decade by both the *New York Times* and *Change* magazine. By the 1990s, accreditors were touting strategic planning as a *sine qua non* of organizational effectiveness. The 1998 Council for Higher Education Accreditation's *Recognition Standards* set forth an expectation for "evidence of policies and procedures that stress planning and implementing strategies for change" (CHEA, 1998, p. 7).

By the first year of the new millennium, SCUP membership had swelled to forty-two hundred, and its topical breadth grown to a full range of strategic considerations: governance, budgeting, learning assessment, faculty workload, student engagement, market segmentation, endowment management, and so on.

Three Themes

Three themes, embryonically apparent in the 1990s, have come to maturity. First, a rational-deductive, formulaic approach to strategic planning is being tempered with a cultural-environmental-political perspective. Bryson described this theme vividly: "Most of these new management innovations have tried to improve government decision making and operations by imposing a formal rationality on systems that are not rational, at least in the conventional meaning of the word. Public and nonprofit organizations (and communities) are *politically rational*. . . . The various policies and programs

are, in effect, treaties among the various stakeholder groups" (Bryson, 1995, pp. 10–11, emphasis in original).

Second, strategic planning is now increasingly about learning and creativity, with the recognition that college and university leaders need to challenge assumptions and consider radically changing existing structures and processes. Relatively recent conceptions of strategic planning center more on dynamism, flexibility, nimbleness, inventiveness, and imagination. They focus on strategic thinking as opposed to syllogistic analysis. In this vein, Henry Mintzberg observed: "Strategic thinking, in contrast, is about *synthesis*. It involves intuition and creativity" (1994a, p. 108). Bryson eloquently admonished: "Indeed if any particular approach to strategic planning gets in the way of strategic thought and action, that planning approach should be scrapped" (Bryson, 1995, p. 3). Flexibility is a key to organizational success today (Hussey, 1999).

Third, there is a new and powerful emphasis on moving from formulation to implementation, from plan to practice, following Benjamin Franklin's aphorism that "well done is better than well said." More and more administrators are asserting that the purpose of planning is not to make a plan but to make a change. In fact, it is not easy to find a text in today's business schools entitled "Strategic Planning." Most authors prefer the moniker "strategic management," which is meant to embody both thinking and doing. John Bryson speaks of this, in a touching confession in the Preface to the second edition of his acclaimed *Strategic Planning for Public and Nonprofit Organizations:* "The second edition thus reflects a major trend in the field. . . . People also realize that it is not enough just to think—organizations must act as well. And it is not enough just to decide what to do and how to do it—the doing matters too. . . . The result is a book that is as much about strategic management as about strategic planning. I have kept the original title, however, because of the recognition and following the first edition achieved" (1995, p. x).

Critiques of Strategic Planning

Strategic planning is not uniformly applauded. Some have questioned whether it is a vital process, a core function, or the latest fashion in the technique boutique. Williams's canine comparison tugs at our hearts as he laments that strategic planning "lies still and vapid like a tired old fox terrier on the couch. An occasional bark, but no bite" (2000, p. 64).

Upon scrutiny, some of these soothsaying scholars are actually offering a strawman argument in order to criticize strategic planning efforts and trends that go astray, before offering their prescription for success. Robert Birnbaum (2000) focused on higher education's adoption of management "fads," among them strategic planning. Rosenberg and Schewe (1985) contend that strategic plans succeed only 10 percent of the time; they rail against such defects in the planning process as mechanical treatment of the

environment, separation of planners from operators, and resistance of organizational cultures. Sevier's recent words are scorching: "There are probably few phrases that cause a greater group groan on most campuses than 'strategic planning.' The fact is, most colleges and universities look at strategic planning as a path to pain, rather than a path to plenty" (2003, p. 18.).

Then Sevier quickly reverses field, logs a number of lessons learned, and concludes that strategic planning "remains a powerful tool for advancing a college's or university's vision" (p. 19).

Harsh as the criticisms appear, they are largely targeted at poor practices that impede creative planning, and the critics, as noted, often offer stories of both failure and success. Mintzberg, perhaps the most cited writer in the field, makes a compelling scholarly argument in his solidly researched 1994 text (Mintzberg, 1994b). He presented considerable evidence that organizations have often had a counterproductive love affair with planning, weighted down by "lead boots" and slowed down by "paperwork mills." Mintzberg also, however, offsets those negative evaluations with a number of corporate success stories spotlighting approaches that were less rational, structured, and rigid. Tom Peters (1994) offered similar ideas (with a lighter touch), hanging the torturous term "death by a thousand initiatives" on strategic planning and other management trends.

So, Does Strategic Planning Work in Higher Education?

Confirmation bias is a well-accepted principle in social science research. As human beings, we are genetically programmed to seek patterns, to conform cognitive input to what we already know, to explain what we see on the basis of our beliefs about how the world works. Especially in the absence of sound empirical analysis, observers—including the editors and authors of this volume—are prone to see the answers we expect to questions such as, "Does strategic planning work?"

After reviewing the literature and consulting with knowledgeable colleagues, we have concluded that a convincing, generalizable empirical study on the efficacy of strategic planning in higher education has yet to be published. There is, of course, no shortage of anecdotes from both sides of the aisle—that is, from the proponents and the critics of strategic planning in academe. Even in the case studies offered by the authors in this volume, there is no definitive answer to the question.

The research design needed to address the effectiveness of strategic planning poses many challenges. Strategic planning in a college or university occurs in a complex, dynamic, real-world environment, not readily amenable to controlled studies, or even to quasi-experimental designs. It is difficult to parse out the measurable effects of strategic planning from the influences of such other important factors as institutional leadership, demographic change, fluctuations in state and federal funding, politics, the

actions of competing organizations, social and cultural forces, and the like. Thus, to the best of our knowledge, the present empirical evidence about whether strategic planning does or does not work in higher education is less than conclusive.

Implications

Although we understand and agree that skepticism is warranted from a social science perspective, it is fair to note that on the basis of our research, experiences, and reading of the literature, we are proponents of planning. We find that the central lesson from such critical observers, carefully read, is not that strategic planning does not work; instead, we believe that a more defensible conclusion is that planning can be done poorly or it can be done well. Strategic planning can produce successful results, or it can be ineffective.

We are encouraged by the cases and advice related by the contributors to this volume. We thank our colleagues for sharing their thoughts on how, in the real world in which colleges and universities operate, strategic planning—wisely used—can be a powerful tool to help an academic organization listen to its constituencies, encourage the emergence of good ideas from all levels, recognize opportunities, make decisions supported by evidence, strive toward shared mission. . . . and actualize the vision.

Note

1. Mintzberg and Quinn (1996) also discuss a perspective of strategy "as pattern" that defines strategy as consistency in behavior, whether or not intended. This theme is extended in Mintzberg, Ahlstrand, and Lampel (1998), *Strategy Safari,* a fascinating work that describes and offers the historical foundations of ten distinct schools of thought on strategy formation.

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MICHAEL J. DOORIS is director of planning research and assessment at Penn State University, in the Office of Planning and Institutional Assessment.

JOHN M. KELLEY is executive director of the Office of Planning, Training, and Institutional Research at Villanova University.

JAMES F. TRAINER is director of planning and assessment at Villanova University.

Issues and Challenges in Higher Education Leadership: Engaging for Change

Glenys Drew
Queensland University of Technology

Abstract

It is proposed from this study that engaging productively with others to achieve change has never been more critical in educational environments, such as universities. Via semi-structured interviews with a cohort of senior leaders from one Australian university, this paper explores their perceptions of the key issues and challenges facing them in their work. The study found that the most significant challenges centred around the need for strategic leadership, flexibility, creativity and change-capability; responding to competing tensions and remaining relevant; maintaining academic quality; and managing fiscal and people resources. Sound interpersonal engagement, particularly in terms of change leadership capability, was found to be critical to meeting the key challenges identified by most participants. In light of the findings from the sample studied some tentative implications for leadership and leadership development in university environments are proposed, along with suggestions for further empirical exploration.

Introduction

The increased complexity of the leadership role in the higher education environment has gained attention as a subject for study over the past ten years (Coaldrake & Stedman, 1998, 1999; Cohen, 2004; Knight & Trowler, 2001; Mead, Morgan & Heath, 1999; Ramsden, 1998). The list of challenges grows longer as university core business increases in complexity (Barnett, 2004; Drew, 2006; Hanna, 2003; Marshall, Adams, Cameron, & Sullivan, 2000; Marshall, 2007; Middlehurst, 2007; Scott, Coates & Anderson, 2008; Snyder, Marginson & Lewis, 2007). This paper discusses some of the points of tension for academic and administrative staff pertaining to leadership in higher education. It reports the results of a qualitative research study undertaken to identify what a sample of emergent and new senior leaders in one Australian university considered to be the major challenges for universities, and hence for

leaders in universities, over the next five years. The findings suggest implicitly and explicitly the centrality of sound engagement capabilities in meeting the challenges identified. The paper commences with a review of literature relating to perceived challenges in university leadership.

Major challenges

Researchers and workers in the field have explored a canvass of intersecting and potentially competing challenges impacting on academic staff and academic administrators. A number of these challenges relate to engagement of different kinds. For example, some commentators cite the changed and differentiated ways in which students engage with the university (Cooper, 2002; Longden, 2006; Snyder et al., 2007; Szekeres, 2006). Szekeres (2006), Whitchurch (2006) and others consider the effects of change relating to administration and general staff experiences in universities. Offering a quality higher education experience fit for the needs of both the individual student and society (Longden, 2006) might be accepted broadly as a concerted goal of university educators. However, reality may see academic leaders charting a course between different, even opposing, paradigms such as "student as scholar" focusing on fostering enquiry, scholarship and life-long learning, and "student as consumer" where students seek a relatively expedient, efficient, vocationally oriented educational experience. Snyder et al. (2007) and Giroux (2005) note the oppositional yet intersecting forces of mass education and of sound pedagogical principles in higher education, with the student as collaborator and critical reflector on the one hand, and, primarily, proactive consumer, on the other.

Other commentators point to the challenge for academics to partner with cognate disciplines, industry, commerce and government, creating linkages in order to compete for industry-based funding and undertake research and development (Stiles, 2004; Whitchurch, 2006). Here, the notion of academic as independent thinker and researcher vies with the more pragmatic orientation of what Whitchurch (2006, p. 167) terms the "business enterprise project". An enterprise or business manager may preside over a "communication web of [parties such as] directors of research, academic staff, and external partners", requiring an ability to "synthesise academic and business agendas" (Whitchurch, 2006, p. 167). Stiles (2004) sees the most effective leaders in education leadership as those who repudiate boundaries to engage in innovative solutions. The recent study of themes and issues identified from academic leaders surveyed in Australian universities confirmed that relationship-building qualities of engagement are most potent in leadership roles (Scott et al., 2008).

Further writers suggest that partnering around a common sense of vision is vital in the increasingly complex environment of academic leadership (Hanna, 2003; Yielder & Codling, 2004). However, in an environment of potentially differentiated agenda,

background, skill and knowledge bases it is not an easy matter to foster the quality of strategic engagement that can build unity of purpose. Yet it is effort worth taking. Indeed, Snyder et al. (2007) state that complexity in the interplay of different approaches, paradigms and overlapping influences in education leadership are as interesting as the identification of the multiple paradigms themselves.

Over the past decade tensions have arisen between delivering on sound principles of pedagogy and research *and* the necessity to create efficiencies in a global environment of mass education (Coaldrake & Stedman, 1999; Meek & Wood, 1997; Pratt & Poole, 1999; Ramsden, 1998; Szekeres, 2006). Studies in the United Kingdom have shown that downward pressure resultant from efficiency gains "applied year on year by government" (Longden, 2006, p. 179) has resulted in higher education providers "opting for either larger classes or reduced contact time, or a combination of both" (Longden, 2006, p. 179). While the global higher education environment suffers from "resource reduction, increased stress and increased expectations" (Szekeres, 2006, p 141), collaborative engagement with industry is increasingly vital in securing research funds and in enacting research (Coaldrake & Stedman, 1998; Drew, 2006). We see pockets of educational leaders sharing resources, ideas and practices to find more effective, streamlined ways of supporting learning, simply because so many of the challenges are the same.

The need to navigate change and adapt is widespread. Barnett (2004), Hanna (2003) and others point to the challenge of leading within uncertainty in the higher education environment, which involves the courage to take action when the longer-term way ahead is unclear. Not surprisingly, it has been suggested that a capacity to support and develop leaders capable of handling complexity, engaging people in vision, partnering effectively and leading through change is "not a luxury but a strategic necessity" for today's universities (Fulmer, Gibbs, & Goldsmith, 2000, p. 59). Of change leadership, Kotter (2007) sees the ability to guide change as the ultimate test of a leader.

The theoretical framework for the study follows the ideas of John Adair and his Action-Centred Leadership Model discussed by Middlehurst (2007) and outlined in Adair's book, *Training for Leadership* (1968). Middlehurst argues that John Adair's model, with its interlinked foci on achieving the task, building and maintaining the team and developing the individual are key dimensions of leadership applicable to the university environment. Indeed, Middlehurst credits Adair's ideas in relation to this model and Adair's subsequent work as ultimately spawning the formation of the United Kingdom Leadership Foundation. The key feature of the model and its application is its emphasis on the personal, human dimension, in each of the three foci. Middlehurst (2007) strongly argues the importance of taking account of this

dimension in exploring all of the challenges of practice and development in the university leadership setting. Hence, the model, although dated, is a useful reference point for the study. Precisely, this personal, human dimension was found to be an important consideration in exploring key issues and challenges in the empirical study.

The brief scan of education leadership issues confirmed the researcher's interest to conduct a qualitative study to discover what a group of new leaders (having held their roles for one to four years) in one Australian university saw as the key challenges that they faced over the next five years in their roles. The study sought to discover the drivers and influences bearing upon the university leadership role which would appear to have challenging implications for leadership practice and development. For this purpose, in this study, a sample group of university academic and administrative leaders were interviewed.

Methodology

The focus of this study was an investigation of a cohort of mid to senior level university leaders' perceptions on what they saw as the main challenges over the next five years for the Australian tertiary sector and, hence, for themselves as individual leaders. Semi-structured interviews were held with eighteen participants, all of whom were part of a "by invitation" accelerated succession leadership program at an Australian university. The university had acknowledged the need for leadership succession planning in recognition of age-related attrition anticipated globally over the ensuing five years (Jacobzone, Cambois, Chaplain, & Robine, 1998; Yielder & Codling, 2004).

Senior and near senior academic and administrative staff completed the development program over three years – one cohort per year – totalling forty-five staff in all. The program comprised eight half-day sessions over a period of one year. At the end of the third year, participants were asked if they would be interested in participating in the interviews. The offer of invitation to participate in the study was made to all forty-five participants of the succession leadership program cohorts at the same time on the conclusion of the third year/cohort of the program. A total of eighteen, eleven females and seven males, participated in the interviews. Ten of those participants held academic supervisory roles and eight held administrative supervisory roles. This breakdown was typical of the gender and role type breakdown for the forty-five participants who undertook the succession leadership program over the three cohorts. In signing off on nominations, the Vice-Chancellor had paid attention to achieving reasonable balance across gender and role type dimensions, for example, overall. Reasonable balance was achieved, with, overall, marginally more women than men, and marginally more academic than administrative staff, taking part in the program over the three cohorts. The types of roles occupied by the eighteen

participants, listed in terms of multiple to single representation in role type, were: heads of school; associate professors; faculty administration managers; information technology project managers; faculty postgraduate studies co-ordinator/ academic; undergraduate studies co-ordinator/academic; senior supervisor (administrative) in information technology, senior supervisor (administrative) in the office of research, head of research institute/professor; and an information technology research professor. Typically, participants had held their roles for between one and four years.

Hour-long semi-structured interviews with each participant were held to gather data. The following open question posed at the interview was provided to participants approximately one week before the interview. "What do you see as the most significant challenges for university leaders over the next five years?" The interviews were held as conversations with little structure other than to encourage interviewees to provide their views frankly. Qualitative in-depth interviewing based on sound ontological and epistemological principles, and tied to a specific research question (Mason, 2002) characterised the investigation. This methodology, where interview conversations with participants are held in an environment where participants feel comfortable to provide their views, is described by Silverman (2000) as the "gold standard" methodology in qualitative research.

A laptop computer was used by the researcher to record participants' responses. These responses were confirmed with participants individually after the interviews. Data analysis took the form of constant comparative analysis (Cavana, Delahaye, & Sekaran, 2001) whereby themes were identified and coded as they surfaced. As new themes emerged, these were compared with the previous ones and were regrouped with similar themes. If a new meaning unit emerged, a new theme was formed (Maykut & Morehouse, 1994). The thematic analysis also noted any differences observed between the comments of academic and administrative participants, respectively. While the study was set in Australia it is anticipated that the findings may have implications for other university settings given some similarities in the higher education environment globally.

Findings and Discussion

The most significant challenges with major implications for contemporary university leaders, in the view of the group, clustered around the following five themes:

- Fiscal and people resources.
- Flexibility, creativity and change-capability.
- Responding to competing tensions and remaining relevant.

- Maintaining academic quality.
- Effective strategic leadership.

While "maintaining academic quality" was identified mainly by academic staff, the remaining four themes reflected the ideas of both administrative and academic staff. The discussion that follows considers these themes, reflecting the most frequently cited key challenges. Following that discussion, note is taken of participants' views which may be said to have disagreed with the majority view; in other words, who cited as their key challenge an item which was not cited by other participants, or by one other participant only.

Fiscal and people resource issues

Competing for resources, the amount of time taken to gain funds, dealing with paperwork and compliance issues, and concerns at recruiting and retaining quality staff were cited as key challenges by academic staff in particular. This is not surprising given reported reduced government funding and increased monitoring accountabilities experienced by universities in recent decades (Cohen, 2004; Knight & Trowler, 2001; Ramsden, 1998). Concern was expressed at the need for new skills as people in leadership roles in universities are not necessarily experienced in work associated with attracting funds, while perceived increases to the bureaucratic burden sit somewhat uncomfortably on academic shoulders.

One academic participant commented on the amount of time spent trying to gain funds and said that "doing this [funding acquisition] part of the role effectively" was a key challenge. Consistent with the projections of Coaldrake and Stedman (1998), concern at resource constraints in the face of high academic workloads and increased monitoring and reporting requirements was an issue for most of the academics interviewed. This concern was cited by administrative senior staff as well as by academic participants. Participants' comments included the following (note that new paragraphs denote comments from different participants):

> The challenge is working smarter not harder. The . . . significant challenge is to realise that the university sector is changing and that sources of income are coming more from research . . . and hence our focus, primarily, is supporting *that*. (Administrative senior staff member)
>
> We have to learn to . . . make more positive overtures to government. We have to be cleverer about how we do that. (Academic senior staff member)
>
> Individually, the challenge is trying to achieve unrealistic expectations about having the resources to do what is required. (Academic senior staff member)

Indeed, the Bradley Review (Høj, 2008) asserts that strictures represented by reduced resources have impaired universities' capacity to make their utmost contribution to society. Consistent with Hanna (2003) and Knight and Trowler (2001), competing for scarce resources was seen as increasingly driving the academic agenda, and as ultimately forging a binary divide between research and teaching. One administrative leader said:

> I think we will see the tertiary system split again in Australia. I'm not sure whether it will be split along the lines of research or teaching. The "pie" stays the same but the money becomes scarcer, so we have to streamline what we can . . . the implication for the leader is that you are always doingmore with less.

Two out of the eighteen participants specifically foresaw that reduced funding would forge a bifurcation between research and teaching in universities, as, in their view, aiming for excellence in both research and teaching may become problematic because of limited resources. Concern at scarcity of resources extended to concern at recruiting and retaining the right people. As identified earlier, the contemporary leadership mandate extends beyond leadership in research and teaching to include community outreach supported by management of quality, information, finance and physical and human resources (Marshall et al., 2000; Snyder et al., 2007).

A number of academic participants expressed concern that lack of certainty about ongoing funding for projects inhibited their capacity to enlist postgraduate students. While staff retention and succession planning were critical to the research effort, planning staff resources adequately was jeopardised by an inability to offer other than limited contract opportunities. Participants commented:

> We want to achieve things and we have to spend money to get outcomes such as research student numbers . . . but if we don't have the money for the scholarship we lose that potential income.

> For leaders, a big challenge is the difficulty of retaining good staff because of limited contract opportunities; managing with declining budgets; being able adequately to recognise staff . . .

> For the sector . . . it is getting people with right skill sets. Skills shortage is everywhere.

The comments reflect the complexities of building a culture of scholarship along sound educational principles in the face of an increased compliance agenda, increased government intervention and relative skills shortage (Drew, 2006; Rochford, 2006). Nonetheless, participants' comments overall clearly demonstrated a positive

spirit. Positivity and openness to new ways of thinking were evident in their body language and verbal expression. One participant said:

> We have to have the courage to explore options and take risks.

From another:

> It means bringing in different people who are not like us and allowing them to "be".

The challenges identified were seen as requiring an ability to extend outwards and operate flexibility. Cohen (2004) and Hanna (2003) agree that capabilities to streamline processes, adapt and innovate are critical in the current complex university leadership environment.

The need for flexibility, innovation and change-readiness

Views of academic and administrative leaders (participants) were equally represented under this theme, typified in comments relating to preparedness to take risks, to think and act creatively, and to help others deal with change:

> The level of risk that one has to be prepared to take now is a lot higher than previously. Leaders need to be ready . . . to be flexible, creative . . .

> The greatest need is being able to think creatively . . . Some universities can be very set in their ways . . . we need to be able to operate with flexibility as the changes are making big impacts upon us.

Participants' views concurred with Barnett (2004), Cohen (2004) and Hanna (2003) that a university's key challenge is the ability to be flexible, adaptable and know how to problem-solve in order to "meet the demands of an increasingly complex and dynamic environment" (Hanna, 2003, p. 26). As argued by Marshall (2007) and Gayle, Tewarie and White (2003), there is a need for leadership development which addresses key challenges including "how to gain consensus among constituents that change is needed" (Gayle et al., 2003, p. 1). Indeed, a recurring theme from participants was having the courage in leadership to think and act creatively, to take considered risks and to help staff deal with the impact of change. Scott et al. (2008), referring to their study of leadership challenges and issues in higher education, write of the need to assist academic leaders in "making sense of the continuously and rapidly changing context" in which they operate, and that, overall, "what emerges is how important it is for academic leaders to be able to deal with change" (p. 27). Participants' comments reflected the ambiguity of concomitant educational and commercial drivers in higher education which call for an innovative, flexible approach that is prepared to take risks. For example:

> The most important thing, if the sector is to thrive, is to allow innovation . . . [to] shake loose old ways of thinking . . . allowing the risk of failure . . .

Ramsden (1998) observes that academic people fundamentally understand change, given their familiarity with the "uncertain process" of "discovering and reinterpreting knowledge" (p. 122) but, he adds, to accept change, they need to see change and innovation as being genuinely beneficial to their work. The observation resonates with the data of the study in that participants appeared to be very accepting of the need for innovation and change, but found that a significant challenge for them, as leaders, was engaging others in change and innovation. In this regard, participants implied that an important dimension of their role was to help build robust capacity in others to accept and adapt to change. As one academic participant expressed:

> The main challenge for leaders is to communicate that change is taking place . . . and that it [change] will be constant. Being a manager of change is the most important thing that I can be and do for staff so that they can understand . . . how to "be" [to function] within ongoing change.

Marshall (2007), Scott et al. (2008) and Whitchurch (2006) concur that the ability to tackle topical issues and lead universities through major change are the most critical needs in the contemporary university environment. Of organisations generally, Wheatley (2003) argues that change leadership calls for a focus on the people expected to work with the change rather than relying upon a devised system or structure.

Responding to competing tensions and remaining relevant

Challenges associated with responding to competing tensions and remaining relevant were reported mainly by academic leaders. As one academic participant expressed:

> Achieving balance between research and teaching and achieving the right balance intellectually and financially in the sector are major challenges.

Remaining relevant, apprehending the real needs of students and engaging effectively with students were cited. As one participant expressed:

> The challenge is to stay in tune with what the needs are . . . to prepare students in ways which match the real needs.

Other participants said that helping students develop both knowledge and values was a challenge:

> The most significant challenge is to develop in students the necessary generic skills as well as a values base, and help equip them for the

> conflicts between the two that occur in practice. We have tended to train for the ideal world and the world "out there" is not always "ideal"
>
> A challenge is dealing with the clash of values and tensions that leaders encounter in contemporary practice: managing the tension between personal values and outcomes.

The observation resonates with research into the school leadership environment which noted the prevalence of ethical dilemmas faced by school principals, concluding "it is clear that as schools become more complex and the challenges facing the leaders of those schools more acute, that some attention to this area of ethics and ethical dilemmas is required" (Cranston, Ehrich, & Kimber, 2004, p. 15).

Many participants revealed a need to balance the increasing demands of compliance and the leadership aspects of their roles. They expressed a concern that time paucity inhibited their sense of executing all aspects of the leadership role well, including attending as fully as they wished to their relationships with staff, students and peers. This challenge was particularly noted amongst heads of school; for example:

> There is a sense of competing demands to do well in everything. In the tertiary sector, a major challenge relates to compliance . . . The risk is that we place more focus on administration than on creating a leadership environment. That is a balance that needs to be managed very effectively . . .

Participants' comments reflect that responding to competing tensions around teaching and research, administration and academic work, intellectual quality and affordability is not a straightforward matter. As Cooper (2002) and others observe, divergent philosophical differences and relationships between stakeholders such as students, academics, universities, government and commerce spell complexity for managing in universities. This suggests that the differences between treating universities and businesses and managing universities in a business-like way, as discussed by Gayle et al. (2003), represent implicit tensions which need to be managed. Participants' comments, however, suggest a will to engage forward with strategic clarity and positive relationships and values.

Maintaining academic quality

Dissent encountered in academic departments, Ramsden (1998) suggests, frequently concerns leaders underestimating resistance related to academic values and, hence, failing to pay attention to "the need to gain shared consent within a culture that so values autonomy and cooperative decision-making" (Ramsden, 1988, p. 122). A major challenge identified in the study was finding balance around the business model, a

more regulated environment with increased administrative demands, and academic quality. One participant said:

> I do believe that compliance models which have been applied to universities do not realise the unique set of values that universities have. It is acknowledged that we are dealing with public money and we need appropriate processes to ensure that this money is spent wisely, but we should not be thinking of ourselves as operating a business and that acknowledgement is out of alignment with current thinking.

This suggests that universities not allow business imperatives to undermine their unique positions to extend knowledge and learning. The challenge of maintaining academic quality while responding to government policy efficiency changes resonates with some of the literature in the field, globally (Meek & Wood, 1997; Cooper, 2002; Szekeres, 2006). One participant said:

> Responding to those [efficiency] changes whilst protecting the academic environment within is the challenge; getting the balance at that point is becoming harder.

Preserving quality for credible engagement was seen as a priority. For example:

> Our results will be better if we go with quality and academic leadership in our society.

Yet balancing tensions between developing a collegial academic culture and competition is the reality for universities. As one participant expressed:

> For the individual leader, building a viable and collegial academic culture is essential. I . . . think about how we develop sustainable collaborative models . . . In my view, in developing a business like approach . . . we create inefficiencies. It creates an environment where people compete with each other. Part of my challenge is how we share resources across parts of an institution and across institutions as well.

Participants appeared to call for an integrated approach to academic planning to foster collaboration and the preservation of academic values including teaching quality so that these were not sacrificed for business efficiency.

Strategic leadership

The need for sound strategic leadership in particular "change leadership" was equally represented in participants' comments. A need for change leadership that fosters innovation, collaboration and ability to influence was implicit in a number of

comments. Participants saw a key place for leadership which "takes the longer, strategic view", which is inclusive, and is prepared to serve. This concurred with the scan of the literature concerning the need for sound strategic leadership to help staff navigate change and collaborate in new and different ways. This requires learning and understanding of cultural differences within the university and amongst key external parties in order that university members think and act strategically in a global context in cognizance of different cultural mores. Two participants stated:

> . . . Whether it is quality assurance, bringing new courses out, having our client satisfaction improve – you are there to serve . . . It is about changing the whole culture of the university so that people see the bigger picture.
>
> For the leader, gathering people around the strategic aims, and having to deliver on this is the biggest challenge.

Leadership capable of aligning people around strategic vision was emphasised:

> We can't really afford to look only at the short-term picture, but [need to] focus on the strategic, longer-view. This wider thinking takes time to build. A lot of people don't realise . . . that there are now significant implications for staff to adopt a different, wider strategic perspective . . .

This concurs with the view of Yielder and Codling (2004) and others that rallying together people from diverse backgrounds in pursuit of common goals is vital. The conflation of responsibilities, ambiguity and challenge reflected in the literature and participants' comments are confronted by Barnett (2004, pp. 251-252) who writes:

> To see universities and teachers as consumers of resources, or even as producers of resources and on the one hand, and . . . as sites of open, critical and even transformatory engagement are, in the end, incompatible positions, no matter what compromises and negotiations are sought.

Barnett's (2004) suggests an ontological "way of being" approach where the difference-making element is to depend more on building personal resilience to deal with fluctuating circumstances than to depend upon the circumstances being favourable. This epitomises the importance of the personal, human dimension emergent in the study. It might be said that hope of engaging others vests largely on a leader's personal resilience and ethical consistency to model the way positively to others. Authors such as Cranston, Ehrich and Kimber (2004, 2006) and Dempster and Berry (2003) note the ethical considerations that are critical to inspiring trust and engagement. Views that were much less represented in the data are recorded next. One participant cited as the key challenge the increase of paperwork and compliance issues, making tough

decisions, and difficulty retaining and rewarding staff within budgetary constraints. It is noteworthy that, here too, the personal dimension was in play. One participant said:

> It is the reducing budgets, the paperwork and compliance issues. For leaders, a big challenge is the difficulty of retaining good staff because of limited contract opportunities; managing with declining budgets; being able adequately to recognise staff; undertaking performance management constructively, and making tough decisions.

Another participant referred to organisational structure issues creating tensions for heads of school:

> When one is positioned between university executive leadership and ground level, the challenge for the leader, say head of school, is how to manage the stretch between those two. The senior leadership is interfacing between university and government, and the head of school is interfacing between the "coal face" and senior leadership, at the same time as trying to nurture creativity and the academic environment.

Middlehurst (2007) seems to reflect this point, in part, when he suggests that one of the distinctive features of leading in the university environment is "[i]nsufficient departmental autonomy to carry management through" (p. 50). Gayle et al. (2003) imply the importance of university leaders grappling with relevant issues and reflecting on their perceptions and attitudes in relation to institutional structures and organisational cultures in universities.

Implications and Conclusion

The identification of key issues and challenges identified in the study would appear to support the literature discussed earlier in the paper and the theoretical framework identified for the study. Both the literature and the theoretical framework propose the critical nature of the human dimension in issues and challenges to do with leadership. The study revealed that quality engagement, including the ability to deal with change, is a critical challenge for university leaders, and that to neglect the human dimension is to fall short of the potential for task accomplishment, building and maintaining the team, and individual development of those involved. How university leaders balance their time and hone required skills to partner with others to gain funds, fulfil administrative accountability measures, effect process efficiencies, demonstrate strategic leadership and ensure a quality experience for all in their charge all depends to some extent on an ability to engage through change. This concurs with the three foci of the model–task achievement, building and maintaining the team and developing the individual – and recognition of the human element in each of these foci, as necessary in meeting the challenges identified.

The study found that inter-relational capabilities to engage and mobilise staff (through change, for example) were most needed. One gained the sense that it is more effective to focus on the people who are expected to embrace strategic change and innovation than focusing on the structure itself (Hanna, 2003). This is implied in comments such as:

> [a] lot of people don't realise . . . that there are now significant implications for staff to adopt a different, wider strategic perspective.

This might be said to exemplify, as Adair (2005) implies, that leadership is best understood at a personal level, and leaders must know themselves and be clear about what they are aiming to achieve in order to be effective (Miller, 2006). In this example, it might be argued, the role of the leader is critical to a team being able to adopt a different perspective in organisations as changing strategy might demand.

A key challenge noted by the participants in the study, and again reflected in the literature review, was striking a balance between effecting necessary efficiency changes and protecting academic quality. Here, too, the findings are consistent with the triple foci of the theoretical framework model. It might be agreed that achieving such balance depends upon clear communication of the goals, team engagement to pursue and work within perhaps competing agenda, and individual development to foster relevant skills and knowledge (Drew, 2006; Mead et al., 1999). A need to acknowledge the human element in trying to achieve balance in complex working environments such as universities is unmistakable. Remaining relevant within the competing tensions was a key, associated challenge.

In terms of remaining relevant, setting up mechanisms by which to receive feedback from a range of sources may help individual leaders tailor development effort most effectively for continuous improvement. The study suggests the interdependency of knowledge/skill *and* human-centred behaviours for effectiveness in leadership. Scott et al. (2008, p. 15) note that a number of studies, "including a small number from Australia, (e.g. Ramsden, 1998; Drew, 2006), shed light on the specific qualities deemed as important and necessary for leaders now and in the future", and that "similar domains of focus and development can be seen in 360-degree leadership instruments and processes used in higher education, such as the Quality Leadership Profile" (Scott et al., 2008, p. 15). Academics co-developing mutually informing research and teaching agenda in cognate disciplines may assist universities to enrich student learning, reflecting the intersecting borders of discipline and cultural domains which operate in society and life. Teaching that excites enquiry *and* leverages consideration of values has the golden capacity to make a difference; as Ranasinghe (2001, p. 1) asserts, "to make the world a better place".

That the eighteen interviewees demonstrated confidence about the future reflects their strong commitment to key academic and professional goals and a readiness to engage with change.

While many participants expressed confidence for the future, comments from just one or two participants reflected concerns about the future – for example, whether ever-tighter budgets and the difficulty gaining research funds would place university teams in a position where they were hard pressed to undertake core business and deliver services adequately. The study supports the view that leadership support and development deserves increased attention today given the multiple and ambiguous drivers of the higher education agenda, differentiated expectations of students and stakeholders, and the disparate ways in which quality is measured.

As outlined above, the findings of this study align with the interrelated concepts of the literature review reflected in Adair's Action-Centred Leadership Model and the more recent distillation of that work to reveal the personal, human dimension as most critical in key issues and challenges cited. In this regard the study proposes, with Brown (2001, pp. 312-323), that the challenges in higher education will be assisted by "paying greater attention to people and process and more consciously practising the principles of effective leadership".

The above findings have implications for the appropriate development of leaders. The study supports the importance of pursuing task accomplishment in a way that takes account of the team who will do the work, and of the development and growth of the individuals involved. An associated implication is learning from the diversity with which higher education is blessed. This is summed up in one participant's comment.

> The more complex the organisation, the more complex will be the issues to be considered in terms of leadership . . . Leadership is much more dynamic and honest where you are able to enter into a dialogue that is real . . . In complex education/university environments . . . we could make more use of the variety of opinions and expertise in considering all kinds of issues.

The findings have implications for how universities not only espouse but place resources to training and preparing leaders capable of responding to competing tensions, balancing multiple agenda and embracing ambiguity. Tracking the progress of leadership development in universities is not attempted here, but it is noted that, typically in the late 1990s, audits of the "quality movement" responded to the inherent challenges of embracing new paradigms for leadership in the late 1990s, and a need to respond to challenge and change was noted in responses to the quality movement at that time (Mead et al., 1999; Meek & Wood, 1997). Further significant work has been

done since then to suggest the desirability of leadership programs and the usefulness of their contribution to building stronger, change-capable and engaged higher education communities (Barnett, 2004; Brown, 2001; Cohen, 2004; Cooper, 2002; Drew, Ehrich, & Hansford, 2008; Marshall, 2007; Middlehurst, 2007; Scott et at., 2008).

That interviewees in the study indicated that they appreciated being able to voice their key challenges suggests the importance of providing an environment where leaders may share and discuss the challenges they face, and benefit from each others' strategies for meeting challenge and change. Gryskiewicz (1999) proposes the concept of "positive turbulence" where the very challenges of changing organisational landscapes and shifting priorities may become sites for consciously developing climates for creativity, innovation and personal/professional growth. Valuable organisational learning experiences are lost unless there is a way of harnessing and sharing the insights gained.

It has been noted that in the complex roles of education leadership, accountabilities may be blurred (Cranston, Ehrich, & Kimber, 2004). Similarly, this study, and that of Scott et al. (2008) recognised that competing tensions in academic leadership domains represent challenges to leaders, calling for clear, engaging, strategic leadership. The findings have supported the need for strategic leadership development supported by a trustful environment where, for example, feedback on leadership may be gained and monitored for continuous improvement. Similarly, a well-contextualised leadership program may provide a useful forum for sharing new relevant information and the challenges of practice. Institutional support, ideally, is critical to building individual self-efficacy that is necessary to successful leadership learning in organisations (Maurer, Mitchell, & Barbeite, 2002). Finally, Marshall (2007) discusses change leadership as the key difference-making component and challenge of today's university; critical to effecting cultural shift, globalisation, diversity and equality and strategic adaptation. The research findings of this study reinforce this view.

As stated, a key implication of the study is that the findings may inform leadership development in universities. In that regard, a note on the distinctiveness of the university sector in terms of development needs may be helpful and is included, in closing. Middlehurst (2007) argues the distinctiveness of the university sector. He reports research conducted by way of evaluating the Adair leadership courses where "respondents drew attention to the distinctiveness of universities as organizations as well as the receptiveness or otherwise of their institutions toward more executive styles of management" (pp. 49, 50). Of the university environment, Middlehurst (2007, p. 70) posits a number of distinctive features including "[t]he difficulties of managing change in universities where strong democratic and antimanagerial traditions existed"; secondly, "[t]he problem of managing highly individualistic academics with no strong

sense of corporate identity to department or university" and, thirdly, "[t]he need for a level of understanding of management concepts and the freedom to exercise degrees of control and influence in order to exercise effective leadership". It may be noted that each of these allegedly distinctive features pertains to the human element in managing and leading people. Finally, two main limitations of the study are discussed.

There are two main limitations to this study. Firstly, the findings of the study need to be treated with some caution because of the small sample size. Thus, the size of the sample mitigates mounting strong arguments by way of implications and recommendations from the study. The second limitation, and a point worthy of exploration in further research, is whether the views of the sample might have been unduly favourable given that research participants were chosen as individuals receiving accelerated development in a succession leadership development program. A significant proportion of the eighteen participants, and indeed a significant proportion of the forty-five participants overall in the succession leadership development program's three cohorts, have gone on to gain more senior roles at the university, while some have left to take up other higher level positions at other places.

Overall, the findings of this pilot study support the tenets within the literature as to the key challenges faced by leaders in higher education. The study, offers a vantage point from which further studies might be undertaken to ask the same research questions of the same participants in, say, four years' time; to compare results of this sample with those of a broader sample unrelated to a particular development program, and cross-sectorally to gain a sense of shared and different issues and challenges faced.

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The Skills Future Higher-Ed Leaders Need to Succeed

By

Amit Mrig
President and CEO, Academic Impressions

and

Patrick Sanaghan
President, The Sanaghan Group

ACADEMIC IMPRESSIONS

Contents

How do you lead when there is no map? When the territory is unknown? What different skills are needed?

Overview

The swift pace of change and the complexity of the challenges facing our colleges and universities is immense, and is testing the abilities of our institutions' leaders. The playbook of the past does not offer a sustainable path forward for all institutions. Continually finding new revenue sources, discounting tuition to increase enrollment or improve the academic profile of the student body, investing in new facilities to attract faculty and students, etc.—these will not be enough.

Changing demographics, new technologies, fundamental shifts in public funding models, and declining financial support have created a tipping point for the industry. Institutions are facing massive and complex challenges with no clear solutions. These are *adaptive* challenges as defined by Harvard's Heifetz & Linsky (2005)—challenges that require innovation, risk taking, and continuous learning; challenges that the skill sets and traditional strategies of the past are not sufficient to address. There are many of these challenges in higher education:

- Finding the resources to grow while trimming programs and budgets.
- Lowering costs while improving quality.
- Ensuring the liberal arts remain both relevant *and* financially sustainable.
- Expanding into new markets without losing focus, and without chasing opportunities that create mission creep.
- Increasing public trust and support during a time of declining funding.
- Shifting our education models and support systems to serve a changing student demographic.

OPENING THE CONVERSATION

The purpose of this paper is to begin a robust conversation with leaders throughout our campuses. We believe that building the leadership capacity of our institutions is the greatest challenge facing higher education. This is not mere hyperbole. If many of our institutions are to thrive in a complex, uncertain, and rapidly changing world, we will need the very best leaders possible. This will not be easy to achieve, but we want to begin the conversation here. We do not propose that this skillset is an exhaustive list; we hope to build on this work in the future, and we hope you will be interested in contributing as well. If you are interested in becoming involved in this work, please reach out to Amit Mrig at amit@academicimpressions.com.

Heifetz and Linsky highlight the difference between technical and "adaptive" challenges, and this distinction has important implications for leaders in higher education. *Technical* challenges are situations we have encountered before, and we can apply our current knowledge, expertise, and resources to deal with them effectively. What makes a problem or challenge technical is not that it is trivial, but that its solution already lies within the organization's repertoire.

With *adaptive* challenges, there are no clear answers as to how leaders and organizations can effectively respond to the challenge or crisis. These challenges require experimentation, risk taking, a "tolerance for failure" (Farson, 2002), and creative, innovative thinking. They also require significant change—and we know that most people are uncomfortable with change (Kanter, 2012).

The problem is that we often treat adaptive challenges like technical ones, and we apply tried and true strategies and methods that have worked in the past to these adaptive challenges with little success (Sanaghan & Jurow, 2011).

Heifetz and Linsky are not alone in their thinking about adaptive challenges. In their article "Thriving in Ambiguity" (2010), authors Pollak and Wakid use the phrase "Lewis and Clark problems" to describe these ill-defined, complex challenges facing leaders today. They see Lewis and Clark-type challenges as ambiguous situations that have a myriad of variables that can't be solved by data, analysis, or past experience. They require exploration, experimentation, curiosity, and learning.

Given the prevalence of these adaptive challenges, we need a different kind of leader in higher education—leaders who can build bridges from the past to the future, taking the best of our industry and making it more relevant, competitive, and sustainable. The past and current leadership model that prizes vision, academic reputation and track record, communication and charisma, and fundraising expertise is no longer enough to meet our current and future challenges.

3 Reasons We Need a New Skillset

Before we go further in our case for a new leadership skillset, it's worth taking a moment to address the skepticism with which some might greet this idea: Do we really need a fundamentally different leadership stance if we are to succeed in the future? Aren't the calls about the demise of higher education overblown?

Having met thousands of leaders in the tumultuous last decade, the two co-authors are well-versed in the pushback to these new ideas. Let's look at the three most significant reasons that we think a new skillset is indeed necessary to lead institutions through the twenty-first century.

1. We need leaders with the courage to focus on the factors that are within our control.

Many in higher education point to external factors to describe the core of higher education's current challenges—particularly the long-term decline in state funding. It is true that funding on a per-student basis is down 18% after adjusting for inflation, and this has certainly pressured state institutions. But additional funding will likely only address who pays for college (the State or students themselves), not how much it costs to provide the education—that is the real issue.

Increasing the expenditures on education doesn't necessarily lead to better outcomes, and a quick scan of national graduation rates will drive that point home better than any other single metric. Nationally, six-year graduation rates have barely budged in the last 20 years, despite institutions investing huge sums of money and personnel in technology to track students, counselors and advisors, new academic support services, and financial aid.

We cannot continue to do business the same way and expect different outcomes. Innovation in higher education has historically been additive—throwing people and technology at our challenges. That is no longer a sustainable model. As revenue slows, but expenses rise, institutions must wholly re-examine their business models; incremental change will not suffice. In fact, a study by EY Parthenon identified that 800 institutions are at significant risk of not being able to continue their operations (EY Parthenon, 2016).

To reimagine our institutions, we will need leaders who are disciplined and honest in their assessments of their institutions, and who can engage the campus community in honest and invigorating conversations about the future. We will need leaders who are willing to make tough decisions, re-examine whether old ways of doing business will still be relevant in the future, adopt an "opportunity" rather than a "scarcity" mindset, and foster creativity and innovation to blaze a new path forward.

2. We need leaders who aren't just going to "wait it out."

There may be some in higher education with the attitude that "this too shall pass"; proponents of this view point to an improving economy, falling interest in MOOCs, and sharp enrollment declines in the for-profit sector. These individuals may feel that the rhetoric about "disruption" is overblown and that higher ed will continue to tread forward as it has for generations.

It is true that institutions are incredibly resilient—they have been in the past, and we think they will continue to be so in the future. However, we are already seeing the writing on the wall with institutional closures and mergers. Now is not the time for complacency.

Looking back, it's much easier to lead when enrollments are trending up, government funding is stable or growing, and public support is overwhelmingly on your side. Leaders in higher education have benefited from those tailwinds for most of the last century. In this historical context, presidents and chancellors judge their success by how many students they deny admission, how many buildings they build, and how many academic programs they add.

Unfortunately, the higher education enterprise finds itself in a very different state today. For reasons already well documented, colleges and universities find themselves trapped by a large, costly, and aging infrastructure, inherited organizational structures that prevent innovative thinking, deeply held traditions and values that are being challenged, and increasing numbers of competitors unbound by these same anchors (not just the for-profits).

While the mode and means of delivering education remained relatively stable from decade to decade, and while the market for higher education was consistently expanding, institutional leaders could plan in a conservative fashion. But as Clayton Christensen (2011, 2013) and many others have pointed out, this history of relative stability and steady growth puts incumbents in any industry at the greatest risk of disruption.

Nearly one in five college and university chief business officers are worried their institutions are at risk of shutting down in the foreseeable future, according to a 2015 survey by Inside Higher Ed and Gallup.

In the survey, 64 percent of business officers this year strongly agreed or agreed that their financial model is sustainable over the next five years, compared to 62 percent the previous year. That confidence drops to 42 percent over 10 years, roughly similar to the previous year's response of 40 percent.

We believe that Peter Vaill's evocative metaphor "living in permanent whitewater" (1996) applies directly to higher education today. There was a time when things would slow down, and leaders could relax a little. Those days are gone and will never return. Now the admissions season is year-round and every bit of downtime is used to raise more funds, advance the institution's mission, lobby for support, pursue partnerships with industry and community, and get an "edge" on the competition.

In the end, leaders must be conscious of the "confirming evidence trap" (Hammond, Keeney & Raiffa, 2006), where we seek information that confirms our original thinking. We can look far and wide for examples, information, and evidence that tell us "things aren't so bad." But powerful and irreversible trends are pushing us to a new normal, whether we like it or not. This will not simply "pass"; it will only get tougher and more complex to deal with. Hope is not a strategy. We need leaders who are looking for opportunities to invest in their institution's future, not only its present—leaders who aren't content to "wait it out."

3. The old paradigm of the "visionary" president is not enough, given the complexity of today's challenges.

We need more than vision; we need the ability to execute our vision. We need leaders who can create a *shared* vision that is benefited both by the meaningful contributions and authentic buy-in of various institutional stakeholders. The lone visionary is mostly a myth, often perpetuated by trustees who seek presidents who will create a singular vision that "will take our breaths away" (Sanaghan 2014).

For the truly adaptive issues facing higher education, there are no "silver bullets." These challenges cannot be solved with a single initiative or through a single division, or by throwing money at the problem—the big challenges facing higher education today are more complex than that. We cannot recruit our way out of this. These issues are not just about better academic advising, career services, or student support initiatives. Innovative pedagogy will not be enough to put these issues to bed. Increased funding does not, by itself, provide a sustainable path forward.

The challenges are too complex to navigate and respond to alone, or to be given to the president and senior team to solve by themselves. Leaders will not be able to mandate their ideas and programs in a top-down manner, no matter how visionary their ideas appear to be. These are whole-campus challenges and they require whole-campus solutions. Identifying and actually implementing appropriate responses requires the engagement and participation of the whole campus.

Looking back at our history to learn about our future

The reality is that over the more than 300-year history of higher education in America, higher education has always adapted to reflect its times. From the selection of faculty to their role, the scope and shape of the curriculum, to which students are served and what services are provided, institutions have a history of anticipating and adapting to their respective settings and times—this is a key reason why many institutions have lasted hundreds of years. As a country, we created land-grant institutions even during a time of civil war; we significantly expanded community college education in the decades following WWII. Leaders must embrace this history of adaptation and innovation, and remember its lessons as they chart a course into the future.

Summary of Process & Findings

> ***"The organizational adaptability required to meet a relentless succession of challenges is beyond anyone's current expertise. No one in a position of authority—none of us in fact—has been here before."***
>
> (Heifetz, Grashow, & Linsky, 2009).

This quote strikes at the heart of this paper. We believe that we will explore uncharted territory over the next decade, and that there will be few signposts along the way to guide us forward. Heifetz and Linsky of Harvard tell us that "to lead is to live dangerously" (2002). How do we navigate and lead in the "permanent whitewater" (Vaill, 1996) that we find ourselves swimming in? Leaders will have to lead while not having all the answers. This kind of leadership will require courage, a willingness to take informed risks and experiment with new and unproven approaches, and an enthusiasm for continually learning *while* you are leading, in the full view of everyone!

Over the last several years, we have looked deeply into the skillset needed for this kind of leadership:

- We have engaged hundreds of leaders in higher education in discussions about future challenges and opportunities facing the industry. We have created possible future scenarios and asked: "What leadership skillset is needed to deal effectively with these complex issues?"

- We convened an "Open Space" meeting (Owen, 2008) with over 40 people from around the country—from presidents and provosts to leaders in student affairs, enrollment management, advancement, and finance—in a day-long conversation about the future of higher education leadership.

- We have held roundtables with more than 20 presidents from diverse institutions, who are wrestling with their own adaptive challenges to ask the same question.

We have also reflected on more than a dozen years of offering training and professional development to tens of thousands of leaders in higher education on the current issues facing colleges and universities. And we have drawn on our 25 years of consulting experience in higher education on over 200 campuses.

The following represents our synthesis of this learning journey and our best current thinking on the emerging leadership skillset that will be needed for higher education leaders to thrive in the future.

We believe we will need leaders who are:

1. Anticipatory thinkers.
2. Risk tolerant and supportive of creativity and innovation.
3. Effective conveners/brokers/facilitators.
4. Courageous decision makers.
5. Resilient and able to "bounce forward" after a crisis or setback.

Anticipatory thinkers

Most changes that have the potential to reshape the landscape in higher education do not arrive unannounced—innovations in online learning, dramatic shifts in demographics, even changes in the broader economy are usually preceded by multiple signals and warning signs. The key is to pay attention to these signs and, as leaders, to be equally as invested in thinking about "what's next" as we are in managing today's challenges.

The strategic challenge is: How do leaders discern what actually matters from the noise? How do they determine what is a fad versus what is really worth paying attention to? How do they manage information overload? How do they connect the dots and create a coherent picture that people can understand? Leaders will have to develop expertise in "sensemaking" and identify the essential issues and trends that require attention and action (Senge, 2007). And importantly, this sensemaking needs to be distributed throughout the institution, so that everyone on campus clearly understands the challenges, opportunities, and choices facing the institution.

Risk tolerant and supportive of creativity and innovation

No leadership quality will be more important in the future than the willingness to take intelligent risks. Leaders do not need to be free-wheeling entrepreneurs ready and willing to "bet the farm"; rather they need to know which calculated risks are worth taking and how to take those risks by piloting, iterating, and constantly learning along the way.

They need to be willing to entertain creative and new ideas and be supportive of certain "failures" and mistakes—as these will be inevitable. We cannot wait until all the evidence is in and we have a perfect plan. By then it will be too late. How then do we build institutional cultures that support innovative practices, even when the added time pressure makes everything more stressful and the stakes are so high?

Effective conveners/brokers/facilitators

Leaders must become effective facilitators of information sharing across the campus and should spend significant time understanding and engaging with the realities and challenges of their multiple stakeholders. They must let go of the notion that they alone are the "deciders" and learn how to convene diverse groups to share information and perspectives about pressing campus issues. This enables "more people to know more" about what is happening and what really matters.

As leaders serve in this "convener" role, they also become more educated about the current realities facing their institutions because they have a more holistic view of the territory, informed by multiple perspectives. This convening helps build the necessary coalitions and relational capital necessary to mobilize people toward implementing strategic priorities that they now understand more fully.

Courageous decision makers

In the future, the costs of inaction may be greater than the cost of not having the perfect approach or not having full consensus behind it. Higher education's future depends on leaders who are willing to challenge assumptions and long-standing ways of doing business, who have the courage to be honest and transparent with stakeholders, and who are willing to make the tough decisions to move the institution forward.

This does not mean that the leader needs to act as a "lone ranger" and attempt to push decisions downward or act in an autocratic manner. It does mean that after meaningful inclusion, dialogue, and discussion, leaders must be committed to using their best-informed judgment to make the tough calls. They will not please everyone—that's guaranteed—and politically they can be at risk when they act courageously. Yet, they must move forward and make the hard calls or their campus will suffer.

Resilient and able to "bounce forward"

Resilient leaders don't just bounce back from challenges or crises; they bounce forward. The adaptive challenges facing higher education will demand resiliency, because setbacks and mistakes will be made; yet, you still must move forward.

Resilient leaders understand that leading is about learning, so they build-in time and space for listening, reflection, and feedback. Leaders must be committed not only to building their own resiliency, but also to developing resilient leaders throughout their campuses. If they can accomplish this, they will be able to adapt and respond effectively to the inevitable storms and challenges that are coming.

In Detail: The Future Leadership Skillset

In the following pages, we make a case that we must identify, develop, and reward leaders who embody these five characteristics or qualities.

This is not to say that other traits of leaders are unimportant; the core leadership qualities of character, competence, compassion, and integrity will always remain. And in order to deal with the adaptive challenges facing higher education, our leaders need to be completely trustworthy, and be willing to put others' interests above their own. We know that these qualities are by no means givens, and there have been numerous leaders derailed because they lack these fundamental qualities of leadership.

But in this paper, we want to shine a light on other, less-obvious qualities of leaders, and identify the traits that are highly specific to the higher education industry and its future.

Quality #1: Leaders who are Anticipatory Thinkers

> *"The real voyage of discovery consists not in seeking new lands, but seeing with new eyes."*
>
> – Marcel Proust

Why anticipatory thinking is needed

We believe the future of higher education will be saturated with complexity and ambiguity, and the pace of change will only increase. Anticipatory thinking is not about

"predicting" the future; no one can do that. But leaders throughout our campuses can develop the capacity to look forward in different ways, at different things, and "make sense" of fast-moving and enigmatic issues and trends.

Notionally, we define anticipatory thinking as the ability to identify trends and potential opportunities and challenges in the wider external environment, and to understand the strategic implications embedded within them. Anticipatory thinking also includes the ability to "connect the dots" across emerging trends and issues, so that leaders and stakeholders can respond to these trends coherently.

We are not talking about just periodically conducting a SWOT analysis. Anticipatory thinking requires a disciplined approach to looking at the external environment and landscape and using multiple perspectives to make sense of what you are seeing and learning. It isn't just a lot of data gathering; we often do far too much of that and then get buried by information overload.

What anticipatory thinking consists of

Thinking, not doing

Anticipatory thinking is just that—thinking. Most of us spend our days "doing." We run from meeting to meeting, from 7:30 a.m. to 5:00 p.m., and at the end of the day, we are not quite sure what we accomplished. To be an effective anticipatory thinker demands that we are the masters of our schedule, not the other way around. We must take disciplined steps to carve out time to think, read, reflect, and connect the dots. Whether this is one hour per day or one day a month, we cannot truly develop this skillset unless we create the time for it.

Many of our leaders think that the busier they are and the harder they work, the more value they are adding. But this is not true. Leaders who are frenetic and who are constantly fighting fires are actually not serving the institution well at all. Leaders have a responsibility to step back, reflect, think about the future, and to ensure that they are preparing for more than just meeting the institution's short-term needs and objectives.

Horizon thinking

Leaders must be careful what they take for granted, and must pay attention to the "harbingers of change" that appear faintly on the horizon. For example, the notion of a "free" college education was discussed here and there years ago, and was often summarily dismissed as "impossible." Yet, this improbable notion has become a powerful reality for many states and students.

Similarly, we have taken for granted that international students will continue to seek enrollment in the US in great numbers, and many institutions would not survive without these students. And yet, recently proposed immigration policies are causing many students to look elsewhere; what will the implications be if we lose access to these academically competitive and full-pay students?

Consider a third example: the hugely underserved market for adult students. Nonprofit institutions were content to treat these students differently—funneling them to University Colleges, Extended Education divisions, or letting the for-profit sector serve these students. Most institutions failed to see the size of the potential opportunity or the fact that the demographics of their "traditional" students would turn against them in the next decade.

These demographic shifts did not happen overnight. Nor did the demographic shifts in the Midwest and Northeast—regions that are seeing continuing decline in the number of high school graduates each year. This is true of other trends, as well. We have been witnessing the de-funding of higher education for more than 30 years. And technology and the democratization of knowledge began two decades ago with the ubiquity of the Internet.

The great recession may have accelerated or expanded these trends and opportunities, but they have been on the radar screen for many years. And yet in recent history, most institutions have been forced to cut programs, lay off faculty and staff, sell assets, and in extreme cases, close their doors. In most cases, these reductions could have been less severe had the institution created opportunities and mechanisms to:

- Identify emerging issues and trends;
- Openly discuss their implications with campus stakeholders, especially the negative implications;

- Identify and prioritize the adaptive challenges; and
- Plan strategically to address these challenges for the future.

What's more, these institutions could have done more than just mitigate cutbacks; they could have positioned themselves to take advantage of new opportunities to grow. This would have taken courage and a tolerance for risk.

Waiting for the future isn't an effective leadership strategy. As the pace of change continues to accelerate, horizon thinking becomes critical. Leaders need to anticipate trends, position against threats, and seize opportunities.

Engaging others in an ongoing discussion about the future of the industry

> *"Perspective is worth 80 I.Q. points"*
>
> – Alan Kay

Anticipatory thinkers intentionally design conversations throughout their institution to talk about the future. They know multiple perspectives are key to surfacing the most salient data points. STEM faculty are paying more attention to different trends and data than Humanities faculty are. Front-line fundraisers networking with high net-worth individuals will see different trends than admissions staff talking with prospective students. No one perspective is more or less important than others, and leaders as well as stakeholders need a broad sharing of multiple perspectives to create an integrated view of the future.

Harnessing the multiple perspectives and sharing these across and among stakeholders is key to sorting out the signal from the noise. Just seeing a lot of blips on the radar screen doesn't help much. The key is to collectively identify and prioritize the most important trends to watch. Connecting the dots across time to better understand the implications for a campus is the essence of Anticipatory Thinking.

For an example of one activity that can help bring these perspectives together, read NACUBO's description of the Future Timeline exercise and AI's article "24 Higher-Ed Leaders Look to the Future."

It's critical that these conversations are structured and designed in the right way. Are you asking a diverse set of stakeholders questions like:

1. **How will students learn in 10-15 years? How do we develop our faculty to be able to teach to these new methods?**
2. **What new technologies have the potential to transform our world (think about artificial intelligence, virtual reality) and how we will we adapt?**
3. **If we had to redesign the institution from scratch, what would we do differently?**
4. **What are the long-term impacts AND side-impacts of the decisions we are making?**
5. **What are the events, trends, and issues that will impact our institution over the next 10 years?**

Looking Outside the Academy

It's not enough to look only at higher-education data and trends. Anticipatory thinkers also have the discipline to look outside of higher education to the wider world. Healthcare has experienced many of the same challenges higher education has—changing funding models, new technologies that enable personalization, integration of care, and the push to define measurable outcomes. Media and publishing have seen their businesses completely disrupted by the Internet, democratization of information, and new entrants. Companies in these industries have made major mistakes and learned important lessons—what can we learn from them? Like our institutions today, they have had to deal with complexity, organizational culture, and rapid change in order to survive. Can their lessons learned be of service?

One of the barriers we notice in our conversations with leaders, especially academic leaders, is a real hesitation to apply anything from the corporate sector to higher education. That just doesn't make sense. We recognize that the academic culture—its objectives, motivations, incentives, and rewards—is special and unique, and that it is different for valid reasons. But academic leaders still need to deal with complexity, manage change, build trust, engage in strategic thinking, provide direction, and prioritize goals. Other organizations have the same challenges, and there are many companies worth learning from: companies that have bedrock values, environments that foster learning and innovation, collaborative cultures, and inspiring missions that go beyond quarterly profits. These companies have had much success adapting to changing conditions in the marketplace. Think of Google, WL Gore, Ideo, Starbucks, and Southwest Airlines. We can learn from others outside of higher education. Anticipatory thinkers realize these resources are out there and access them.

Smart anticipatory thinkers keep up with technology and media companies, industrial design, international events, and the current temperament of Wall Street, among other factors. Consumer preferences and behaviors are continually shaped by these trends, and the more dots you connect as an anticipatory leader, the more likely you are to distinguish real opportunities from fads.

Taking field or scouting trips

A strategic way to shift your mindset is to step outside of your everyday setting and visit other institutions and organizations, even those *outside* of higher education, to learn from their successes and mistakes and to understand: how they operate; conduct business; innovate; manage their culture effectively; and deal with problems. It's important that these field trips aren't just "dog and pony shows" where a half-day or one-day stopover shows only the wonderful, sparkling stuff. This isn't helpful to anyone and is often more of a public relations experience than anything else. Choose places you can actually learn from, and spend more than a day visiting them.

Identifying aspirational peers or companies that have successfully innovated, especially under difficult circumstances, can be a highly impactful way to see your own challenges from a different perspective. Knowing how others have dealt with their own adaptive challenges will inform and challenge your thinking; it also might give you some realistic hope that ambiguity and complexity can be dealt with effectively. Success and failure both leave clues. Adaptive leaders strive to search for the lessons and leverage what they have learned from others, rather than repeat others' mistakes.

Engaging in sense making—not just anticipating

Sensemaking is a term first coined by Karl Weick (1995) and has been further developed by Peter Senge (1996) and Deborah Ancona (2005). These thinkers describe sensemaking as a process wherein individuals and organizations attempt to develop a deeper understanding of the problems or challenges they are trying to solve. Sensemaking requires leaders to facilitate conversations between individuals and groups who hold different, even contrary, perspectives and vantage points. This might seem counterintuitive to many leaders who strive mightily to keep opposing views and stakeholders separated, in order to avoid the discomfort of conflict.

Yet sensemakers often see conflict as a *resource* to be explored, not avoided. They are curious about the different viewpoints. The key outcome of these conversations is to develop a *shared* understanding (not necessarily agreement) of what is going on in the larger environment and within the organization. This can only happen when multiple perspectives are shared in a constructive manner. We now have many methodologies that allow us to bring large and diverse groups together (e.g. Future Search, Open Space Technology, World Café, The Interview Design, Liberating Structures) to gain a widely distributed understanding of institutional issues. The primary purpose of these conversations is to help create a "map" of the world you live in, so that you can make informed, coherent choices and decisions even when things are quite fluid and changing rapidly.

Leaders need to meet with multiple layers throughout their campuses. Often, listening only to those closest to them or at their own peer level can trap them. It isn't enough. Seek the ideas and perspectives of others throughout the institution. These individuals will see different things and will see things differently. Their insights can be useful in developing both your anticipatory thinking and your sensemaking ability.

Just gathering information and insights from multiple stakeholders, however, is not enough. Leaders must engage these same stakeholders in a sensemaking process whereby this information is assimilated, synthesized, and prioritized. These groups must audit the institution's current strengths and challenges as they relate to these trends—because not all opportunities are the right ones for an institution to pursue.

Anticipatory Thinking in Action

We worked with one campus where the new president created a powerful and strategic "scouting trip" that began an exploration into the adaptive challenges facing his institution. The president understood that the campus would have to change in dramatic ways to deal with some of the adaptive challenges and pressing financial problems it was facing. The former leadership had "kicked the can down the road" for years, failing to conduct the tough conversations that were needed or to make any difficult decisions that would upset people. At the same time, there was more than a fair amount of denial and belief that "this too shall pass" among campus stakeholders, especially the faculty.

The president selected five highly accomplished and trusted academics (no administrators) to help the institution "Discover the Future of Higher Education." He relieved them of their teaching and service duties for a semester, and they went forward conducting research, visiting other campuses, attending conferences, and talking with their colleagues across the country. When they returned from their learning journey, they crafted a report that was shared widely across the campus, and they engaged in some difficult conversations about the implications of the report and the future of their institution.

The essential message of the report was: Their current business model was broken and some dramatic changes would be needed. The report proved to be a "game changer"; it helped highlight the strategic decisions and actions that would enable the institution to thrive in the future. It also mobilized the primary stakeholder groups (e.g., the faculty senate, the administrative council, the staff council) towards collective action. Everyone realized that this was not the "president's problem" to solve; they had to deal with it together.

The president intuitively knew that if he had provided the same dire message, it might have fallen on deaf ears, regardless of all the facts and data he could provide. But when he asked deeply respected faculty to explore the future of higher education, the faculty were able to create an informed and trusted database that allowed a very different set of conversations to take place. This also allowed for a much deeper understanding of the issues involved—because it was no longer solely the president's task to define and articulate the challenges.

There was risk attached with this "scouting" approach, and the new president was willing to take that risk. Being proactive in the face of adaptive change is an essential leadership strategy.

Quality #2: Leaders who are Tolerant of Risk and Failure

Why risk tolerance is needed

Risk tolerance, managing risk, and being tolerant of failure aren't widely discussed in higher education. Many faculty and administrators view themselves as stewards of institutions that have existed long before themselves, and will persist long after. This caretaker mentality can make bold choices that risk the future of an institution unappealing. Further, many in higher education are risk averse by nature, having been drawn to the academy in part for its stability, predictability, and security.

Yet setbacks, failures, and mistakes will be inevitable (Farson & Keyes, 2003; Gladwell, 2008) and how our leaders deal with failures and learn from them will determine their effectiveness and their ability to move their institutions forward.

What risk tolerance consists of

Willingness to learn from failure

The key to creating a culture that embraces creative ideas and approaches is to not penalize individuals for failure. In a system that values precision and accuracy, this can be a counterintuitive approach. Yet institutions need to shift their mindsets from seeing only risk to seeing opportunity. Shifting these mindsets will not be easy and will take time, and leaders need to be intentional about creating safety. Without this safety, no one will put themselves at risk, nothing will be learned, and no meaningful forward progress will be made (Farson & Keyes, 2003).

One practical recommendation is to define what a smart failure is. If leaders can define the boundaries for experimentation, what risks they are willing to accept, and what smart failure is compared to an unacceptable outcome, they can create the psychological safety for their teams to think differently.

Not every institution has the same ability to withstand missteps. We know many institutions in which the margins are razor thin, and for whom experimentation with a new enrollment strategy could—if it fails—result in 50 fewer students enrolling and seriously jeopardize the institution. In those cases, experimentation might be limited to small-scale pilots affecting only feeder schools that traditionally don't send more than 1-2 students to the institution. Whatever your institution's specific constraints are, defining smart failure leads to smart risk taking.

Incentives and motivations

Leaders need to be mindful and attentive to both intrinsic and extrinsic motivations. Both are powerful drivers of whether individuals feel comfortable and supported taking risks. Intrinsic motivations have to do with how people are naturally wired; extrinsic motivations have more to do with incentives and rewards to encourage certain behavior.

Research shows that some people are motivated by "promotion" or "playing to win," while others are motivated by "prevention" or "playing not to lose" (Halvorson, Higgins 2013). Promoters are generally comfortable with risk and trying new things; they tend to see the positive outcomes, work quickly, are optimistic, and are highly motivated by accomplishing new things. Prevention-minded people, on the other hand, work more slowly and methodically; tend to be prepared for the worst, and are nervous about moving too quickly.

Understanding and tapping individual motivations are at the heart of effective leadership and especially so when leaders are trying to encourage more creativity and innovation. Some people might rush in quickly, ignoring obvious warning signs along the way. Others will be naturally "hard-wired" to be more skeptical, concerned, and will see the reasons why things won't work out. Increasing an individual's or organization's risk tolerance isn't about having a higher percentage of promotion-minded people. Empowering smart risk taking is about both:

- Providing encouragement, support, and incentives for those who are naturally less comfortable with risk, and
- Creating a more disciplined process for those who are already more comfortable with risk.

When it comes to extrinsic motivations, there are many instances where our words and actions don't line up, creating confusion and reinforcing the status quo. Leaders might talk about the importance of thinking differently, innovating, and taking risks, but if the incentives don't support such action, very little will actually happen. For example, an institution that wants to engage in more cross-disciplinary collaboration for the purposes of new academic programs or scholarship, must ensure that promotion and tenure criteria don't penalize faculty. This means looking at how they assign credit for such work, or how they evaluate the number of articles produced, or the quality of journals in which the work was published, etc.

Fundraising is another example—leaders might talk about the importance of a sustainable fundraising operation, but their actions may indicate otherwise. Institutions typically prioritize dollars in the door *today* over other metrics that are leading indicators of *tomorrow's* results (like alumni participation and engagement).

Such examples are numerous in higher education; the more we strictly adhere to old measures of success, or the more we hold people accountable only to short-term results, the less likely we are to create the space for bold thinking and new ways of operating our institutions.

Moving from a scarcity mindset to an opportunity mindset

Many leaders have responded unproductively to economic scarcity in recent years, often by freezing in place. By this we mean that prevailing beliefs are uninspired and self-limiting – "we're carrying too much"; "change is hard"; "it won't work"; "we never have enough resources"; "we've always done it this way"; "let's stick with the tried and true."

The danger in this thinking is operating in a passive mode (reacting to events as they occur) as opposed to a proactive mode (responding thoughtfully and opportunistically to changing conditions). We become skilled at advocating for resources, but not at creating them.

This scarcity mindset engenders powerlessness and inaction, as institutional leaders accept that their institution's destiny is driven by external factors and agents. We need to re-frame the conversation from "we need more funding from X and Y" to "here's what we can do today," and we need to ask questions like these:

- How can we achieve higher levels of quality and service through our own efforts?
- What investments can we make to create sustainable long term returns for the institution?
- How can we use our current constrained environment to re-energize and re-focus the institution?

There are opportunities that can be seized during times of constraint and scarcity, but adopting this institutional mindset requires bold, focused, visionary, and persistent leadership. It requires our leaders to counter the scarcity mindset and inspire us toward more productive and investment-oriented habits of thinking. This more productive mindset realizes that resource constraints can actually be a positive force for good that can drive the creativity and innovation needed to confront the challenges ahead.

Securing the money needed to pursue the opportunities

Creating a culture is one thing, but putting resources towards new opportunities is equally important. Not all ideas require a big investment, and institutions should think carefully about how they pilot and iterate initiatives so that risk is limited. For example, consider Bay Path University's approach to testing and then scaling up new academic programs:

- Rather than hire a full-time person for a new program or initiative, consider adding someone on a part-time or special-projects basis.
- Consider adding a minor before a major.
- Leverage online programs and adjuncts instead of adding full-time faculty for new programs.

These strategies enable institutions to start small, prove the investments will be successful, and generate a return for the institution. Starting small helps the institution innovate much more clearly.

However, there are occasions when starting small and then scaling up is not always possible. New software packages that can help with student retention and certain academic programs like nursing or speech language pathology can entail large start-up costs. Institutions need to have the

funds available when opportunities present themselves. Leaders should be disciplined in their budgeting process so that every year they allocate a certain percentage of the budget (usually 2-5%) for a special initiatives fund. This can be allocated at the president's or senior cabinet's discretion. We know of one institution where each unit's budget is cut by 1-1.5% a year and there is a forced reallocation of resources. The funds are reallocated according to the strategic priorities so some departments receive significant increases, if their work ties directly to the institution's strategic objectives.

Another strategy for securing these dollars is to secure donor support for a "president's fund" that can be used opportunistically to enhance the institution. What's critical is that this type of innovation is budgeted for consistently and in advance.

Risk Taking in Action

We spoke at length with one president who turned around a small, at-risk private university in 1997. At the time, the institution was facing an incrementally shrinking budget; the faculty were not paid well compared to their peers at other institutions; and the university had a tremendous deferred maintenance backlog. Facing the prospect of continued decline if the institution remained mired in "how we have always done things," the president looked for opportunities for new growth. Both an anticipatory thinker and a risk taker, the new president approached the board with the proposal to reallocate $600,000 out of a $26 million operating budget to invest in launching online programs.

This was a calculated, but significant risk. After all, the roofs were leaking. And in 1997, there was widespread skepticism about the credibility and sustainability of online education. However, this president saw an opportunity to open the doors of the institution to under-served students and to grow enrollment and revenue. The decision paid off. Though the new online programs generated less than $90,000 in revenue the first year, today those programs exceed $85 million, accounting for half the institution's total revenue.

What set this leader apart from his predecessors was his opportunistic mindset and his adherence to Peter Drucker's budgeting discipline, whereby organizations regularly abandon activities that are not deemed productive enough in order to free up resources for growth. Every year since 1997, that institution has set aside 2-3% of the budget to invest in growth initiatives. The president knew that this ongoing discipline—as well as the initial risk—would be necessary if his university was to not only survive, but thrive in the decades ahead.

He also knew that he needed to shift the entire campus' mindset towards taking initiative and learning from risk and failure; sustaining the institution's new growth trajectory would require more than just one opportunistic thinker at the top. He had inherited a culture that was content to limp along, that wanted to avoid taking big risks and making mistakes. To turn the rudder on that culture, he began with a thorough mission review and conducting surveys and focus groups, and involved the campus in drafting a set of core values that could actually be lived at the institution. They used the Organizational Culture Inventory® to measure their progress, and they invested in leadership retreats and leadership development programs based on these core values. Over 150 managers have gone through the program and remain with that university today.

Quality #3: Leaders who are Effective Conveners and Facilitators

Why effective conveners are needed

We tend to have a very singular definition of leadership, celebrating and crediting individual figures for organizations' successes. To be sure, Steve Jobs, Henry Ford, and many others are notable for their brilliance, vision, and ability to bring their visions to life. But the reality is that these are rare, if not exceptional, cases. In most organizational settings, we need leaders who can engage the collective minds and will of the organization's stakeholders to set and achieve strategic priorities.

The notion that the leader is paid to set the vision is a fallacy that is still accepted by scores of institutions and their boards. For example, many trustees ask potential presidents to describe their vision for the institution as part of the hiring process and then push new presidents to create a strategic plan as quickly as possible. But without a deep understanding of the campus culture and community, and without the support, buy-in, and contributions from the campus community, the president's ability to effect meaningful change or progress is significantly diminished.

Leaders who are conveners, who take a more facilitative approach to leadership, resist this urge and bring stakeholders (including the board) together to create alignment, shared understanding, and action.

What being an effective convener consists of

These leaders are defined by several common traits, including:

Humility

If your operating assumption is that you have all the answers, you're more likely to think that involving others slows the process and dilutes the outcome. Leaders who are effective conveners realize that it's not a question of how smart you are. All leaders are smart, but not all smart people are leaders. There is a big difference between leadership and "smartship," and we need a lot more of the former and less of the latter. The challenges facing institutions are too complex and are changing too quickly for one person to figure it all out alone. And even if you did figure it all out, conveners recognize that they are only one person and that to move an entire institution requires the support, buy-in, and commitment of the whole campus (Badaracco, 2002).

A willingness to trust others

To lead collaboratively as a facilitator or convener means wielding influence, not authority. Conveners' natural orientation is to trust others. They are okay with relinquishing some control of the ultimate outcome because they genuinely believe in the value that others bring to the table.

They can and must influence the direction of the institution—their unique vantage point gives them insights that others won't have—but they know they cannot mandate it, even if they have positional authority. They know that the collective direction, even if it's not exactly their own, will be a better outcome because that direction has the buy-in and support of their constituents. These leaders seek commitment and not just compliance from those with whom they work.

A commitment to go beyond the usual suspects

Every campus has a common set of constituents who regularly volunteer or who are regularly appointed to important task forces and committees, but a facilitative approach to leadership requires going beyond bouncing ideas off of the "usual suspects."

True collaboration comes from inviting all stakeholders to the table, even the curmudgeons who operate with a great deal of skepticism. When you only engage the usual suspects, you risk groupthink and you most likely miss those who have valuable ideas to contribute, but who aren't likely to volunteer (Janis, 1972).

Bringing diverse groups together is the only way to truly address the adaptive challenges we face in higher education. Only when we can learn from one another, having healthy discussion, debate, and even some positive

conflict, can we begin to see new ways of tackling our challenges (Heifetz & Linsky, 2005; Heifetz, Linsky & Grashow, 2009).

This will take some courage, because often when people have not previously been invited to participate meaningfully, they can be suspicious about intent and can prove difficult to deal with. Conflict between groups can emerge quickly, and trust can be diminished. How these challenging interactions and conversations are managed will set the tone for the openness and honesty of the discussions.

An ability to connect with and across other cultures

Leaders who are effective at convening multiple stakeholder groups, especially those that cross boundaries like academic disciplines, or the faculty/administrative divide, have the opportunity to learn and connect with the multiple cultures across campus. Most universities, especially highly decentralized ones, have multiple cultures. Leaders who can either become or identify and engage with "cultural travelers" who communicate regularly across these boundaries (Sanaghan, Goldstein & Jurow, 2001) are more likely to lead effectively. Leaders who can mentor across boundaries, encourage collaboration on projects, and build cross-divisional teams that spearhead the implementation of the strategic plan and important initiatives can model what it means to be an effective convener and collaborator.

Creating alignment

Collaborative leaders who recognize and tap the value of multiple teams are better at creating the necessary alignment to move a campus forward. The key is bringing together people from multiple departments and divisions; too often collaboration is limited to your team or division. Very few institutions collaborate across silos effectively. Here are a few examples:

Student affairs divisions are often very large, with multiple departments each "owning" a piece of the student lifecycle or the student experience. There are well-intentioned teams working towards the same purpose, but not necessarily in sync with one another. Quite often these teams don't get together to troubleshoot issues meaningfully and effectively, to share best practices, and to ensure alignment and synchronicity across their efforts. How effectively do they collaborate with academic advising and other front-line teams that may report through other divisions?

Nowhere is decentralization and lack of alignment more obvious than across academic departments. Within the same institution, you can find certain departments, schools, or colleges that excel at online learning, while others struggle mightily. The quality and effectiveness of teaching and research varies widely within an institution. How institutions design and deliver programs, craft developmental education programs, and balance teaching with scholarship also varies—these institutions could be exceptionally well-served by convening conversations across disciplines and across departments to share information and practices.

Leaders who are effective facilitators and collaborators see the power of this type of information sharing; they know that with the increasing complexity and ambiguity, individuals can't have all the answers, and must rely on the skills and ideas of others to solve thorny, complicated issues. They will have to craft processes that gather multiple perspectives; help facilitate discussion, debate, and dialogue about campus issues; and act as a collaborative broker of cross-boundary information and problem solving (Sanaghan & Lohndorf, 2015).

Challenging assumptions

Many leaders avoid bringing large groups together because they think they can't possibly "get anything done" with large groups. The conventional wisdom is that if you want to move an agenda forward, smaller groups are better than larger ones. The problem is that the smaller the group, the more limited the collective knowledge is, the more likely it is that biases will influence decisions, and the more likely it is that you will rely on tried and true solutions versus creative and "outside the box" ideas.

That said, it is also possible to overdo collaboration. Well-intentioned leaders can get stuck in endless meetings, endless process, and endless debate. They don't make decisions and don't act quickly or effectively on new information. They mistakenly focus on consensus and making everyone happy with the decision and outcome.

A better approach is to ensure the process is fair—that everyone is heard, that the process followed has integrity, and that clear criteria for decisions and actions are established and communicated—and then ultimately to

make a decision (Kim & Mauborgne, 2003). The goal has to be to take action, not to avoid making a tough decision using the guise of consensus and collaboration.

Rather than overreliance on committees, consider forming task forces and work groups with explicit charters, missions, and deadlines. These groups are formed for a specific and timely purpose and are then disbanded when the work is complete. These groups should have clear purposes and mandates, and the resources needed to do the job.

Treating conflict as a resource

Even though it may not feel comfortable, conflict is not something to be avoided or suppressed at all costs. Effective leaders know that when you bring groups together, especially mixed groups, you will have different viewpoints. If you've assembled the right groups with the right mix of people, you will have impassioned arguments, and will likely hear more than one option or recommendation that has merit. This is a good thing, and conflicting views can be a resource in these cases.

The leader must normalize the idea of conflict being healthy for his or her group. When occurring in a culture of respect and integrity, conflict can help build relationships across the team as team members come to understand each other's perspectives. Conflict can help create open-mindedness, critical and independent thought, and an ownership mentality for the group's work. And because it forces us to look at issues from a perspective other than our own, conflict—when managed well—often will produce a better overall outcome.

Effective Convening in Action

In 2014, we had the pleasure to be involved in and witness the turnaround of a community college facing financial challenges. The incoming president brought a commitment to collaborative leadership and initiated a process during which he convened hundreds of faculty to discuss the institution's financial realities and its future. He knew that the new strategic plan would be shallower than it could be if it didn't tap the brainpower of the whole institution, and that it would be difficult, if not impossible, to implement if the faculty had little part in development and felt no ownership of it. He also knew that there were powerful ideas and information already present on campus that simply hadn't been tapped in previous planning and budgeting cycles.

As part of the process, the president convened over 200 faculty for an all-day planning activity. To create meaningful conversations and solicit ideas and feedback from 200+ faculty is a real, if not daunting, challenge. The leader knew that the event had to be well organized, the activity designs had to be powerful and efficient, and the faculty had to be reassured that the process was of vital importance, and therefore worth their time and effort. The strategic planning task force planned the day in detail: the president personally welcomed the faculty and conveyed the importance of their contributions, and the faculty then engaged in a SWOT analysis, a future timeline activity, and a sensemaking activity after lunch. The design of these activities emphasized idea-gathering and transparency, and every individual present had the opportunity to contribute ideas and questions, so that no individual or group could dominate the planning day. This one day got the campus community on the same page and helped to develop a roadmap for moving forward. In a short time, the planning task force was able to gather, synthesize, and report back the opportunities for moving forward that the faculty were able to identify.

The transparency and inclusion of the planning process built trust, and convening all stakeholders to help chart the future has since become a regular part of the institution's planning and budgeting activities. Applying this same approach to the budgeting process has helped the institution bring consistency to the budget and reinvest surplus funds strategically in its academic programs.

Key to the success of this approach was the leaders' willingness to trust others and that they were not afraid of involving large groups in the planning process; they knew that as long as the forum was designed and facilitated well, there would be incredible brainpower that would be tapped. There are a lot of proven methodologies for leveraging the brainstorming power of large groups: Open Space, World Café, Future Search.

Quality #4: Leaders who are Courageous Decision Makers

"Inability to make decisions is one of the principal reasons executives fail."

– John C. Maxwell

Why courageous decision making is needed

In order to make substantive and positive change, leaders will inevitably confront resistance from multiple sources including: the heavy weight of tradition, the embedded structures and policies of the organization, stakeholders who fear what they may lose as a result, the economic realities of how the institution is currently funded, among others. These barriers to change make even the smallest movements difficult, let alone sweeping decisions that offer the chance of reshaping an institution.

As we've shared in this paper, there are a number of strategies a leader can and must employ to ensure they work collaboratively with stakeholders to arrive at the best strategy and direction for the institution. But *knowing* what to do isn't the hardest part about leadership. The hardest part about leadership is *doing* what you need to do. In the end, leaders must have the courage to act—to make the tough decisions even in the face of incomplete information or conflicting perspectives.

What courageous decision making consists of

Disrupting the status quo

In any organization and certainly in higher education, there are numerous forces at work to reinforce the status quo, and frankly it's much easier to go along with these established norms and "ways of doing things." Institutions have multiple stakeholders, and leaders often find themselves in a delicate balancing act, trying to negotiate the needs and wants of competing interests. Shared governance often becomes an excuse for divided governance, with each "side" representing their constituents and doing the best they can to "win."

This politically-charged environment perpetuates the status quo because the fear is that any change or new idea will result in winners and losers. To please all parties, leaders compromise and favor across-the-board solutions or incremental change that will disaffect the least number of people. Yet this approach results in mediocrity—a push to the mean or sameness across the institution—the exact opposite of what's required to pursue excellence. Courageous leaders don't strive for equality, but do strive for fairness.

Often leaders avoid taking a stand on critical issues. Which academic programs are more core to the institution? Which strategic initiative is the most important? Which is the least? The irony is that the best amongst us won't stand for mediocrity and will migrate to other institutions that are willing to invest in areas of excellence, and are willing to own both what they are good at, and *not* good at.

What is courage?

Leaders must have the courage to make the tough decisions, but where does this courage come from?

In our society, we often think of courage in individual actions; we celebrate one person's actions to overcome difficult circumstances or odds. "Courage" summons up stories of someone acting instinctively and immediately to save his or her own life or someone else's.

In organizational life, courage is anything but *instinctive*. And courage isn't about any one action—it's about persisting over time. Leaders who make difficult decisions don't make them instinctively or immediately at all. They include others in the process; they check their thinking with trusted colleagues; they carve out space for reflection; ultimately, they are clear about the purpose and what's at stake. The decision-making process doesn't have to be scientific and is rarely formulaic, but it is thoughtful and rigorous.

Time and timing

Courage isn't about acting *immediately*, either; making courageous decisions isn't about speed or impulse. It is the exception, not the rule, when leaders are forced to make

high stakes choices on the fly. Too often, leaders create the illusion of urgency because they themselves might be uncomfortable. There is danger in rushing to closure and jumping to solutions in order to relieve our own anxiety, before understanding the complexity of the problem or the potentially negative implications. Rushing major decisions is not a courageous act.

Courageous leaders are willing to ask: when do we need to make this decision? Their interest isn't in delay, but rather in assessing the pros and cons of making the decision too quickly or missing an opportunity as it passes by. These leaders recognize the importance of creating the time and space to think. They use this space to improve their odds of success by calculating what could go right (not just what could go wrong), coming up with contingency plans, and asking what they might be missing. If possible, it's ideal for leaders to sit with the truly high stakes decisions a few days before announcing the decision to see if it passes the "gut test." This isn't to say intuition is more important than conscience, but that both are needed.

Honing the ability to make decisions

Decision-making is not something that is innate, it is learned and honed over time.

The best decision makers keep a habit of evaluating the effectiveness of their most important decisions, and they learn from both successes and failures. This is not an easy process to follow; it requires discipline and commitment to learn from the past. We recommend engaging in After Action Reviews (AAR). These are not after action "reports" where lessons learned are documented, but never internalized; these are honest reviews of what worked and what didn't. The goal isn't blame, but accountability. The goal isn't to move past a bad decision, but to move forward with new knowledge and information.

Over time, this reflection and learning helps leaders make good decisions on a more consistent basis, and that in turn provides greater confidence to take on the tougher issues.

The military has long perfected the ways to conduct After Action Reviews (AAR). It's important to note these are not informal meetings held after a major project or decision, but disciplined processes that include before-action planning. We recommend the HBR article, "Learning in the Thick of It," for a thorough description of how to actually conduct this process in a meaningful way.

They are in service to the institution, not the other way around

Courage in a leadership context is about being willing to act for the greater good. Making tough decisions is first and foremost about putting the institution above any personal interests. Courageous leaders have a trustee mindset, not a delegate mindset. They are not thinking only about what is at stake for them, their department, or any stakeholder group they represent. They act as trustees and make decisions that are in the best interest of the whole institution. This stance of trusteeship is especially necessary when the decisions may be politically unpopular or have difficult consequences.

It's important to recognize that the office you serve—whether that is the presidency, a deanship, academic advising, or the office of institutional advancement—is more important that the individual who holds that office.

Identifying the hills they are willing to die on (choosing their battles)

Not all decisions carry the same weight or the same potential impact on the institution. Leaders need to identify what hills they are willing to die on, meaning which decisions are of such significant importance that they are willing to stake their positions or reputations on them. Successful leaders will carefully consider the need, opportunity, and cost (personal, political, and professional) of the decisions they make.

One president we know uses three questions before acting:

1. Is what we're attempting to do important?
2. Even if it is important, is it worth the cost?
3. Can we actually get it done?

This simple, but powerful set of questions can help you filter and prioritize the battles that are truly worth fighting and can give you the confidence to go forward.

Courageous Decision Making in Action

The year was 1994, and the setting was a (then) relatively unknown liberal arts institution in a crowded market. The institution appeared to be dying a slow death: enrollment was down to just 400 students and was continuing to decline each year. There was no "cushion" in the operational budget; if enrollment was even two students fewer than projected, the institution had to scramble.

Seeing the writing on the wall, the incoming president approached the board with a bold proposal. She asked for $10 million of the institution's $14 million endowment (70%) to invest over the course of five years in strategic initiatives. She recognized that the institution was in this position because of the inertia of years of underinvestment and the lack of bold thinking. Now, they needed to be honest about where they were. If they kept on their current trajectory, the institution would close its doors in a matter of years. If they were to have a future that would be worthy of their history and their people, they would need to do something bold.

This wasn't just about taking a shot in the dark. Those $10 million would be invested in a measured way, and not just at the whim of a creative leader. They needed to make smart and informed choices on how to spend it, and they needed to ensure enrollment increases each year to begin returning an annual budget surplus.

The new president called together a team of ten faculty and staff and gave them the scenario: You have $10 million to create the most innovative college in our market over the next five years; let's "muse about the future." Out of that five-year visioning came specific recommendations to launch the institution's first graduate programs, reach out to a new student demographic, invest in the faculty, grow the institution's marketing and branding, and launch the institution's first fundraising campaign.

The president prepared a financial plan for the five years, with the board committing $2 million each year. One of the conditions of the plan was that if they couldn't balance the budget each year, the board could pull the plug.

But because they made smart choices on where to invest, each year the institution was able to increase its enrollment and bring in surplus tuition revenue. In the years since, the institution has continued to invest in growing new academic programs and has fed some of that surplus revenue back into the endowment each year. What was a $14 million endowment in 1994 is a $50 million endowment today. The residential full-time enrollment today is nearly 800 students, and the institution benefits from graduate and online enrollment that increases each year.

Twenty years ago, that president brought energy, passion, and courageous decision making to bear on confronting a hard reality. She was willing to own the situation the institution was in and do something about it. Investing 70% of the endowment—that took courage.

Quality #5: Leaders who are Resilient

Why resilience is needed

Because of the complexity of the adaptive challenges leaders will face in the future of higher education, mistakes and failures will be inevitable. The ability to not only "bounce back" (Zolli, 2012), but "bounce forward" from adversity, crisis, and challenge will be one of the primary differentiators of effective leaders. How can leaders encounter challenge after challenge and still remain steadfast and positive? How can they use these incidents as springboards for change and renewal, and not become overwhelmed by them?

Strategic Note

In Jim Collins' famous book, *Good to Great*, he interviewed Admiral Jim Stockdale, who was one of the most decorated soldiers in modern military history, and who endured many years of torture by the Vietcong in the infamous Hotel Hilton. Stockdale spoke movingly about this "paradox" of having the courage to face the most brutal facts of your current situation, and never lose faith that you will prevail in the end (Collins, 2001).

What resilience consists of

Resilience will be one of the very most important capacities a leader can develop and possess, but how does one become a resilient leader? Diane Coutu (2002), a leading academic in the field of leadership resilience, identifies three essential characteristics of resilient individuals and leaders who might help us gain insight into this invaluable capacity. Coutu found that resilient leaders have the following:

1. A staunch acceptance of reality.
2. A clear sense of purpose and meaning.
3. An uncanny ability to improvise.

A staunch acceptance of reality

Resilient leaders look at challenges and crises head-on, and don't sugarcoat the situation with platitudes like "never lose the opportunity of a crisis." They don't try and explain things away. Yet, even under very difficult circumstances, they have a realistic faith that things will get better over time and that they will endure and come out the other end whole. This deep and realistic faith creates a powerful touchstone for these leaders that enables them to keep moving forward, even amid incredibly difficult situations.

A clear sense of purpose and meaning

Resilient leaders believe that they are serving something much bigger than themselves, a noble purpose that adds meaning to the hardships they endure. When they meet difficult challenges, circumstances, and crises, their suffering is not meaningless or in vain, because they believe these events have lessons embedded in them. These lessons often reveal the leaders' "lived" values and core principles (Pulley and Wakefield, 2001) and enable them to act on the courage of their convictions (Sanaghan, 2016). These leaders are clear about who they are and what they are here to accomplish—and they usually view their accomplishments in the context of service to others. Their lives become—as Victor Frankl, the famous psychiatrist and concentration camp survivor, put it—a "search for meaning."

An uncanny ability to improvise

Resilient leaders make do with what they have and don't complain or focus on what's missing (e.g. money, people, resources, or technology). They possess a kind of inventiveness and improvisation that few leaders ever have. They don't succumb to a "scarcity mindset" in which a lack of resources prevents intelligent action. Instead, they use their own creativity and that of others to take risks, try new things, and meet challenges in unconventional ways.

Resilient leaders have a great deal of curiosity. They don't let barriers or blockages prevent them from exploring possibilities. They do not deny the challenges; they just don't let the challenges overwhelm them or cause them to give up hope. They are good at "focusing on the road and not the walls" (Horowitz, 2014) and they keep their eyes "on the prize" to get through difficult times.

Strategic Note

Andrew Zolli's wonderful book, *Resilience: Why Things Bounce Back* (2013), is a great resource for any leader who wants to learn how to be a more resilient individual.

Resilience in Action

A few years ago, one president we know took the helm at a teaching institution that had recently taken on the debt load of significant expansion of multiple campuses to support a strong growth strategy for its teaching education programs. Then, the state changed the credentialing requirements and the institution's enrollment imploded, to the extent that the operating budget saw a $10 million/year deficit. The institution's survival was threatened.

The president undertook a rigorous prioritization process, trying to be transparent with the faculty at each step about the decisions—tough decisions—that needed to be made. In the midst of the process, however, several faculty filed complaints with the AAUP and spread unfounded stories of what the institution was doing and how the institution was doing it. The stories were lies, but they created a firestorm of controversy on campus.

The president proved resilient, showing both an uncompromising honesty about the current situation and an optimism about the long-term outcome. She opened up her home to regular dinner meetings with small groups of faculty, heard their concerns, and built her relational capital with members of her campus community who were deeply fearful about the institution's future. The president realized that what many of the faculty were most fearful about was that she might not stay for the long haul and see the institution through this incredibly difficult period. She communicated in these dinner meetings that she was here to stay and that though they faced hard work together and a long uphill battle, they would get through it together.

They did. Under the president's leadership, the institution balanced its budget by staying focused on the factors within their control. In a tough market, they knew they would have to innovate, so they opened innovation spaces on campus, created a highly effective pathways program to serve the needs of a disadvantaged population, and found new opportunities to grow enrollment. Importantly, the president not only took the institution from the lowest of lows back to the middle, but she also pushed: "We're not done. We're going to continue to grow."

As a result, today there is excitement and trust on campus, and a sense of shared and hard-earned community.

This president lived the paradoxical stance articulated by James Stockdale that makes perseverance over the long haul and resilience after crisis possible: to hold both an uncompromising honesty about the tough realities faced, and an unswerving faith in the long-term outcome.

Being actively proactive: developing the capacity for resilience

It is important to actively build your resilience "muscles" and not wait for a crisis, challenge, or failure to come to you. Leaders need to create a "resilience readiness" *before* crises happen. The good news is that resilience isn't "fixed"; it can be developed over time with deliberate and conscious actions on the part of the leader.

Resilient individuals and leaders have some shared characteristics that enable them to persevere. This list of factors can provide a "scorecard" for leaders as they assess their capacity for developing resilience (Coutu, 2002; Southwick and Charney, 2012; Zolli, 2013; Sanaghan, 2016).

Strategic Note

Some of our colleagues have written a great book, *Navigating an Organizational Crisis: When Leadership Matters Most (2016)*, which describes how leaders can deal with unforeseen, powerful crises, and make it out alive. The authors, Hutson & Johnson, talk about the importance of "Preresilience," and provide some strategies to build your personal resilience. It is a great read.

Resilient people:

1. Tend to be optimistic about the future. This does not mean a "Pollyanna" optimism in denial of the facts, but a realistic and hopeful view of the future.

2. Are naturally curious about a lot of things and continue to learn throughout their lives.

3. Have a healthy "tolerance for failure" and see that there are lessons to be learned from mistakes.

4. Are good at asking for help. Most leaders are not good at this, but resilient leaders are confident enough to say that they don't know something and actively seek the support of others when facing challenges.

5. Have self-awareness, mindfulness, and strong emotional intelligence. They believe that they are the authors of their lives, not the victims of their circumstances.

6. Often have a religious or spiritual connection and see their faith as both an anchor and a beacon of light that supports them through trying times.

7. Are great problem solvers who actively search for solutions and try different and creative approaches when confronted with challenges.

Leaders can use these seven factors to identify where they are resilient and where they may have areas of needed development to build their capacity for resilience. This is important—resilience will be sorely needed as we encounter the adaptive challenges facing higher education.

Drawn from our paper Building Leadership Resilience in Higher Education (Sanaghan, 2016), here are three priority suggestions to help leaders build their resilience "muscles":

1. Build time to reflect into your daily and weekly schedule. This is not easy to do, given the enduring whitewater in which we all live. Keeping some kind of journal can help you develop a reflective practice that will prove useful when times are challenging.

2. Find at least two "confidants" (Heifetz & Laurie, 2001) who are individuals you respect and trust deeply, and who care about you as a person. These are "authentic allies" who will listen carefully, and will provide honest feedback and wise counsel. They can act as harbors and sanctuaries when the storm hits and you feel lost and confused. They are a gift in any leader's life.

3. Build a great team around you so that you can leverage their talents, lighten the load, and have a positive support system when things get tough. Creating a high functioning team is not easy, but it is an important undertaking if a leader is going to build a resilient organization. One person at the top making all the decisions just doesn't work, and makes the organization fragile. For a deep read on

this topic, see our paper 6 Powerful ideas for Building a First-Class Team on Campus. If we are going to deal effectively with the many challenges that await us, building "distributed" resilience throughout our campuses will be a strategic priority for senior leaders everywhere.

Besides the strategies mentioned above, we recommend seeking out work with people with whom you don't normally interact, actively seeking intelligent challenges, and cultivating diverse thought partners who will constructively test your thinking.

Taking care of yourself physically is also an important element of leadership resilience: getting enough exercise, meditating, healthy eating, losing weight. These are all things that we know about, but that we struggle to actually do on a regular basis. But they are important: these commonsense practices help get your resilience "in shape."

Conclusion

As we have laid out in this paper, our current and future challenges demand that we think differently about the kinds of leaders we need in higher education. Functional expertise or sheer intelligence is not the same as knowing how to lead. To be a leader is to be a learner. Both individuals and institutions must make leadership development a priority.

We strongly encourage leaders to begin identifying and cultivating future leaders who show potential. This must be a proactive endeavor. Too often in higher education we draw our leaders from outside the institution. We don't invest nearly enough in our own people's professional and leadership development, and this change must begin at the highest levels of the organization. Leaders must be dedicated to building the resourcefulness, adaptability, and capacity of their people. No institution can rise above its leadership.

Senior leaders will need to give people at all levels the opportunity to lead, thereby tapping the intelligence and talent of campus stakeholders. If they cannot do this, they will never be able to manage the adaptive challenges that are coming at them at an accelerated rate. As we have discussed, adaptive challenges don't wait for a campus to be "ready"; they show up uninvited, complicated, and ambiguous.

We also strongly encourage readers of this paper to continue their own leadership journey. Build your skills through attending programs, staying up to date with literature, and networking with others outside your department or division.

Would You Like to Continue the Conversation?

We welcome you to share your reactions to this paper and its ideas. In particular, we invite you to:

- **Chat with us about how we can help**
  We would love to explore how we can help you develop leadership programs on your campus, or invite you to our leadership development workshops to learn more.

- **Bring us to your campus**
  Would you like us to meet with your board, leadership academy, or deans, and provide a presentation or class on the new leadership skills?

- **Contribute to our offerings**
  We welcome your contribution to Academic Impressions' leadership development efforts through writing or speaking on a particular topic.

To continue the conversation, please contact Amit Mrig at amit@academicimpressions.com. We look forward to talking with you!

Amit Mrig
President and CEO
Academic Impressions

Appendix: What Board Members Need to Know

If leaders are to cultivate these future skills, the active participation and support of their boards will be essential. The board plays a critical role in setting tone for the culture and enabling leaders with these new skill sets to thrive—by hiring, cultivating, and supporting leaders who are developing these skills. In our example of courageous decision making earlier in this paper, the president of that small liberal arts university credited her board with setting the right tone for the institution's leadership and with being willing to both face the tough questions and entertain new opportunities. "If we allowed you to invest this much," the board asked, "how would you double the enrollment?"

It's in the board's power to promote and instill either a culture of innovation or risk aversion. If the president doesn't feel supported by the board or is actively dissuaded from thinking big or thinking creatively, he or she will set a very conservative climate with the cabinet that will funnel down through the entire institution. More immediately, boards may have direct responsibility for approving new and bold decisions (such as acquiring a nearby institution or asset, resetting tuition, or creating a new school or college).

This is why the entire board, not simply the executive committee, must be actively engaged with leadership and engaged in conversations about current and future challenges and opportunities. The board must be involved in the anticipatory thinking and sensemaking for the campus, from the very beginning and on an ongoing basis. They bring a unique *external* perspective to the table that must be tapped if we are to create holistic solutions to the adaptive challenges we face. They should not be just "debriefed" about challenges and emerging issues by the president at board meetings and then solicited for some "advice." This is a minimal expectation. The board needs to participate with the other campus stakeholders, *especially* faculty, in informing the anticipatory thinking of the campus and developing their own sensemaking skills.

In our work on campuses, we have often experienced barriers between the board and faculty. For example, they often: use different language; have different standards about "excellence"; have different interpretations of the same information; don't really understand each other's "worlds", and haven't built the relational capital necessary to have courageous and difficult conversations together concerning strategic issues facing the institution.

There are few better ways to address all these barriers than having the Board collaboratively build the anticipatory thinking, sensemaking, and resilience of the institutions they govern. They need to help scan the external environment of which they are a significant part. There are powerful trends and issues impacting their own organizations that they must deal with quickly and effectively if they are to remain competitive in the marketplace. What are those issues and how might they impact or influence the campus, or higher education in general?

When we think about sensemaking, one of the greatest dangers is "listening to yourself too much" and becoming too insular or self-confirming. The board's external perspective can illuminate "blind spots" (Banaji, 2013) that insiders simply cannot see. This is a strategic contribution almost every board can provide. However, it's important that board members don't offer these insights from an "expert" position, where they tell campus stakeholders what they think is best for the institution; that won't work well. But in a joint inquiry with faculty into what's going on in the external landscape, board members can share their experiences and advice, and most importantly, how they as leaders are responding to the external events, trends, and issues that keep them up at night. This would be a strategic gift for any campus, and would begin to lower the "barriers" that often set up negative dynamics between the faculty and the board. By focusing on a real task (that joint inquiry) in service of the institution's mission and vision, relational bridges and understanding can be created that will be an investment in the campus' future.

Finally, the board needs to support courageous and thoughtful decision making to ensure the health of their institution. Some of these decisions will be hard, with results that may not be realized for a long time, and some stakeholders will not be happy with whatever happens. The board must support innovation and creativity anyway. If the board can work collaboratively with other campus stakeholders and especially the president, they can play a key role in creating a resilient institution.

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A R T I C L E S

CAMPUS LEADERSHIP AND THE ENTREPRENEURIAL UNIVERSITY: A DYNAMIC CAPABILITIES PERSPECTIVE

SOHVI LEIH
University of California, Berkeley

DAVID TEECE
University of California, Berkeley, and the Berkeley Research Group

This study explores relationships between campus leadership and the organizational-level dynamic capabilities that underpin the management of research universities. Our observations suggest that the presence of leaders who marry strategic thinking and capabilities development enhance the likelihood of a university's competitive fitness and long-term survival. We compare and contrast strategic decisions and leadership propensities of chancellors at UC Berkeley and presidents at Stanford University. Our findings help explain why Stanford has advanced in relation to Berkeley and hint at the challenges and opportunities facing Berkeley chancellors. We also suggest that it is timely for university presidents to begin to manage proactively the university and, to the extent possible, its innovation ecosystem to increase the chances that their institutions will continue to prosper in an increasingly competitive environment that is also exposed to uncertainty and change.

Research on the strategic management of research universities tends to focus narrowly on issues such as the management of the Technology Transfer Office (e.g., Siegel, Waldman, & Link, 2003) or the role of university incubators (Clarysse, Wright, Lockett, Mustar, & Knockaert, 2007; Rothaermel & Thursby, 2005). With the advent of online learning and pressure to find additional funding sources and assist in regional development, some scholars are asking deeper questions about whether universities need to be not only more entrepreneurial but also managed and led more strategically. As Rothaermel, Agung, and Jiang (2007, p. 708) noted, "The research stream on the entrepreneurial university views entrepreneurial activity as a step in the natural evolution of a university system that emphasizes economic development in addition to the more traditional mandates of education and research." Our focus is related but different. We ask not just how research universities may engage in supplementary technology transfer, but also more generally how to lead and manage the university to ensure that it maintains evolutionary fitness, making the changes necessary to bolster its competitive advantage and enhance its performance in the longer term.

Little is understood about the role of campus leaders in making universities more successful and the factors that might mediate their impact. Our general thesis is that universities in the United States and elsewhere have often been somewhat poorly managed and that improved leadership and better management of the university is not just desirable but now essential. Universities suffer when they ignore competition and neglect contemporary management concepts and practices. We refer not just to initiatives to improve efficiency and productivity. While proper financial management is imperative, no new shared services initiative or similar measures can bring strength to a university that continues to make strategic missteps or has failed to respond to available opportunities. Without strong *dynamic* capabilities to keep the resource profile and revenue model aligned with the needs of stakeholders, efficiency and cost effectiveness will count for relatively little. They are necessary but not sufficient for survival and improvement.

It has long been recognized that better management and better strategy are essential to the continued strength of colleges and universities (Cyert,

1983). However, management excellence has been lacking at many universities across the United States and around the world. Moreover, few theoretical frameworks have been employed to address organizational changes and strategies in universities that may help university leaders respond to challenges and achieve strategic goals.

We endeavor to learn from case analyses of two well-run and well-led universities: Stanford University and the University of California, Berkeley (Stanford and Berkeley henceforth). In doing so, we seek to answer a fundamental question: How do campus leadership and governance in research-based universities affect the development and maintenance of excellence in core research and teaching activities, as well as in ancillary services such as technology commercialization activities?

This article proceeds as follows. The next two sections present relevant background and context and advance the notion that research universities need to be managed differently and more entrepreneurially to succeed in the face of important developments in the competitive environment. The subsequent section presents our theoretical framework, followed by methods and data. Then we analyze the Berkeley and Stanford cases and discuss empirical findings and implications for further research. The last section concludes the paper.

BACKGROUND

Forty years ago, Cohen and March (1974) remarked that the American college presidency "is a reactive job," noting that:

> Presidents define their role as a responsive one. They worry about the concerns of trustees, community leaders, students, faculty members, law enforcement officials. They see themselves as trying to reconcile the conflicting pressures on the college. They allocate their time by a process that is largely controlled by the desires of others. Though they are, for the most part, individuals of considerable energy, they often become tired. (p. 1)

They went on to observe that decision making in the university resulted from a process that "decouples problems and choices" (p. 2). They also noted that the American college president was more important than various constituencies believed. In their framework, power on campus was widely distributed, with faculty in particular having a strong voice. The university, they quipped, was like an "organized anarchy" that required "a new theory of management" (p. 4). They did not provide one, however, and none has been forthcoming. Nor has there been an effort to test whether the behaviors they and others (e.g., Kerr, 2001a) observed—that the university is some kind of administered community—are appropriate anymore.

Cohen and March further believed that their "garbage can" model of decision making was a good descriptor of actual decision making in universities and other public organizations. In their model, constituents dump problems and solutions into a (metaphorical) garbage can. They noted that the attributes of the garbage can model "have fairly general relevance to decision making in higher education" (p. 84).

The garbage can model, if applicable, is hardly a flattering model of decision framing and decision making. It suggests the absence of good strategic management. Cohen and March's data also show that the activities of university presidents can be broken into three relatively equal brackets: administrator, political leader, and entrepreneur (dealing with bankers, customers, and suppliers). Their analysis speaks to the complexity and the quasi-political nature of decision making in the university. However, it does not speak to what is necessary for good management. Our hypothesis is that good management involves not just managing the organization known as the university. It also requires leadership and strategy, particularly with respect to building and managing the ecosystem surrounding the campus to promote regional, national, and global economic development that benefits not just regional and national economies, but the university itself.

Some scholars have employed the term "entrepreneurial university" to describe academic institutions that promote economic development and the "capitalization of knowledge" (Etzkowitz & Leydesdorff, 2000, p. 1).[1] However, Etzkowitz and Leydesdorff did not tease out clearly what *entrepreneurial* means for campus leadership, and so their framework provides little guidance for university presidents, chancellors, and others responsible for the long-term survival and growth of the university.

In the introduction to the symposium on responsible leadership in this journal, Siegel (2014) helped address this deficiency in part by highlighting the role of top-level leaders in formulating and implementing strategic initiatives that efficiently

[1] Etzkowitz and Leydesdorff (2000) claimed that universities worldwide play a third role in required and economic development and that a "hands-off" approach by university leadership is no longer viable, as a "triple helix" is needed to organize knowledge infrastructures.

deploy the organization's resources and address the concerns of a wide range of stakeholders. Likewise, Bertrand and Schoar (2003) showed that top executives are important (and statistically significant) determinants of enterprise policy and financial performance, with effects varying significantly across managers. Few treatments of leadership, however, focus on the context of research universities.

We offer frameworks and concepts from the field of strategic management, in particular the dynamic capabilities framework, to advance discussion and dialogue on strategic management issues confronting major research universities. We look at the role of college presidents and suggest that different management styles and systems are needed in today's world. In particular, university presidents must not only ensure that proper financial management systems are in place and being properly implemented; they must also get better at strategic management while simultaneously enhancing entrepreneurial activity around the campus as a complement to research and teaching.

It is no longer adequate for universities to be managed as they have been. The era of resource munificence and limited accountability for results is over in most jurisdictions. There is increased competition from online and offshore entities, along with opportunities to team up with new actors.

Moreover, the "Baumol paradox"[2] in higher education (i.e., low productivity improvement and tuition escalation) needs to be broken. We draw on accepted frameworks from the field of strategic management—and in particular the dynamic capabilities framework—for clues as to how major research universities need to be managed to preserve and expand their contributions to their primary stakeholders while enhancing their longevity.

The dynamic capabilities framework (Teece, 2007, 2014; Teece, Pisano, & Shuen, 1997) might be thought of as a new long-term (or long-range) planning framework, as it focuses on creating and sustaining long-term competitive advantage. However, "planning" in the traditional sense is not emphasized heavily in the framework, because the environment is too dynamic and plans depreciate so quickly that they often are not worth formulating. That's not to say that university presidents and their top management teams shouldn't think both quickly and slowly, in the sense of Kahneman (2011). Rather, the dynamic capabilities framework acknowledges that strategy and capabilities must be understood together and constantly honed to the exigencies, opportunities, and requirements of an increasingly competitive environment.

In addition, internationally significant research universities will maintain and enhance their reputations and contributions only by being well resourced and well managed. Only by doing so will they be sustainable for the benefit of future generations. As Oxford University vice chancellor Sir John Hood (2004) noted, "Reputations built on the memorable success of the past do not of themselves provide a stable foundation for the future."

CONTEXT

Great research universities are characterized above all by a commitment to the independent truth-seeking inquiry of their scholars seeking to push the frontiers of our understanding of all phenomena and pass on that knowledge to successive generations. Significant developments are upon us that, in our view, require universities to not only continue to pursue their historic mandate, but be managed more strategically and purposefully using modern concepts, frameworks, and techniques. First, there is the sheer size and importance of universities and their central role not just in teaching and research, but also increasingly in spawning new businesses and assisting with the development of industrial, agricultural, and service sectors through innovation and problem solving. The expectation that research universities can both expand their contributions to basic research and teaching and help solve society's particular problems seems to have become amplified in recent years.[3] Second, the low productivity growth experienced in teaching and instruction over many decades has led to tuition increases that are crippling to some constituencies. The rate of increase in tuition experienced over the past two decades in the United States and other countries is not sustainable.

Many universities have become large organizations facing national and international competition. They have considerable impact not only on their direct stakeholders (students, faculty, and staff) but also on local, regional, and national economies. Indeed, many college campuses completely dominate

[2] Public services become relatively more expensive because of the faster productivity increase in industrial production (Baumol, 1968).

[3] The state of Connecticut has even proposed taxing the investment profits of Yale's endowment if Yale doesn't reinvest endowment profits in the local economy or higher education (Martin, 2016).

their local economies (e.g., Yale in New Haven, Connecticut; the University of Michigan in Ann Arbor; Texas A&M in College Station; and Cornell University in Ithaca, New York). Some of this is recent. For example, in the past decade the University of Pennsylvania has outstripped industrial, financial, and public entities to become the largest employer in Philadelphia.

While universities have for centuries contributed to economic development, advances in science and engineering have come to enhance the centrality of research universities in cities and in regional innovation ecosystems. Examples include Stanford, Berkeley, and UC San Francisco (UCSF) in the San Francisco Bay Area/Silicon Valley biotech and electronic clusters; Carnegie Mellon in the robotics/artificial intelligence cluster around Pittsburgh; and Harvard, the Massachusetts Institute of Technology (MIT), Boston University, and others in the biomed cluster in Cambridge and the greater Boston area.

John Sexton, president of New York University (NYU), noted that "more than ever, universities will generate and sustain the world's idea capitals, and, as vital creators, incubators, connectors, and channels of thought and understanding, they will provide a framework for global civil society" (Sexton, 2010). In our view, Sexton's vision will not happen unless universities are better managed.

In short, research universities are big businesses and need to be managed as large creative and instructional enterprises that, beyond performing world-class research and providing world-class instructors, must also be prepared to assist not only government and industry but also new enterprise development, while advancing their own strengths and survival prospects.

Structural factors (including governance) clearly affect the ability of a management/leadership team to bring about change. In the case of public universities, the mechanisms of state control/governance and the manner of state funding are, in the main, beyond the control of campus leadership. Notwithstanding that, great research universities, whether private or public, need to do their best to insulate themselves from the vagaries of political whim and public funding availability. As Sir John Hood (2008, p. 105), former vice chancellor at Oxford, noted, "The institutional independence and academic freedom we rightly value above all else do require of us . . . the will and energy to build up levels of our endowments . . . to the point where our collective aspirations can no longer be compromised."

We take the view that better strategic management of the university is not just a matter of favoring commercial and entrepreneurial values over academic and research values. We find that the two are complements, not substitutes. The evidence suggests that at both the individual faculty and institutional levels, faculty who are excellent in outreach and external (entrepreneurial) engagement are also most likely to be better researchers (Zucker, Darby, & Brewer, 1998). Siegel, Wright, and Lockett (2007, p. 497) summarized the evidence as follows:

> Studies in both the U.S. and Europe clearly show that leading researchers are not disadvantaged. Van Looy et al. (2004) report that engagement in entrepreneurial activities coincides with increased publication outputs, without affecting the nature of the publications involved. Lowe and Gonzalez-Brambila (2007) find that faculty entrepreneurs are among the most productive and best-cited in their respective fields, even after they form these start-up companies.

Moreover, one cannot help but notice that universities such as UCSF, Stanford, and NYU that have embraced close engagements with external partners have done well because of it, and have used the additional resources and brand value acquired to cross-subsidize research and teaching in other areas—including the arts and sciences.

THEORETICAL FRAMEWORK

Does Campus Leadership Matter?

Richard Cyert (1990, p. 29) defined leadership as "the ability to get participants in an organization to focus their attention on the problems that the leader considers significant." Leadership and (strategic) management are intertwined in the university context. Both affect resource generation and resource allocation. The importance of leadership has been observed by many researchers. Towering presidents at Harvard such as Charles Eliot, Lawrence Lowell, and James Conant rendered the school unrivaled in its quality and cost (Christensen & Eyring, 2011). Former Stanford provost Frederick Terman is (hyperbolically) called the "father of Silicon Valley" because of his leadership in contributing to the rise of Stanford and the growth of the high-tech region (Leslie & Kargon, 1996). MIT president Karl Compton had an important effect on promoting academic entrepreneurship in the 1930s and 1940s, funding a number of MIT spinoffs (Hsu & Kenney, 2005).

Despite these examples, other scholars have been pessimistic about any discernible effects of leadership on university performance. Cohen and March (1974, p. 2), for example, noted the limitations of college presidents: "Compared to the heroic expectations he and others might have, the president has modest control over the events of college life. The contributions he makes can easily be swamped by outside events or the diffuse qualities of university decision making." By contrast, in for-profit enterprises, the top leadership team can usually make a big difference (Tushman & O'Reilly, 2002).

Setting aside the debate over how much influence top leaders really have at universities, some have argued that university administrators have become too focused on meeting political and social pressures, stabilizing finances, and promoting efficiency and accountability. If so, this is no longer enough. In this paper, we offer a framework that can help the campus leadership team see opportunities, set priorities, execute wisely, and transform quickly. That framework is called dynamic capabilities.

The Capabilities Framework

The need for new priorities and a new management framework. Top university leaders need a framework to help them understand how to manage in a challenging world where economic realities are being injected with great force. University leaders understand the importance of executing on issues such as rewarding high-quality research and teaching, using the peer-review process to assess the quality of research, and reviewing the quality of instruction by measuring student learning and achievement. These core issues will never go away, even as their shape is changed by new technology and new priorities.

What is new are the significant direct and indirect mandates universities are receiving to increase campus contributions to society. In particular, universities are engaging not only with established enterprises and their industrial research activities, but also with start-ups. The reasons are at least twofold:

1. Basic research in corporations is declining, even as overall corporate research and development has been steady as a percentage of revenues. Basic research is the only research that universities generally conduct. The decline of basic research in the corporate sector (Arora, Belenzon, & Patucconi, 2015) has made research universities relatively more important in total U.S. scientific activity.
2. The emergence of venture capital in the 1960s along with the limited capacity of established industrial companies to seize new opportunities and the (guided) entrepreneurial energy of students have created both the opportunity and a need for a start-up culture on campus to help bring the fruits of research more quickly to the marketplace, or to wherever they can help satisfy unmet needs.

These developments and challenges have led to a dramatically different set of issues and opportunities for research universities: The central requirement is to help get research not only published but also disseminated and transferred for the use of society. The opportunity for the university is to capture some portion of the wealth thereby generated, through traditional mechanisms (e.g., royalty income from patent licenses) as well as grants and ultimately endowment gifts from those who have benefited from the catalytic role of the campus.

The developments outlined above raise fundamental questions about the nature and scope of the core issues for campus leadership. To put this tersely, we must now recognize that the job description for the campus CEO (whether president or chancellor) will need to change in many cases, as the skill sets required of campus leaders today are different from those required even a decade ago. Today universities require more strategic leadership/management skills. It is no longer enough to be just an honored academic whose chief asset is good relations with faculty, staff, and students. That can in fact be a chancellor's Achilles heel, as giving faculty, staff, and students what they want may (though need not) subtract from what's required for campus-wide leadership and development of the innovation ecosystem surrounding the campus.

If this is a fair representation of the requirements for campus leadership today, it leads naturally to the question of what management/leadership skills are most needed for a 21st-century president/chancellor/rector. On a generic level, the dynamic capabilities framework advises that in the context of change animated by deep uncertainties and declining resources, what is needed is the ability to connect the university externally and internally, and to do what is necessary to unite the campus around new mandates and exigencies.

It is easy to believe that campus leadership has been doing the right things for decades, if not centuries. But in our view there is an endemic failure of many universities to understand the global nature of

competition and to recognize opportunities and threats. These deficiencies now matter because the competition for financial resources and for top talent has changed dramatically. How can university leadership be guided to better engage these new opportunities and threats? Our view is that the dynamic capabilities framework is a useful starting point. Capabilities can be analytically separated into ordinary and dynamic, although they are often tightly linked.

Ordinary capabilities. Ordinary capabilities bring technical and operational fitness/excellence to campus. They are strong when best practices are adopted across a campus. This is often not the case, however, and campuses sometimes lack even rudimentary mechanisms such as financial management tools. This is often complicated by fund accounting and by decentralized financial management, which is often highly beneficial from a perspective of scholarly independence but often leads to untimely reporting and poor resource allocation. When resources are scarce, it is particularly important to prioritize and understand the costs of various functions (e.g., research, teaching, and programmatic activity). Just as hospitals need to (but often don't) know the costs of different ways of delivering patient care, so too do universities need to be aware of the costs of their programs and activities, but they often are not. This is no longer tolerable.

It is reasonable to expect every campus to have a state-of-the-art (i.e., best-practice) IT-based student administration, contract/document management, and financial management system to administer the campus and manage and control risks. Peer review and external audits of the academic performances of departments and schools are vital parts of day-to-day management. Accordingly, there is often much benefit from bringing best practices from the public and private sectors to campus (and vice versa). This is necessary but not sufficient.

The dynamic capabilities framework separates ordinary capabilities and their management from dynamic capabilities. The former can usually be delegated to the campus chief operating officer. Developing/strategizing capabilities, on the other hand, must lie with the leadership team. Ordinary capabilities are about *doing things right* (for which there is considerable room for improvement in most universities); dynamic capabilities are about *doing the right things*, and thus need to be the imperative of the top management team. Dynamic capabilities should command the majority of the president's or chancellor's time, and this is where the top leadership on campus must be most proficient.

Dynamic capabilities. Dynamic capabilities are defined as an organization's (or institution's) ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece et al., 1997). Dynamic capabilities differ from ordinary capabilities, which have also been called static, first-order (Collis, 1994), and zero-level capabilities (Winter, 2003). Dynamic capabilities must be built because they cannot be bought. They can take the campus beyond best practices and enhance a university's performance by modifying and augmenting its resources and redirecting existing resources toward what is likely to matter most in the future.

Understanding how universities become more successful thus requires an examination of how campus leaders make the right decisions and put the right processes in place to undergird the organizational capabilities that sustain competitiveness. Universities are organizations with goals, but because they face competition they also need—and often don't have—competitive strategies. They need to be managed and managed well if they are to survive and prosper. This study posits that the dynamic capabilities framework is a conceptual lens for understanding the critical managerial issues facing campus leadership.

At a practical level, the managerial activities that support dynamic capabilities are the sensing of opportunities and garnering of critical insights about future trends and developments, prioritizing investments and making decisions that seize the most promising opportunities, and constantly transforming the university to keep it aligned with the ecosystem that supports it now and in the future (Teece, 2007). "Asset orchestration" needs to be combined with good strategy for a university to compete successfully and do well. These activities are at the core of dynamic capabilities and should capture the attention of university presidents and the senior executive team.

Strong dynamic capabilities will bring evolutionary fitness to the campus. Ordinary capabilities bring only technical/operational fitness. However, often the latter is the only focus of a school's strategic (five-year) plan. This needs to change.

Dynamic Capabilities in the Context of Higher Education

Some might question the relevance of dynamic capabilities in the context of higher education, because most universities are not-for-profit organizations and

education is heavily dependent on subsidies from state and federal governments and/or endowments. However, in today's global education market, competition for top faculty and top students is stiff. The strength and global nature of this competition has changed the game. Moreover, there is both the need and the opportunity to capture value from on-campus research activity. Commercialization activities, however, do not fit comfortably into the traditional academic career path of research, teaching, and administration (Wright, Clarysse, Mustar, & Lockett, 2007). Spinning off companies is a much more time-intensive activity than licensing, even if surrogate entrepreneurs are brought in from outside (Franklin, Wright, & Lockett, 2001). Furthermore, university management systems, developed to manage academic integrity, may not be well suited to commercialization and the need for timely decision making (Wright et al., 2007).

Further, some observers are mistrustful of the intrusion of business values and managerial thinking into university administration and call for protecting higher education as a purely intellectual enterprise devoted to research and teaching and little else. We believe it is a mistake to use the not-for-profit status of the university as an excuse for poor management. Good management is the handmaiden of improvement, survival, and growth for both profit and not-for-profit institutions. Society demands more of the university today than it did 50 years ago. Resources cannot be squandered or misallocated. Dynamic capabilities are fundamentally about evolutionary fitness, and unfit institutions have short lives.

Moreover, as noted earlier, the scale of the university alone requires modern management (Weber & Duderstadt, 2004). Berkeley and Stanford have huge budgets—$2.35 billion (2013–2014)[4] and $5.5 billion (2015–2016),[5] respectively—and have impacts on cities (Berkeley and Palo Alto, respectively), regions, and the nation, if not the world.

Competition in the higher education industry is also increasing with the emergence of nontraditional providers and traditional providers branching into online learning (Teece & Guile, 2013). Thus, there are concerns that the university's inability or unwillingness to adapt will result in a loss of viability (Zemsky & Massy, 1990). Strategic management is not just about coming up with a good financial plan. The organization must also set its priorities and commit its resources in a fashion consistent with and supportive of the challenges and opportunities it faces, irrespective of the interests of sitting constituents. Good strategic management requires an organization to properly diagnose its own challenges, map its capabilities against its strategy and opportunities, and then chart a path forward with consistent policies that allow the organization to survive and prosper.

Moreover, new campus business models or new revenue streams (what some have called "third-stream" activities involving the commercialism of academic research) "need to become a core component of universities' activities rather than merely being bolted on to the traditional streams of research and teaching" (Siegel et al., 2007, p. 498). We likewise argue that three activities—sensing, seizing, and transforming—are integral to strategic management and must animate campus leaders. In Table 1, we explore the importance of these functions to leaders and show how they can be linked to create and capture value for the university and society.

The Focus of Campus Leaders Within the Dynamic Capabilities Framework

Sensing. One cannot underestimate the importance of diagnosing an institution's strategic predicament and charting a course forward. Leaders are expected to monitor the organization–environment interface and work out which problems to prioritize. Good leadership entails understanding the foundations of the institution's competitive advantage, identifying the key locations on what Columbia University provost Jonathan Cole called the "cognitive map" for the university (Kennedy, 1993). Good leaders must be cognizant of vulnerabilities; reduce existing dependencies; and identify new research opportunities, educational markets, and funding sources—all while monitoring and sometimes mimicking successful competitors, albeit with a distinctive flair based on heritage, insight, and strategy.

Skill in identifying opportunities can lead to the discovery of new revenue sources and mechanisms to protect established ones. University leaders need to give attention to shifts in governmental appropriations and orchestrate fund-raising by providing leadership and active engagement in development activities. In particular, they must create a culture and climate that support alumni contributions. Fund-raising is a key measure of presidential success (Cook, 1997).

[4] See http://cfo.berkeley.edu/sites/default/files/2013-14%20UC%20Berkeley%20Budget%20Plan%20-%20Final%20(9-5-13).pdf.

[5] See http://facts.stanford.edu/administration/finances.

TABLE 1
The Focus and Effort of Campus Leaders Within the Dynamic Capabilities Framework

Dynamic capability micro-foundation	Functions of campus leaders	Supporting literature (examples as applied to universities)	Effects of leadership on organizational outcomes	Supporting literature (examples as applied to universities)
Sensing	- Identify emerging global trends - Recognize opportunities that increase access to research funding, endowment gifts, and talent - Recognize threats to enrollment, faculty retention, and quality of services	- Leadership is the ability to get participants in an organization to focus their attention on the problems the leader considers significant (Cyert, 1990). - Leaders help find a new set of urgent priorities in service to society (Kerr, 1998).	- New student recruitment/ selection opportunities discovered - Decline of traditional funding diagnosed; new revenue and funding sources identified	- Academic leaders can increase sensing capabilities by creating an environment supporting people who identify new opportunities to attract revenue (Glassman et al., 2003). - Fund-raising has become a measure of presidential success (Cook, 1997).
Seizing	- Enact processes to implement and support new academic activities - Oversee resource acquisition and expenditures - Manage constituencies that provide financial support - Support incentives, attitudes, and policies that foster a climate of entrepreneurship - Manage conflicts astutely - Double down on new research and teaching opportunities	- In responding to opportunities, governance (how choices are made and who makes them) becomes critical for university success (Kennedy, 1993). - There is a need for new revenue models (Siegel et al., 1997). - New revenue generation and cost-control schemes (and new business models) are likely to define the future (Alstete, 2007).	- Increased faculty entrepreneurship - More flexible capital allocation decisions - New labs and facilities - Endowment growth - Research funding expansion - New fund-raising initiatives - Creative financial engineering	- Leadership is key in better resource management (Massy, 1996). - Academic leaders combine aspects of management and leadership in relation to both people and task (Ramsden, 1998, p. 365).
Transforming	- Shut down poorly performing programs and departments - Build partnerships with unconventional constituents - Internationalize campus - Change campus cultures	- Leaders play roles in developing dynamic capabilities (O'Reilly & Tushman, 2011) and asset orchestration (Teece, 2007). - University roles are being transformed (Youtie & Shapira, 2008).	- Greater linkages and stimulation for technological and business innovation in regional ecosystems - New programs created; subpar projects terminated - Morphing into new structures	- Some programs must be discontinued to ensure organizational health (Eckel, 2002). - University leaders have a positive influence on the development of regional clusters (Breznitz et al., 2008).

In short, university presidents must serve as boundary spanners, building the capability to monitor the environment, gather information quickly, address opportunities, and identify new sources of munificence, as well as discern which units/programs need to be shut down or created. These kinds of sensing activities, when executed well, support strong dynamic capabilities.

Seizing. Seizing is about implementation, catalyzing decision makers to ensure timely and proficient execution of the best initiatives. Once opportunities and threats are identified, the university needs to prioritize responses and spring to action. With respect to the role of the leaders, seizing relates to what others have referred to in both setting guiding principles (Rumelt, 2011) and ensuring that plans are executed and goals are met. Former Stanford president Donald Kennedy (1993, p. 127) has also stressed the role of good governance, noting that "in responding to the dilemma of growing opportunity accompanied by contrasting means, governance becomes absolutely critical."

To respond to new opportunities, university leaders must also act entrepreneurially and help ensure a sound strategic planning process that makes the most effective use of resources. Plans must not be wooden; continuous updating is in order. Quality decisions are important with respect to student enrollment, new degrees, new land uses, community relations, fund-raising, and internationalization.

Campus leaders also need to be involved in the design and implementation of new academic and business models. In today's environment, traditional funding sources are shrinking. Meanwhile, new technology allows and requires different ways of educating. Meeting the challenge requires new revenue models, new contractual arrangements with faculty, and new pricing policies and different cost-control measures (Christensen, Horn, Soares, & Caldera, 2011). Strong university leaders help formulate new strategies and build competitive differentiation. For example, some leaders might decide to take advantage of and help shape online learning, while others might focus on teaching and eschew research. What is better depends on circumstance. Maintaining the status quo is unlikely to be the best strategy.

Without being proficient in seizing or implementation, universities may sense opportunities and threats but be unable to act on them in a timely manner, if at all. This may be because established constituents are in the way, testing the mettle of many leaders. Through good decisions properly implemented, strong leaders can improve the ability of the university to meet the needs of its internal and external stakeholders. However, they are unlikely to do so by trying to keep every constituency happy. Dilatory decision making and capitulation to poor-performing constituents and the loudest voices will undermine dynamic capabilities and educational success.

The effects on universities of developing and employing good seizing disciplines might be reduced in the absence of clearly articulated strategic goals, however. Using a sample of 82 British firms, Child (1974, p. 9) found that "the less dispersed top management objectives are and the more agreement there is among senior managers as to which objectives have priority, the more successful the organization will be in attaining them." Similarly, Bourgeois (1985) found that the greater the goal consensus within the top management team, the greater the performance of the firm. Research shows that "over 90% of successful transformations involve a new top management team. But the 10% that do succeed with a standing senior team are the most successful in the long term" (O'Reilly, personal communication with Mike Tushman, 2015). While these results are from the corporate world, there is no reason to believe that they are not applicable to the university.

Building a strong endowment is always an anchor to help maintain greatness and longevity, but it provides no guarantee. Of course, poor investment management decisions can squelch a good record at raising endowments and annual fund-raising. The University of Rochester, which in the early 1970s had the third-largest endowment in the country after Harvard and the University of Texas, made poor investment choices (e.g., heavy allocations of its public equity portfolio to local companies like Kodak) and eventually had to dramatically downsize its faculty and programs in the mid-1990s to survive (Lerner, Schoar, & Wang, 2008).

Transforming. According to former Harvard president Lawrence Lowell, Harvard's strength does not derive merely from its world-leading reputation and endowment, but from its most persistent tradition: the tradition of change (Christensen & Eyring, 2011). The long-term success of organizations inevitably requires that leaders reallocate resources away from mature and declining activities toward emerging scientific areas and growth opportunities (O'Reilly & Tushman, 2007). Long-run success requires strong dynamic capabilities, especially those that are transformational. As Teece (2007, p. 1335) has indicated, the key to sustained profitable growth

in the business enterprise is the ability to learn to connect, recombine, and if necessary reconfigure resources/assets and organizational structures as the enterprise (or the institution) grows, and as technologies, customers, and other stakeholders require. This asset orchestration and connection activity is how organizations evolve and maintain evolutionary fitness. In the university context, this means reinvigorating moribund programs and shutting down poorly performing schools and departments where necessary and starting new ones where possible, while embracing excellence and quality-enhancing technologies in research and teaching.

Universities often face pressures to not make strategic changes (Zajac & Kraatz, 1993). Academic governance and the deference given to faculty often limit a university's agility and flexibility, creating sluggishness and fostering a tendency toward the status quo (Association of Governing Boards of Universities and Colleges, 1996). Using the examples of universities, Hannan and Freeman (1984) observed that there are high levels of structural inertia in organizational populations and argued that the pressures for "reliability" and "accountability" lessen the likelihood of major or core organizational changes (p. 153). These frictions amplify the need for strong dynamic capabilities.

Universities cannot be immune to changing market, political, technological, and social factors. New policies, procedures, and structures are needed when change occurs. There is evidence that some universities have begun the process of reconfiguration in response to heightened competition.

Many researchers have documented certain responses to the changing environment, including (1) the innovative university (Christensen & Eyring, 2011), (2) creating effective university–industry alliances (Cyert & Goodman, 1997), and (3) the entrepreneurial university (Slaughter & Leslie, 1997). Some theorists recommend reconfiguring campus business models to adopt online learning and new structures for teaching. The management literature on disruptive innovation can be used to guide campus leadership toward new academic and business models (Christensen et al., 2011; Christensen & Eyring, 2011; Johnson, Christensen, & Kagermann, 2008). But what might these look like? What is the process by which resources become reallocated and activities that are no longer relevant get terminated?

Reconfiguration will often involve new leadership and changes in relationships with external constituencies. Effective leaders use their relational skills to build partnerships with various stakeholder groups. For example, the arrival of a new president at Yale (Richard Levin, the 22nd Yale president) influenced the development of a biotechnology cluster surrounding the university in the 1990s (Breznitz, O'Shea, & Allen, 2008). Partnerships with other universities can help enhance academic programs and recruit additional students (Stein & Short, 2001). These changes in relationships require leaders to legitimize new initiatives (e.g., Podolny, Khurana, & Popper, 2005). Major changes on campus may help ensure better performance (Eckel, 2002). For example, program discontinuance can serve as a "necessary adaptive mechanism" (Dougherty, 1979, p. 1) that allows reallocation of resources to more promising areas (Pettigrew, Ferlie, & McKee, 1992). Clearing out the old can make room for the new.

Transformations that occur in organizations are often narrated using organizational history. The retrieval of information regarding past transformations guides current choices for transformation (Walsh & Ungson, 1991). Weick (1979, p. 156) also noted that "a standard operating procedure is a frame of reference that constrains exploration." Leaders might meet with resistance when implementing changes that deviate from organizational experiences and routines.

CASE STUDY METHODOLOGY

Research Design

We examine actual leaders' efforts in two institutional settings: Stanford University and the University of California, Berkeley (Stanford and Berkeley henceforth). Because of complexity and opaqueness, it is difficult to identify leaders' capabilities with certainty, but we attempt to make the case that certain leaders' actions consistent with dynamic capabilities have been critical to campus survival and success. These links will be illustrated by discussing how developments at Stanford and Berkeley were shaped by linkages to the industrial and technology worlds. We chose a case-study approach to provide contextual insight into the causal factors behind differential performance by the institutions (Rasmussen, Mosey, & Wright, 2014). It is a cursory examination designed to indicate how the framework is relevant, not to reach dispositive conclusions. The latter is impossible in the space available here.

Case Selection

We chose Stanford and Berkeley for several reasons. First, both are internationally acclaimed

high-performing research universities with influential leaders. Stanford is categorized as private, Berkeley is categorized as public, and there are observed variations between them in performance over time. Stanford has achieved its success in recent decades. In 1950, it was a regional university struggling financially. In many ways it has caught up to Berkeley, as today it is a top internationally known and wealthy university (Sandelin, 2007). Although Stanford and Berkeley are both top schools, their respective successes have been attained by traveling distinctly different paths. By comparing two highly successful schools, we increase the burden on our framework to show how leadership could help both do better. As a result, some of our insights are subtle.

Berkeley and Stanford differ in governance and sources of funds. Both are recipients of federal funds, but the state support for Berkeley has dwindled to just a single-digit percentage of the campus budget in recent years.[6] As endowment income and tuition have increased as percentages of total funding for both schools, today the public/private distinctions reflect the governance more than the resource base.

Finally, both institutions have strong engineering colleges/schools. Engineering schools, sometimes working collaboratively with business schools, are usually the key (but not the only) nexus for industry collaboration and new enterprise development initiatives on or near campus. These two universities allow us to compare some of the functions and actions of campus leaders and their effects.

Data

We relied on three primary sources: interviews, archival documents/oral histories, and media reports. We first conducted in-person, phone, and email interviews with key stakeholders including campus leaders, scientists, and technology transfer specialists. Interview questions were designed to gauge interviewees' attitudes toward locations and their perceptions of the overall campus institutional support for entrepreneurship.

Second, we drew on historical accounts from Berkeley's Regional Oral History Office. The office has archived interviews with campus administrators and faculty since the early 1950s and covers important events in campus history. Many of these same people also worked at Stanford during their careers, allowing them to provide informed comparisons.

Third, background interviews and data were supplemented with news reports in the local media, such as Berkeley's *Daily Californian* and the *Stanford Daily*. The numerous books and articles that have been written about the two campuses were also an important resource. These sources allowed us to analyze important policies and programs for what they reveal about the ordinary and dynamic capabilities at both universities. Table 2 below provides key findings from previous studies. We do not claim methodological rigor; we are mainly looking for insights.

OBSERVATIONS

Sensing

The capabilities that underpin sensing allow leaders to detect emerging opportunities and threats in the external and internal environments. This detection could implicate any aspect of the university; possibilities include enrollment and funding trends and establishing the need for new programmatic initiatives. Table 3 provides a chronology of leadership at Stanford and Berkeley in terms of phases relating to sensing, seizing, and transforming.

Sensing at Stanford. In 1949, Wallace Sterling was invited to become Stanford's president. His presidency lasted until 1968 and saw Stanford rise from a struggling regional university to the top tier of U.S. universities. Before Sterling's presidency, Stanford was a respectable but undistinguished regional institution. There was no tradition of major gift giving by alumni and friends of the university; lackluster performance of the endowment led to serious financial difficulties in the 1940s, so much so that faculty compensation wasn't competitive.

Paradoxically, Stanford's early development of strong "sensing" capabilities may have been in part a reaction to the poor state of its endowment, which had led to budgetary constraints that made it difficult to offer competitive faculty salaries. To improve the school's financial resources, Sterling devoted energy to fund-raising and successfully identified and

[6] State support accounts for about 10% of Berkeley's sources of its total budget, 2014–2015. See http://www.ucop.edu/operating-budget/_files/rbudget/2015-16budgetforcurrentoperations_.pdf. Stanford's sources of revenue for 2016: 17% sponsored research, 21% endowment income, 4% other investment income, 16% student income, 18% healthcare services income, 6% expendable gifts and net assets released, 9% SLAC national accelerator laboratory, and 9% other income. See http://facts.stanford.edu/administration/finances.

TABLE 2
Some Contrasting Actions and Effects of Leadership at Stanford and Berkeley

	Sensing	Seizing	Transforming
		Stanford	
Perceived threats or opportunities	- Regional, not national, standing - Lack of financial resources (1950s) - Federal government support likely to expand (Cold War)[a]		
Leaders' actions/ inactions	- Recognize emerging opportunities for federal and private research support (1950s and 1960s) - Soliciting alumni gifts - Failed to see significant commercial opportunities for academic publishing	- Rapid response to opportunities - Established computer science curriculum - Established Stanford Industrial Park (1951) - Increased collaboration with industry - Focused strategy ("steeples of excellence," 1955–1965)[b] - Semiconductors; computer science	- Abandoned regional focus for national and global reputation - Steeples of excellence - Curricular and program reform - Research funding enhanced dramatically - Upgraded faculty and student body to allow top-tier status by 1975
Leadership effects on university		- Joint research with industry developed industrial park in 1951 that attracted new entrepreneurs in emerging electronics and computer industry[c]	- Endowment growth and good governance over the past 25 years ensures continued success
	Sensing	**Seizing**	**Transforming**
		Berkeley	
Perceived threats or opportunities	- Failed to foresee dramatic reduction in state funding		
Leaders' actions	- State of CA budget[d] - Failed to see significant opportunities for commercial academic publishing	- Resource reallocation for research in the late 1920s (to attract talent)[e] - Ambivalent about seeking outside funding - Slow response to emerging financial constraints[f] - Failure to openly and aggressively embrace new enterprise development - Important exceptions (e.g., biotech in the 1980s and 1990s)[g] - Focus on "across" - Maintained rankings despite the decreased state funding	- Aggressive (and successful) fund-raising, but starting from a low base - Program elimination - Collaboration with industry on research that is important to the state of California (e.g., agriculture, earthquakes, highways, bridges) - Prioritized faculty compensation and did a good job of retaining top talent
Leadership effects on university	- No early warning from leadership - Late at targeting major gifts and building entrepreneurial and gifting culture	- Increased outside funding - Missed early opportunity to develop strong local/ regional ecosystem	- Administrative costs lowered somewhat - Professional schools became more student friendly - Modest expansion of executive and professional training and education - Success in molecular biology and in information systems

[a] By the late 1940s, Stanford's engineering program had more than $2 million in government contracts. See https://alumni.stanford.edu/get/page/magazine/article/?article_id=42971.
[b] Under the leadership of Terman, Stanford launched a campaign to build "steeples of excellence," 1955–1965. See https://www.stanford.edu/about/history/history_ch3.html.
[c] History of Stanford. See https://www.stanford.edu/about/history/history_ch3.html.
[d] State funding has declined by over 30% since 1999–2000 (UC Berkeley, 2014).
[e] Matkin, 1990.
[f] The first major effort began in 1985 when chancellor Ira Michael Heyman took the lead in centralizing fund-raising and launching the "Keeping the Promise" campaign (Heyman, 2004).
[g] Jong, 2008.

cultivated potential donors. In particular, he was closely involved with the Ford Foundation, and this personal relationship yielded important funding for the campus. A former Stanford dean of humanities, Sterling became head of the Ford Foundation's Fund for the Advancement of Education[7] in 1951, which further enhanced the relationship. A few years later, when the university received a major grant in the behavioral sciences, a Foundation officer wrote:

> Wallace, you may be pleased to hear that our advisors gave Stanford a much higher rating in the behavioral sciences because of you and their expectations of you and not alone because of the university's previous accomplishments. (quoted in Geiger, 1993, p. 124)

In raising the school's academic reputation, Sterling was greatly assisted after 1955 by his new provost, then-dean of the engineering school Fred Terman. Like Sterling, Terman believed that the quality of faculty was paramount. He famously pursued "steeples of excellence," which meant recruiting small groups of high-quality faculty in areas of growing importance to science and technology. These faculty would in turn attract grant money and top students. Terman also promoted particular disciplines of national importance. To succeed, the strategy required a deep understanding of developments at the frontiers of technology and of the application of military technology to civilian needs.

Terman wrote his strategic vision for Joseph Pettit, his protégé and successor as engineering dean. This revealed a keen awareness of where opportunity lay:

> Do not waste time with the undergraduate programs. They had never paid big dividends no matter what resources were devoted to them. Instead, put the effort into the graduate departments, where national reputations were forged. And never forget the guiding principles of the 'mainstream theory' and the 'steeple concept.' There is no point in creating excellent programs in fields no one cares about. ... Stay in the mainstream, and make those programs count. Far better to build superb programs in a few crucial fields than to try for comprehensive coverage and end up doing lots of things well but none with distinction. (quoted in Leslie, 1987, p. 58)

In 1946, when Terman was dean of the engineering school, he took full advantage of the emerging possibilities in electronics research. Having led a wartime Harvard lab that collaborated with industry to develop and deploy radar countermeasures, he came to Stanford convinced that close relationships between the university and industry, government, and the military would be mutually beneficial (Lowen, 1997). Perhaps Terman also understood the potential of solid-state electronics (the transistors that would soon give rise to the integrated circuit) and what it could mean for the school and local economy. He also saw expanding federal funding of research as an opportunity in the postwar period. He wrote to Stanford's president:

> Government sponsored research presents Stanford, and our School of Engineering, with a wonderful opportunity if we are prepared to exploit it. ... We failed to take advantage of a similar opportunity presented by the research activities of the war. We are fortunate to have a second chance to retrieve our position. It is doubtful if there will ever be a third opportunity. (quoted in Leslie, 2000, p. 80)

He later recalled, "Stanford got a running start after the war as compared with our competitors around the country ... because we had, in effect, a carefully thought-out plan" (Terman, 1975, p. 117). In his view, Berkeley's College of Engineering lagged by two or three years in pursuing the same opportunities.

Spatial/locational issues matter, too. In 1951, Stanford trustees authorized the creation of Stanford Industrial Park on 209 acres (since expanded to 700 acres) of the university's land (Sandelin, 2004). Terman worked to enhance opportunities for collaboration with companies in the park (Adams, 2005). He saw these interlocking relationships as a way to overcome the notion that students had to head to the East Coast to advance their careers. Companies located on the industrial park have also been generous to Stanford, especially The Hewlett-Packard Company and both of its founders. In particular, alumnus Walter Hewlett's gift of $400 million in 2001 was the largest single gift ever received by an American college or university (*Stanford Report*, 2001).

Sensing at Berkeley. As a land-grant institution, Berkeley remained sensitive to the need to conduct research that would help solve national and state problems. This sensitivity was vital to its mission and its perceived legitimacy as a public institution. Its focus until recently was to do the best for the state of California and society, and to rely on politicians to protect and enhance the university's budget. But the university has been let down by politicians (if not by the public) who have not protected the university in

[7] The fund was established in 1951 to support new and experimental programs at all levels of formal education. See http://dimes.rockarch.org/FA740/biohist.

TABLE 3
Chronology of Leadership at Stanford and Berkeley

Stanford			University of California, Berkeley		
	President	**Milestones**	**Chancellor**	**UC President**	**Milestones**
1870				Henry Durant	Morill Act, 1862
1872				Daniel Coit Gilman	"Fiat Lux" highlights deep scholarship, 1868
1875				John LeConte	
1881				William Thomas Reid	
1885				Edward Holden	
1888				Horace Davis	
1890				Martin Kellogg	
1891	David Jordan (1891–1913)				
1899				Benjamin Ide Wheeler (1899–1919)	**Strong seizing phase** • Rapid growth with increased state funding • Business school opens[a]
1913	John Branner				
1916	Ray Wilbur (1916–1943)	**Transforming phase** • Upgraded facilities and salaries • Hoover donation			
1919				David Barrows	
1923				William Campbell	
1930				Robert Gordon Sproul (1930–1958)	
1932					Lawrence Berkeley National Laboratory
1943	Donald Tresidder	**Strong sensing, seizing phases**			
1949	Wallace Sterling (1949–1968)	• Raised $330 million in gifts[b] • Research park			
1952	Frederick Terman (First provost, 1955–1965)	• Creation of three VP positions • Steeples of excellence strategy	Clark Kerr (1952–1958)		Creation of Chancellorship
1958			Glenn Seaborq	Clark Kerr (1958–1967)	**Weak seizing phase** • Failed to develop Richmond site
1961			Edward Strong		
1965			Roger Heyns		Free speech movement, 1964
1967				Charles Hitch	Selected in 1966 as "best balanced distinguished university in the US" (Harvard was 2nd)
1968	Kenneth Pitzer				
1971	Richard Lyman (1970–1980)	**Strong seizing phase** • "Campaign for Stanford," $300 million (1972–1977)	Albert Bowker (1971–1980)		
1975				David Saxon	
1980			Ira Michael Heyman (1980–1990)		
1983		**Strong seizing phase** • "Stanford Engineering Venture Fund" (1984–1996)		David Gardner (1983–1992)	Selected as strongest graduate institution
	Donald Kennedy (1980–1992)		Chang-Lin Tien (1990–1997)		First fund-raising effort, 1985 "Keeping the Promise"

TABLE 3
(Continued)

Stanford			University of California, Berkeley		
	President	**Milestones**	**Chancellor**	**UC President**	**Milestones**
					capital campaign ($470 million)
1992	Gerhard Casper (1992–2000)			Jack Peltason	
1995					Demonstrations against Novartis' $25 million contribution
1997		Hewlett donation, $400 million	Robert Berdahl (1997–2004)		
2000	John Hennessy (2000–present)			Richard Atkinson (1995–2003)	**Strong seizing phase** • Improves ties with industry • BP funding • HP gift • Financial engineering
2003				Robert Dynes (2003–2013)	
2004			Robert Birgeneau (2004–2013)		
2013			Nicholas Dirks (2013–present)	Janet Napolitano (2013–present)	New concept for Richmond site

[a] The College of Commerce, later the School of Business Administration, opens. See http://vm136.lib.berkeley.edu/BANC/CalHistory/timeline.html.
[b] Toner (1985).

the budgetary process. Hence, reliance on the public purse has turned out to be a bad bet.

Nonetheless, Berkeley has become reasonably successful in recognizing and acting on federal research opportunities, as exemplified by the 1952 expansion of the Radiation Lab located above campus into the larger Livermore facility, about 40 miles southeast of the campus. Lawrence Livermore National Laboratory, as the facility was renamed in 1971, remains an important part of the regional innovation system in which Berkeley is embedded.

State funding began to decline noticeably in the 1970s, but the campus did not pursue alumni giving in earnest until the 1980s (as will be discussed in the next section, on seizing). Berkeley's commitment to remaining sensitive to the goals of the state legislature and of public values does not always sit easily alongside the requirements of surviving as a leading research university. For example, despite declining state support, Berkeley's leaders have continued the laudatory goal of economic diversity in the student body. In the 2012–2013 school year, 36% of Berkeley's undergraduates received Pell Grants, need-based grants for low-income students, versus 16% at Stanford (*U.S. News & World Report*, 2015). In a 2013 interview, then-outgoing chancellor Robert Birgeneau made the controversial statement "We don't need more great private universities—we need great public universities. ... That's Berkeley's responsibility. ... We need to be vigilant to maintain our public character for the indefinite future" (*Daily Californian*, 2013).

As former executive vice chancellor (and business school dean) Earl Cheit pointed out, the multiple goals Berkeley has set for itself are considerable:

> It's really an audacious aspiration. ... We want to be open and at the same time, as good as the places that have much more money, like Stanford. ... Stanford has half our students and twice our budget. ... So how does a land grant institution compete with people with that kind of money? It must compete in a very tough labor market for faculty and the best graduate students. That's the challenge that our leadership has. (Cheit, 2002, p. 401)

Today, one can question whether adopting the mantle of public university makes sense when (1) it locks the campuses into declining funding and increasing financial obligations, and (2) private universities are in any case competing to attract qualified low-income students and are better able to support them financially. Viewed this way, gaining access to

additional resources is paramount, and the benefits of being public questionable.

Berkeley has arguably been a bit slow in sensing and seizing some emerging commercial opportunities. This is illustrated by the long-term debacle (1960s to today) around UC Berkeley's Richmond Field Station. The Richmond site is on 100 acres located six miles northwest of the Berkeley central campus. The site affords an opportunity for industrial colocation, but because the university did not or could not raise the necessary funding, potential has not been fully realized. Multiple initiatives to develop the site into an industrial park failed. It remains to this day a field station, and the land is not yet put to its first best use.

Berkeley's then-chancellor Clark Kerr considered the Richmond site in the 1960s as a possible home for a Berkeley research park. This was after he had observed the early stages of the development of the Stanford Industrial Park. Kerr approached College of Engineering dean Morrough P. O'Brien about the idea, but the dean dismissed it as not being consistent with Berkeley's model for technology transfer on a more open, distributed basis through publishing research and training and educating engineers who would then enter the workplace (Hufferd, Leih, Siegel, & Teece, 2015). Other campus leaders also viewed developing a research/industrial park as "too risky" (Matkin, 1990).

One can only speculate what might have happened if the university had had better cooperation with the city of Berkeley to develop underutilized land in West Berkeley, or if it had been more affirmative in developing its Richmond Field Station site into a minicampus on which industry might have collocated.

Berkeley's leaders have succeeded for many years in their core educational and research missions, but some arguably have been too complacent with respect to the long-run sustainability and survival of the campus. Their thinking in the 1960s was dominated by large sociopolitical aspirations, including universal access to higher education and progress through science (Kerr, 2001a). While laudable, these goals, which set the tone for much of what was to follow, fell short of ensuring the longer-term fiscal health and independence of the university. Moreover, and despite their knowledge of the evolution of the state budget, they failed to see future vulnerabilities.

Seizing

In the dynamic capabilities framework, seizing refers to the panoply of decisions and activities connected with prioritizing opportunities and turning the most promising ones into realities. Stanford has proven adroit at capitalizing on opportunities for research and industrial collaboration. Berkeley has been slower in responding to opportunities for business collaboration, but there are important exceptions, most notably in molecular biology (discussed below under Transforming at Berkeley).

Seizing at Stanford. As noted, effective seizing requires clear prioritization and rapid and astute execution. When the U.S. military in 1950 reviewed its contract with Stanford with an eye toward augmenting it, Terman warned that unless Stanford acted quickly, the Navy would take its business elsewhere: "If there is a delay of even one month we are likely to be passed over for the present and may then never regain our present position" (quoted in Leslie, 1993, p. 70). The university's board of trustees rapidly approved the contract of $750,000 over two years, which effectively doubled the size of Stanford's electronics program. Terman and the trustees were able to move with equal speed when it came to industrial contracts (Adams, 2009). Under Terman, Stanford engineering focused on areas that were most likely to attract federal funding. His "steeples of excellence" strategy paid off as federal support increased from only $127,599 in 1947 to $13 million by the early 1960s. Examples of his "steeples of excellence" include the Microwave Laboratory Terman founded in 1945 and the Electronics Research Laboratory in 1947. The strategy reached a pinnacle in 1962 when the government built the Stanford Linear Accelerator at a cost of $114 million. At that time, it was the largest single federal research facility ever built (Matkin, 1990).

In 1959, Sterling commissioned a study, "Stanford's Minimum Needs in the Years Ahead," that called for new investment of more than $100 million. In 1960, spurred in part by Sterling's study, the Ford Foundation "offered the university an unprecedentedly large challenge grant: $25 million to be matched 3-to-1 by Stanford's fund-raising from other [non-government] sources" (Lyman, 2009, p. 10). The "Plan of Action for a Challenging Era" fund-raising campaign, which ran through 1964, garnered a total of $114 million (more than $872 million in 2016 dollars), making it the largest campaign in higher education up to that time. Sterling played a firm guiding role throughout.

Meanwhile, Sterling's relationship with the Ford Foundation led to a string of significant grants for

Stanford, beyond awards to individual faculty members.[8] The first was a $100,000 grant for the social sciences in 1950, Ford's first year of distributing such grants. In 1954, Ford provided $3.5 million for a new Center for Advanced Study in the Behavioral Sciences to be built on Stanford-owned land. Stanford Law received $600,000 in 1955 for international studies. In 1956, the university received a grant of more than $2.3 million (about $19.5 million in 2013 dollars) to provide a source of ongoing income to increase faculty salaries. In 1957, grants were awarded totaling over $5 million for various purposes, including $3.1 million for medical school instruction and a further $1.1 million to improve faculty salaries.

Another notable Stanford University president with regard to fund-raising was Richard Lyman (1970–1980). Lyman helped seize a different kind of opportunity when he guided the campus through Vietnam-era and civil rights protests. He enforced civil discourse on campus and expanded the enrollment of minorities and women. He also conducted what was then the largest fund-raising campaign in the history of higher education, the $300 million "Campaign for Stanford" that ran from 1972 to 1977. The funds, which amounted to more than $1 billion in 2016 dollars, were divided between the endowment, new buildings, and operational expenses.

Stanford's leaders, while not eschewing federal contracts and other public funds, can be said to have pursued an industry-friendly strategy that created a virtuous cycle in terms of not only funding but also the local economy and sponsored research. The engineering school was at the center of this and actively engaged with pioneering firms in Silicon Valley, assisting them where they could with teaching, research, and, more important, the supply of qualified graduates. Stanford's School of Engineering has continued to be an important center of leadership on the Stanford campus.

Another entrepreneurial dean of engineering, from 1984 to 1996, was James Gibbons, who continued to build faculty strength and created the Stanford Engineering Venture Fund (SEVF) to leverage the opportunities created by Stanford's ties to the venture capital community. In 1985, Gibbons approached a group of venture investors and asked that they not only endow chairs in the department, but also invest the gifts in the start-ups in their venture fund portfolios. After a successful decade, the original fund was wound down, and a successor fund was launched with new donors. In 2012, then-dean Jim Plummer remarked that "SEVF has made Stanford Engineering relentless in pursuit of big ideas and fearless in its decision-making. If we need something—buildings, equipment, resources, people, anything—we can seize the opportunity because of the Stanford Engineering Venture Fund" (quoted in Myers, 2012).

Seizing at Berkeley. The effective cultivation of state largesse has deep roots at Berkeley. The early rapid growth of the university under the leadership of Benjamin Ide Wheeler (1899–1919) was due in part to his ability to appeal to the state for financial resources. Wheeler succeeded in convincing lawmakers to provide the first major infusion of state funding for the university, tying support to the level of enrollment rather than to property tax revenues. The number of students grew from 2,535 to 12,227 during Wheeler's tenure, and the corresponding increase in funds permitted the hiring of new and talented faculty (Douglass, 1998).

Wheeler also gained the financial support of much of San Francisco's wealthy elite. Although there had been a long tradition of support, such as the Cora Jane Flood endowment in 1898, the amounts were small and the university was not geared up for major "development."

Berkeley also has a long tradition of leveraging ample government research support and strong faculty governance as a competitive faculty-recruiting tool. Unable to compete with salaries offered by wealthy private universities on the East Coast, Berkeley embarked on a campaign to recruit the best young scientists by offering to support their research. In 1915, the university established a separate fund for research controlled by the faculty, the first such fund in the country. In 1927–1928, Berkeley's funding for research was $112,000, compared to Stanford's $3,300 (Matkin, 1990).

Although Berkeley gained momentum in the 1950s by leveraging its expertise in nuclear physics, Stanford reaped even greater benefits from the post-Sputnik expansion of funding for university research. Albert Bowker, a former chancellor of Berkeley and former faculty member at Stanford, provided insight into the difference in the use of federal money between the schools:

> Terman had the view that the intelligent use of government money in those days, when things were pretty easy, meant it could be used to support faculty and could be used to support a department. . . . That's really how Terman built the engineering school. . . . He jumped into federal money much harder and faster

[8] Grant details are from back issues of the *Stanford Daily*, available online at http://stanforddailyarchive.com.

> than Berkeley, aside from the laboratories. . . . Berkeley was much more conservative in those years. (Bowker, 1991, p. 126)

Berkeley also lagged when it came to seizing opportunities to cooperate with industry. For much of the 1950s, IBM and other firms with staff in the proto-Silicon Valley area asked Berkeley to supply satellite teaching facilities (Adams, 2009). The program was debated by the UC Regents and politicians for four years before it was partially approved. However, San Jose State University had by that time gained accreditation for its own engineering program, and the Berkeley effort was terminated within a year of its inception. Also, when Xerox wanted to establish its new computer research lab within the city of Berkeley, it was driven off by unwelcoming city regulations and eventually established its lab (Xerox PARC) in Palo Alto (W. Spencer, personal communication, March 2014).

It wasn't until the 1970s, when the state of California reduced funding for Berkeley's engineering research, that the engineering department seriously pursued funding from, and collaboration with, industry (Adams, 2009). As has often been the case, Berkeley was reacting to events rather than anticipating them and shaping its own future. Rather than showing foresight, Berkeley chancellors have often excelled at doing more with less. Former chancellor Ira Michael Heyman (1980–1990) admired his predecessor for this: "Al Bowker came in the early seventies, . . . the fiscal problems were grim. Despite this, Al maintained the quality of Cal" (Heyman, 2004, pp. 47–48).

In 1985, nearly a decade after Stanford had completed its second major fund-raising campaign, Heyman launched Berkeley's first concerted effort to raise private money. His "Keeping the Promise" campaign promoted annual giving and gifts to the endowment by alumni, corporations, and other donors. The catalyst for this first campaign, he noted, was a need to fund biology projects and modernize campus biology facilities.

> It was a huge commitment. We had never raised this kind of money in a general campaign, and we didn't have any known fund-raising capacity to do it in biology. . . . We needed to raise these enormous sums. We might have planned a campaign less rapidly without this pressing need. . . . A campus wide undertaking was necessary for coordination and to maximize the efforts of all the units. (Heyman, 2004, p. 115)

The campus has been somewhat slow and weak at seizing, perhaps in part because some faculty believe involvement with industry is too complicated and riddled with conflicts that will get in the way of independent research. When a phobia exists, it can negatively affect many types of external alliances.

A case in point occurred when the campus announced in 1998 that it would enter into a five-year agreement with Novartis, a Swiss pharmaceutical giant and producer of genetically engineered crops (whose agriculture biotech business has since become Syngenta). Novartis would contribute $25 million over five years to fund faculty-proposed basic research in the Department of Plant and Microbial Biology in exchange for privileged (but not exclusive) access to discoveries. The agreement became highly controversial. There was a widespread perception that the deal "compromised the mission of the university," according to Lawrence Busch, an agricultural sociologist at Michigan State University and the principal investigator of an external study commissioned by Berkeley's academic senate (quoted in Dalton, 2004). Dean Gordon Rausser, the chief architect of the Novartis deal, argued that such deals enhance the university's research mission without compromise:

> What Novartis receives for its $25 million contribution is the right to *negotiate* to acquire at fair market value a *percentage* of discoveries that *may* result from research it helps fund. In other words, if there are no marketable discoveries, or the University does not accept Novartis's offer to license them, Novartis will receive no commercial rights at all. Even without this agreement, Novartis as a member of the business community could approach the Office of Technology Transfer to negotiate licenses on any of U.C. Berkeley's proprietary rights. On the other hand, the university will be a winner regardless of outcome, having obtained not only needed cash and possible intellectual property ownership but also, and perhaps most importantly, access to Novartis's proprietary genomic databases which are essential to Berkeley's cutting-edge research in plant and microbial biology. (Rausser, 1999, p. 8, emphasis in the original)

The cultural challenges at Berkeley associated with working with industry on any transformative scale have not yet gone away. In the words of Earl Cheit (personal communication, December 12, 2013), former dean of the business school:

> There are plausible partnerships or joint efforts that might be done with companies. The pushback on campus . . . is very, very strong from faculty members, and some administrators. There is a great concern that essentially academic values are going

> to be sacrificed. And the depth of that resistance is very strong.

These are challenging and controversial issues to some—exactly the type of situation in which strong leaders are required to give confidence that conflicts can be managed and that externally funded research is both permissible and desirable.

Perhaps because of a belief that the state would and should provide adequate funding for a deserving institution, campus leadership, along with many other constituents, failed to sense that the state was burdening its budget with entitlements it couldn't afford, including very generous defined-benefit pensions for state employees and runaway expenditures on prisons, all of which would conspire to squeeze the University of California's budgets in good times as well as bad.

There have nevertheless been remarkable periods of strong leadership over the past 25 years when Berkeley chancellors and the top executive team have been bold, smart, and effective in their actions. We mentioned earlier Chancellor Heyman's Keeping the Promise campaign to raise significant endowment in the 1980s. Among recent chancellors, considerable credit should go to Robert Birgeneau (2001–2013). Birgeneau and his executive team demonstrated uncommon agility not just by Berkeley standards, but by global (campus) norms. For instance, he pulled together teams (and the University of Illinois as a partner) in very short order that successfully pursued financial opportunities, such as the BP competition announced in the fall of 2006 that led to a $500 million grant (over 10 years) to create the Energy Biosciences Institute to support research on biotechnology to produce biofuels. As one Berkeley colleague explained to the authors in 2015, this was "a breathtaking example of nimbleness and leadership" (G. Breslamer, personal communication, September 13, 2015). This nimbleness and entrepreneurial spirit was cemented when Birgeneau appointed Graham Fleming as vice chancellor for research with a mandate to seek further partnerships and gifts. Successes included $20 million from the Alfred P. Sloan and Gordon Moore Foundations for data science.

The campus raised $3.13 billion from more than 281,000 donors between 2005 and 2013, led by Birgeneau. The chancellor rightfully claimed that "this was a historic campaign, not just for Berkeley but for all public universities in the United States" (Rodríguez, 2014, p. 1). In addition to the above achievements, in 2007 the university received a $113 million matching gift, the largest in its history, from the Hewlett Foundation to fund 100 endowed faculty chairs.

Perhaps the savviest move of the university, evidenced during the Birgeneau period and no doubt supported and engineered in part by Birgeneau's team, was the use of debt financing on a large scale. With historically low interest rates and strong debt-service capacity on the campus, it made enormous sense to use modest leverage to complete capital projects that would be revenue yielding (or add strong amenity value) to the campus. The Li Ka Shing Building, QB-3, the East Asia Library, the Lower Sproul project, and the new North Academic Building at the Haas School of Business all benefited from debt financing, which leveraged gifts and other funding.[9] Clearly, this much more entrepreneurial approach (the use of financial engineering) fully exemplifies dynamic capabilities. The leadership team that included Frank Yeary, John Wilton, Bob Lalanne, and George Breslauer was important to the execution of these initiatives.

Transforming

In the dynamic capabilities framework, transforming involves what is called asset orchestration and asset repurposing. These activities are associated with the breaking up of established ways of doing things to align capabilities with new needs and new opportunities in the broader environment.

Universities, like all organizations, must undergo some level of continuous renewal, such as regular revisions of curricula, shutting down moribund departments and institutes, and launching new initiatives to remain attractive and relevant. Leaders at Stanford appear to have been successful in guiding their campus through these necessary changes. Berkeley has made significant transitions, too.

Transforming at Stanford. Stanford's culture recognizes few constraints from the past. *Die Luft der Freiheit weht,* Stanford's unofficial motto, translates

[9] The North Academic Building at the Haas School of Business also benefits from alumni gifts to a new legal entity that constructed the building and then gifted it to the university, thereby avoiding the burden of state design regulations and other requirements that degrade quality and add to costs. This artful financial and legal engineering is necessary when the state will not fund capital projects or even operating expenses but nevertheless still tries to regulate expenditures even when the source of the funds is gifts from alumni and friends.

as "the wind of freedom blows." The phrase is from Ulrich von Hutten, a 16th-century humanist. Stanford's first president, David Starr Jordan, embraced the critical spirit of these words when, at the school's opening celebration in 1891, he said that Stanford "is hallowed by no traditions; it is hampered by no one" (quoted in Eesley & Miller, 2012, p. 12). Current Stanford president John Hennessy echoed this in his own inaugural speech: "Stanford was born with a Western pioneering spirit . . . and this spirit has continued to characterize how we approach our mission" (Hennessy, 2000, p. 1).

Transformation has come repeatedly to Stanford's academic departments. Pamela Matson, dean of the School of Earth, Energy, and Environmental Sciences, described it this way:

> There's a tradition of changing, of evolving as new tools and methods and approaches become available, as the questions change and as the challenges facing humanity change. We're proud of that agility, that ability to be flexible. You see over our history departments coming and going, merging and changing, new things being added all the time. (Sullivan, 2012)

This tradition dates back to at least Ray Lyman Wilbur, who became the third president of Stanford in 1916. He believed the university was ready for a stepwise improvement and set out "to transform Stanford's academic organization, upgrade its facilities and salaries, and jump-start fund-raising . . . [while] expanding graduate study and professional education, promoting faculty research and outside consulting, and stressing scholarship over extracurricular activities" (Gillmor, 2004, p. 26).

When Wallace Sterling became president of the university after World War II, he criticized the educational standards of entering students and set about upgrading faculty to allow the school to be more selective about admissions. His successful fundraising efforts allowed him to increase salaries to attract and keep the best faculty. This was accompanied by increasingly high standards for appointments and promotions.

Sterling also implemented organizational change. The creation of three vice president positions—for business, finance, and the provostship—in the late 1950s allowed Sterling to concentrate on external relations. He liked how the engineering department had made a portion of salaries dependent on federal contracts and sought to extend that model across the campus. That was one of his motivations in making Frederick Terman, then dean of engineering, Stanford's first provost.

Terman had built up the capacity of his engineering department partly through an unorthodox hiring technique. He sought out the most knowledgeable and talented electrical engineers in Silicon Valley and "anointed" them as adjunct or consulting professors at Stanford, because Stanford faculty were not yet sufficiently conversant with the new technology to teach it. As Albert Bowker, a Stanford professor at the time (and later Berkeley's chancellor), recalled:

> One of his famous statements is "The academic administration is something like intercollegiate athletics, except there are no rules." Terman was a real bandit in some ways. He really believed in competitive bargaining, hiring the best, and doing what it took to get them. He is the one who made Stanford what it is today, in my opinion. (Bowker, 1991, p. 131)

Consistent with Bowker's observation, current Stanford president John Hennessy articulated the need for continuous transformation in his 2000 inauguration:

> Being a university of high degree is not something that can be maintained by standing still. It requires us to reexamine and rejuvenate what we are doing, and it requires us to be bold in launching new efforts and in seeking out new ways to build on the foundation of our predecessors. (Hennessy, 2000, p. 1)

Hennessy has also remarked, "We feel that the venture community knows that here at Stanford we are willing to work with our innovators to facilitate the process of technology transfer" (quoted in Aycinena, 2004).

Transforming at Berkeley. Berkeley's motto, *Fiat lux* ("Let there be light"), was selected at its founding in 1868 and reflects the school's emphasis on deep scholarship. Quality research, not entrepreneurship, is the most valued campus focus. Even academic entrepreneurship has not been highly valued.

Consistent with this focus is Berkeley's longstanding involvement with federal government-sponsored national labs, such as Lawrence Livermore and Lawrence Berkeley, founded in 1952 and 1931, respectively. There was also engagement with the Naval Biosciences Laboratory, a campus-based unit that studied infectious diseases from 1934 to 1974. Links with the national labs are "safer" than collaboration with industry and the pursuit of start-ups in terms of impact on values. As a consequence, collaboration often focused on links to the national labs more than links to industry. The connection brought generous federal research funding

that perhaps had the effect of reducing the need to reach out to industry. Berkeley's transformation efforts, like Stanford's, often are triggered by external circumstance. Sometimes transformation is initiated by faculty and endorsed by the leadership.

A period of slow transformation at Berkeley started in 1951, when the regents approved a devolution of authority from the statewide system to the two largest campuses, Berkeley and Los Angeles. The office of chancellor was created in 1952, with Clark Kerr as Berkeley's first chancellor. As part of Kerr's academic revamp, vocational departments were eliminated, and the resulting resources were reallocated to research. The social science departments were also improved. By 1964, Berkeley was rated as the nation's "best balanced distinguished university"—ahead of Harvard, Princeton, and Yale, which were ranked two, three, and four, respectively (Kerr, 2001b, p. 58). Kerr succeeded even though Robert Gordon Sproul, the system president while Kerr was Berkeley chancellor, was a micromanager who did not—at least initially—allow Kerr to make the myriad small decisions that administrators ought to be responsible for. This led to long delays for even minor decisions (Adams, 2009).

As a public institution, Berkeley is more highly regulated than Stanford. In practice, this means it can be hard to get things done. Former executive vice chancellor Earl Cheit remarked in a 2002 interview that "new regulations on universities—regulations about affirmative action, regulations about equity, and all sorts of regulations ... make universities more accountable and bureaucratic. But ... Berkeley is much more bureaucratic than other campuses in the system" (Cheit, 2002, p. 134). He saw this as creating barriers to bold leadership and decision making by deans and department chairs. As Adams (2009) observed, if Terman had been at Berkeley rather than Stanford, he is unlikely to have had anything like the same impact on either the school or the regional economy.

Cheit provided an example in the use of corporate logos in relation to athletic activities. At the time, these needed to be approved by a committee. One sponsorship deal with a company that had already partnered with the campus in other ways took so long that the company finally withdrew, "a source of embarrassment and a financial loss. ... Part of the diminishment of deans and chairmen is the bureaucracy" (Cheit, 2002, p. 135).

Berkeley's attitude, as explained above, was lukewarm (some might say even hostile) to the commercialization of faculty research. Moreover, the university's administration was unaccustomed to dealing with commercial concerns and had no system in place for dealing with companies and commercialization issues. As one contemporary observer put it, "Berkeley is struggling through a minor identity crisis over technology transfer" (Matkin, 1990, p. 44).

Notwithstanding, the campus has transformed itself from time to time in quite remarkable ways. Perhaps the most praiseworthy effort to "transform" on campus occurred in molecular biology. Molecular biologists in Berkeley's biochemistry department became involved in the nascent biotechnology industry in the 1970s as not just consultants but also founders of firms, with professor Ed Penhoet leaving the biochemistry department in 1981 to co-found Chiron Corporation (with Pablo Valenzuela and Bill Rutter at UCSF). Other Berkeley faculty played key roles in the founding of Genentech, a biotechnology firm now owned by Roche Holding AG.

Importantly, the faculty-led initiative to unify the fragmented research activities of Berkeley faculty in molecular biology and related fields enabled provost Roderick Park to establish in 1980 the Chancellor's Advisory Committee on Biology (CACB), with scholar Dan Koshland as chair. Koshland was an iconic scientist and editor of *Science* magazine and an early champion of links to the biotech industry. The CACB pushed through a sweeping reorganization of biological sciences that included the winding up of 10 biology departments and 150 faculty and their relocation into two new departments: integrative biology and molecular and cell biology. These two clusters were designed to create a multidisciplinary community that would allow focus on therapeutics. The initiative was strongly supported by the chancellor, in part because it looked as if it would assist in external fundraising and might also attract state funding for capital expenditures. It did in fact attract state cofunding; that opportunity then triggered the first major fund-raising campaign for the Berkeley campus, led by chancellor Ira Michael Heyman (Koshland, Park, & Taylor, 2003).

Berkeley has had similar but smaller-scale initiatives. Noteworthy is the formation of the School of Information Systems in 1994 out of the old School of Library Sciences, which traced its roots to the 1920s. The final name change to today's School of Information came in 2006. The I-School, as it is known colloquially, is on the vanguard of contemporary information solutions.

Moderate change has also been made at the system-wide level. Richard Atkinson, president of the UC system from 1995 to 2003, improved the university's ties with industry, especially in the areas of science and engineering. In 2000, his effort resulted in the state's allocating $100 million to each of four multicampus institutes, represented on the Berkeley campus by the Center for Information Technology Research in the Interest of Society and the California Institute for Quantitative Biosciences (Breslauer, 2011). Atkinson also chose Berkeley as the first campus to offer Discovery Grants in 1996 under his new Industry–University Cooperative Research Program.

Berkeley's leaders now have to guide the campus into a new world of minimalist state support with a limited repertoire of organizational capabilities at their disposal. The absence of bold leadership may have contributed to Berkeley's weak financial position. It was not able to win the difficult budget battle in Sacramento, and the campus has missed other opportunities.

Berkeley's comparative strength still lies in its graduate programs, which are the pacesetters in the United States and abroad. While it has not lost its lead to Stanford, it is no longer unassailably superior, despite statistics that show superior across-the-board academic research strength. Stanford's undergraduate program is often more sought after, as are some of its professional schools.

The battles at Berkeley are perhaps as much ones of culture and values as of resources and structure. When the faculty are supportive of new initiatives, they tend to happen. However, both faculty and students are capable of throwing up roadblocks to quality-enhancing change.

In our view, a new and more strategic and entrepreneurial culture must emerge at Berkeley to enable the chancellor to get more done. The faculty needs to be led, and the chancellor needs to provide a bold, clear-eyed, and non-apologetic vision from the top. For instance, it's still the case that Berkeley's campus values are ambivalent around entrepreneurship. Even in the engineering college, elements of disquiet surround involvement with start-ups. In the words of one professor: "Our culture is changing slowly, but faculty are still shy to talk about their start-ups even though almost every faculty member (in the College of Engineering) is involved in quite a number" (K. Keuter, personal communication, July 8, 2014). The chancellor, provosts, deans, department chairs, faculty, and students must come together around a shared vision for the necessary change to occur. The chancellor is ideally positioned to explain why being entrepreneurial is not at odds with being "independent," and that linkage to industry and other campuses (through partnerships and other mechanisms) at home and abroad is important for the long-term survival of the institution and for the maintenance of the campus's great strength in sciences, mathematics, engineering, and the arts. New initiatives and an augmented resource base are necessary to achieve this.

DISCUSSION

This study has examined the functions of leaders in universities and provided a contingent explanation about the effects of leaders on organizations. Our study contributes to the literature linking processes of organizational adaptation to rules that define the relationship of universities to their external environment (e.g., Jong, 2008). Our analyses of two cases provide a more detailed but still only impressionistic insight into the dynamics among campus leadership, strategy, institutional adaptation, and performance. We believe that leadership and campus leaders' dynamic capabilities induce or encourage individual members at universities to work harder and improve their commitment to the campus, which ultimately contributes to enhancing university performance.

More specifically, we have examined organizational fit from the perspective of leaders. We have noted that while both Stanford and Berkeley have pursued technical fitness (operational effectiveness and financial controls initiatives), there is further to go. Evolutionary fitness (adaptation and anticipation to changing circumstances) is also required (Helfat et al., 2007). Dynamic capabilities can help guide leaders in that direction. We posit that Stanford has also aggressively pursued (or at least had success) developing evolutionary fitness, and now has an impressive endowment to help it navigate whatever troubled waters lie ahead.

Berkeley delivers more for less, but having better cost-of-service/enrollment metrics does not guarantee survival as a world-class institution. Its financial foundations are more precarious than Stanford's. Its evolutionary fitness is more tentative. Delivering high quality at a diminishing discount (i.e., lower tuition) is not a panacea. Dynamic capabilities are what counts. The absence of strong dynamic capabilities are Berkeley's (and many other institutions')

Achilles heel. Below, we briefly assess where each institution stands with respect to sensing, seizing, and transforming.

Sensing: Homogeneity in Perceptions of the Environment Among Leaders

We perceive that Stanford has relatively strong capabilities in this category. Its leaders have reacted to trends and opportunities, such as the postwar economic boom and recent student interest in social entrepreneurship; moved to capitalize on them by leveraging the resources the school has built, such as its relationships with leading technology firms; and continuously transformed academic offerings to carry out their strategy.

Leaders at Berkeley perceived the environment differently. For example, while some chancellors saw the need to develop a science and technology park, others saw the state government in Sacramento as their most important patron, causing the leadership to pursue broad public goals, usually at the expense of developing thicker links with industry. Campus leaders were also sometimes distracted from administration and planning by the pursuit of their academic research.

Heterogeneity in perceptions regarding the direction and mission of the university may make sensing activities somewhat futile, because there is less agreement around what constitutes threats and good opportunities. There is clearly a role for leadership in achieving greater unity and consensus around a long-term strategic vision, by which we mean a plan for how the university will compete and the course it will take to do so.

Berkeley has been handicapped by its restrictive 1,232-acre footprint and its adjacency to a city that, from the 1960s until quite recently, was anti-development and, to some extent, anti-university. But campus leadership has so far not pursued particularly creative solutions to these limitations. It has tried to manage within the status quo; it has not tried to shape a different world as much as it might have. Fortunately, the city of Berkeley has been more permissive on development over the past five years, and this bodes better for the future of both the city and the university.

Seizing: Focused Strategic Goals

Consensus on strategic goals allows an institution to be more effective. Stanford's overseers have been aligned with the vision of campus leaders. Its faculty and students are relatively docile. Leaders at Berkeley, however, are answerable to both the faculty and the Regents of the UC system. Students and off-campus elements also have undue influence. The challenge is therefore much greater for Berkeley leaders, who must convince these and other constituencies that they have adopted the right strategy. In short, the governance structure at Berkeley is cumbersome, and the activist student body is often a handicap, as it can be naive about how the university's resource base is maintained and expanded.

The response of each university to opportunities has also been different. Stanford used the postwar boom in defense spending as an opportunity to collaborate with industry. Berkeley also had access to defense dollars but has generally preferred to emphasize basic research activities that companies find less appealing.

While Stanford did not create Silicon Valley, it has positioned itself well within it. Berkeley has also contributed to Silicon Valley's success in many ways, with faculty and graduates playing major roles in the founding of firms such as Cadence, Sun Microsystems, and Intel. Stanford used its land to bring companies into close proximity with campus activities. The collaborative opportunities that arose far exceeded the rent that was paid. Berkeley, of course, also participates in, and benefits from, Silicon Valley, but the symbiosis between Stanford and the local high-tech ecosystem is more developed.

As noted, Berkeley has made only limited use to date of the 100 usable acres at the Richmond site, to which it has had access since the 1950s. Berkeley's ability to seize opportunities is often constrained by the entrenched interests of the faculty and naive views of students. The strained relations with the city of Berkeley and the city's historic anti-development status harmed the campus, as has distraction over whether Sacramento and those directly in charge of the state budget were likely to support the university.

Today, leadership with respect to on-campus entrepreneurship is being supported by the federal government through the Innovation Corps (I-Corps) program, a National Science Foundation (NSF) initiative started in 2011 that supports "guided academic entrepreneurship" (Teece & Guile, 2013). Through I-Corps, the NSF is essentially paying major universities to help turn NSF-funded breakthroughs on campus into entrepreneurial ventures. This is of great benefit to the Berkeley campus, because the NSF's involvement and support helps legitimize activity that campus leadership has been slow to endorse.

Notwithstanding Stanford's general proclivity to sense and seize commercial opportunities, it is intriguing (and disappointing) that neither Berkeley nor Stanford has managed to commercialize academic publishing in a significant way. University of California Press is a system-wide entity with a stellar academic reputation, but it has failed to evolve into the kind of academic publisher that Oxford University Press or Cambridge University Press became. Stanford University Press, likewise, has failed to become a truly noteworthy (academic) publisher. An indicator of the missed opportunities is the stellar contribution of Oxford University Press, which from 1996 to 2006 provided more than £377 million to Oxford University (Hood, 2008). This is an indication of the potential that was available to both campuses. Only a lack of entrepreneurial leadership (over many chancellors/presidents) and possibly difficult governance issues (in the case of Berkeley) can explain the failure to capture this opportunity.

Transforming: Organizational Experience

As we have seen, Stanford was fortunate to have Sterling and Terman, who worked together to bring the campus into the top-tier rankings. Together, they sensed and seized opportunities afforded by the postwar boom, astutely harmonizing political and market forces, on-campus constituencies, and institutional mission.

Even as leaders at Berkeley sensed the onset of budgetary constraints and launched fund-raising campaigns, and despite high-profile successes like molecular biology, campus leadership did not fully seize the moment and begin to fundamentally transform the university. Hampering the campus have been various dysfunctional aspects of Berkeley's culture (e.g., riots and demonstrations often led by off-campus nonstudent groups) and value subtraction from dealing with lawmakers, the Regents, and the University of California Office of the President. Getting some campus constituencies to understand that campus links to business and involvement with commercial entities aren't necessarily detrimental was a tall order. Further success will require uncommon leadership.

Moreover, complacency both on campus and with alumni has continued in some quarters, even as state funding per student continues its decline. The university's ability to ally with industry has been constrained by an empowered faculty and activist student body that is not sure that partnering with business is a good idea. These conundrums require great leaders to resolve them. Allowing these constituencies to dominate the discourse and to cow campus leadership will cause the university to fail in its core mission, let alone its ancillary ones.

As one can imagine, given the complexity of historical and social processes, it is difficult to prove a causal metrics-based link between campus leadership and campus performance. However, as Table 4 shows, a number of indicators demonstrate that Stanford as a whole has more rapidly improved its standing against its competitors. The consequences of these past deficiencies now haunt Berkeley and other University of California campuses. They can be overcome by building stronger dynamic capabilities and finding leaders who can support the academic enterprise while being entrepreneurial in their own leadership/management style.

CONCLUSIONS

Our research has shed light on the functions of leadership necessary to undertake the mandates required to maintain the viability of the university. If one had reviewed the relative standing of Berkeley and Stanford in 1950, Berkeley unquestionably would have been the superior institution. Half a century later (in 2000) that was no longer clear, even though Berkeley's across-the-board strength is well recognized by scholars worldwide. Today, each campus has its champions.

What is undisputed is that Stanford has grown from a regional university to one of the top universities in the nation and world. In our view, Stanford's superior dynamic capabilities help explain Berkeley's relative decline. The continued viability of Berkeley's more academic and more consultative approach is less certain but may be required by its governance structure.

Berkeley remains the world's greatest research university, but the withdrawal of generous state funding is a major negative factor. Dramatic decreases in state funding levels are unlikely to change. The impact of lower state funding could have been offset if both the university and the city of Berkeley had made economic development and stronger business linkages a priority. Neither did.[10] Much

[10] As noted above, Dr. William Spencer, vice president of research at Xerox, pointed out in an interview that Xerox's first choice for what became its Palo Alto Research Center (PARC) was Berkeley, not Palo Alto. Given that almost all of the technological breakthroughs essential to the PC came from PARC, the futures of the two universities may well have been different.

TABLE 4
Major reputational rankings of graduate schools, 1906–1982

Institution	Cattell (1906)	Hughes (1925)	Hughes (1934)	Keniston (1959)	Curtter (1966)	Roose/ Andersen (1970)	Ladd/ Lipset (1979)	Assessment (1982)
UC Berkeley	**6**	**9**	**1**	**2**	**1**	**1**	**2**	**1**
Stanford	**12**	**14**	**13**	**13**	**5**	**3**	**3**	**2**
Chicago	3	1	5	6	9	7	6	7
Harvard	1	2	1	1	2	2	1	3
Columbia	2	3	3	3	7	12	11	11
Yale	7	4	7	4	6	5	4	3
Wisconsin (Madison)	10	5	4	8	3	6	7	8
Princeton	13	6	11	7	10	8	8	6
Johns Hopkins	5	7	9	16	13	19	17	30
Michigan	8	8	8	5	4	4	5	8
Cornell	4	10	6	9	11	11	12	11
Pennsylvania	11	12	14	11	15	14	15	14
Minnesota	14	13	10	12	12	16		16
Illinois (Urbana)		11	11	10	8	9	10	13

Sources: Webster (1983, p.18), Kerr (1991).

remains to be done. Perhaps federal support to public universities is a possibility.

Our research is the first effort to apply the dynamic capabilities framework to issues in the management of research universities. While in the past the approach of strategic planning (Massy, 1996) was applied to help interpret and shape university strategic management efforts, there has been little effort in recent decades to bring strategic management thinking to bear on the management of universities.

Our research also contributes to the literature on academic entrepreneurship. Research efforts have noted the growing role of universities in creating and diffusing ideas and knowledge. Academic entrepreneurship has been part of the policy debate about the best ways to diffuse knowledge and achieve beneficial university–industry interactions (Rosenberg & Nelson, 1994). There is a need both at the societal level and within universities to adapt their promotion and remuneration systems to incentivize new arrangements and new partnerships to deliver better education more cheaply and to assist in technology commercialization activities that benefit the campus (Siegel et al., 2007). However, tensions will always exist among scholarly research, new technology models, and commercial pursuits. Stanford has shown that leveraging the complementarities between the university and industry can elevate the entire academic enterprise rather than debase it. In practical terms, Stanford's win-win ecosystem approach to linking higher education to the needs of industry has provided durable advantages.

Our assessments should be viewed cautiously. First, the historical record required us to rely on perceptual measures of organizational capabilities and leaders' characteristics. Second, the anecdotal evidence collected from the archival data are incomplete. Not all presidents' and chancellors' interview transcripts were available, so our selection was somewhat opportunistic.

Our study was designed to be exploratory. Much more work has to be done. Efforts to improve the measurement of leaders' characteristics, capabilities, and performance will prove vital for the validation and extension of our findings. Research designs that evaluate individual leaders and universities may yield additional insight and understanding, too.

We hope our study will bring more attention to the need for a more strategic approach to the management of universities. It will help ensure evolutionary fitness. Increased interest in university management and leadership would be a positive development for the higher education field. Much of the policy debate has hitherto been at the sector level. Little attention has been paid to particular universities and their senior leadership. The complexity of the subject requires the integration of micro-level and conceptual and empirical frameworks from diverse disciplines. The application of the dynamic capabilities framework may be a first step in this direction.

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Sohvi Leih (sleih@berkeley.edu) is a visiting scholar at the University of California, Berkeley, where she was previously a postdoctoral scholar, and an assistant professor at Loyola Marymount University in Los Angeles. Her work has appeared, or is forthcoming, in management journals including *California Management Review*, *Strategic Organization*, and *Global Strategy Journal*, and from publishers such as Oxford University Press. She received her Ph.D. from the University of Oxford.

David J. Teece (teece@haas.berkeley.edu) is the Tusher Chair and director of the Tusher Center for Intellectual Capital at the Haas School of Business at the University of California, Berkeley. He is also chairman of the Berkeley Research Group and has published more than 20 books and 200 articles on the role of technology and capabilities in enterprise performance.

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Re-inventing Shared Governance: Implications for Organisational Culture and Institutional Leadership

Bjørn Stensaker, University of Oslo and NIFU, bjorn.stensaker@ped.uio.no
and Agnete Vabø, NIFU, agnete.vabo@nifu.no

Abstract

Shared governance has been a key historical characteristic of higher education although this form of governance has come under increased pressure in recent decades. It is often argued that shared governance is less relevant for tackling the challenges related to a more dynamic environment of the sector. This paper discusses underlying premises for the current conceptions of shared governance and analyses how a sample of Nordic universities perceives the place and role of governance in their strategic development. It is found that most universities emphasise leadership and leadership development as a key measure to strengthen their governance capacity and it is argued that most universities seem to overlook the cultural and symbolic aspects of governance along the way. This may have serious consequences for the internal legitimacy and trust when universities enter into demanding change processes.

Introduction

Higher education has for a long period experienced a series of reforms and change initiatives following altered environmental conditions. As part of this process, universities have been encouraged to renew their systems of governance. While many universities historically have been governed through a system in which academic staff have played a major role in decision-making, the arguments launched as part of various reform processes are that this form of governance is not responsive enough to handle the rapidly changing environment and that decision-making involving academic staff is too slow and incremental (Birnbaum, 2004, p. 7).

Both in the US and in Europe, serious criticism has been launched about the need for universities to streamline their governance systems. In the US, such criticisms have been addressed by the National Association of State Universities and Land Grant Colleges, by the Association of Governing Boards of Universities and Colleges and other stakeholders (Birnbaum, 2004). In Europe, arguments about the need for governance reforms have come from the European Commission through its 'Modernisation Agenda' (European Commission, 2013) but also from national reform initiatives in the sector (Musselin, 2005; Maassen and Olsen, 2007). Such initiatives are often linked to changes in the relationship between the state and higher education in which universities achieve more autonomy in exchange for stronger accountability claims (Huisman, 2009; Stensaker, 2011; Stensaker and Harvey, 2011).

A recent European Commission-funded review of changes in governance of universities in Europe found that although changes take place at various extent and pace; there are signs of more external representatives in the supervisory or governing boards of universities, increased institutional autonomy in determining internal governance structures and increasing financial autonomy of universities in general (de Boer *et al.*, 2010). Following this review, the European Commission have still argued for the need to develop 'more flexible governance and funding systems', to 'support the development of strategic and professional higher education leaders and ensure that higher education institutions have the autonomy to set strategic direction' (European Commission, 2011, p. 9). In other words, there is continuing political drive for further reforms in the internal governance of universities: a drive that also seems influenced by the dynamics within the higher education sector (Tuchman, 2009; Wildavsky, 2010; Fumasoli and Lepori, 2011).

However, one could argue that governance could be perceived as something more than just an instrument for accomplishing more strategic and lean universities; it could also be seen as an essential dimension of their identity as institutions having a strong impact on how universities function, with possible implications for their overall performance. A key characteristic of universities has been the intimate link between governance arrangements and the core 'production' associated with universities; teaching and research (Ben-David, 1991). It has been argued that it is exactly this link that makes these institutions unique, not only as organisations but also regarding the ideas that emerge from them. Birnbaum (2004, p. 20) has therefore warned against

attempts to focus too much on making universities efficient, due to the danger that extremely efficient universities may easily be transformed into something else than academic institutions (see also Geiger, 2004).

The point to be made then is that while universities indeed need to adapt to changing environments, there are still good arguments for trying to maintain key characteristics of the historical legacy regarding how universities are governed. The question is how universities are currently balancing these dimensions: what are the perceptions of and place for shared governance in the strategic development of universities? The article addresses this question by developing a framework for understanding the current changes in the internal governance of universities and by analysing how a sample of leading universities in the Nordic region present future visions regarding their internal governance systems as expressed in their strategic plans.

A framework for analysis

What is shared governance?

The concept of governance is in general usually referred to as a form of steering beyond state influence, in which societal influence is secured through various networks or other steering arrangements (Treib *et al.*, 2007, p. 3). Within higher education, the concept of shared governance has historically had another meaning hinting at the influence and representation of academic staff in various decision-making processes. Still, while the concept of shared governance may sound self-evident in higher education, it is not easy to define this concept (Leach, 2008, p. 13). Part of the problem is related to the difficulties of linking shared governance to specific governance arrangements. As demonstrated by various studies, the internal governance of universities is highly diversified (Martin and Etzkowitz, 2001; Amaral *et al.*, 2003), dependent on national and institutional traditions and history (Clark, 1972, 1983) and to a various extent affected by national and global reform trends (Huisman, 2009; de Boer *et al.*, 2010; Bonaccorsi *et al.*, 2010). What these studies show is that while shared governance has historically been associated with academics being involved in decision-making, there are differences both as to *how* they are involved and the range of actors involved in the decision *sharing*. Concerning the differences in how academics are involved, Minor (2003, p. 962) distinguishes between three perspectives:

- academics involved in all decision-making issues;
- academics involved in decision-making on academic matters;
- academics should not have a major influence in decision-making.

Within these three perspectives, one could also differentiate between the extent to which academic involvement is formally secured through legislation, or whether their involvement is more dependent on traditions, culture and informal arrangements (March and Olsen, 1976; Tierney, 2004; Whitley, 2008; Lamont, 2009).

With respect to the sharing of decisions, it is possible to identify an expanding inclusion of various actors in the institutional governance arrangements. Not least an important development in shared governance took place in the late 1960s and early 1970s with the so-called democratic revolution of universities (de Boer and Stensaker, 2007). During this period university governance was opened up for the participation of new actors in decision-making. In some instances one could even argue that this process led to the formation of the university as a representative democracy, especially if the following characteristics were met in the governance arrangements (de Boer and Denters, 1999).

- Affected interests should have the right to elect their representatives and should be eligible for such positions.
- These representatives should have substantial powers (otherwise the university demos can not effectuate its voting right).
- Decision making powers should not be concentrated but fused or separated among the several; ideally, in a system of horizontal checks and balances, the representative council has the upper hand.

As part of this democratisation process students were also included in governance arrangements (Klemenčič, 2012), for example, in the governing of institutional quality assurance systems (Michelsen and Stensaker, 2011).

However, reform and change initiatives have also triggered the inclusion of other types of stakeholders in institutional governance. The so-called marketisation of higher education has been identified as an important driver behind this development (Etzkowitz *et al.*, 2000; Kerr, 2001; Geiger, 2004; Teixeira *et al.*, 2004) and has to some extent contributed to push back the notion of the university as a representative democracy in favour of more corporate governing structures streamlining internal decision-making (Power, 2007; Smith and Adams, 2009; Dill, 2012) and where it is the external rather than the internal voices that has the upper hand (Robbins, 2003; Tuchman, 2009).

Sometimes it is external representation combined with a strengthened institutional leadership that may trigger 'managerialism'; a sort of generic narrative about the need for strategic change and institutional transformation (Reed, 2002, pp. 164–5), where the university is in need of becoming an organisational actor that respond to environmental challenges in a coherent way (Krücken and Meier, 2006). In the latter processes academics are involved more as consultants instead of being collaborators in the decision-making process; a development that academics tend to perceive as unfortunate (Tierney and Minor, 2003).

Hence, in a historical perspective one could argue that there is still much shared governance in higher education but that the perceptions of what shared governance means are being re-interpreted both regarding the processes relating to decision-making and the types of actors involved. Not least, significant changes in the organisation of subjects and disciplines can be identified with the establishments of multi- and interdisciplinary study programmes, research schools and research groups. Furthermore, increasing numbers of student and academics, as well as increased differentiation in research and education tasks, reforms in the public sector in general and in higher education in particular, have contributed to the growth of administrative staff. The social characteristics, formal training and education, roles and functional areas of the administrative corps have changed; it is better educated and consist of more advisors and fewer secretaries. Increasingly administrative staff work in the interface between management and science, in developing research networks and applications, in relation to processes of knowledge transfer, regional cooperation and development of partnerships and in implementing institutional strategies (Whitchurch, 2012). This interaction between academic and administrative involvement is perhaps an indication of what the future of shared governance may imply.

What is the effectiveness of shared governance?

There are several empirical studies that have tried to analyse how shared governance can best be facilitated and whether there are any distinct characteristics associated with effectiveness of shared governance. Several of these studies have also addressed the issues often used as points-of-departure for criticising shared governance where academics play a dominant role: that shared governance is unsuitable for taking tough decisions (implying that shared governance is less suitable for settings in which strategic change is needed) and that shared governance is too slow in a situation requiring more dynamic decision-making.

There is considerable evidence suggesting that shared governance is far from functioning in an optimal way. In Norway, a survey showed that most academics in principle would prefer academic leaders to be elected, although their experience with appointed leaders is very positive (Bleiklie *et al.*, 2006). Many academics may also conceive shared governance as non-productive and mostly symbolic processes that are not prioritised in a situation where the academic workload and demands for research output is significant and where external activities and profiling is perceived as more important than participating in internal decision-making (Leach, 2008). Hence, it is perhaps not surprising that studies have shown academics in some countries to be more dissatisfied the more involved they are in administrative decision-making processes (Geurts and Maassen, 1996), although it has also been found that trust in leadership increases the more frequent contact academic staff have with the leadership (Bleiklie *et al.*, 2006). Primarily, increasing autonomy for universities mean that institutional leadership is given greater autonomy in their management of academic, organisational and financial issues. More autonomy for leadership does not necessarily mean more personal autonomy for academic staff. The quality of the relationship between academics and leadership as well as any changes in working conditions for academic staff due to new management forms is an important backdrop to an understanding of the conditions of 'success' with new forms of governance. However, strategic institutional autonomy can be limited by different organisational constraints. First, one should bear in mind the often complex legal status of the higher education institutions, as they are often subject to and regulated by extensive laws and guidelines at national and international levels. Second, despite strategic and other efforts to develop universities to become more coherent, with common strategic goals and 'philosophy of management', as organisations they are nevertheless loosely coupled as disciplines, scientific and intellectual communities and are governed by their own standards of academic work and quality. New modes of governance, as well as the rise in the number of administrative staff, is typically considered by academics to be a negative development as the administrative corps is criticised for exercising too much power over academic issues. A recent global survey of academics ('The changing academic profession', the CAP-study (Locke *et al.*, 2011)) supported the picture of increasing tensions and conflict within the academy as a substantial number of academics reported both scepticism about whether top level administrators provide competent leadership and the lack of information about events taking place at their own institution

(Harman and Meek, 2007). These findings certainly indicate tensions between management and academy, although not to the same extent in the Nordic countries (Norway and Finland) participating in the survey) as in systems such as the United Kingdom and Australia where strategic management has had more far-reaching consequences (Harman and Meek, 2007).

For the institutional leadership where the pressures for external accountability is particularly strong, internal academic issues may be perceived as less important than securing financial stability and nurturing the public relations of the institution (Leach, 2008, p. 11). In this situation, the speeding up of decision-making is one way of trying to demonstrate accountability and greater responsiveness.

However, through several detailed case-studies, Eckel (2000) showed that it is hard to identify any particular characteristics of effective shared decision-making in situations where hard decisions are required. By studying how shared governance worked at four US universities where academic programmes had to be shut down, he concluded that the governance arrangements and decision-making processes at the four institutions varied according to time-frames, regarding the number of people involved and the types of actors included. However, they were all shared governance processes able to reach hard decisions (Eckel, 2000, p. 31). In a similar vein, Kaplan (2004, p. 31) found that trying to identify specific characteristics of especially effective shared governance arrangements is highly problematic. Neither board size, allocation of power, union status, centralisation or decentralisation of decision-making, or other structural factors seems to have particular influence on outcomes of decisions regarding their effectiveness, although they may have more impact on efficiency (Kezar, 2004, p. 40).

However, as well illustrated by Albert and Whetten (1985), decisions of this type are often conceived by academics as something far more than just pragmatic adaptations to a changing environment. These decisions are instead perceived as intimately related to the identity of the institution ('will cut-backs affect our profile as a research-intensive university?') suggesting that shared governance is not only a means but an important end in itself (see also Dill, 2012). It is the interpersonal relationships, the level of trust in decision-making processes and a feeling of ownership that is of significance in effective shared governance arrangements (Kezar, 2004, p. 39). As underlined by de Boer (2009, p. 234) it is such informal processes and rules that seem to guide the academic staff despite numerous reform attempts.

Based on this brief review one may suggest that academics indeed are engaged in decisions that may even have a negative or challenging effect on colleagues and on the core processes of universities (Eckel, 2000, p. 32), as long as academics think decisions are made the 'right way' (Birnbaum, 2004, p. 12). In the literature on organisational justice, a distinction is often drawn between distributive and procedural justice, where distributive justice can be linked to the perceived fairness of how material and symbolic goods are distributed within the organisation, while procedural justice addresses the perceived fairness of the means used to determine the goods distributed (Folger and Konovsky, 1989, p. 115). Research has indicated that procedural justice in general is an important predictor for organisational outcomes such as commitment to the organisation and trust in its governance system (McFarlin and Sweeney, 1992, p. 634). Based on the studies reported above, the same seems to be true for higher education. In other words, legitimacy is an important factor to take into account when governance systems in higher education are designed.

Dimensions for analysing the role of shared governance in strategic change processes

The question to be asked on this basis is then which 'right ways' can be identified with respect to the development of shared governance in strategic development processes? What are the legitimate designs of future governance systems? Given the previous discussion, at least two crucial dimensions can be identified. The first dimension concerns the way decisions are taken. Here, one may distinguish between decision-making processes that emphasise formal rules and regulations often based on legislation stemming from the national or the institutional level (Tierney, 2004) and decision-making that is more informal where collegial processes more characterised by reaching agreement and consensus dominate (Clark, 1983; Harvey, 1995). Of course, in between these two extremes one may find much variety in decision-making processes where both symbolic and various political models fit in (Tierney, 2004; de Boer and Stensaker, 2007).

The second dimension concerns the types of actors involved in the decision-making distinguishing between a model in which academic staff has most influence to a model where a number of different actors may have a say in the process (Tierney and Minor, 2003). Again one may identify various models that may be positioned in between these extremes ranking from pure corporatist business-like models (Tuchman, 2009) to more representative democracy models (de Boer and

Stensaker, 2007). If these dimensions are combined, one ends up with a two-by-two table that, in a simple way, illustrates the variety of understandings in relation to shared governance (Table 1).

The four possible models (representative democracy, corporate enterprise, collegial and entrepreneurial) in which shared governance should be understood as ideal-type alternatives, are more intended to demonstrate key characteristics of how shared governance could play a role in strategic development than reflect accurate descriptions of change processes.

The four models emphasise different dimensions of how shared governance may play a role in a strategic development process. In the representative democracy model, emphasis would most likely be put on the close relationship between students, administration and academic staff in developing the institutions and the importance of, and respect for, formal rules and regulations for how decision-making processes should be organised (de Boer and Stensaker, 2007). In the collegial model, one would expect more emphasis on perceiving culture, ownership and decisions based on consensus as central characteristics for strategic development (Clark, 1972, 1983; Harvey, 1995). In the corporate enterprise model, one could point out that representation of external stakeholders and actors in decision-making bodies would be seen as a vital characteristic and that such external stakeholders are key to enhance the institutional links with the environment (Amaral *et al.*, 2003). Finally, one would expect that an entrepreneurial model of shared governance in strategic development processes would put much weight on the need for leadership and the discretion of dynamic leaders to take initiative and form coalitions for change and the creation of networks, both internally and externally (Etzkowitz *et al.*, 2000).

TABLE 1

A framework for analysing the role of shared governance in strategic change processes

	Actors involved in institutional decision-making	
	Internal stakeholders	External stakeholders
Ways in which decisions are reached		
Formal	Representative democracy model	Corporate enterprise model
Informal	Collegial model	Entrepreneurial model

Methodological design

To illustrate the assumptions above, strategic plans of leading universities in the Nordic region have been analysed in detail. The argument for picking out the Nordic region as the empirical base is that universities within this region have historically experienced all the different shared governance models outlined earlier (Maassen and Olsen, 2007). Five universities and their strategic plans have been selected as cases: the University of Helsinki, the Uppsala University, the Lund University, the University of Copenhagen and the University of Oslo. The arguments for the selection of universities is that these are (although far from the only) leading research-intensive universities in the Nordic region that through their history have a long tradition of shared governance arrangements in which academic staff have played a major role. At the same time, these institutions are also major institutions with respect to research and innovation that most likely make them exposed to pressure to adapt to new understandings and forms of shared governance. Hence, the selected institutions are likely to be exposed to difficult dilemmas regarding how they should be designing their future governance systems.

The selection of strategic plans as the key source of information for analysing the role and place for shared governance is first that strategic plans can be interpreted as the document in which the central vision and mission of a university is formulated; and the key institutional statement pointing out the paths to future development. While the strategic development of universities certainly can take a deviant course during implementation (Czarniawska and Wolff, 1998; Jarzabkowski, 2005), one could still argue that strategic plans are becoming more important as instruments for navigation in more turbulent times, not least for identifying and perhaps even imitating characteristics of other perceived successful universities (Labianca *et al.*, 2001) or at least position them as more prominent strategic actors (Deiaco *et al.*, 2012). In addition, one could also argue that strategic plans are important means of communication for universities; as indications of the organisational measures through which societal expectations are met.

In the analysis of the strategic plans of the selected universities, two issues have been prioritised. First, the strategic plans have been analysed with the aim of trying to identify the role governance in general is expected to have for the institutional development, not least since one could imagine that also other factors and dimensions may be important in this respect. Second, the strategic plans are analysed to find out

whether certain models (Table 1) of shared governance are seen as more relevant than others for future development. Hence, the institutional strategies are primarily seen as important empirical input to understand the discourse: the attempts to frame and legitimise the new modes of governance and other central concepts in the dialogue and negotiations between the relevant constituencies.

Perceptions of governance in the strategic development of universities

The strategic plans of the five universities selected are quite different from each other. They cover different time-periods, they are different with respect to how detailed they outline change strategies and measures and they differ in scope and length. The reason for some of these differences are most likely due to different national contexts but also due to the way these universities are organised, not least how autonomous faculties are in relation to the central administration.

Despite the differences found between the various strategic plans they also share some similarities. As expected, all strategic plans include sections related to the vision and mission of the universities and the values and norms associated with the organisational identity of the universities. Here, all the universities portray themselves in a similar way emphasising academic freedom in research and teaching, rationality, quality, independent thinking, critical reflections, human rights and high ethical and democratic standards.

Not surprisingly given the increased globalisation of the sector, the strategic plans are similar with respect to how they perceive their challenges in the years to come. The need for increased relevance of education and research, the social responsibility the university has towards society, the need to be accountable for the resources allocated to the university and the need to become even more excellent institutions to be able to compete internationally are some of the most often mentioned challenges. In addition to excellence, pathways to the future are often described by pointing to the need to become more multi-disciplinary, ensure good working conditions for academic staff and boost staff recruitment (the link between staff recruitment and the ability to perform well in international rankings is often made).

The importance of governance in strategic plans

Several of the universities maintain that the strategic plan in itself has been developed through active participation from students and staff. Some of them also provide details as to how such participation was

organised (University of Copenhagen, 2007, p. 8; University of Oslo, 2010, p. 3). For example, the University of Helsinki (2012, pp. 7–8) points out that the strategic plan has been:

> . . . drafted in close cooperation with the academic community. Members of the university contributed eagerly to the process . . . numerous inspiring discussions have now culminated in this strategic plan . . . The enthusiastic participation of a large number for students and staff in drafting this strategy clearly communicates the strong commitment of the university community to together further the cause of the university.

Following such statements, there is often an implicit assumption that participation of staff and students in the development of the strategic plan have led to joint agreement among staff about the content of the strategy; providing the whole university with a 'shared purpose' (for example, Uppsala University, 2008, p. 3).

The issue of governance is in general not very prominent in the strategic plans analysed. Interestingly, several of the strategic plans underline that the plan has to be quite generic in nature allowing faculties to develop their own strategic plans (Lund University, 2012, p. 19). Here, one would perhaps imagine that governance issues would be brought forward to clarify the links between institutional and faculty strategies and decision-making levels but beside some statements that a clear division of work and responsibilities are needed between different levels at the universities (Uppsala University, 2008, p. 10), there are relatively few references to governance arrangements.

To the extent governance issues are addressed in the strategic plans, it is mostly found in relation to arguments about the need to reform and stimulate a more efficient and flexible administration, better integrated ICT systems and a more professional support staff (Uppsala University, 2008, p. 10; University of Oslo, 2010, p. 12; University of Helsinki, 2012, p. 14) and the introduction of various incentive-based or evaluation systems (for example, University of Helsinki, 2012, p. 26).

However, what is most striking is that none of the universities in the sample acknowledge that the ability to change as an organisation may be a challenge in itself as part of a strategic development process. If such statements are made, they are often more related to commenting upon new external expectations and external changes in framework conditions than related to internal factors within the universities. Here, one could ask if the 'shared purpose' assumed to come out of the strategic plans may have caused the universities to perceive the implementation of the strategy as a more technical and straightforward process? As stated by

one of the universities in the sample: 'The university's staff and students will implement the strategic plan' (University of Helsinki, 2012, p. 15).

How is change expected to take place in strategic development?

While it may be obvious that the staff and students will be central in implementing the strategic plans of the universities, their role might be very different as indicated by the four models of shared governance outlined in Table 1.

In the strategic plans, the road-map to change is portrayed in ways that fits all the shared governance models. As illustrated by the quote from the University of Helsinki above, one can find statements that fit well with shared governance understood as representative university democracy. Student participation in planning and decision-making is for example considered as strengths for Lunds University (2012, p. 6), while at the University of Oslo (2010, p. 14):

> Employees and students shall know where decisions are made and how those decisions can be influenced, and they shall be urged to participate in university democracy. The organisation and information and competence building in this area will be improved.

In the universities, change is also portrayed to take place through shared governance along the corporate enterprise model, this is especially visible with respect to monitoring and evaluation of the implementation of the strategic plan (Uppsala University, 2008, p. 10; University of Helsinki, 2012, p. 26). Here, change is mostly seen as dependent on division of responsibilities between different governance levels, the central role of the board of the institution and rules and regulations securing follow-up. Specific management tools such as the use of quality assurance are also seen as important.

Considering all models together, it is the entrepreneurial one that stands out as the dominant model in the strategic plans. This is mostly due to the great emphasis all the universities in the sample put on leadership as vital in stimulating organisational change. This emphasis on leadership is visible in three ways. First, all universities in the study underline the need for new types of academic leadership within the universities. This is formulated as the need for 'communicative leadership' (Lunds University, 2012, p. 6), 'interactive leadership' (University of Helsinki, 2012, p. 22), or simply 'better leadership' (University of Oslo, 2010, p. 14). Second, all universities argue strongly for the need of systematic leadership training and skills enhancement. Developing leaderships programmes for both academic

and administrative positions and for both research and education are prioritised. Third, all universities are launching changes in the personnel policies (payment and competence development), signalling that this may be an important management tool for the leadership (University of Copenhagen, 2007, p. 26; Uppsala University, 2008, p. 10).

Links to the collegial model can also be found in the strategic plans. However, these links are mostly found in sections addressing quality and excellence and the need to strengthen the core activities of education and research. Considering the strong emphasis of the universities of the role of leadership in instigating change, it is interesting that most references to the collegial model can be found in the sections where the importance of leadership is discussed. As formulated by the University of Helsinki (2012, p. 22):

> Interactive leadership will continue to be developed in the units. Leaders will set up interactive forums and other operating models in their units to promote strategic objectives and ensure good internal communication. The work of steering groups will be enhanced throughout the university.

Or, as underlined by the University of Copenhagen (2007, p. 26):

> The efforts to improve the University of Copenhagen as a workplace will pay due respect to the freedom of research and freedom of speech, a high level of staff participation and close connections between research and education all of which should epitomise the University of Copenhagen at any time. More specifically, the University of Copenhagen will consciously assess its personnel and pay policies within the strategy period. The systematic development of competencies and management skills, as well as individual career planning are among the tasks that will be accorded high priority.

Re-inventing shared governance as a responsibility for the leadership?

On the basis of the considerable emphasis put on leadership in the strategic plans, one could be tempted to argue that the traditional conceptions of shared governance are in the process of being replaced by a model more aligned with an entrepreneurial ideals emphasising stronger leadership throughout the institution (see also Smith and Adams, 2009, p. 268). Of course, one should be careful in describing such changes in a deterministic way. First, as underlined by a several studies, new decision-making structures do not necessary determine the long-term development of the university (Kaplan, 2004; de Boer, 2009). Second, the emphasis on entrepreneurial leadership as a tool for strategic development is not the only model displayed in the strategic plans: it is accompanied by ideas from other models of shared governance,

including representative democracy, the collegial tradition and even the corporate enterprise model. Third, a key issue in the entrepreneurial model will also be what type of leaders that will occupy the new posts at the universities and what sort of training they will receive. This will most likely have substantial impact on how leadership is conducted in practice.

However, the latter point is of particular interest if one relates it to the responsibilities attached to the leadership positions. In addition to being responsible for the realisation of the strategic objectives of the institutions, the leadership is given quite extensive responsibility for creating trust, engagement and support from the academic staff in the strategic plans. As such, one could argue that shared governance has been reinterpreted as a responsibility for the leadership. This development may pose several challenges for the leadership and have important implications for the culture and identity of the universities.

First, and considering the new and broadened expectations directed at universities, the new leadership faces an immense task of *enacting on and prioritising among the many issues* that need to be addressed. This is one of the paradoxes of the current development: while more tighter-governed universities are currently introducing various risk-management techniques to cater for accountability demands, and for dealing with what is perceived as a more uncertain environment (Power, 2007), the traditional shared governance models emphasising deliberation, reflection and thoughtfulness are challenged, although these models have a lot to offer in situations characterised by high risk and much uncertainty. Here, there is perhaps a need for universities to take a more creative look into the purposes and functioning of various decision-making and governance arrangements and align established procedures and arrangements to the new expectations so that decisions are not only taken the 'right way' (Birnbaum, 20014, p. 12) but addresses the most significant issues facing universities. For example, the strategic plans analysed are very general where objectives, milestones and development paths can be interpreted in diverse ways, indicating that 'implementation' will be something far more than just a technical exercise (Jarzabkowski, 2005). The implication is that fundamental 'risk' issues may still have to be addressed during implementation and that there is a need for arenas where seemingly trivial issues are analysed more in-depth regarding their possible consequences for education and research.

Second, and related to the signalled need for *training* the new breed of leaders at the university, one could question whether it is only the leaders

that currently need 'training'. As underlined by Harvey (1995, p. 154), traditional collegial shared governance arrangements can sometimes be turned into 'cloisterist' modes characterised by an isolationalist, secretive and defensive behaviour. As such, one could argue for the need to 'train' the academic staff, rather than the leadership to stimulate change and renewal. While one certainly could question whether any form of traditional 'training' of academic staff would have much effect in this respect, Dill (2012) has suggested that more can be gained by attempting to stimulate social integration and sustain the integrity of academic work in universities. Fostering social integration through clarifying key academic norms and values through symbols, ceremonies and during practice would more likely have substantial impact on the interest academic staff would have in well-organised decision-making processes.

Third, and related to the urged need for *efficiency in decision-making processes*, one can identify a particular leadership challenge in that leaders are being held accountable to hierarchies above while at the same time held responsible for the creation of trust at the shop floor and an engaged staff supporting the decisions taken. As noted in some studies (Clark, 2004; Kezar, 2004), trust takes time to build, implying that 'consultations' with academic staff has to be perceived as something more than just a symbolic process where it might be difficult to create a balance between speed and efficiency on the one side and trust and engagement on the other. Speed is hardly admirable if decisions are poor and lack support. One option for solving this challenge is to clarify key principles, norms and values, *a priori* specific decisions that have to be taken, creating a kind of social contract between the academic staff and the leadership on how certain issues are to be tackled.

The immense focus on leadership found in the strategic plans will most likely in some way or another be fused together with elements from other shared governance models when the new governance arrangements at the studied universities are materialised. Such organisational innovation is probably needed as 'shared governance is more than ever required, but in new and adapted forms' (Clark, 2004, p. 176). The challenge with the dominance of the entrepreneurial governance ideal emphasising leadership is that trust and engagement can more easily link strongly to the personal characteristics of the new leaders than to cultural characteristics and the identity of the institution. The more symbolic and cultural functions of governance arrangements can as a consequence be toned down as indicated above. Here, more studies are needed to shed light on how the new generation of leaders

in the universities organise the governance arrangements under their responsibility and what impact this may have on the academic and administrative functioning of universities.

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AN EXPLORATION OF UNIVERSITY LEADERS' PERCEPTIONS OF LEARNING ABOUT LEADERSHIP

Ms Glenys Drew
Senior Leadership Development Consultant
Human Resources Department
Queensland University of Technology
2/ 126 Margaret Street
BRISBANE QLD 4000
AUSTRALIA
g.drew@qut.edu.au
ph: 61 7 3138 4082

Associate Professor Lisa C. Ehrich
School of Learning & Professional Studies
Faculty of Education
Queensland University of Technology
Victoria Park Road
Kelvin Grove QLD 4059
AUSTRALIA
l.ehrich@qut.edu.au
ph: 617 3138 3038
fax: 61 7 3138 8265

Emeritus Professor Brian Hansford
Centre for Learning Innovation
Faculty of Education
Queensland University of Technology
Victoria Park Road
Kelvin Grove QLD 4059
AUSTRALIA
bc.hansford@qut.edu.au

AN EXPLORATION OF UNIVERSITY LEADERS' PERCEPTIONS OF LEARNING ABOUT LEADERSHIP

ABSTRACT

The paper reports on a study conducted with eighteen new and emerging middle level university leaders who had been targeted for a senior leadership development program. Participants were asked to identify (i) what constitutes effective leadership within a university setting; and (ii) and reflect on one or more significant learning experiences that helped them to learn about leadership. The findings revealed that effective leadership practices were those that fell within two broad categories of interpersonal skills and engagement; and strategic thinking, action and operational effectiveness. Three main types of significant learning experiences cited were learning from others; formal university leadership programs; and critical incidents on the job. The paper concludes with some key implications for developers of university programs.

Introduction

Universities around the world have begun looking closely at their leadership succession plans to ensure there is an adequate pool of quality applicants who will take their place as leaders given anticipated staff turnover and age-related attrition (Jacobzone, Cambois, Chaplain & Robine, 1998). To meet these challenges, leadership preparation and development programs have been utilised to develop the capacities required of leaders in a changing landscape. For the purposes of this paper, leadership capacity is defined as 'broad-based skilful participation in the work of leadership' (Lambert 1998, p. 18). A more complex socio-cultural milieu in which university leaders now work (Marshall, Adams, Cameron & Sullivan, 2000; Ramsden, 1998a, 1998b) has also pointed to the need for effective leadership programs to support them in their daily endeavours. Of interest in this paper are the perceptions held by new and emerging university leaders regarding what constitutes effective leadership, and how they learned about leadership. It is argued that investigating participants' viewpoints has the propensity to enhance our understanding of the nature of leadership given there is limited empirical research that has explored effective leadership within higher education institutions (Pounder, 2001). Furthermore, it is argued that learning about participants' views regarding leadership may provide some useful insights into effective ways of providing leadership development for leaders within university settings (Knight & Trowler, 2001). This paper begins by providing a discussion of the challenges and complexities that beset the university context and, by implication, university leaders. Some of the broader literature on effectiveness in leadership is then considered followed by an examination of how leaders learn about leadership within university contexts.

Changing university context

In recent decades, higher education institutions around the world have faced increasing complexity and change due to a range of external social, economic and political pressures. Kezar (in Kezar & Eckel, 2004) identifies three significant changes to the higher education environment that are making governance more problematic and these are diverse environmental issues such as accountability and competition; retiring faculty staff and more diverse faculty appointments; and the need to respond efficiently to shorter decision time frames. Ramsden (1998a) concurs when he says:

> [u]niversities face an almost certain future of relentless variation in a more austere climate. Changes in the environment – mass higher education, knowledge growth, reduced public funding, increased emphasis on employment skills and pressure for more accountability - have been reflected in fundamental internal changes (p. 347).

Part of the complexity facing universities is their dual role. One the one hand they fulfil a key role in local and global communities where they engage in knowledge creation and dissemination through teaching and research. Yet, on the other hand, they must operate as successful corporations able to withstand scrutiny to financial management practice, administrative reporting and in relation to accreditation requirements in relevant disciplines.

It is not surprising, therefore, that these and other competing pressures are having a significant impact upon the lives and work of university leaders and managers and, as Kezar and Eckel (2004) state, are placing enormous responsibility upon leaders to make ‘wise decisions in a timely manner’ (p. 371). It is in this challenging context that university leaders need to be able to create and lead change, motivate staff and tend to the managerial matters such as budgeting in a timely and efficient way (Pounder, 2001; Ramsden, 1998a) . Given a complex context in which

leaders now work and the challenges posed by changed governance arrangements, what might constitute other effective leadership practices within the university context?

Effective leadership practices within universities

In writing about leadership within the higher education sector, Ramdsen (1998b) argues that 'it is identical to leadership in other organisations and idiosyncratic to university environments' (p.123). By this he means academic or university leadership is distinct from other types of organisational leadership, because it is concerned with academic business (i.e. research, scholarship, teaching, service). At the same time, academic leadership can be understood within the broader framework of the leadership literature because in many ways it is not fundamentally different and consists of similar elements. For this reason, the discussion that follows draws upon a selection of perspectives from the broader leadership literature that has currency for university leadership in addition to some writing and research that comes from studies of leadership within university settings.

Over the centuries there has been much attention given to the topic of leadership yet to date there continues to be little consensus regarding its meaning, nature and the best way to develop leaders. Much writing in the field distinguishes between leadership and management. For instance, leadership is described as a practice that focuses on setting visions, mobilising people and bringing about change, while management is described as a practice that involves planning and budgeting, organising staff, controlling and solving problems (Kotter, 1990). Most writers would

agree that leadership and management are complementary processes and necessary for the running of effective organisations. For the purposes of this discussion, leadership is defined as 'a practical everyday process supporting, managing, developing and inspiring academic colleagues' (Ramsden, 1998b, p.4).

Leadership has been construed in terms of traits, practices, behaviours and attitudes. Two theories pertinent to university leadership that are considered in this discussion are Bales and Slater's (1955) 'leader behaviour theory' and transformational leadership theory (Burns, 1978; Bass, 1985). While introduced to the field over half a century ago, leader behaviour theory emerged in the 1950s and held that effective leadership comprised two factors: structure and consideration (Bales & Slater, 1955). Structure referred to task oriented behaviours and getting the job done while consideration focused on interpersonal relationships with followers (Bales & Slater, 1955). Central to both sets of effective leadership practices was the need for leadership oriented skills (i.e. interpersonal skills that inspire, motivate and support staff) and managerial skills (i.e. strategic planning and change and meeting expectations and outcomes). In more recent times, theorists have built upon these two dimensions of leadership (e.g. see Hersey & Blanchard, 1977; Wheatley & Kellner-Rogers 1996). Although the two dimensions of structure and consideration constitute a relatively simple conceptualisation of leadership, it is argued that these dimensions have relevance for understanding university leadership. As Ramsden (1998b) argues, 'in universities, as in other organisations, systematic processes which produce orderly results are required to balance the imaginative ideas that produce change' (p.109).

Over the last twenty years, there has been much leadership thinking focused on transformational and transactional leadership. Transformational leadership involves motivating and inspiring staff as well as satisfying their higher needs (Bass, 1985; Bass & Avolio, 1988; Burns, 1978). It is also about stimulating and encouraging thinking and bringing out high performance in staff, beyond normal expectations. A key component of transformational leadership is the notion of 'enabling others to act' (Kouzes & Posner, 2002) which refers to leaders who encourage and empower others to act, take ownership and strengthen their performance. Building an inclusive culture that supports genuine collaboration and effective team work has been identified also as an important leadership practice within organisations (Senge, 1990) and schools (Johnston & Caldwell, 2001).

In contrast to transformational leadership, transactional leadership is concerned with the positional power of the leader to ensure compliance by followers. It views leadership as an exchange where rewards and punishments are handed out to acknowledge performance of followers (Burns, 1978). While Burns (1978) saw that transformational leadership was positioned at one end of the continuum and transactional leadership at the other, Bass (1985) argued that transactional leadership was not incompatible with transformational leadership and both strategies could work together to constitute effective leadership. Both Pounder (2001) and Ramsden (1998b) have argued that insights from transformational leadership theory are pertinent for university leadership. For example, based on his study of organisational effectiveness in higher educational institutions in Hong Kong, Pounder (2001) argued that what is required in leading universities today can be reflected in a leadership approach that draws upon elements of transformational and transactional approaches

to leadership. He argued that transformational leadership is necessary to build interpersonal relationships, morale and team work while transactional leadership is necessary for planning-goal setting and productivity-efficiency (Pounder 1999 in Pounder 2001). According to Pounder (2001), such a combination of transformational and transactional approaches should enable universities to manage the variety of paradoxical pressures that they face. The final part of this discussion refers to the work of three writers who provide insights into leadership within university contexts.

Firstly, Filan and Seagren (2003) drew upon research and theoretical insights to arrive at six critical components of leadership which constitute leadership training within their university. These are: understanding of self; understanding of transformational leadership; establishing and maintaining relationships; leading teams; leading strategic planning and change; and connecting through community. They describe their university academic leadership program which is based on a series of activities that build leaders' knowledge and skills in each of the six critical areas. That these authors highlight opportunities for academic leaders to learn more about themselves and focus on self development is not surprising. For example, London (2002) claims that 'self insight [is] a prerequisite for understanding others [and] the foundation for development' (p. 27) for leaders in organisations while Bhindi and Duignan (1997) argue that an understanding of self is a critical feature of what they coin 'authentic leadership', where authenticity refers to discovering the self through relationships with others and has a focus on trustworthiness, genuineness and ethics. Following the work of others (e.g. Ramsden 1998a, 1998b; Pounder 1999, 2001), Filan and Seagren (2003) highlight the relevance of academic leaders drawing upon

insights from transformational leadership theory for its ability to inspire trust and engage staff to high levels of achievement.

Secondly, Ramsden (1998a) refers to studies he and others conducted at the Griffith Insitute for Higher Education that found that academic leaders, such as middle managers, play several roles and these include motivating and inspiring staff; bringing about high performance in colleagues; credible leadership that stimulates and encourages thinking; filtering out bureaucratic demands so that academics are free to 'get on' with their jobs; leading from behind as well as from the front; facilitating the work of others rather than focusing on their own work; and balancing open ended problems while acknowledging goals, constraints and expected outcomes. These types of roles are congruent with transformational and transactional leadership behaviours.

Thirdly, a recent Carrick sponsored study led by Scott, Coates and Anderson (in press) explored what the perceptions of some 500 academic leaders were regarding important leadership capabilities or attributes. The findings included a range of capabilities such as empathising, self-regulation, self-organisation, decisiveness, commitment to learning and teaching, strategy, diagnosis, influencing, flexibility and responsiveness and university operations. In summary, then, the capabilities mentioned by Scott et al. (in press) and the other writers in the leadership field discussed above point to a blend of human centred and strategic operations behaviours, attributes, attitudes and practices in recognition that leadership is a multi-faceted activity.

Learning about leadership

Just as there is no consensus on what is leadership or what constitutes effective leadership, there is no consensus regarding the best way to develop leaders (Blackler & Kennedy, 2004) or the best way leaders learn about leadership. Over the last couple of decades, research studies have found that new academics often feel alienated and unsupported in their work (see de Rome & Boud, 1984; Marshall, Adams & Cameron, 1998). However, it is not only new academics who have reported feeling isolated but also new leaders (Daresh, 2006; Ramsden, 1998b). In response to these concerns, universities have established a number of formal means of support for new staff including induction programs, targeted training programs, leadership development programs and formal mentoring programs. Of these, leadership development programs are often cited as approaches to develop leaders and, for this reason, are considered in more detail below.

Leadership development programs

Organisations throughout the world continue to invest considerable sums of money in leadership development programs for aspiring and existing leaders based on the belief that leadership holds the key to organisational growth and renewal (Brown, 2001). Yet leadership development programs are strategies that are deemed to be 'underutilized in most universities' (Brown, 2001, p.313). According to McDade (1988), these programs have not achieved the same level of acceptance in the higher education area as they have done in the corporate world. Commenting on Australia, Anderson and Johnson (2006) claim that there is a tendency for academic leaders to learn on the job rather than engage in leadership development programs. While learning on the job can be a valuable way of learning, leadership development

programs are viewed as a more formalised active alternative (McDade, 1988). In more recent times, there has been a strong argument in the literature for the implementation of leadership development programs that build effectively the leadership capacity required to lead universities into the future (see Carrick Institute, 2006; Southwell, Gannaway, Chalmers & Abraham, 2005).

It is important to note that leadership development programs can and do vary a great deal. A particular view of what is meant by leadership drives their content and the way in which they are taught (Ehrich & Hansford, 2006). These programs range from more traditional academic formal approaches (Mitchell & Poutiatine, 2001) to experiential approaches (Hornyak & Page, 2004). Experiential approaches are said to provide learners with opportunities to reflect alone and with others on their experiences, evaluate them and thus come to new understandings about them (Mitchell & Poutiatine, 2001). Some of the more common purposes of using experiential exercises to develop leaders include helping learners to take risks, be innovative, develop skills of collaboration, manage conflict and use diversity (Kaagan, 1999). Mentoring comes under the umbrella of an experiential learning approach to leadership development since it takes place within the context of a relationship with another and involves opportunities for both parties (the mentor and the mentored) to share, reflect upon experiences and learn from these experiences. It is discussed next.

Mentoring is an interpersonal learning activity whereby a more experienced person (a mentor) provides professional development and various levels of support to a less experienced person (protégé or mentee) (Hansford, Tennent & Ehrich, 2003). In

a university setting, mentors have been described as key players who socialise new members of staff into the role and culture of the organisation (Bochner, 1996). In addition they provide personal support, general information, knowledge on how to survive, assistance with promotion and confirmation processes, and 'open doors' for others. (Marshall et al., 1998). These relationships often evolve between persons due to their mutual interests and/or the desire of either or both party to work together (Clutterbuck, 2004). However, it is not uncommon to see formal mentoring programs implemented in universities (Bochner, 1996) to support the learning of new leaders. The previous discussion has identified some of the ways in which university leaders learn about leadership. The authors concur with the ideas of London (2002) who argues that leadership development is not and cannot be construed as a one time event that is going to prepare leaders. It is more likely to be an ongoing process combining formal and informal learning experiences for staff.

Methodology

The focus of this study was an investigation of a cohort of mid to senior level university leaders' perceptions about (i) what constitutes effective leadership and (ii) what are some significant or defining leadership experiences that have most assisted their learning in the leadership role. Interviews were held with eighteen participants, all of whom were part of a "by invitation" accelerated succession leadership program at an Australian university. Participants held a variety of middle level senior academic and administrative roles such as Head of School, administrative roles in student services, and research administration or information technology positions. Following the completion of the program (comprising eight half day sessions over a period of one year), participants were asked if they would be interested in participating in

interviews with one of the researchers who also was one of the facilitators of the leadership program.

Out of a potential pool of some forty participants, eighteen agreed. Of a total of eleven females and seven males, ten participants held academic supervisory roles and eight held administrative supervisory roles. The hour long interviews were based on the two open questions identified above. The thematic analysis also investigated any differences observed between the comments of academic and administrative participants, respectively.

Interviews, as a data collection method, are effective as they enable dialogue and conversation for researchers and educators 'eager to grasp new ways of knowing' (Greene 1994, p. 454). A laptop computer was used by the researcher to record participants' responses and these responses were confirmed with participants individually. Data analysis took the form of constant comparative analysis (Cavana, Delahaye & Sekaran, 2001) whereby themes were identified and coded as they surfaced. As new themes emerged, these were compared with the previous ones and regrouped with similar themes. If a new meaning unit emerged, a new theme was formed (Maykut & Morehouse, 1994).

Findings

The results of the findings from the two core questions are discussed here. Regarding question 1, the analysis of participants' responses yielded several themes

which centred on characteristics of leaders as well as particular practices. These themes have been identified in order of most frequently to least frequently cited.

Effective leadership conditions or practices that constitute high performance

There was strong support by participants that effective leaders are persons who have people skills; who promoted an environment that fostered growth of leadership in others, opened doors for staff and helped create opportunities; were credible and engendered trust; acted as role models; were ethical, inclusive and collaborative in their practices; were strategic and took responsibility for decisions; communicated the goals and vision of the organisation; understood organisational priorities; and had adequate resources and connections. These comments were equally distributed across the academics and administrators in the sample. Some illustrations are included below:

People Skills

In terms of people skills, one participant summed it up as:

> *People management is most important… You are thrust into a role primarily about managing and leading people.*

These people skills included being both approachable and visible. It is noted that people skills were implicit in a vast majority of the comments.

Promoting an environment where leadership is fostered in others

A prominent theme identified by several participants, most of whom were academics, was promoting an environment where leadership can be fostered in staff. Three examples are provided below.

> *To foster the growth of leadership in others…using delegation to foster a sense of ownership and responsibility in others and hence to "grow" the leadership skills and capabilities*
>
> *Leaders should provide autonomy and allow others to do the job in their own way; not to micromanage. If they are new to their role…the leader puts the other person in the driver's seat and provides the conversation and back up support needed.*
>
> *It is not enough just to have the structure right; the personal dimension needs to be right. You need the capacity to delegate to people; something that is possible in the presence of mutual trust.*

Closely related to this theme was the notion of leaders using their influence and role in helping staff create and act on opportunities. For example,

> *Someone whom you can respect in terms of having a vision, demonstrating intellectual capacity…creating opportunities and helping you take advantage of opportunities… Good leaders force you out of your comfort zone, have confidence in you for a new role and then back you in that role* (Academic).
>
> *It is giving people the opportunity to succeed* (Academic).

Not only do leaders need to provide these types of opportunities, but another participant claimed that leaders need to create an environment where people are able to bring ideas to the table without fear. A common concern raised by participants in the aforementioned quotes was that staff should be offered opportunities, encouragement and support to develop their talents and build their own leadership skills.

Credibility and the engendering of trust

Credibility and trust were words that emerged mainly in academic participants' comments regarding important characteristics of effective leaders. One academic referred to his PhD supervisor as a brilliant example of a leader: For example:

> *... He didn't demand respect, he earned respect. He was a humble person and he had credibility. People follow a person like that. The environment that he created was one of trust.*

Other participants said:

> *The leader must have the trust and respect, from supervisor, staff and peers in order to have credibility* (Administrator).

> *The leader must be able to instil confidence in you concerning his/her capacity to lead. Saying "there is a problem" where there is one, and "let's fix it" is important* (Administrator).

Two academic participants nominated sincerity and action as part of the trust element, expressing the view that part of trustworthiness is the ability to see matters through. One put it this way:

> *Unless you have gained people's trust, people are not going to come to you with issues and items which need resolution…. One needs to blend sincerity with organisational skills, as one can genuinely mean to do something but if they* [sic] *can't organise themselves it won't get done, despite their sincerity. That's the type of leader I look for.*

Role models

Both academic and administrative participants referred to the importance of leaders being role models for staff and setting a good example for them. Four quotes illustrate this:

> *For me, it is…leading from the front, versus the notion of managing from the rear…*

> *It is being an example-setter. It is having a good example to benchmark myself against. It is a level of approachability in the leader. The stronger ones as leaders tend to be those who are more approachable than others.*

> *Leaders need to be most visible in times of change.*

> *I like the word "leader". I expect to be led by example; to be led by someone who is dynamic, intelligent, visionary, and truthful.*

Ethical, inclusive and collaborative practices

An important theme that emerged was the need for leaders to be ethical, inclusive and collaborative in their practices. For example, participants stated:

> *Having no favourites; interested in a fair outcome for everyone* (Administrator)
>
> *For me, they are inclusiveness, transparency and a collaborative approach to both strategic and operational issues* (Academic).
>
> *Integrity is most important* (Academic).

Taking responsibility for decision making

A number of participants, mostly administrative leaders, alluded to the importance of decision making, not only in terms of the leader following through but also in making sound judgements. For example:

> *Directness is important. I prefer my supervisors to be providing direction with honesty about what they are doing, showing integrity; and when a decision is made to follow through on that decision..*
>
> *Decision-maker – an ability to seek advice appropriately and to weigh up that advice.*
>
> An academic participant referred to the importance of leaders themselves being pro-active in making decisions and not merely implementing decisions of those higher up in the university. He said:
>
> *In relation to governance, governance that is generated by the leadership members themselves and not just imposed upon them is far more effective. You need to develop an internal discipline on governance, generating the "spirit" of it from within.*

Communicating the goals and vision of the organisation

Both administrative and academic participants nominated vision as a key requirement of leadership. Two participants said:

> *[leaders who are]… able to act as though they "own" the vision. They don't have to create their own vision; we have that through the university* [mission and goals], *but they have to "own" those goals for others to own them.*
>
> *We need to undertake the collective view of things, and part of that is about communicating your vision to others so that there is clarity regarding how you move forward together.*

Understanding organisational priorities

Related to vision was leadership that requires an understanding of organisational priorities. One participant stated:

> *Leadership requires clear vision...At the organisational level the leader needs to have good understanding of organisational priorities and a good sense of their own place and sphere of influence within those priorities*

Participants referred to the need for a "collective view" in pursuing strategic organisational priorities, and a consultative, participative approach to solving issues. One academic stated:

> *Good leaders are seen to have the ways and means to accomplish what they set out to do. It means being creative about ways to solve issues. Leaders provide guided thinking. They don't solve problems for people but engage people in solving problems; they ask them to come with a possible resolution in mind.*

Adequate resources and connections

Effective leaders required access to adequate resources and connections. As one administrative participant stated:

> *The leader must have adequate resources and connections to be able to take carriage of projects and activities for which he/she is responsible.*

Significant learning experiences for leaders

Some participants reported that the very act of reflecting upon their experiences or learning activities helped them to acknowledge that they had, in effect, learned about leadership. Participants' experiences were categorised into three main areas and these were learning from others (i.e. mentors, role models); formal courses or programs; and critical incidents or on-the job learning activities.

Learning from others

A number of participants, mostly academics, referred to the value of learning from another person such as a mentor or a role model who inspired, supported and encouraged them. For instance, one academic participant said:

> *The most valuable messages in terms of leadership have come from other people who are leaders who have provided me with either the modelling or messages which have been very tangible in terms of my development.*

For another participant (administrative), having access to a mentor who provided good advice and discussed developmental matters was cited as important:

> *…the Dean at [X University] strongly encouraged me to do a masters course, though I was in science, and get into administration. He discussed what he saw as my strengths and weaknesses. He was right. Doing the masters course opened doors. It allowed me to see management from a different perspective…I believe that having a good leader who advises staff well and takes the time to have staff development discussions.*

Formal courses of study / Leadership programs

Across participants equally, significant leadership learning came about by engaging in leadership development programs and courses. A number of participants, particularly academic leaders, referred to benefits of sharing with others in the relevant "by

nomination" senior succession leadership program entitled "Leading in the New Era" (LINE) provided at the given university. One academic participant said:

> *It was the LINE (Leading in the New Era) program. It was like a coming of age for me. I really enjoyed X's* [senior university executive's] *presentation about the way he deals with issues.*

Other participants commented about this program. A commonly cited benefit, particularly from heads of school, was the value of *standing back and reflecting on one's own professional development and leadership behaviours* [given the] *unlikelihood of finding the time to do this without the discipline of a program.*

An administrative participant identified a leadership development course with a strong experiential focus undertaken some ten years ago which had caused her to reflect upon and question her leadership approach:

> *... The whole point of the exercise was to teach people as managers not to be rule bound. For me it had a huge impression because the whole thing fell apart. Prior to that I had had a tendency to be rule bound… the lessons that it taught me about being flexible and open to change never left me.*

Several participants referred to critical or defining events when they learned one or more valuable lessons about themselves as leaders. One academic cited the following:

> *When our research centre didn't get …funding there was a great sense that I had to do everything I could to maximise people's potential to get other jobs. It brought home to me that I have to look after my people…Managing within a major change experience one has to be clear and honest… and keep people informed.*

Another academic said:

> *Crisis situations are those from which I have learned most. One aspect of that is learning to disengage when needed and still to remain in control of your life. Going through difficult times shores up ability to lead.*

For two academic leaders, significant leadership learning came about through on-the-job learning precipitated by pressing needs to lead through change.

> *For me there was an early developmental experience… where I learned about strengths that I didn't know I had…*
>
> *…watching and learning from others in leadership roles. Some experiences which were painful at the time one can reflect upon later and say "I would do that again" or "I would not do that again".*

One academic participant mused that learning was the result of all three of the activities named here. He said:

> *I would like to see a continuation of events and activities as well as educational experiences ... mentoring. It is in learning from the experience of others and from one's own experience. The learning experience is an upward, incremental trend, drawing on a mixture of influences.*

Discussion

In terms of what constitutes effective leadership within a university environment, participants in this study identified a number of leader qualities and practices. For the purposes of the discussion, the nine themes that emerged from the first question are discussed in relation to two overarching categories: interpersonal people skills and engagement, and strategic thinking and operational effectiveness. Both of these broad leadership practices are said to be complementary and necessary for effective leadership (Bales & Slater, 1955; Kotter, 1990).

Interpersonal people skills and engagement

Participants referred to people skills that are central to effective leadership. It is precisely these skills that emphasise the human side of leadership (Ehrich & Knight, 1998) and assist us to see leadership as an interpersonal relational activity (Bales &

Slater, 1955; Bhindi & Duignan, 1997; Pounder, 2001; Kouzes & Posner, 2002). As Ramsden (1998b) says, ‘leadership is to do with how people relate to each other’ (p. 4)

An important theme that emerged in participants’ responses was that effective leadership provided and promoted an environment where leadership was fostered in others. This idea has been supported in the literature where effective leaders are seen as educators who provide staff with opportunities that help them grow and become leaders themselves (Kouzes & Posner, 2002; Ramsden, 1998b). In the study participants referred to effective leaders who delegate and empower staff to take ownership and responsibility, a notion that both Ramsden (1998b, 1998a) and Kouzes and Posner (2002) discuss as critical to leadership. Related here is leadership that comes from behind and plays a supportive role as well as a challenging one (Daloz, 1986; Kouzes & Posner, 2002) in helping people to get out of their comfort zones and embrace the challenges of leadership.

Although participants did not use the term, ‘transformational leadership’, much of what they described as effective leadership could be considered as constituting this type of theoretical approach. For example, participants referred to the process of enabling others to become leaders (Burns, 1978; Kouzes & Posner, 2002); valuing people and their growth (Burns, 1978) inspiring trust in staff (Burns, 1978) and promoting cooperation and collaboration (Ramsden, 1998b). Participants referred to leaders who have the trust and respect of their peers and staff. Related to this was credibility in the role. Credibility has been defined as the dynamic currency of leadership (Leavy, 2003) since it depends on performance of the leader. For

participants, credibility was viewed in terms of leaders who followed through, were trustworthy and 'walked the talk'. Credibility was also identified as an effective leadership practice of roles of Heads in Ramsden's (1998a) study. Trust was seen as essential in the presence of integrity and a 'hallmark of environments in which people feel respected, valued and appreciated' (Filan & Seagran, 2003, p.'26).

Participants referred to effective leaders as those who set an example and acted as role models for staff. One of Kouzes and Posner's (2002) five leadership practices is 'model the way' which refers to the need for leaders to model the behaviour they expect of others if they want commitment from staff. The final theme that fits within the overarching category of interpersonal people skills was ethical, inclusive and collaborative practices. Here participants referred to the need for leaders to be ethical, not to have favourites, but to be transparent, fair and collaborative in their dealings. In recent years there has been a resurgence of writing on the moral and ethical dimensions of leadership (Duignan & Collins, 2003; Preston & Samford, 2002) needed in organisations. Some writers have argued this focus is due to the increasingly complex environments in which leaders work (Cooper, 1998). The importance of creative inclusive and collaborative practices resonates with Filan and Seagren's work (2003) that maintains that leaders need to build and encourage team work where collaboration is key. As they say, "collaboration requires learning to work on teams, handling conflict, making decisions through consensus, demonstrating ethical process and using team assessment" (p.28).

Strategic thinking and organisational effectiveness

According to Filan and Seagren (2003), leading strategic planning and change is a key role of academic leaders. In the current study, participants alluded to a number of practices that were related to strategic thinking and organisational effectiveness. For instance, participants referred to the importance of leaders who not only make sound decisions but also who follow through on these decisions. Support for this idea can be found in the work of Bryson (in Filan & Seagren, 2003) who maintains that strategic planning and decisions need to be followed through with thinking and acting that result in change.

Participants referred to the importance of leaders who communicate vision to staff. A key effective leadership practice of Kouzes and Posner (2002) is inspire a shared vision where leaders invent a future based around the vision and help staff to commit to it. To do this requires leaders to operationalise the visions and goals and empower staff (Sergiovanni, 1992) so they are able to 'own the vision,' as one participant said.

Understanding organisational priorities and directions was identified by participants as a feature of effective leadership. A participant who was Head of School referred to the need for governance to come from within the department rather than merely to be imposed from the top. In other words, leaders in concert with staff need to articulate clear goals for the department as well as be able to understand the wider systemic organisational priorities. It is because of Heads' location occupying the middle ground between staff and the system that Ramsden (1998b) says they need to filter out bureaucratic demands so that academics can get on with the job.

Finally, participants referred to necessity for adequate resources to be able to undertake their job effectively. Yet, in the climate of shrinking resources within universities (Currie, 1998), this has posed a challenge for many university leaders. The importance of having access to adequate 'connections' is related to Filan and Seagren's (2003) notion of 'connecting through community' where university leaders need to have connections not only within the university environment but also outside of it. Leaders are viewed as those people who build and nurture connections with others.

Learning about leadership

The new and emerging leaders in this study identified three significant ways in which they learned about leadership. Firstly, formal programs of study such as leadership development programs and post-graduate study were cited. Given that leadership training and development programs are used by universities as a means of supporting staff and building capacity, this finding was not unexpected. A couple of participants referred to a program they recently completed which introduced them to the university's strategic mission and goals. Another participant recalled a group experiential learning activity that enabled her to reflect on her current practices of managing and to come to new understandings about herself and her practices. Experiential learning activities are designed to do this – to develop skills of collaboration, entice risk-taking in a supportive environment (Kaagan, 1999) and challenge leaders to think again and see a situation differently (Mitchell & Poutiatine, 2001). It appears that the formal programs of study described by participants fell within both the more traditional and academic approaches (Mitchell & Poutiantine, 2001) and experiential approaches (Kaagan, 1999; Hornyak & Page, 2004).

Secondly, participants referred to learning from others (mentors, other leaders) who acted as role models, inspired them and provided useful advice, all functions that are said to be performed by mentors in the literature (Clutterbuck, 2004; Kram, 1985).

Thirdly, participants identified a number of critical incidents that occurred on the job that provided rich and valuable learning about leadership. This finding was unsurprising given Anderson and Johnson's (2006) comment that much learning for academic leaders occurs on the job. For some participants, the learning emerged through crisis situations and difficult times that required them to take action. For others, the incidents provided them with opportunities to reflect upon themselves as leaders, their strengths and their capacities. The importance of self-understanding (Bhindi & Duignan, 1997), self-regulation (Scott et al., in press) and self-insight (London, 2002) has been highlighted in the leadership development literature. A number of participants identified key lessons they learned which included the importance of honesty in one's dealings; helping others to look at situations differently; embracing change; and working with limited resources. All of these lessons describe roles university leaders are expected to play (Ramsden, 1998a, 1998b).

Implications and conclusions

The results of this study have shown that, from the perspectives of eighteen new and emerging leaders from one university in Australia, demonstration of interpersonal, relationship-building, inspiring trust in staff, and motivating and enabling attributes lie at the heart of successful leadership. Indeed, the descriptions provided by

participants had a strong flavour that "transformational leadership", following the ideas of Burns (1978) and other writers, was what they perceived as effective for leadership within a university context. Nevertheless, it was clear from participants' perceptions that the human centred attributes and actions of leaders did not constitute, on their own, sound leadership. Participants referred to important strategic thinking and organisational practices that were necessary for sound and effective decisions to be made. Participants perceived that leaders needed a strong comprehension of organisational priorities, a clear vision they could share and help staff commit to, and necessary resources and connections. Leader credibility, then, was seen to entail personal attributes such as sincerity and humility in fostering others' potential, *and* an ability to make decisions and take follow-up action. The perceived interdependency of interpersonal skills and strategic and operational competence was an important finding of the study.

What lessons might be learned from the results of this study for leadership developers in universities? Two key lessons are provided here. Apart from the obvious point that there is no one or best way to develop leaders, the findings indicated that learning about leadership occurs at different levels within the university. Following the ideas of Ramsden (1998b), different levels include the self or the personal level; the department level where much of the on-the-job learning and work is done with staff; and the system / university level and beyond. Participants in the study described learning experiences that encompassed each of these levels – learning about self; learning on the job through critical incidents when they were dealing with particular dilemmas often requiring them to work with staff to confront these issues, and learning that was provided by the system or university leadership

programs. Learning from others, such as mentors where they were both supported and challenged provided fertile ground from which they recalled valuable learnings that contributed to their leadership understandings. University run programs were discussed in terms of effective experiential activities that left a lasting impression on some participants since they enabled them to reflect upon practice and change their attitudes and practices. These programs also provided other opportunities for participants to reflect, observe and listen to other leaders, and extend their networks within a safe environment. From an examination of some recent literature published on leadership programs provided by universities (see Brown, 2001; Mitchell & Poutiatine, 2001), these types of activities are not uncommon in leadership development programs. Since leadership is practised at a number of different levels, we concur with Marshall et al. (2000) that any type of leadership program should include interventions at the three main levels identified previously in this discussion, recognising that learning also takes place outside of formal programs.

The second lesson would be to reinforce the centrality of the exercise of reflection in any type of leadership development program (Avolio, 2005) since much of the learning described by participants in this study involved reflection on practice (alone and with others). Ramsden (1998b) reinforces the point about the place and role of reflection but also adds the need for self assessment, the importance of experience, and a commitment to personal improvement as necessary for leadership development. It would seem that a range and variety of activities are necessary to encourage reflection on action as well as other learning experiences that heighten leaders' understandings of their work (Marshall et al., 2000).

The findings of this study have shown that there is little doubt that 'learning to lead is a lifetime responsibility' (Ramsden 1998b, p. 227). Such an idea is critical not only for leaders' own development but also for the ongoing learning and development of their staff. As one of the participants in this study put it:

> *I don't think of myself as a leader, I think of myself of someone in the group. For me, the best is to say: "We did the impossible; we did a great thing". It gives me confidence in the group to believe a group can do more. In fact, if I am a leader they are incredibly important moments because I have brought the potential of the group to realisation. I think that that link is very important.*

Finally, the findings of this study need to be read with some caution due to two methodological limitations inherent in the research design. Firstly, the study was small in scale and involved interviews with eighteen new and emerging leaders from one Australian university only. For this reason, it is not possible that these findings can be generalised to other university contexts. Secondly, one of the researchers of this paper was also the presenter of the leadership program from which participants were invited to attend. It is possible that the invitational methodology may have had a bearing on the type of participants who volunteered to engage in it. Relatedly, it is possible that the comments made by the participants may have been affected by the researcher playing the dual role or facilitator of the leadership program and researcher.

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Which Problems to Solve? Attention Allocation and Online Knowledge Sharing In Organizations

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Abstract:	Why do individuals allocate attention to specific problems in organizations? Viewing attention allocation as a matching process between knowledge providers and problems, we examine knowledge sharing in the context of an online discussion forum where knowledge providers respond to problems posted by other organization members. We argue that knowledge providers are more likely to allocate attention to solving problems that more closely match their expertise, but that decisions to allocate attention are also influenced by problem characteristics such as length, breadth, and novelty, as well as by problem crowding. Analyzing 1,251 realized matches and 12,510 unrealized matches among knowledge providers and problems posted in an online discussion forum within a global engineering firm over a 32-month period, we find evidence to support our claim that attention allocation is driven by the features of a particular provider-problem match, thereby shifting the discourse from knowledge provider-seeker relationships to knowledge provider-problem matches. The implications for theories of knowledge sharing, matching processes, and managerial attention are discussed.

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Martine R. Haas
The Wharton School, University of Pennsylvania
3620 Locust Walk, Philadelphia, PA 19104, U.S.A.
mrhaas@wharton.upenn.edu

Paola Criscuolo
Imperial College Business School
Tanaka Building, South Kensington Campus
London SW7 2AZ, U.K.
p.criscuolo@imperial.ac.uk

Gerard George
Imperial College Business School
Tanaka Building, South Kensington Campus
London SW7 2AZ, U.K.
g.george@imperial.ac.uk

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The first two authors contributed equally to this paper. Please direct correspondence to Martine Haas, mrhaas@wharton.upenn.edu.

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WHICH PROBLEMS TO SOLVE? ONLINE KNOWLEDGE SHARING AND ATTENTION ALLOCATION IN ORGANIZATIONS

ABSTRACT

Why do individuals allocate attention to specific problems in organizations? Viewing online knowledge sharing as a matching process between knowledge providers and problems, we examine attention allocation in the context of an online community where knowledge providers respond to problems posted by other organization members. We argue that knowledge providers are more likely to allocate attention to solving problems that more closely match their expertise, but that decisions to allocate attention are also influenced by problem characteristics such as length, breadth, and novelty, as well as by problem crowding. Analyzing 1,251 realized matches and 12,510 unrealized matches among knowledge providers and problems posted over a 32-month period in an online discussion forum within a global engineering firm, we find evidence to support our claim that attention allocation is driven by the features of a particular provider-problem match, thereby shifting the discourse from knowledge provider-seeker relationships to knowledge provider-problem matches. The implications for theories of knowledge sharing, matching processes, and managerial attention are discussed.

In the digital economy, individuals and organizations are awash with information. With over 3.2 billion social networking users, 3.9 billion active email users, and 400 million tweets a day, the rise of social media produces vast amounts of information content. Businesses own more than 900 million mailboxes worldwide which account for over 100 billion work-related emails sent and received daily (Radicati, 2013), with the average manager spending 28% of their work day sending and answering emails (McKinsey Global Institute, 2012). A report on social technologies, defined as "information technology (IT) products and services that enable the formation and operation of online communities, where participants have distributed access to content and distributed rights to create, add and/or modify content" (p.1), estimates that over $1 trillion value can be realized annually through social technologies, and that individual employee productivity can be enhanced by 20 to 25% (McKinsey Global Institute, 2012). This explosion of social technologies has the power to transform organizations and organizational life.

Within organizations, the critical processes of learning, innovation, and performance increasingly depend on how their members utilize such social technologies to share knowledge (Argote, McEvily, & Reagans, 2003; Brown & Duguid, 2002; Sambamurthy & Subramani, 2005). To facilitate knowledge sharing, many large organizations have established electronic communities of practice and introduced social technology platforms to support them, such as online discussion forums (or bulletin boards) where employees can post problems related to their work and share solutions with each other.[1] Such platforms are potentially valuable for knowledge sharing, but their proliferation can contribute to an increasing sense of information overload among employees (Davenport & Beck, 2001; Dean & Webb, 2011). In a world of information overload, attention becomes a critical scarce resource (Simon, 1947). Accordingly, the finite attention of employees becomes a key constraint on problem solving (Cyert & March, 1963; March & Simon, 1958; Ocasio, 1997). Faced with a growing number of problems seeking solutions via social technology platforms, individuals who might be able to provide solutions to others' problems must decide not only whether to allocate attention to offering solutions at all, but also which problems to address. Since information overload is a growing

[1] Online discussion forums are also increasingly used to share knowledge across and outside organizational borders (e.g. Faraj, Jarvenpaa, & Majchrzak, 2011; Jeppesen & Lakhani, 2010).

challenge, the question of why organization members decide to allocate attention to addressing particular problems online is an increasingly urgent concern for organizations.

To explain why individuals choose to respond to problems online at all, prior research on online knowledge sharing in organizations has pointed to social motives such as reputation enhancement, commitment to the community, and generalized reciprocity (e.g. Chiu, Hsu, & Wang, 2006; Constant, Sproull, & Kiesler, 1996; Wasko & Faraj, 2000). Such benefits are particularly important because many organizations do not offer explicit rewards or incentives for online knowledge sharing among their employees. However, individuals are likely to be concerned about the costs as well as the benefits of spending time and effort responding to others' problems online, since attention is a finite resource. Moreover, the question of *which* problems individuals choose to address online has not been addressed in prior studies. Applying findings from research on interpersonal knowledge sharing to the online context suggests that individuals might be more likely to respond to problems from other individuals with whom they have connections based on factors such as social similarity, physical proximity, or prior familiarity (e.g. Espinosa, Slaughter, Kraut, & Herbsleb, 2007; Quigley, Tesluk, Locke, & Bartol, 2007; Reagans, 2011). Yet in online settings, individuals often respond to problems from others with whom they have no such connections, to the extent that Constant and colleagues (1996) noted that online knowledge sharing seems to be driven by "the kindness of strangers." The implication is that individuals may choose to respond to problems for reasons beyond interpersonal connections – perhaps, for reasons related to the problem itself.

In this study, we examine knowledge sharing in the context of an intra-organizational online discussion forum – a social technology platform that provides an informal setting where knowledge seekers (i.e. employees who are searching for solutions to problems) can post task-related questions, and knowledge providers (i.e. employees who can offer solutions to those problems) can post answers. We explore why knowledge providers allocate attention to some problems rather than others in this context by shifting perspectives to focus on provider-problem matching rather than provider-seeker relationships, and by taking into account the costs as well as the benefits that these providers can expect to incur. The context is of theoretical relevance for our research question because there are many problems seeking solutions, and individuals decide which problems to address, if any. It is also

of practical importance since many large, dispersed organizations use online discussion forums to facilitate knowledge sharing among their employees (e.g. Davenport & Prusak, 2000; Kane & Alavi, 2007). Other social technology platforms such as email, document repositories, and groupware are widely used for knowledge sharing within firms too (e.g. Ahuja & Carley, 1999; Bock, Zmud, Kim, & Lee, 2005; Kankanhalli, Tan, & Wei, 2005), but the distinctive advantages of an online discussion forum are that knowledge seekers can search both broadly and efficiently for solutions to their problems, and obtain immediate, customized responses from knowledge providers whom they might not otherwise reach.

In order for knowledge seekers to receive responses, however, knowledge providers have to decide to allocate attention to addressing their problems. Attention allocation involves the focusing of time and effort on a stimulus (James, 1890; Kahneman, 1973). While attention allocation can be mindful or less mindful (Levinthal & Rerup, 2006; Weick & Sutcliffe, 2006), we focus on deliberate decisions to allocate attention to solving particular problems, as manifested by whether or not an individual posts a response to a problem in an online discussion forum. We draw on organizational theories of matching processes (e.g. Mitsuhashi & Greve, 2009; Vissa, 2011) to analyze why individuals allocate attention to some problems rather than others. As a baseline, we propose that this matching process will be influenced by how closely the expertise possessed by the knowledge provider matches the expertise required by the problem. We then consider the effect of other problem characteristics that can attract attention but also create cognitive load for a knowledge provider, such as the problem's length, breadth, and novelty, as well as the effects of problem crowding in the form of concurrently posted problems that can attract attention to the forum but also compete with the focal problem for attention. Finally, we propose that expertise matching can moderate the effects of problem characteristics and problem crowding on a provider's decision to allocate attention to a problem, by increasing the benefits of attention allocation and reducing the costs created by cognitive load and competitive crowding. We test our hypotheses using field data from a global engineering firm, where organization members utilized an online discussion forum to post problems and share solutions related to structural engineering, a core competence of the firm.

Our study contributes to conversations about how attention is allocated inside organizations, with broader implications for information processing in social technology environments. By viewing attention allocation as a matching process, we bring matching theory into the organization and highlight the theoretical importance of matches between particular knowledge providers and particular problems for influencing what receives attention. Our attention perspective sheds light on how knowledge sharing is shaped by factors that influence the costs as well as the benefits that providers can incur when allocating attention to problems, while controlling for provider-seeker relationships and other factors that may influence this activity. Examining the increasingly pressing question of how attention is allocated in the context of an online discussion forum also contributes to our understanding of online knowledge sharing, a phenomenon of growing practical significance within and across organizations. Perhaps at its core, the study helps illuminate a challenge of central importance to organizations: understanding why some problems get solved while others do not.

AN ATTENTION PERSPECTIVE ON KNOWLEDGE SHARING

Knowledge Sharing in an Online Community

In large, dispersed organizations where knowledge is widely distributed, online communities often utilize social technology platforms such as discussion forums to enable knowledge seekers to access solutions to problems from knowledge providers across the organization. By posting questions to an online discussion forum, individuals can search beyond their own social networks, minimize coordination costs, and receive answers from others whom they did not know could offer them. For an online discussion forum to function effectively, however, voluntary participation from knowledge providers is necessary.

Prior research on online knowledge sharing has identified a variety of social motivations that may lead knowledge providers to contribute solutions to problems. For example, in an early study of advice-giving in a technical online community, Constant, Sproull, and Kiesler (1996) found that the benefits to knowledge providers in a Fortune 100 company seemed to arise primarily from the gratification of helping colleagues and from the reputational enhancement gained by demonstrating expertise. Wasko and Faraj (2005) found that members of a legal professional association were more

likely to contribute to an online discussion forum if they felt they had more to share, anticipated reputational benefits, and were structurally embedded in the professional network. Chiu, Hsu and Wang (2006) found that perceived norms of reciprocity as well as social ties and community identification increased the propensity to share knowledge in a professional IT network in Taiwan. Other studies have found evidence for effects of functional role and hierarchical status (Ahuja, Galletta, & Carley, 2003), user experience and recognition (Jeppesen & Frederiksen, 2006), perceived identity verification (Ma & Agarwal, 2007), and self-efficacy (Hsu, Ju, Yen, & Chang, 2007). In the related context of electronic document repositories, scholars have uncovered additional factors that can affect contributions, ranging from individual self-worth to generalized trust, a climate of fairness, and organizational rewards (e.g. Bock et al., 2005; Kankanhalli et al., 2005). Taken together, these studies suggest that a range of motives lead individuals to contribute solutions to problems.

However, much of this research examines general propensities to contribute, rather than why specific contributions are made. To the extent that previous research on online knowledge sharing has focused on dyadic exchanges rather than overall contributions, it has assumed that contributions depend on relationships between providers and seekers (e.g. Constant et al., 1996). This focus on provider-seeker relationships builds on research on knowledge sharing through personal networks, which has shown that providers are often more willing to share knowledge with seekers to whom they feel personally connected. A personal connection between a provider and a seeker may arise from social similarity or homophily, which encourages interaction between individuals with similar demographic or social characteristics (e.g. McPherson, Smith-Lovin, & Cook, 2001; Reagans, 2005). It may come from physical proximity, which exposes individuals to each other and makes it easy for them to access each other (e.g. Allen, 1977; Cummings, 2004). It also may come from prior familiarity, which establishes mutual knowledge and expectations of ongoing reciprocity (e.g. Cramton, 2001; Espinosa et al., 2007). Yet research on online knowledge sharing has shown that contributions often occur in the absence of interpersonal homophily, proximity, or familiarity (e.g., Constant et al., 1996). Moreover, there is mixed evidence for the importance of reciprocity in online knowledge sharing, with some arguing that expectations of reciprocity matter (e.g. Chiu et al., 2006; Walther, Anderson, & Park, 1994), while others find that they do not (e.g. Constant et al., 1996;

Wasko & Faraj, 2005). The implication is that knowledge sharing in an online discussion forum is driven by factors beyond provider-seeker relationships based on homophily, proximity, familiarity, and reciprocity.

To shed new light on what these factors might be, we take a different perspective from prior research by viewing knowledge sharing in an online discussion forum as driven by provider-problem matching, rather than by provider-seeker relationships. In our empirics, we account for the likelihood that a provider contributes to the forum at all as a precondition for our analyses, and we also control for provider-seeker relationships, but our theoretical arguments and our main empirical analyses focus specifically on a provider's decision to allocate attention to a particular problem. Below, we argue that this decision is driven by the expertise match between the provider and the problem, as well as by other problem characteristics and by problem crowding. Our hypotheses are summarized in Figure 1.

----- Insert Figure 1 about here ----

Provider-Problem Expertise Matching

Prior research has shown that knowledge providers' levels of expertise are important in influencing their overall contributions to an online community. For example, Constant et al. (1996) found that individuals with higher levels of expertise were more likely to contribute answers to an online discussion forum, and Wasko and Faraj (2000) confirmed that individuals were less likely to contribute answers when they felt that their expertise was inadequate. These studies relied on self-reported levels of expertise and overall contributions, and did not examine either the content of the providers' expertise or the content of the problems to be addressed. Nevertheless, they suggest that a provider who can offer expertise that more closely matches the expertise required by a focal problem will be more likely to decide to allocate attention to that problem.

In part, providers whose expertise more closely matches the expertise required by a problem may see greater benefits in allocating attention to that problem. These benefits may arise from the satisfaction of helping others (e.g. Dudley & Cortina, 2008) or from the value that they anticipate creating (Nahapiet & Ghoshal, 1998), as well as from the prospect of enhancing their reputation or encouraging future reciprocity by using their expertise to provide a good solution (e.g. Chiu et al, 2006; Constant et al., 1996; Wasko & Faraj, 2000). To the extent that such benefits are anticipated,

they can be expected to be greater when there is a closer match between the content of provider's expertise and the content of the problem.

Additionally, providers whose expertise matches a focal problem also face lower costs of attention allocation. Closer expertise matching increases the likelihood that the provider has the absorptive capacity necessary to understand the problem (Cohen & Levinthal, 1990; Zahra & George, 2002). Further, evidence from geographically distributed teams suggests that overlapping expertise enhances mutual knowledge, reducing the costs of understanding and responding to others' problems (Kotha, George & Srikanth, 2013). This makes it quicker and easier for the provider to make sense of the problem, grasp its intricacies, contingencies, and ramifications, situate it in a broader knowledge landscape, and identify and articulate a solution (Sole & Edmondson, 2002; Thomas, Sussman & Henderson, 2001; Tsai, 2001). In contrast, potential knowledge providers may find it more difficult to solve or even understand a problem when the content of their expertise and the content of the problem are more divergent, due to their lower absorptive capacity and the insularity of their knowledge base (George, Kotha & Zheng, 2008), making it costlier to respond effectively.

Because a potential knowledge provider with expertise that more closely matches a problem can anticipate both greater benefits and lower costs from allocating attention to that problem, we expect that a closer expertise match increases the likelihood that a provider allocates attention to a problem in an online discussion forum. Thus, as a baseline prediction, we expect:

Hypothesis 1: The likelihood that a provider allocates attention to a focal problem will be positively related to the closeness of the provider-problem expertise match.

Problem Characteristics

Theories of selective attention suggest that a problem is likely to attract attention if it is salient – if it stands out more relative to alternative targets for attention allocation (McArthur, 1981; Taylor & Fiske, 1978). According to cognitive psychologists, salience does not rely on prior preferences for a particular kind of stimulus; instead, attention is drawn selectively to a stimulus on exposure (Higgins, 1996). The implication is that characteristics of a problem that make it more salient can increase the likelihood that a potential knowledge provider will allocate attention to that problem.

In an online discussion forum, characteristics of a problem that can make it more salient for a potential knowledge provider include its length, breadth, and novelty. Longer problems take up more space on the screen, dominating a provider's field of vision and crowding out other stimuli (cf. Parkhurst, Law, & Niebur, 2002; Wolfe & Horowitz, 2004). In addition, once the potential knowledge provider starts to read, longer problems may also be more engaging, as the provider gets drawn into the details of the situation presented in the problem. Broader problems are more likely to touch on a domain of expertise of interest to a provider, offering a hook that captures the provider's attention (cf. Cohen, March, & Olsen, 1972; March, 1994). For example, a problem that mentions tennis, soccer, and baseball is more likely to attract attention than one that only mentions tennis. Again, once the potential knowledge provider starts to read, broader problems may also be more engaging as they connect the domain of expertise that originally attracted the provider to other domains of expertise. More novel problems can attract attention as a result of distinctiveness effects (e.g. Gardner, 1985; Nelson, 1979; Taylor & Fiske, 1978). Prior research has shown that executives pay more attention to issues that subordinates portray as more novel (Dutton et al. 2001), and unfamiliar terrains are more likely to capture search attention during new product development (Li et al., 2013). Similarly, in an online discussion forum, problems that are novel relative to other problems are likely to stand out more, and thus attract attention. Additionally, research on open source software suggests that tackling novel problems can be intrinsically motivating as well as extrinsically rewarding, since solving them can serve as a reputation-enhancing signal to the community (Lakhani & Wolf, 2005).

Some length, breadth, and novelty thus can help attract attention to a problem. At high levels, however, length, breadth, and novelty can impose costs on potential knowledge providers that may reduce their propensity to allocate attention to the problem. When a problem is high in length, breadth, or novelty, it creates cognitive load for a provider, in the form of non-trivial information processing demands (Sweller, 1988). This cognitive load may be due to intrinsic or extraneous factors: intrinsic cognitive load is generated by the problem's inherent level of difficulty, while extraneous load is generated by the way in which it is presented: for example, describing a square in writing imposes more extraneous load than providing a picture of a square (Chandler & Sweller, 1991; Paas, van Gog, & Sweller, 2010).

Long problems may generate greater intrinsic load than short problems because they are inherently more difficult, requiring a potential knowledge provider to utilize more complex cognitive schemas to process them. They may also create greater extraneous load because they are more wordy than necessary, perhaps due to an unfocused portrayal of the problem or an unnecessarily detailed description, such that the provider needs to expend greater effort to understand the question, distil the essential information, and articulate a response. Broad problems are likely to generate greater cognitive load than narrow problems because they are likely to be inherently more difficult, controlling for expertise matching, since they span multiple domains of expertise and thus require that providers construct and utilize more complex schemas to process them (Dane, 2010). Problems that are novel for the forum likewise are likely to create greater cognitive load than problems that are routine for the forum, either because they are inherently more difficult to address as the knowledge provider does not possess the schemas needed to process them and must build them from scratch; or because even if the provider does possess the necessary schemas, the novelty of the problem for the forum means there is still more work to be done to help others understand the solution than is needed for a routine problem (George et al., 2008; Kotha et al., 2013). Thus, problems with high levels of length, breadth, or novelty impose higher cognitive loads on potential knowledge providers, increasing the costs of allocating attention to such problems. The consequence, as Kahneman (1973: 53) pointed out, can be that "excessively complex stimuli are treated as irrelevant noise and no longer attract attention."

In summary, a problem that is very short, narrow, or routine can fail to attract attention from a potential knowledge provider due to low salience, while a problem that is very long, broad, or novel can be off-putting due to high cognitive load. Taken together, these arguments suggest that there will be a curvilinear relationship between a problem's length, breadth, or novelty and a potential knowledge provider's decision to allocate attention to that problem, such that greater length, breadth, and novelty will have positive effects on the likelihood of attention allocation, but only up to a point, after which greater length, breadth, and novelty will have negative effects on the likelihood of attention allocation. Hence, we propose:

Hypothesis 2: The likelihood that a provider allocates attention to a focal problem will be curvilinearly related to the problem's (a) length (b) breadth (c) novelty, in an inverse U-shape.

Problem Crowding

While cognitive psychologists' theories of selective attention suggest that the characteristics of a problem itself are important for attention allocation, organizational scholars have proposed theories of selective attention tailored to organizational settings that suggest that the extent to which problems attract attention will vary not only with the characteristics of those problems themselves, but also with the contexts in which the problems are embedded (e.g. March & Olsen, 1976; Weick, 1979). Ocasio (1997) calls this "the principle of situated attention" – that is, what individuals focus on depends on the particular situation or context they find themselves in (Ross & Nisbett, 1991).

In an online community's discussion forum, a central feature of the context that can be expected to influence the allocation of attention to a focal problem is problem crowding, in the form of the number of other problems concurrently posted to the forum (cf. Jones, David, & Rafaeli, 2004; Piezunka & Dahlander, 2014). Theories of intra-organizational ecology and competition for attention suggest that the full set of problems that are seeking solutions can influence how individuals allocate attention to specific problems within firms (e.g. Burgelman, 1991; Hansen & Haas, 2001). In an online discussion forum, concurrently posted problems can increase the chances that a potential knowledge provider decides to allocate attention to a focal problem by increasing the salience of the full set of problems, and the forum overall. If more problems are posted to the forum on a regular basis, the activity on that forum generally will be greater (cf. Butler, 2001; Markus, 1987). Potential knowledge providers are more likely to be aware that the forum is an active hub for knowledge sharing, to monitor the forum's postings on an ongoing basis, and to take notice of announcements about new postings. Additionally, they may be more likely to assess the potential for benefits such as reputation enhancement or future reciprocity as greater if there is more activity on the forum (cf. Chiu, Hsu & Wang, 2006; Connolly & Thorn, 1990; Lin, Hung & Chen, 2009). Whether because a potential knowledge provider is more likely to notice a focal problem or to assess the benefits of responding to it as greater, the result is that more concurrently posted problems can increase the likelihood that the provider allocates attention to the problem.

However, since attention is a finite resource, beyond some point a large number of concurrently posted problems may reduce the likelihood that the potential knowledge provider decides to allocate attention to a focal problem. As March (2002: 27) observed: "the attention devoted to a particular [decision] by a particular potential participant depends on alternative claims on attention". It has long been recognized that problems compete for the attention of members (e.g. Cyert & March, 1963; Simon, 1947), with wide-ranging implications for decision-making in organizations (e.g. Eggers & Kaplan, 2009; Joseph & Ocasio, 2012; Sullivan, 2010). The competition between problems has become increasingly acute as companies have introduced new electronic platforms that enable knowledge seekers to "push" or broadcast their problems to hundreds or thousands of potential knowledge providers at zero marginal cost, simply by posting them to an organization's intranet or external website (Jeppesen & Lakhani, 2010; Shapiro & Varian, 1999). In an online forum, a large number of concurrently posted problems creates many alternative claims on a potential knowledge provider's finite attention. The resulting competitive crowding increases the opportunity costs of attending to a focal problem, and thus may decrease the likelihood that the provider decides to allocate attention to that problem.

In summary, when there are few concurrently posted problems, a focal problem can fail to attract attention from a potential knowledge provider due to a general lack of interest in the forum. Conversely, when there are many concurrently posted problems, a focal problem can fail to attract attention due to the opportunity costs created by competitive crowding. The implication is that there will be a curvilinear relationship between the number of concurrently posted problems and the allocation of attention to a focal problem, such that a larger number will have positive effects on the likelihood of attention allocation up to a point, after which a larger number will have a negative effect on the likelihood of attention allocation. Thus, we predict:

Hypothesis 3: The likelihood that a provider allocates attention to a focal problem will be curvilinearly related to the number of concurrently posted problems, in an inverse U-shape.

Moderating Effects of Provider-Problem Expertise Matching

We have argued above that problem length, breadth, and novelty as well as the number of concurrently posted problems will influence the likelihood that a potential knowledge provider

decides to allocate attention to a focal problem. However, we expect that provider-problem expertise matching will positively moderate these effects. In particular, we argue that closer expertise matching will increase the likelihood that a provider decides to allocate attention to a problem that is longer, broader, or more novel, or that is competing with more concurrently posted problems.

Closer expertise matching can increase the benefits and decrease the costs of allocating attention to a problem of greater length, breadth, or novelty. When a problem is long, broad, or novel, the benefits of allocating attention to that problem will be greater for potential knowledge providers who have expertise that more closely matches the problem, because of their greater ability to offer a response that can help others and create real value, as well as possibly enhance their own reputation and elicit future reciprocity (Chiu et al., 2006; Lin et al. 2009). Additionally, the costs of allocating attention to a problem that is long, broad, or novel are likely to be lower for a potential knowledge provider who has expertise that more closely matches the problem, since that provider will have greater absorptive capacity for the problem, which reduces the costs involved in managing the cognitive load created by length, breadth, or novelty. For example, a provider with more closely matching expertise will be able to sort important from extraneous information in a long problem and digest the important information more efficiently; process the multiple domains of expertise in a broad problem using appropriate schemas more readily; or absorb a problem that is novel for the forum and address that problem more easily.

Closer expertise matching can also increase the benefits and decrease the opportunity costs of allocating attention to a problem when there are more concurrently posted problems competing for the provider's attention. When there are many concurrently posted problems, the benefits of responding to a focal problem will be greater for a provider who has expertise that more closely matches the problem because that provider has greater ability to offer a solution that can create value, be reputation-enhancing, and perhaps elicit future reciprocity, compared to a provider who has expertise that is less closely related to the problem. Moreover, the costs of responding to the focal problem will be lower for a provider who has expertise that more closely matches the problem because that provider's time and effort will be more productive as a result of their increased capacity to absorb the problem and articulate a response efficiently (Kotha et al., 2013). Since less time and

effort are required to respond to the problem, the opportunity costs incurred by the provider as a result of competitive crowding will be reduced.

Taken together, these arguments suggest that the benefits of allocating attention to a problem that is long, broad, novel, or competing with more concurrently posted problems will be greater when there is a closer expertise match than when there is a distant expertise match, and the costs of allocating attention to that problem will be lower. Accordingly, the inverted U-shaped curves that we predicted for the main effects of problem length, breadth, and novelty and concurrently posted problems on attention allocation can be expected to demonstrate a steeper upward curvature and a flatter downward curvature when expertise matching is greater. Hence, we predict:

Hypothesis 4: Expertise matching will positively moderate the curvilinear relationship between the likelihood that a provider allocates attention to a focal problem and the problem's (a) length (b) breadth (c) novelty, such that the positive slope of the inverted U-shape curve becomes steeper and the negative slope becomes flatter with increasing closeness of the provider-problem expertise match.

Hypothesis 5: Expertise matching will positively moderate the curvilinear relationship between the likelihood that a provider allocates attention to a focal problem and the number of concurrently posted problems, such that the positive slope of the inverted U-shape curve becomes steeper and the negative slope becomes flatter with increasing closeness of the provider-problem expertise match.

DATA AND METHOD

Research Setting

We tested the hypotheses using data collected at one of the world's leading multinational engineering consultancies. Headquartered in London, the firm employs more than 10,000 full-time staff in 71 offices across 26 countries. It executes thousands of projects annually, and is globally renowned for creativity and innovative problem solving through its work on landmark structures including the Sydney Opera House and the 2008 Beijing Olympics National Aquatic Center.

Knowledge sharing enabled engineers in this firm to solve problems that arose from specific client needs and that required them to figure out ways of applying principles, past experience, and existing practices in unique situations. To facilitate knowledge sharing, the firm had invested heavily in advanced information and knowledge management systems, including online discussion forums as well as expert yellow pages and searchable document repositories. These technology platforms were supplemented by a range of human resource practices, such as mentoring, job rotation, and experience

sharing, as well as by a strong knowledge sharing culture in which employees were willing to help each other. There were no formal incentives for knowledge sharing, however, and providing advice was not formally rewarded by the appraisal system. Instead, as one senior manager in the firm told us: "People are expected to help… so the norm is contribution and this is just the way things are."

Data Collection

To facilitate knowledge sharing across the organization, the firm had established 25 electronic communities of practice (eCOPs), each with its own online discussion forum. These communities focused on different technical disciplines, including structural engineering, fire engineering, environmental consultancy, fluid dynamics, acoustics, etc. Joining an eCOP required individuals to formally register, and registered members received an email whenever a question was posted on the community's online discussion forum. Individuals could belong to multiple eCOPs, and could join or leave any of these eCOPs with impunity. The message threads of all the online discussion forums were accessible by all employees, whether or not they were registered members of the eCOP, and anyone in the firm could contribute to any forum by posting questions and/or answers. The questions and answers posted to a forum included the name of the individuals posting them and their email addresses, but no other identifying information. The system did not allow knowledge providers to automatically access more detailed information on the knowledge seekers. To obtain this information, a provider would have to type the name of the seeker into the search engine of the firm's other knowledge management systems.

We analyzed knowledge sharing in the structural engineering community's online discussion forum over a 32-month period between January 2003 and August 2005. Structural engineering is a fundamental discipline in construction and design projects. The firm employed over 1,000 structural engineers, who accounted for 27% of its total engineering staff. The structural engineering community was the largest and most vibrant eCOP inside the firm. Like the other 24 eCOPs, it was heavily supported by the organization, which provided funding for video conferences, short courses, lunchtime seminars, and other activities. In August 2005, the structural engineering eCOP had 535 members, of whom 73% were structural engineers, 6% were bridge engineers, 6% were civil engineers, 3% were façade engineers, and others specialized in fields such as material sciences,

geotechnical, and infrastructure. The most common themes in the problems that were posted to the structural engineering eCOP's online discussion forum focused on appropriate structural elements, building regulations, economic feasibility, numeric values, and theoretical models and formulae. However, the problems themselves were not titled, tagged, or categorized into these (or other) themes when they were posted. Some sample problems from the online forum are presented in Table 1.

----- Insert Table 1 about here -----

Data sources. We combined data from four sources for this study. The first source was the electronic logs of all the messages posted to the online discussion forum during the 32-month period under analysis. As the online discussion forum was used as a vehicle to advertise some of the activities organized by the structural engineering community, such as seminars, workshops or training courses, we read all the 3,682 messages posted during our sample period and deleted those messages that did not refer to an engineering problem. After this, the dataset included 3,421 messages, of which 952 were problems and 2,469 were responses. Thus, an average of close to 30 problems and 77 responses were posted per month. These messages were posted by 623 individuals, of whom 478 were knowledge providers (i.e., posted at least one response).

A second data source was the firm's expert yellow pages. Each member of the firm was encouraged to provide a description of his/her areas of expertise in a personal profile on the company intranet, which could only be accessed by employees, and to keep it updated. These expertise descriptions were self-declared and voluntary. There was a strong incentive to provide an honest and accurate description because this knowledge management system was searchable and often used by staff to identify experts in a particular area. Indeed, the phrase prompting the expertise description stated: "what things I expect people to ring me up and discuss". Thus, while the descriptions were not officially screened for accuracy, the individuals were expected to be able to provide an answer to a colleague if questioned about an area of technical expertise listed on his/her profile. Additionally, the descriptions were reviewed annually as part of each individual's appraisal process, which meant that there was some formal as well as informal pressure on staff not to 'over-declare' their expertise. About two-thirds of the firm's employees had completed their expertise descriptions when we

obtained this dataset. These descriptions were 30 words long on average, though some exceeded 250 words. They provided rich information, as this typical example demonstrates:

> *"Structural issues related to reinforced / pre-stressed and/or post tensioned concrete; flat slab /rib slab design; in service behaviour including deflection prediction, structural implications of shrinkage and thermal effects, and the investigation of defect; 3D steelwork package Xsteel and Raft design; structural testing and monitoring including full scale testing of hole cutting in a post-tensioned slab"(56 words)*

The third data source was records from the Human Resource department, which provided data on employees' office location, rank, tenure, and gender. The fourth source was the company's project database, from which we extracted lists of the projects on which each individual had worked since joining the firm.

Because of missing data across the four data sources, some of the knowledge providers had to be dropped from the dataset, reducing our final sample to 307 knowledge providers (though our models also account for individuals who could have served as knowledge providers but did not, as described below). When we compared these 307 providers with the 171 providers who were excluded because of missing data, we found that those who were included in our final sample posted significantly more answers than those who were excluded ($p<0.01$). This is advantageous for our study in that we are able to include a high proportion of responses that were posted to the forum in the final sample even though some individuals had to be dropped. In fact, the sample of 307 knowledge providers was responsible for generating 76% of all the responses to engineering-related problems on the forum during the period under analysis. After excluding responses to problems that were posted by individuals with missing data, our final sample included 1,974 messages, of which 639 were problems and 1,336 were responses.[2]

Statistical Approach

[2] It is possible that some responses to problems were given directly to a seeker, bypassing the online forum. However, our interviews with members of the firm, including the Head of Knowledge Management, indicated that participants were strongly encouraged to post their responses on the forum rather than replying directly to a seeker, so that others could search the forum for answers to their questions. Indeed, seekers occasionally posted answers they had received over the phone from a provider on the forum for exactly that purpose. We also checked whether the seeker had included a phone number or email address at the end of the question, which could indicate that a direct rather than public response was desired, and found only two instances of this in our sample of 639 problems. The available evidence thus indicates that providers tended to post their responses on the forum rather than replying directly to seekers via email or telephone calls.

Because the focus of our theoretical arguments is on whether a particular knowledge provider decides to allocate attention to a particular problem in the forum, the unit of analysis in our main econometric models is a provider/problem dyad. We constructed a matrix of all provider-by-problem dyads in which the ij^{th} cell is 1 if provider *i* provided a response to problem *j* (realized dyad) or 0 if provider *i* did not provide an answer to problem *j* (non-realized dyad). The providers in these dyads included all the 307 individuals who posted at least one response during the observation period. We defined the risk set of problems to include all possible problems that were available to be answered at the time that a focal problem was posted to the forum – that is, all problems posted prior to the time that the focal problem was posted (whether or not they received a response), and that were still open at the time that the focal problem was posted. We considered a problem to be still open if it was posted less than 50 days before the focal problem; we used this window because no problem in our dataset received a response 50 days or more after it been posted. The resulting dataset consisted of 376,670 possible provider-problem dyads, of which 1,336 were coded 1 (realized dyads) and 375,334 were coded 0 (non-realized dyads).

Constructing the dataset in this way enabled us to compare realized dyads to non-realized dyads, following the analytic approach taken in previous studies of tie formation between firms (e.g. Gulati, 1995). However, the dataset was characterized by a preponderance of zeros due to the large number of non-realized dyads. The analysis of a dataset with very few positive events (less than 1%) cannot be undertaken using a standard logit model because it will underestimate the probability of a positive outcome (i.e., a match between a provider and a problem) (King & Zeng, 2001). The dataset was also characterized by non-independence in the error terms arising from the fact that both providers and the problems could appear many times in the dataset. This issue of network autocorrelation could lead to underestimation of standard errors (Krackhardt, 1988). To address these concerns, we followed previous studies of tie formation in sparse networks (e.g. Hallen, 2008; Jensen, 2003) by using a choice-based sampling technique and testing our hypotheses using a rare-event logit model. The choice-based sampling technique included all the realized dyads and a randomly extracted sample of corresponding non-realized dyads.

Consistent with our theoretical focus on why a particular provider decides to allocate attention to a particular problem rather than other possible problems, for each realized dyad in which provider *i* responded to a problem *j*, we randomly selected 10 non-realized dyads from the sample of problems to which provider *i* could have responded but did not (i.e., those that were posted less than 50 days prior to the focal problem). To ensure that enough problems had been posted prior to the focal problem to randomly extract the sample of ten non-realized dyads, we excluded problems posted during the first two months of our observation period, resulting in a final dataset with 13,761 dyads of which 1,251 were realized dyads and 12,510 were non-realized dyads.[3]

While this choice-based sampling technique resolves concerns created by a preponderance of zeros in the dataset, it can bias the logit estimates because the proportion of positive outcomes in the sample is different from that in the underlying population of potential dyads. To correct this bias, we used weighted exogenous sampling maximum-likelihood estimation (WESMLE), an approach that weights the contribution of each dyad to the likelihood function and is better than alternative approaches for large samples (King & Zeng, 2001). Additionally, we clustered the standard errors on the provider (Hallen, 2008; Jensen, 2003), since each provider appears in one realized dyad and ten unrealized dyads (i.e., the provider is constant across eleven observations).[4] We used Tomz's (2003) ReLogit Stata procedure to estimate the logit models. Finally, we utilized the longitudinal nature of the dataset by constructing the explanatory and control variables to minimize reverse causality by measuring them in the period prior to the focal match/non-match, as explained more fully below.

Dependent Variable

***Attention allocation*.** Our main dependent variable is whether a provider decided to allocate attention to a problem posted on the structural engineering community's online discussion forum. We considered that provider *i* allocated attention to problem *j* if s/he posted a response to problem *j*. Thus our dependent variable is a binary variable that is equal to 1 if a possible provider-problem match was realized, or 0 if that possible match was not realized.

[3] We ran robustness tests with ratios of 1:5 and 1:3 realized to non-realized dyads, and found that they produced substantively equivalent results to those reported here.

[4] We also estimated models clustering the errors on the problem, the knowledge seeker, and both the knowledge provider and the knowledge seeker, and found results consistent with those reported here.

Explanatory Variables

Provider-problem expertise matching. To capture how close the expertise possessed by a provider was to the expertise required by the problem, we utilized a keyword similarity approach (Criscuolo, Salter & Sheehan, 2007). Specifically, our measure of ***expertise matching*** was constructed by capturing how similar the keywords in the provider's expertise description were to the keywords in the focal problem.

To capture the universe of possible keywords and how similar they were to each other, we began by deriving a list of 574 keywords from the expertise descriptions of all employees stored in the company's expert yellow pages (n=3,948).[5] We used this list of 574 keywords to construct a keyword-by-keyword similarity matrix (K) (574x574) whose cell ij^{th} contains a measure of similarity between keywords *i* and *j*. To derive this measure of similarity, we used the Salton cosine formula:

$$\text{cosine(i, j)} = \frac{\text{cooc(i.j)}}{\sqrt{\text{oc(i)} * \text{oc(j)}}}$$

where the nominator represents the co-occurrence of each pair of keywords in the expertise descriptions and the denominator is the product of the square root of the respective occurrence frequencies in all 3,948 expertise descriptions (see Aral & Van Alstyne, 2011 for a similar application in the context of email exchanges). Pairs of keywords that co-appear very often have a cosine nearer to one, while keywords that rarely appear together have a cosine nearer to zero. For example the cosine value for 'foundation' and 'pile' is equal to 0.46, while the cosine between 'foundation' and 'vibration' is only 0.027.

We also used the list of 574 keywords to construct a provider-by-keyword asymmetric matrix (X) (307x574) in which cell x_{ij} =1 if the i^{th} provider mentioned keyword j^{th} in his/her expertise description, and x_{ij} = 0 otherwise. Similarly, we constructed a problem-by-keyword asymmetric

[5] In deriving this list of keywords we disregarded articles, prepositions, adverbs, verbs and words that did not refer to technical expertise. We also classified word pairs, such as 'remote sensing' and 'traffic calming', and word triplets such as 'environmental impact assessment' and 'computational fluid dynamics' as keywords. Additionally, keywords were corrected for plurals and association, e.g. rail/railway, sustainable/sustainability, daylight/light, cabling/cable, forecasting/forecast (for an application of this approach to the context of patent analysis see Corrocher, Malerba, & Montobbio, 2007). From this list, we selected the 574 keywords that appeared more than 10 times. We then presented this list to senior managers to ensure that key areas of expertise were not missing, and that the list of pairs and triplets of keywords did identify particular areas of expertise.

matrix (Y) (639x574) in which cell y_{ij} =1 if problem *i* mentioned keyword *j*, and y_{ij} = 0 otherwise. We then multiplied the provider-by-keyword matrix (X) by the keyword similarity matrix (K), and multiplied the resulting matrix by the transposed problem-by-keyword matrix (Y). By weighting by the keyword similarity matrix, we are able to capture the extent of similarity between the keywords in the provider's expertise and the keywords in the problem, even when these keywords were not exactly the same. In this way, we obtained a provider-by-problem matrix (W) (307x639) which contains in cell w_{ij} the similarity between the keywords mentioned in the expertise description of provider *i* and those mentioned in problem *j*. We then divided the value of each w_{ij} cell by the product of the total number of keywords in the expertise description of provider *i* and the total number of keywords in problem *j* to restrict the range of this indicator between zero and one. Problems that addressed areas of expertise more similar to the expertise of the potential knowledge provider have a higher value of this expertise matching variable.

Problem characteristics. To measure ***problem length***, we counted the number of words in each problem posted to the forum.

To measure ***problem breadth***, we computed the extent to which there was variety in the domains of expertise addressed in the problem. To identify the possible domains of expertise that could be addressed, we again drew on the 574 keywords from the company's expertise yellow pages. We carried out a hierarchical clustering analysis on the keyword-by-keyword matrix (K), applying the Ward method with Euclidean distances. Using the Duda and Hart stopping rule (1973), we obtained 19 clusters of keywords, which represented different domains of expertise inside the company. This method allowed us to classify the keywords that appeared in each problem into one or more of these 19 domains of expertise. We constructed the measure of problem breadth using Teachman's entropy index, a measure of variety (cf. Harrison & Klein, 2007) determined by the following formula:

$$\text{Problem breadth} = \sum_{i=1}^{19} p_i \times \ln(p_i)$$

where p_i is the proportion of keywords in domain *i*. Problems whose keywords are spread more evenly across a higher number of expertise domains have a higher value on this breadth measure.

Our measure of ***problem novelty*** captures how different the focal problem is to problems previously posted to the forum, again using a keyword similarity approach to derive the measure. Specifically, the measure was constructed by examining how similar the keywords in the focal problem were to the keywords in previously posted problems. To capture how similar a particular problem was to each previously posted problem, we multiplied the problem-by-keyword matrix (Y) by the keyword similarity matrix (K), and then multiplied the resulting matrix by the transposed problem-by-keyword matrix (Y) to generate a problem-by-problem matrix (Q), which contained in cell q_{ij} the similarity between the keywords in problem *i* and those in problem *j*. We then divided the value of each q_{ij} cell by the product of the total number of keywords in problem *i* and in problem *j*, to account for all the possible combinations of keywords in two given problems. Finally, for each problem *i* we calculated the average similarity value between problem *i* and all the other problems previously posted on the forum (i.e., we excluded problems posted after the focal problem), and computed the inverse of this average to derive our problem novelty measure.[6] Accordingly, for a given problem *i* the problem novelty variable is derived using this formula, where *J* is the number of problems previously posted on the forum:

$$\text{Problem novelty}_i = \frac{1}{\frac{\sum_{j=1}^{J} \frac{q_{ij}}{kw_i * kw_j}}{J}}$$

Thus, a problem that contains keyword combinations that differ from the keyword combinations in previously posted problems will score high on this novelty measure. By construction, problems posted at the beginning of our observation period will tend to display lower values on this measure than problems posted towards the end of the period; to address this issue we included month and year dummies in our models that account for the timing of the problems.[7]

Problem crowding. We constructed a measure of ***concurrent problems*** that is equal to the number of problems posted on the forum in the three working days prior to the focal problem being posted. We chose a window of three working days because close to 90% of the problems in our

[6] Consistent results were also obtained with a problem novelty measure built using all 639 problems posted to the forum during our observation period, including those posted before as well as after the focal problem.
[7] We also re-ran our analyses after dropping the first six months of observations, and the results did not change.

dataset were answered within this time frame. We ran robustness checks with different windows, including five, seven, and ten working days, and obtained similar results.

Control Variables

We included several sets of variables to control for alternative explanations for attention allocation in the online discussion forum. First, we included a series of variables to account for characteristics of the provider-seeker dyad. To control for reciprocity (i.e., the possibility that a provider might be more likely to respond to a problem posted by a seeker who had previously assisted him/her), we used a dummy variable equal to 1 if the focal provider had previously received a response to a problem from the focal seeker, or 0 otherwise (***reciprocity***). To control for homophily (i.e., the possibility that a provider might be more likely to respond to a problem posted by a seeker who shares similar personal characteristics), we created a dummy variable equal to 1 if both individuals in a dyad were of the same gender, or 0 otherwise (***same gender***).[8] To control for proximity (i.e., the possibility that a provider might be more likely to respond to a problem posted by a seeker in the same location), we included a dummy variable equal to 1 if two individuals worked in the same office, or 0 otherwise (***shared office***). To control for familiarity (i.e., the possibility that a provider might be more likely to respond to a problem posted by a seeker whom s/he knew), we included two variables: a dummy variable equal to 1 if two individuals had worked together on a project during the five years preceding the date at which the problem was posted on the forum, or 0 otherwise (***shared projects***), and a count variable that captures the number of other online communities in which the provider and seeker were both members, since this could have enabled them to get to know each other through interactions on other online discussion forums as well as through other community-related activities such as video conferences, seminars, and training sessions (***shared communities***).

[8] We would have collected information on other demographic characteristics such as age, race, or nationality if it had been possible, but we were constrained by laws that restricted the use of such information. However, while we expected that gender might matter in an online discussion forum, because it is often apparent from participants' names, these other demographic characteristics are less likely to matter significantly; in support of this intuition, prior research has shown limited roles for their effects in online knowledge sharing (Constant et al., 1996).

Second, we included a series of variables to account for characteristics of the seeker that might lead a provider to allocate attention to a problem posted by that seeker. We controlled for the seeker's rank in the company using HR data that classified each individual's hierarchical level on a 9-point scale (***seeker rank***), to capture the possibility that a provider might be more likely to allocate attention to a problem posted by a seeker with higher rank in the company. We included a dummy variable equal to 1 if the seeker was a member of the structural engineering community, or 0 otherwise (***seeker member***), since a provider might have felt more motivated to respond to a problem posted by a seeker who was more invested in the forum. We also included a dummy variable equal to 1 if the seeker was one of the formal facilitators in the online discussion forum, or 0 otherwise (***seeker facilitator***). These formal facilitators were subject matter experts responsible for stimulating technical discussions and maintaining an active discussion forum; given their central role in the community, problems posted by them might have been more likely to attract the attention of a knowledge provider.

Third, we accounted for characteristics of the provider that might have influenced their decision to allocate attention to a particular problem. We controlled for the provider's rank (***provider rank***) and the provider's tenure in the organization (***provider tenure***). Individuals in higher positions in the company and/or with longer tenure might have had a greater depth of expertise in particular areas, which could have increased their propensity to respond to problems in those areas. We also controlled for the number of projects (logged) to which a provider was assigned at the time that the problem was posted to the forum (***provider project load***), because a provider who was working on more projects at the time a problem was posted to the forum might have been less likely to allocate attention to that problem as a result of their higher project load.

Fourth, to account for the possibility that a particular provider was not the first to respond to a problem, we included a control variable for the order of their response (i.e., first, second, third, etc) (***response order***). We expected a provider to be less likely to respond to a problem if others had already responded. We constructed this variable by setting its value equal to the actual order of the response for a problem to which a provider responded; for a problem to which a provider could have

responded but did not, we randomly assigned a value to this variable so that its distribution among the non-realized dyads corresponded to that among the realized dyads.

Fifth, we included dummy variables for years, months, and days of the week in our models to account for any otherwise unobserved tendency of knowledge providers to allocate attention to problems posted at different times.

Controlling for selection bias

Consistent with the focus of our theoretical arguments on why a particular provider chooses to allocate attention to a particular problem rather than to other possible problems in the online discussion forum, our main rare-event logit analyses focus on the 307 individuals who posted at least one response to a problem on the forum during our observation period. However, restricting our analysis to only those individuals who acted as knowledge providers creates a possible selection bias because individuals who post responses to problems may systematically differ from individuals who do not post responses. To account for this possible bias, we used the two-stage procedure proposed by Heckman (1976). In our context, this involved estimating a first-stage probit model to predict whether an individual posted at least one response to any problem on the forum during the observation period (*selection model*). From this we derived an inverse Mills' ratio, which we then included in our main rare-event logit model (*outcome model*).

The sample used in the selection model included all individuals who were active on the forum during the observation period, whether as knowledge providers, knowledge seekers, or both (n=399), plus all members of the structural engineering community who were not active on the forum during the observation period and for whom we had complete data (n=214), for a total risk set of 613 individuals.[9] The dependent variable was equal to 1 if an individual posted a response on the forum at any point during the observation period, or 0 otherwise (***knowledge provider***). As independent variables we included a series of characteristics that we expected might have influenced whether an individual was a knowledge provider. Individuals who were formal facilitators of the forum (***forum***

[9] We also ran the first-stage model using as a risk set all individuals who were active in the forum during our observation period plus all structural engineers in the company. This risk set includes 955 individuals of whom 543 did not participate in the forum. For this larger risk set we do not have information on gender and project load for all individuals. Since both of these variables are significant in the current model, we have chosen to estimate our first-stage model using the smaller sample. The results do not change with the larger risk set.

facilitator) may have been more likely to respond to problems posted on the forum as part of their responsibilities. Individuals who were members of the structural engineering community (***member of focal community***) may have had a greater sense of commitment to the community and thus have been more likely to respond to problems, while individuals who were members of more other communities (***member of other communities***) may have had a greater underlying propensity to share knowledge and help others by posting responses. Gender might have affected the probability of knowledge provision too, so we included a dummy variable that was equal to 1 for male, or 0 otherwise (***gender***). Individuals in higher positions in the company (***rank***) were often expert problem solvers, and may have been more able to respond to problems on the forum as a result, while individuals who had worked in the company for a longer period (***tenure***) had more work experience that could be shared with others on the forum. Individuals who had expertise in a larger number of engineering domains (***expertise breadth***) may have been more likely to have the relevant knowledge to respond to problems on the forum; we calculated this variable following the procedure used to derive the problem breadth variable. Similarly, individuals who were specialized in structural engineering (***structural engineer***) may have had a greater propensity to respond to problems on the forum. Finally, individuals who were assigned to more projects during the observation period may have been less likely to respond to problems posted on the forum as a result of their higher project load, so we included a logged measure of total project assignments in the model (***total project load***).[10]

RESULTS

Table 2 reports the descriptive statistics for the variables used in the models. We standardized the main continuous independent variables by subtracting the mean and dividing by the standard deviation in order to avoid high correlations between these variables and their interaction terms (Neter, Wasserman, & Kutner, 1990). Most of the correlation coefficients are low. Nevertheless, we

[10] To apply the Heckman two-stage procedure, we need at least one instrumental variable that is expected to influence the selection process, i.e. whether an individual acts as knowledge provider, but is not expected to influence the likelihood that an individual allocates attention to a particular problem rather than other problems. We used the following four variables as instruments: *forum facilitator*, *member of focal community, member of other communities,* and *gender.* We included *rank* and *tenure* in both the first-stage model and our main models, since these variables could be expected to influence both the selection and the outcome equations. We replaced *expertise breadth* and *structural engineer* with our expertise matching measure in the main models, since this measure more accurately captures how expertise might affect a provider's decision to allocate attention to a particular problem (the results are not changed by including them too). And we replaced *total project load* with the measure that captures the provider's project load at the time that the focal problem was posted.

derived variance inflated factors (VIF) for our models; these were on average less than 2.5, indicating that multicollinearity is not a concern in the regressions.

----- Insert Table 2 about here -----

The first-stage probit model predicting whether or not an individual acted as a knowledge provider (not shown) indicated that individuals were more likely to post at least one response on the online discussion forum during the observation period if they were higher ranked in the company (b=.110, p<.01), were male (b=.296, p<.01), had broader expertise (b=.308, p<.01), were structural engineers (b=.214, p<0.05), and, contrary to our expectations, had a higher project load (b=.196, p<0.05). The other variables included in the model did not have significant effects.

The results of our main rare-event logit models are shown in Table 3 and Table 4. Table 3 reports the estimates for the main effects predicted by H1, H2 and H3. Model 1 is a baseline model which only includes the control variables. This model indicates that reciprocity was a positive and significant predictor of the probability that a particular provider allocated attention to a particular problem. However, we did not find any significant effects for homophily based on gender, proximity based on shared office, or familiarity based on shared projects or shared communities. Similarly, none of the seeker characteristics seemed to explain why a provider decided to allocate attention to a problem. Of the provider characteristics, rank has a positive and significant effect in the model with control variables only, but this effect is not significant in subsequent models. Conversely, project load is not significant in the model with control variables only, but this variable is negative and significant in subsequent models, indicating that providers were less likely to allocate attention to a focal problem if they were assigned to more projects at the time that the problem was posted. The inverse Mills' ratio is not significant, indicating that selection bias was not a major concern in our dataset.

----- Insert Table 3 about here -----

Model 2 shows the results for Hypothesis 1, which predicted that a provider will be more likely to respond to a problem that more closely matches the provider's expertise. This hypothesis is supported: we find a positive and significant relationship between expertise matching and the decision to allocate attention to a given problem (b = .165, p < .01). Models 3, 4 and 5 add the problem length, breadth, and novelty variables in order to test Hypotheses 2a, 2b, and 2c, which predicted curvilinear

relationships between each of these three problem characteristics and the likelihood that a provider decides to allocate attention to the problem. The predictions are supported for all three variables, as shown by the signs and significance of the coefficient estimates. In Model 3, we find a positive and significant coefficient for the problem length variable (b =.148, p<.01) and a negative and significant coefficient for the squared term (b=-.078, p<.01). In Model 4, the coefficient for the problem breadth variable is also positive and significant (b=.643, p<.01) and its squared term is negative and significant (b= -.315, p<.01). The same pattern is found in Model 4 for the problem novelty variable, which has a positive and significant linear effect (b=.103, p<.05) and a negative and significant squared term (b= -.033, p<.05). The inflection points for all three inverted U-shaped curves are within the observed range of these variables. These results hold in Model 6 where the variables are included together. Hence, we conclude that there is strong support for Hypothesis 2.

In Model 7, we introduce the linear and squared terms for the competing problems variable in order to test Hypothesis 3, which predicted that that the number of concurrently posted problems has a curvilinear relationship with the likelihood that a provider decides to allocate attention to a focal problem. In partial support of Hypothesis 3, we find that the linear term has the predicted positive and significant effect on the likelihood of attention allocation (b=.112, p<.01). However, the squared term is not negative and significant as we had predicted; instead, it is positive and non-significant. The finding of a positive linear effect of the number of competing problems holds in Model 8, where the non-significant squared term is excluded, indicating that the likelihood that a provider allocated attention to a focal problem was greater if a higher number of other problems were posted to the forum concurrently, and did not decline as the number of concurrently posted problems reached higher levels. Thus, the support for Hypothesis 3 is mixed.

To test Hypotheses 4 and 5, the moderating effects of expertise matching on problem characteristics and problem crowding are presented in Table 4, in Models 9-14 and Models 15-16 respectively. As these models show, we find linear-by-linear interactions but not curvilinear-by-linear interactions between expertise matching and each of the variables capturing problem characteristics and problem crowding. That is, there are significant interactions with the linear terms but not the squared terms for these variables. Model 17 presents a full model that includes the interactions for the

squared terms, while Model 18 reports the full model where we excluded these higher order interaction terms. As the interactions for the squared terms are not significant in the partial models, we assess the support for our moderating hypotheses using Model 18 (cf. Aiken & West, 1991).

----- Insert Table 4 about here -----

Model 18 shows a positive and significant interaction term between expertise matching and problem length (b=.067, p<0.10): the likelihood that a provider allocated attention to a longer problem was greater if that provider had expertise that more closely fit the expertise required by that problem. The interaction between expertise matching and problem breadth is also positive and significant (b=.105, p<0.05), indicating that the likelihood that a provider allocated attention to a broader problem was higher if that provider had expertise that more closely matched that required by the problem. Similarly, expertise matching positively and significantly moderates the relationship between problem novelty and attention allocation (b=.105, p<0.01). We also find that the interaction term between expertise matching and competing problems (b=.061, p<0.05) is positive and significant, indicating that the likelihood that a provider allocated attention to a focal problem while facing a higher number of concurrently posted problems was greater if that provider's expertise matched the expertise called for by the problem.

Notably, although there are no significant interactions for the squared terms, it is still possible that the negative slopes of the curvilinear main effects may become flatter with increasing closeness of the provider-problem expertise match. To see this, consider the derivative for a linear-by-linear interaction in a simple linear model, $Y=\beta_1 X+\beta_2 X^2+\beta_3 Z+\beta_4 XZ$, where X is problem length and Z is expertise matching. The derivative, $dY/dX = \beta_1+2\beta_2 X+\beta_4 Z$, shows that the slope of the curve is a function of both X and Z. That is, both the upward sloping part of the curve and the downward sloping part of the curve are affected by Z (see Aiken & West, 1991, for further explication).[11] In order to establish whether expertise matching significantly affects both the positive and the negative slopes of

[11] If we had found curvilinear-by-linear interactions too, such that $Y=\beta_1 X+\beta_2 X^2+\beta_3 Z+\beta_4 XZ+\beta_5 X^2 Z$, the derivative, $dY/dX =\beta_1+2\beta_2 X+\beta_4 Z+2\beta_5 XZ$, would have shown that the slope of the curve was a function of X, Z, and X^*Z. In this case, the slopes of the curve could have changed in additional ways, possibly even to the extent that the inverse U-shape switched to a U-shape for some values of Z (see for example Van der Vegt & Bunderson, 2005 in the context of a linear model).

the curvilinear main effects in our models, therefore, we must plot the interaction terms and also examine the differences in the predicted probabilities of attention allocation associated with different values of the expertise matching variable.

We used the estimates from Model 18 to plot the interaction terms. Since the magnitude, direction, and statistical significance of moderating effects depend on the values of all the other independent variables in non-linear models (Hoetker, 2007), and statistical testing of these effects can produce misleading results (Greene, 2010), we follow the suggestion of Greene (2010) and assess the evidence for Hypotheses 4 and 5 by inspecting these plots. To generate the plots, we derived the predicted probabilities of attention allocation at three levels of the moderator variable (expertise matching) over the entire observed range of the moderated variable (e.g. problem length), while holding all other continuous explanatory variables at their means and significant binary variables at 1. We used one standard deviation below and above the mean of the expertise matching variable for the low and high values, respectively, and the mean for the medium value.

----- Insert Figures 2a-d about here -----

The plots for the predicted probabilities for the moderating effects of expertise matching on problem length, breadth, and novelty are presented in Figures 2a, 2b, and 2c. These figures show that a provider was less likely to allocate attention to a problem that was longer, broader or more novel if the match in expertise between that provider and the problem was low; however, a provider was more likely to allocate attention to such a problem if the level of expertise matching was high (i.e. the curves shift upward as expertise matching increases). All three figures also indicate that an increase in expertise matching shifts the maximum of the inverted U-shape curves toward the right, as illustrated by the vertical dotted lines, suggesting that an a closer expertise match increases the point at which the costs of allocating attention to a focal problem outweigh the benefits for a knowledge provider.[12]

[12] We also derived the confidence intervals for the differences in predicted probabilities using a simulation-based procedure (King, Tomz & Wittenberg, 2000; Zelner, 2009). Although these confidence intervals need to be interpreted with considerable caution (Greene, 2010), we found that the differences in predicted probabilities associated with a change in expertise matching from low to medium to high values were statistically significant (at $p<0.05$) for the entire range for each of the three moderated variables (i.e., the confidence intervals around them never contained zero), indicating that the upward shifts of the U-shaped curves were significant. Additionally, we tested whether the rightward shifts of the curves' maxima indicated by the vertical dotted lines were significant. For problem length, we found that the shift in the maximum was significant for the change

To further examine whether both the positive slopes and the negative slopes of the curves are significantly affected by expertise matching, we plotted the differences in predicted probabilities associated with a change in expertise matching from low to medium to high values, and then plotted these differences in predicted probabilities against each of the three moderated variables (plots not shown). If expertise matching has the effect of steepening the positive slopes as well as flattening the negative slopes of the curves, we would expect to see that these differences increase across the entire range of the moderated variables. The plot corresponding to Figure 2a revealed that the differences in predicted probabilities only increased to the left of the maximum of the inverted U-shape curve for length, indicating that an increase in expertise matching steepened the positive slope of the curve but did not flatten its negative slope. In contrast, the plots corresponding to Figures 2b and 2c revealed that the differences in predicted probabilities increased across the entire range of the inverted U-shape curves for both breadth and novelty, indicating that an increase in expertise matching steepened the positive slopes and also flattened the negative slopes of these curves. Thus, we find partial support for the moderating effects of expertise matching on problem length predicted in H4a, and full support for the moderating effects of expertise matching on problem breadth and problem novelty predicted in H4b and H4c.

Finally, we plot the predicted probabilities for the moderating effects of expertise matching on the competing problems variable in Figure 2d. This figure shows that providers were more likely to allocate attention to the focal problem when there were more other problems concurrently posted on the forum, and this effect was amplified at higher levels of expertise matching. Deriving and plotting the differences in predicted probabilities for low, medium, and high levels of expertise matching confirmed that the moderating effects of expertise matching were positive across the full range of the competing problems variable.[13] Thus, with the caveat that we did not find a curvilinear main effect for

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from low to medium values of expertise matching, but not for the change from medium to high values; for both problem breadth and problem novelty, the shift in the maxima was significant for the changes from low to medium as well as medium to high values of expertise matching (i.e. the confidence intervals for these maxima did not overlap).

[13] Again, using a simulation-based procedure to calculate the confidence intervals indicated that this moderating effect of expertise matching was statistically significant.

competing problems, H5 is supported, since the effects of competing problems are significantly positively moderated by expertise matching.

Supplementary Analysis

Our hypotheses and empirical analyses focus on a knowledge provider's decision to allocate attention to a particular problem. However, once a knowledge provider has decided to allocate attention to a problem, the amount of time and effort that the provider allocates to that problem may vary – that is, there may be variation in *attention intensity* (Kahneman, 1973, Ocasio, 2011). Our data enable us to examine this in a very preliminary way, by examining the length of the response to a focal problem.

Using the sample of 1,251 problems that received at least one response, we estimated double random effects models that regressed the length of the responses (logged) against the same variables used in our main rare-event logit models.[14] We included the original inverse Mills' ratio derived from the first-stage probit model where we predicted the likelihood that a provider gave at least one response, as well as a second inverse Mills' ratio derived from an additional first-stage probit model where we predicted the likelihood that a problem received at least one response.[15] Thus, we controlled for selection bias arising from which individuals provided at least one response to a problem as well as from which problems received at least one response.

Estimates from these models (not shown) indicate that expertise matching had a positive and significant impact on the length of a provider's response to a problem (b=.071, p=0.01). The estimates for the linear terms of problem length, breadth, and novelty were all positive and significant (b=.140, p=0.01; b=.099, p=0.1; b=.097, p=0.01), but the effects for the square terms were negative and significant for problem novelty only (b=-.028, p=0.1). The estimates for competing problems were not significant for either the linear or the squared term. There was evidence of a positive and significant

[14] This specification corrects for the possibility of underestimated standard errors due to multiple appearances of the same provider and problem in the dataset (e.g., see Reagans, 2011). Our main rare-event models use clustering instead because an extension of the double random effects approach to such models does not currently exist.

[15] This second selection model included all the seeker characteristics in the main outcome models as well as the variables for problem characteristics and problem crowding. As instrumental variables, we used month and day of the week dummies, based on the assumption that the timing of when a focal problem was posted on the forum affected the likelihood that it received a response but not the length of the response it received.

moderating effect of expertise matching for problem length (b=.060, p=0.05), but not for any of the other variables. In addition, response order had a positive and significant effect (b=0.05, p<0.01), indicating that providers gave longer responses to problems that had received more other responses already, and shared projects had a negative and significant effect (b=-.12, p<0.05), indicating that providers gave shorter responses to problems posted by seekers with whom they had worked previously. Taken together, these preliminary results suggest that some of the factors that influence the initial decision of *whether* to allocate attention to a problem also influence *how much* attention to allocate subsequently, but the initial decision seems to involve more complex considerations of the benefits and costs of attention allocation; once the commitment is made to allocate some attention to a problem, the costs of allocating more attention seem generally less important.

DISCUSSION

As information demands on managers explode with the growth and spread of social technologies, there is a pressing need for clear explanations of why managers allocate attention to specific problems in digital environments. Our study shifts the scholarly debate from discussions of knowledge provider-seeker relationships (based on relational, social, and reputational rationales) to knowledge provider-problem matches (based on expertise fit, problem characteristics, and problem crowding). Our findings support our central claim that the features of a particular provider-problem match influence attention allocation in an online discussion forum. Below, we address their implications for theories of managerial attention, matching processes, and knowledge sharing in online communities, as well as for our understanding of how social technology platforms are used in organizations.

Attention Allocation as a Matching Process

While prior theories of attention allocation in organizations have offered valuable perspectives on how individuals allocate their attention to problems, they have not focused on how particular individuals allocate attention to particular problems. According to the attention-based view of the firm, for example, the attention of organization members is channeled in some directions and away from others by structural features of organizations such as rules, resources, and relationships

(Ocasio, 1997). Relatedly, theories of issue selling emphasize how organization members make deliberate efforts to promote particular problems as worthy of each other's attention (Dutton & Ashford, 1993). Viewing attention allocation as a matching process advances such theories by emphasizing the inherently dyadic nature of this activity, and moving beyond a focus on what determines the set of problems that is available for attention allocation to examine how particular individuals allocate attention among the particular problems within that set.

In viewing attention allocation as a matching process between providers and problems, our study is among the first to bring matching theory inside organizations. Originally developed by Becker (1973), matching theory was initially used to explain the formation of marriage partnerships, and subsequently applied to employee-employer matching in labor markets (e.g. Jovanovic, 1979). More recently, it has been extended to an array of matches in inter-organizational contexts, including between venture capitalists and start-ups (Sorensen, 2007), potential alliance partners (Mitsuhashi & Greve, 2009), entrepreneurs and potentially valuable contacts (Vissa, 2011), and firms and research scientists (Mindruta, 2013). We extend matching theory into the intra-organizational context by examining how matching processes occur within a firm, as part of the daily activities of the organization members. Additionally, while prior research on matching theory has focused on matches between two actors (e.g. employer-employee, potential alliance partners), we focus on matches between actors and issues: that is, why individuals allocate attention to particular problems and not others.

One of the core insights of matching theory is that the complementarity between the resources or capabilities of potential partners increases the likelihood of a match (e.g. Mitsuhashi & Greve, 2009; Vissa, 2011). Consistent with this insight, our findings show that greater similarity between the expertise possessed by a provider and the expertise required by the problem increased the likelihood of attention allocation in the online discussion forum we studied. Furthermore, we found that expertise matching positively moderated the effects of problem length, breadth, and novelty (although it did not increase the likelihood of attention allocation to very long problems). We also found that expertise matching positively moderated the effects of problem crowding, such that an increase in the number of concurrently posted problems was more likely to result in increased attention to the focal problem if the expertise match between the provider and the problem was greater. Thus, viewing attention

allocation as a matching process leads us to new ways of understanding why organization members pay attention to some problems and not others.

At What Cost? An Attention Perspective on Knowledge Sharing

Knowledge sharing remains the cornerstone for explanations of how firms leverage the diverse, distributed expertise of their employees to create value and distinguish themselves from competitors (Grant, 1996; Kogut & Zander, 1996). Scholars have made considerable efforts to understand with greater precision how the processes of knowledge sharing unfold within firms (e.g. Argote et al., 2003; Hansen, 1999; Quigley et al., 2007; Reagans & McEvily, 2003; Szulanski, 1996). However, among the broader activities to which organization members can allocate attention, knowledge sharing is often viewed as a peripheral activity (Brown & Duguid, 1991; Lave & Wenger, 1991). This is particularly the case in the context of social technology platforms such as online discussion forums, where participation is voluntary and often seen as organizational citizenship behavior (Constant et al., 1996; Wasko & Faraj, 2005). In such a context, factors that make it difficult for a knowledge provider to respond to a problem may well crowd out benevolent motivations or the benefits that the provider anticipates from contributing. Our attention perspective on knowledge sharing illuminates such factors by suggesting that knowledge providers take the costs as well as the benefits of attention allocation into account in deciding whether or not to respond to particular problems.

In particular, our attention perspective suggests that these costs and benefits will be influenced by the characteristics of a problem itself as well as by problem crowding. As predicted, our results revealed that problems that were longer, broader or more novel were more likely to attract attention from a potential knowledge provider – but only up to a point, after which greater length, breadth, or novelty decreased the likelihood of receiving attention. These findings are consistent with our argument that the cognitive load created by a problem that is very long, broad, or novel creates costs for a provider that can outweigh the benefits of these characteristics for attracting attention to the problem.

We expected to find that a higher number of concurrently posted problems would have a similar curvilinear effect on the likelihood of attention allocation to a focal problem, but did not find

evidence for this; instead, we found only a positive effect. One possible reason is that the numbers of concurrently posted problems were not high enough in our dataset for a negative effect of competitive crowding to set in. We ran follow-up analyses extending the window for posting other problems from three working days to five, seven, or ten working days prior to the focal problem, but still found only positive effects. However, when we used the seven- or ten-day windows and also considered only those focal problems with 10 or more competing problems, we found evidence of an inverted U-shape relationship between the number of competing problems and the likelihood that a provider allocated attention to a focal problem. This suggests that we did not find evidence of such a curvilinear effect in our main models because the maximum value of our concurrent problems variable (max=12) was below the threshold at which competitive crowding reduces the likelihood that attention is allocated to a focal problem.

One additional provocative finding, though a preliminary one, concerned the effects of provider project load. Contrary to our expectations, the first-stage selection model indicated that individuals who were assigned to more projects in total during the observation period were actually more likely, rather than less likely, to allocate attention to responding to problems on the online discussion forum. This may have been because such individuals were somehow more able or more willing to manage involvement in a wider array of work-related activities. However, consistent with our expectations, our main outcome models showed that a knowledge provider who had a higher project load at the time that a focal problem was posted was less likely to allocate attention to that problem, indicating that the opportunity cost of responding to a problem was higher for such an individual. The implication of these results is that attention allocation is influenced by a provider's attention capacity (c.f. Simon, 1957) – that is, how much attention they are able to allocate – in complex ways that are worthy of further exploration in future research.

Taken together, these findings extend theories of knowledge sharing by heeding the call for researchers to pay more "attention to attention" (Ocasio, 2011), and specifically by considering how both the costs and the benefits of allocating attention to a particular problem can influence a potential provider's inclination to share their knowledge. While much prior research on knowledge sharing has noted that knowledge seekers face costs as well as benefits when trying to secure solutions to their

problems through network ties or electronic databases (e.g., Hansen & Haas, 2001; Teece, 1977; Zander & Kogut, 1995), our study breaks new ground by considering the costs as well as the benefits that knowledge providers face when allocating their scarce attention to providing such solutions.

Online Knowledge Sharing in Organizations

Our study also aims to contribute to an emerging body of research that specifically focuses on online knowledge sharing in organizations, via social technology platforms such as corporate intranets or databases (e.g., Faraj, Jarvenpaa & Majchrzak, 2011; Fulk et al., 2004; Kankanhalli et al., 2005). In interpersonal contexts, people sometimes choose to withhold their knowledge from others who request it for practical, strategic or political reasons (e.g., Connelly, Zweig, Webster, & Trougakos, 2012; Haas & Park, 2010). In online communities, it is even easier to withhold knowledge, since the knowledge seeker does not approach the knowledge provider directly and thus there is little risk of violating norms or incurring repercussions. For this reason, social technology platforms that are intended to facilitate knowledge sharing are often plagued by collective action problems that deter individuals from contributing their knowledge (e.g. Ba, Stallaert, & Whinston, 2001; Cabrera & Cabrera, 2002; Connolly & Thorn, 1990). Moreover, once they decide to engage in online knowledge sharing, our study shows that knowledge providers make systematic choices about the focus of their contributions that are driven by different considerations than those that drive interpersonal knowledge sharing.

Specifically, much of the increasingly extensive literature on interpersonal knowledge sharing in organizations emphasizes the role of personal connections in facilitating exchanges between individuals, usually through social network ties (e.g. Hansen, 1999; Levin & Cross, 2004; Reagans & McEvily, 2003; Tortoriello & Krackhardt, 2010). However, the control variables in our models indicated that even where actual or potential personal connections between providers and seekers existed, as a result of social similarity, physical proximity, or prior familiarity, these considerations did not increase the likelihood of attention allocation; the only form of connection that mattered in our study was reciprocity. Other studies have found similarly weak evidence for the influence of personal connections in online communities (e.g., Constant et al., 1996). Indeed, the attraction of technology platforms such as online discussion forums for many organizations lies in their ability to facilitate

knowledge sharing even in the absence of personal connections between organization members. Yet our understanding of what drives knowledge sharing in such online settings has been limited. In light of this, our study aims to advance research on online knowledge sharing by shifting the focus away from provider-seeker relationships and toward provider-problem matching instead, and thus offering insights into how a closer provider-problem expertise match, as well as other characteristics of the problem and problem crowding, influences the likelihood that a provider allocates attention to that problem.

For research on knowledge sharing in organizations, as well as on interpersonal communication and social networks more broadly, there are two notable implications of this shift. First, social network theory has called for more focus on the content of ties, as what is transferred through a tie might influence the choice of partners (Chua, Ingram, & Morris, 2008; Podolny & Baron, 1997). By showing that provider-problem expertise matching influences whether an exchange takes place between a provider and a seeker in an online community, our study heeds this call and highlights the importance of the expertise to be transferred through a tie in determining the activation of that tie. A second implication is that not everything that can be analyzed as a social network necessarily should be analyzed as such. While a provider-problem matrix derived from an online discussion forum can be readily converted into a network of ties between knowledge providers and knowledge seekers, the lack of social context in an online setting limits the fruitfulness of this approach. That said, the more the user interface of an online discussion forum or similar social technology platform is structured in a way that makes social features salient, the more we might expect social network variables to matter for how it is used. Thus, if an online discussion forum were to be designed in a way that makes the characteristics of its knowledge seekers highly salient to its knowledge providers, for example by requiring seekers to post their photo or location with their questions, factors such as social similarity or physical proximity might drive knowledge sharing more than we observed in a setting where these characteristics were not highly salient.

Future Directions

Our study of knowledge sharing in an online discussion forum illuminates how knowledge providers decide whether or not to allocate their attention to particular problems. The study has its

limitations, however, which suggest some potential avenues for future research. The first relates to the generalizability of our results given that we focus on a single professional services organization. Although we have a large sample of individuals, and a considerable amount of information about them, we must look to future research to establish the extent to which our findings reflect the particular features of the organization, or alternatively, reveal more general patterns. For example, the firm we studied has many employees dispersed around the world, and a large number of online discussion forums. Thus, it could be that this is an organization in which employees are more selective about which problems they choose to address than might be the case, for example, in a smaller organization where there is more pressure to participate, where an online discussion forum is a relatively novel and exciting technology, or where contributing knowledge by responding to problems is viewed as a way to signal status.

Second, in focusing on the matching process between knowledge providers and problems, we limited our scope to studying whether a provider posted a response to a problem on the online discussion forum. In our supplementary analysis, we also examined how much attention they allocated, as measured by the length of their response. However, we recognize that this supplementary analysis is more suggestive than definitive, since longer responses may or may not actually take more time and effort to formulate than shorter answers. Using additional measures and exploring the distinctive drivers of attention intensity more fully thus would be a valuable direction for future research. Moreover, our data did not allow us to evaluate the quality of the responses provided to a problem. Further research could usefully examine the impact of provider-problem expertise matching, problem characteristics, and problem crowding on the quality of online knowledge sharing, perhaps in a research setting where knowledge providers are rated by their colleagues on the helpfulness of their online contributions. Finally, in focusing on why providers allocate attention to particular problems in an online discussion forum, we have not addressed the question of why knowledge seekers post problems to the forum in the first place, whether certain types of individuals are more likely to post problems than others, or whether certain types of problems are more likely to be posted. These would also be useful directions for future research.

In conclusion, this study offers fresh insights into online knowledge sharing in organizations by examining why individuals choose to allocate attention to specific problems. From a knowledge management perspective, social technology platforms like online discussion forums are valuable tools for facilitating knowledge sharing among globally dispersed employees. However, the ability of organizations to realize the full potential of these tools is limited by the attention that their members choose to devote to providing solutions to each other's problems. By viewing attention allocation in an online discussion forum as a matching process between providers and problems, this study adds to current debates on how knowledge is shared within organizations, especially in the increasingly important online context.

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TABLE 1: Sample Problems Posted on the Structural Engineering Forum

Appropriate structural elements
We are undertaking a town centre redevelopment and our client is looking to provide the necessary car parking under the development. The site area is approx 30,000m2 (300m by 100m). We have a couple of structural options for the deck supporting the development above the car park. A ribbed RC slabs or a steel frame with precast planks. The grid is 16.2 x 7.4m with an imposed load from the development of 30kN/m2. Does anyone know of a similar situation and what solution was used for the deck over the car park?
Building regulations
We are involved in the design of a football stadium in Scotland. The local building control department has questioned the fact that we haven't got any fire protection to the roof structure. As the roof is not required for the overall stability of the structure, or to hold up any of the floors, we considered that fire protection wasn't required, as in a normal building structure. Has anyone else who has been involved in stadium design had a similar query? Any comments gratefully
Economic feasibility
I am involved in a competition scheme for a housing block right next to a railway, and naturally the architect is concerned about limiting vibration. I know that we have isolated concert halls and the like. However I'm not sure if such measures would be cost-effective in a housing context, and if so, what sort of technologies we might recommend. Any suggestions?
Numeric values characterizing structural elements
Three questions about shear head reinforcement in flat slabs: 1. With traditional reinforcement (i.e. straight bars and shear links), what proportion of the reinforcement average weight/square metre would people expect to be accounted for by the shear links? 2. 7.8m x 7.8m grid, 300mm flat slab, imposed loads of around 5kPa - what average reinforcement weight per square metre would people expect to see? 3. What is the best way of coping with punching shear around columns in flat slabs?
Theoretical models and formulae
We are currently designing a number of high rise apartment blocks in masonry which exceed 4 stories. Walls are load bearing masonry with precast floors. We are currently designing the buildings to Option 3 of Table 12 BS 5628 i.e. designed vertical and horizontal ties for accidental damage. This is the Client's preferred option. The horizontal ties are not a problem. His preferred method of forming the vertical ties is to use a hollow block which is then in filled with concrete. When you use the formula in Table 14 BS 5628 to calculate the tie force - for a 150mm thick inner leaf with ties at 5m centres and a clear distance between floor restraints of 2.6m - it works out at approximately 1MN. This equates to approximately 5T25's. I have looked through the Masonry Designers Manual which comes up with 4T32's in their example. The values appear high. If anybody has used this method before and can provide any advice on the above, I would be grateful.

TABLE 2: Descriptive Statistics and Bivariate Correlations

	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Attention allocation	0.09	0.29	0	1																	
2 Reciprocity	0.00	0.04	0	1	0.052																
3 Same gender	2.82	2.11	1	15	-0.012	0.001															
4 Shared office	5.68	1.99	1	9	0.010	0.025	-0.007														
5 Shared communities	0.90	0.30	0	1	0.004	0.013	0.005	-0.057													
6 Shared projects	0.06	0.25	0	1	0.018	0.005	0.009	0.366	0.089												
7 Seeker rank	0.82	0.39	0	1	0.004	0.019	0.001	0.058	-0.001	0.070											
8 Seeker member	0.19	0.39	0	1	-0.003	-0.005	0.012	0.016	-0.004	-0.066	-0.100										
9 Seeker facilitator	0.19	0.60	0	5	0.006	-0.006	0.001	-0.032	0.091	-0.042	0.007	0.091									
10 Provider rank	0.34	0.47	0	1	0.008	0.003	0.013	0.136	0.020	0.082	-0.025	0.366	0.133								
11 Provider tenure	6.50	1.82	2	9	0.000	0.014	-0.007	0.029	0.002	0.009	0.009	0.093	0.058	0.226							
12 Provider project load	18.61	11.08	3	53	0.000	-0.001	-0.003	0.023	0.004	0.018	0.011	0.129	0.075	0.337	0.547						
13 Response order	18.98	20.10	0	93	-0.001	0.028	0.001	0.019	-0.008	0.010	0.034	0.155	0.171	0.434	0.398	0.664					
14 Expertise match	0.05	0.04	0	1	0.091	0.008	0.007	-0.021	-0.001	0.011	0.031	0.005	0.003	0.059	-0.014	0.020	0.101				
15 Problem length	97.48	66.17	9	540	0.006	0.000	-0.002	-0.212	0.037	-0.143	0.067	-0.015	0.049	-0.055	0.013	0.007	-0.007	-0.001			
16 Problem breadth	0.98	0.55	0	2.03	0.008	0.001	0.000	-0.113	0.024	-0.082	0.081	0.002	0.015	-0.038	0.012	0.013	0.005	0.014	0.450		
17 Problem novelty	17.88	8.99	0	103.62	-0.008	-0.003	-0.003	0.135	-0.059	0.046	-0.014	0.031	0.011	0.031	0.011	0.002	-0.009	-0.268	-0.047	-0.051	
18 Competing problems	3.95	2.11	0	12	0.022	0.011	0.008	0.005	-0.003	-0.078	-0.026	0.037	0.010	0.016	0.004	-0.002	0.013	-0.018	0.015	-0.021	-0.016

Correlations greater than |0.0177| are significant at 5%. Number of observations: 13,761.

TABLE 3: Rare Event Logit Model Estimations for Hypotheses 1, 2 and 3
DV=Attention allocation to a focal problem (N=13,761)

	1	2	3	4	5	6	7	8
Reciprocity	2.292***	2.282***	2.231***	2.294***	2.291***	2.247***	2.266***	2.250***
	(0.508)	(0.521)	(0.540)	(0.550)	(0.533)	(0.561)	(0.572)	(0.570)
Same gender	0.0424	0.00568	-0.000609	-0.00459	0.0147	0.00549	0.0114	0.0105
	(0.0678)	(0.0691)	(0.0689)	(0.0697)	(0.0693)	(0.0699)	(0.0703)	(0.0701)
Shared office	-0.0573	-0.0499	-0.0522	-0.0493	-0.0477	-0.0492	-0.0508	-0.0519
	(0.0830)	(0.0852)	(0.0849)	(0.0860)	(0.0855)	(0.0858)	(0.0849)	(0.0849)
Shared communities	0.0565	0.0626	0.0582	0.0605	0.0646	0.0591	0.0594	0.0589
	(0.0522)	(0.0514)	(0.0505)	(0.0511)	(0.0515)	(0.0507)	(0.0510)	(0.0510)
Shared projects	0.0719	0.0593	0.0684	0.0612	0.0624	0.0679	0.0677	0.0668
	(0.0749)	(0.0769)	(0.0778)	(0.0764)	(0.0767)	(0.0773)	(0.0777)	(0.0776)
Seeker rank	0.0156	0.0184	0.0200	0.0219	0.0169	0.0195	0.0160	0.0156
	(0.0162)	(0.0161)	(0.0169)	(0.0162)	(0.0158)	(0.0168)	(0.0166)	(0.0165)
Seeker member	0.0557	0.0486	0.0513	0.0516	0.0451	0.0573	0.0580	0.0583
	(0.105)	(0.105)	(0.106)	(0.106)	(0.105)	(0.106)	(0.106)	(0.107)
Seeker facilitator	0.0627	0.0628	0.111	0.0920	0.0473	0.113	0.141	0.153
	(0.135)	(0.136)	(0.135)	(0.135)	(0.137)	(0.135)	(0.137)	(0.133)
Provider rank	0.0162**	0.0161	0.0140	0.0147	0.0171	0.0138	0.0140	0.0140
	(0.00727)	(0.0106)	(0.0107)	(0.0107)	(0.0105)	(0.0106)	(0.0108)	(0.0109)
Provider tenure	-0.000144	0.000501	0.000474	0.000348	0.000520	0.000497	0.000643	0.000667
	(0.000910)	(0.00118)	(0.00124)	(0.00118)	(0.00120)	(0.00124)	(0.00128)	(0.00128)
Provider project load	-0.00558	-0.0398**	-0.0429**	-0.0401**	-0.0413**	-0.0449**	-0.0441**	-0.0439**
	(0.0166)	(0.0195)	(0.0196)	(0.0196)	(0.0197)	(0.0199)	(0.0202)	(0.0202)
Response order	-0.0208	-0.0217	-0.0217	-0.0210	-0.0222	-0.0215	-0.0217	-0.0218
	(0.0164)	(0.0165)	(0.0165)	(0.0165)	(0.0164)	(0.0165)	(0.0165)	(0.0165)
Expertise matching [a]		0.165***	0.169***	0.173***	0.173***	0.181***	0.184***	0.185***
		(0.0350)	(0.0346)	(0.0347)	(0.0372)	(0.0366)	(0.0366)	(0.0363)
Problem length [a]			0.148***			0.142***	0.140***	0.138***
			(0.0468)			(0.0514)	(0.0509)	(0.0510)
Problem length ^2			-0.0781***			-0.0707***	-0.0740***	-0.0738***
			(0.0268)			(0.0273)	(0.0268)	(0.0268)
Problem breadth [a]				0.643***		0.471***	0.460**	0.445**
				(0.186)		(0.182)	(0.183)	(0.182)
Problem breadth^2				-0.315***		-0.273***	-0.262**	-0.253**
				(0.106)		(0.103)	(0.104)	(0.103)
Problem novelty [a]					0.103**	0.0985*	0.0936*	0.0949*
					(0.0498)	(0.0538)	(0.0534)	(0.0533)
Problem novelty ^2					-0.0334**	-0.0219**	-0.0204**	-0.0203**
					(0.0133)	(0.0104)	(0.0102)	(0.0100)
Competing problems [a]							0.112***	0.128***
							(0.0379)	(0.0340)
Competing problems^2							0.0184	
							(0.0248)	
Inverse Mills' Ratio	0.0895	-0.0190	-0.0302	-0.0260	-0.0142	-0.0344	-0.0235	-0.0227
	(0.0566)	(0.0912)	(0.0929)	(0.0928)	(0.0924)	(0.0951)	(0.0944)	(0.0947)
Constant	-5.297***	-5.150***	-5.085***	-5.380***	-5.045***	-5.184***	-5.035***	-4.929***
	(0.493)	(0.507)	(0.510)	(0.514)	(0.503)	(0.511)	(0.544)	(0.515)
Log-likelihood	-4136.35	-4090.1	-4083.7	-4084.9	-4084.65	-4076.15	-4068.7	-4069.1

Robust standard errors clustered by providers in parentheses. Year, month and day of the week dummies included.
[a] Variable is standardized by subtracting the mean from the value and dividing by the standard deviation.
* significant at 10%; ** significant at 5%; *** significant at 1%

TABLE 4: Rare Event Logit Model Estimations for Hypotheses 4 and 5
DV=Attention allocation to a focal problem (N=13,761)

	9	10	11	12	13	14	15	16	17	18
Reciprocity	2.215***	2.215***	2.192***	2.190***	2.208***	2.215***	2.252***	2.230***	2.199***	2.164***
	(0.568)	(0.567)	(0.566)	(0.568)	(0.569)	(0.569)	(0.574)	(0.573)	(0.564)	(0.564)
Same gender	0.000789	0.000775	0.00555	0.00796	0.0220	0.0221	0.0104	0.00882	0.00532	0.00623
	(0.0699)	(0.0701)	(0.0709)	(0.0703)	(0.0707)	(0.0709)	(0.0707)	(0.0706)	(0.0711)	(0.0700)
Shared Office	-0.0463	-0.0464	-0.0481	-0.0474	-0.0485	-0.0479	-0.0532	-0.0545	-0.0419	-0.0434
	(0.0852)	(0.0853)	(0.0848)	(0.0849)	(0.0847)	(0.0845)	(0.0856)	(0.0855)	(0.0839)	(0.0841)
Shared communities	0.0635	0.0636	0.0573	0.0580	0.0516	0.0518	0.0605	0.0596	0.0558	0.0541
	(0.0512)	(0.0511)	(0.0509)	(0.0508)	(0.0510)	(0.0509)	(0.0511)	(0.0512)	(0.0516)	(0.0513)
Shared projects	0.0481	0.0483	0.0512	0.0515	0.0477	0.0518	0.0581	0.0577	0.0496	0.0439
	(0.0781)	(0.0780)	(0.0774)	(0.0776)	(0.0776)	(0.0787)	(0.0777)	(0.0779)	(0.0777)	(0.0783)
Seeker rank	0.0174	0.0175	0.0170	0.0173	0.0196	0.0194	0.0189	0.0182	0.0206	0.0199
	(0.0166)	(0.0166)	(0.0167)	(0.0166)	(0.0167)	(0.0167)	(0.0168)	(0.0167)	(0.0169)	(0.0168)
Seeker member	0.0627	0.0628	0.0573	0.0588	0.0783	0.0817	0.0823	0.0813	0.0789	0.0803
	(0.106)	(0.106)	(0.106)	(0.106)	(0.106)	(0.107)	(0.107)	(0.107)	(0.106)	(0.105)
Seeker facilitator	0.122	0.122	0.150	0.148	0.153	0.153	0.0868	0.105	0.119	0.134
	(0.137)	(0.138)	(0.133)	(0.132)	(0.132)	(0.132)	(0.140)	(0.136)	(0.138)	(0.134)
Provider rank	0.0185	0.0186	0.0194	0.0202	0.0142	0.0129	0.0180	0.0179	0.0173	0.0175
	(0.0134)	(0.0134)	(0.0143)	(0.0142)	(0.0120)	(0.0115)	(0.0123)	(0.0123)	(0.0147)	(0.0144)
Provider tenure	0.00110	0.00110	0.000672	0.000691	0.000653	0.000724	0.000962	0.000965	0.000749	0.000734
	(0.00163)	(0.00163)	(0.00162)	(0.00163)	(0.00138)	(0.00133)	(0.00148)	(0.00149)	(0.00172)	(0.00169)
Provider project load	-0.0506**	-0.0507**	-0.0558**	-0.0573**	-0.0415*	-0.0417*	-0.0423*	-0.0419*	-0.0520**	-0.0500*
	(0.0234)	(0.0234)	(0.0251)	(0.0255)	(0.0221)	(0.0219)	(0.0228)	(0.0227)	(0.0257)	(0.0258)
Response order	-0.0220	-0.0220	-0.0235	-0.0231	-0.0240	-0.0237	-0.0220	-0.0221	-0.0239	-0.0242
	(0.0163)	(0.0163)	(0.0166)	(0.0166)	(0.0166)	(0.0166)	(0.0164)	(0.0164)	(0.0166)	(0.0165)
Expertise matching (EM) [a]	0.284***	0.283***	0.119***	0.127***	0.296***	0.283***	0.254***	0.247***	0.213***	0.266***
	(0.0374)	(0.0335)	(0.0357)	(0.0336)	(0.0326)	(0.0272)	(0.0299)	(0.0266)	(0.0664)	(0.0507)
Problem length [a]	0.0862	0.0866	0.148***	0.146***	0.142***	0.142***	0.137***	0.136***	0.131**	0.123**
	(0.0550)	(0.0548)	(0.0510)	(0.0511)	(0.0514)	(0.0514)	(0.0510)	(0.0512)	(0.0534)	(0.0534)
Problem length^2	-0.0627**	-0.0634**	-0.0739***	-0.0724***	-0.0723***	-0.0726***	-0.0698***	-0.0697**	-0.0742***	-0.0669**
	(0.0276)	(0.0283)	(0.0271)	(0.0269)	(0.0270)	(0.0270)	(0.0271)	(0.0271)	(0.0277)	(0.0278)
Problem breadth [a]	0.404**	0.403**	0.229	0.277	0.422**	0.433**	0.423**	0.400**	0.285	0.297*
	(0.185)	(0.183)	(0.178)	(0.178)	(0.182)	(0.181)	(0.185)	(0.184)	(0.182)	(0.180)
Problem breadth^2	-0.225**	-0.225**	-0.169*	-0.203**	-0.248**	-0.252**	-0.243**	-0.230**	-0.195*	-0.202*
	(0.105)	(0.105)	(0.101)	(0.102)	(0.103)	(0.103)	(0.105)	(0.105)	(0.103)	(0.104)
Problem novelty [a]	0.128**	0.128**	0.138***	0.137***	0.125**	0.119**	0.123**	0.125**	0.148***	0.153***
	(0.0523)	(0.0526)	(0.0508)	(0.0510)	(0.0511)	(0.0501)	(0.0538)	(0.0536)	(0.0504)	(0.0499)
Problem novelty^2	-0.0255**	-0.0255**	-0.0302***	-0.0297***	-0.0162	-0.00932	-0.0238**	-0.0235**	-0.0128	-0.0184*
	(0.0108)	(0.0108)	(0.0114)	(0.0113)	(0.0176)	(0.00928)	(0.0105)	(0.0103)	(0.0146)	(0.0104)
Competing problems [a]	0.127***	0.127***	0.122***	0.123***	0.128***	0.129***	0.0801**	0.103***	0.0898**	0.109***
	(0.0340)	(0.0339)	(0.0337)	(0.0336)	(0.0340)	(0.0339)	(0.0384)	(0.0358)	(0.0387)	(0.0353)
Competing problems^2							0.0287		0.0241	
							(0.0245)		(0.0253)	
EM x Problem Length	0.139***	0.138***							0.0467	0.0671*
	(0.0391)	(0.0368)							(0.0361)	(0.0379)
EM x Problem Length^2	-0.00131								0.0288	
	(0.0209)								(0.0224)	
EM x Problem Breadth			0.316***	0.196***					0.161	0.105**
			(0.119)	(0.0388)					(0.133)	(0.0485)
EM x Problem Breadth^2			-0.0915						-0.0328	
			(0.0863)						(0.0897)	
EM x Problem Novelty					0.131***	0.127***			0.0964***	0.105***
					(0.0294)	(0.0280)			(0.0348)	(0.0326)
EM x Problem Novelty^2					-0.0114				0.00890	
					(0.0170)				(0.0174)	
EM x Competing Problems							0.0905***	0.0896***	0.0508**	0.0609**
							(0.0206)	(0.0210)	(0.0241)	(0.0243)
EM x Competing Problems^2							-0.00527		0.0112	
							(0.0146)		(0.0169)	
Inverse Mills' Ratio	0.00881	0.00872	-0.0137	-0.0153	0.00444	0.00252	0.0283	0.0285	0.0201	0.0160
	(0.121)	(0.121)	(0.131)	(0.132)	(0.103)	(0.101)	(0.109)	(0.108)	(0.130)	(0.130)
Constant	-5.012***	-5.011***	-4.882***	-4.898***	-4.959***	-4.961***	-5.208***	-5.041***	-5.090***	-4.969***
	(0.530)	(0.533)	(0.537)	(0.534)	(0.521)	(0.521)	(0.546)	(0.518)	(0.568)	(0.531)
Log-likelihood	-4063.28	-4063.49	-4057.76	-4058.11	-4057.79	-4058.32	-4065.18	-4065.66	-4046.42	-4047.44

Robust standard errors clustered by providers in parentheses. Year, month and day of the week dummies included.
[a] Variable is standardized by subtracting the mean from the value and dividing by the standard deviation.
* significant at 10%; ** significant at 5%; *** significant at 1%

FIGURE 1. Model of Provider-Problem Attention Allocation in an Online Discussion Forum

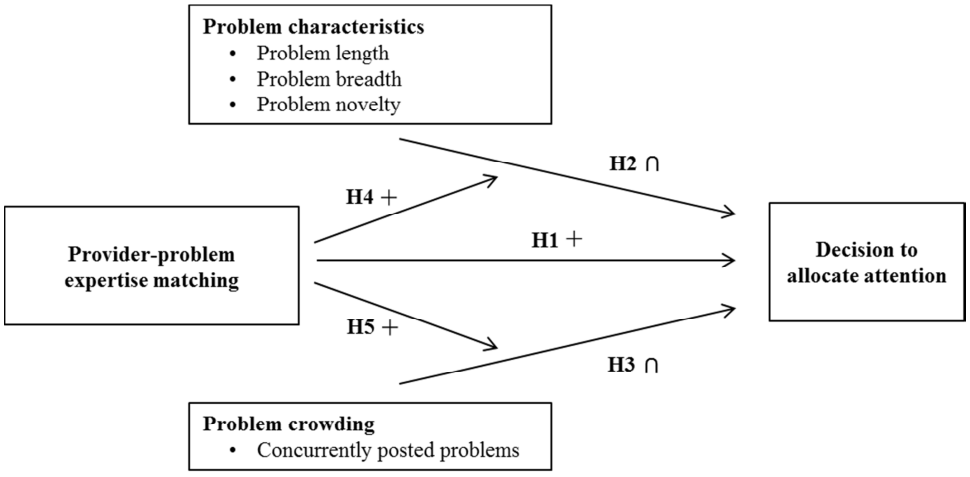


FIGURE 2a. Moderating effect of expertise matching on the relationship between the length of a problem and the likelihood of allocation attention to a problem

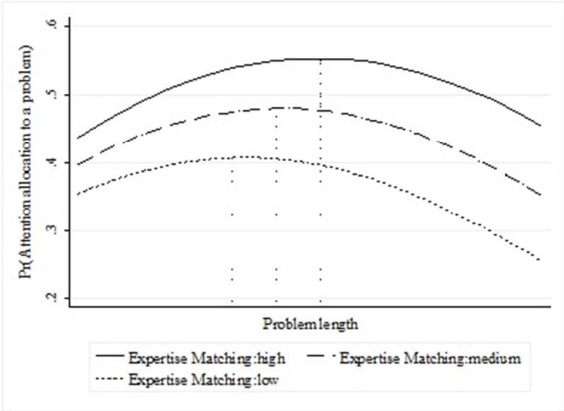


FIGURE 2b. Moderating effect of expertise matching on the relationship between the breadth of a problem and the likelihood of attention allocation to a problem

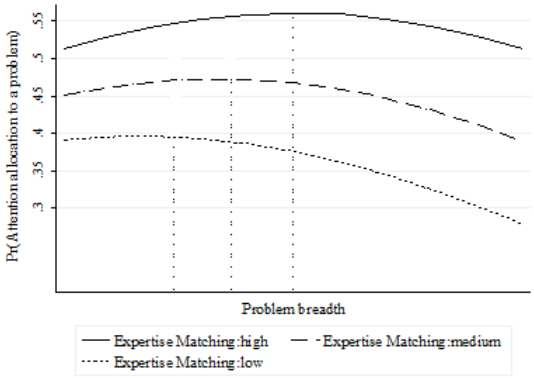


FIGURE 2c. Moderating effect of expertise matching on the relationship between the novelty of a problem and the likelihood of attention allocation to a problem

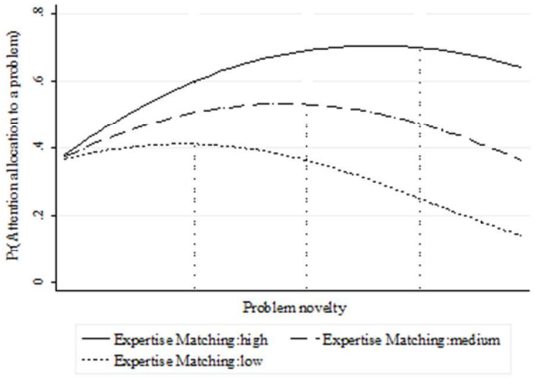
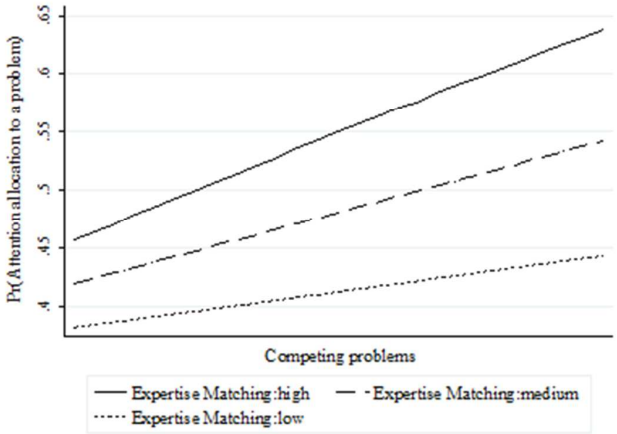


FIGURE 2d. Moderating effect of expertise matching on the relationship between competing problems and the likelihood of attention allocation to a problem



Bios

Martine R. Haas (mrhaas@wharton.upenn.edu) is an associate professor of management at the Wharton School, University of Pennsylvania. Her research focuses on collaboration in global organizations, with an emphasis on knowledge sharing and team effectiveness. She received her PhD in organizational behavior from Harvard University.

Paola Criscuolo is an associate professor of innovation management at Imperial College Business School. She received her Ph.D. in the economics of innovation and technological change from Maastricht University. Her research interests include knowledge transfer and innovation at the firm and individual levels.

Gerry George (g.george@imperial.ac.uk) is deputy dean and professor of innovation and entrepreneurship at Imperial College Business School. He also serves as the director of the Rajiv Gandhi Centre at Imperial College London. He received his Ph.D. from Virginia Commonwealth University. His recent work examines strategic and organizational factors, such as business models and organizational design, and their impact on innovation and performance in technology ventures and emerging markets.