

Boyer reconsidered: Priorities for framing academic work

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Abstract: *This paper focuses on the redevelopment of the Faculty of Built Environment and Engineering at Queensland University of Technology. It describes the theoretical framework upon which reconceptualisation for redevelopment was based and outlines some of the outcomes that have emerged through implementation of the model for change which developed. What emerges is a Faculty committed to transformational cultural change based on a principled set of ideas about the future of built environment and engineering education. These ideas have been cast against well-known and scholarly views of the project of higher education; the works of Ernest Boyer and Burton Clark have been relied upon to provide theoretical foundation to the shaping of the Faculty's future. Boyer's four scholarships are here reconsidered and remapped over Burton Clark's ideas about successful entrepreneurial universities. Together these sources point to the development of an integrated community of scholars where the role of leadership is to provide what Boyer called the scholarship of integration.*

Keywords: *organizational change, higher education leadership, scholarship of integration*

Introduction

The publication of Ernest Boyer's seminal work *Scholarship reconsidered: priorities of the professoriate* (1990) changed the way in which institutions of higher education consider academic work; Boyer's ideas about scholarship are ubiquitous. In Australia, as in other parts of the world of higher education, systems of staff promotion and development and whole institutions are framed around the scholarships Boyer so eruditely defined. Boyer's one small book has become a talisman for the way in which academic work is conceived; the global academic community has absorbed Boyer's conception of our scholarly project. After Boyer, Donald Schon (1995) observed that Boyer's scholarships would require us to design new institutional structures to accommodate academic work conceived around the scholarships however much of higher education has continued with business as usual at least at the organizational structural level. Examples of whole institutions adopting Boyer's principles, either explicitly or implicitly, in new organizational structures are rare although Royal Melbourne Institute of Technology University (RMIT) (2005) and new cross-organizational divisions such as the Engineering Systems Division at Massachusetts

Institute of Technology (MIT) (2005) in the US indicate that Boyer's work is a reasonable source of ideas about not just scholarship but also organizational change.

Here we reconsider Boyer's scholarships by casting them as interrelated around the scholarship of integration. We use our own circumstances in a period of transformational change in the Faculty of Built Environment and Engineering at Queensland University of Technology (QUT), as our example. However the ideas we present are pertinent to other places where a large academic unit such as ours (300 staff and 5000 students) must transform itself in the context of changing resource environments, altered conceptions of the roles of universities, and differences in the ways that academic disciplines and scholarship are being thought about. In reconsidering our scholarly academic project we, unlike Boyer at the time of his writing, are fortunate to have reference to the work of Burton Clark (1998) whose summation of the transformational characteristics of successful, entrepreneurial, European universities provides insights into the key drivers that might aid our work. In formulating a new framework for our Faculty we apply Clark's observations about entrepreneurial universities to our reconsideration of Boyer's discrete scholarships. And we emerge with ideas for the future of our Faculty with roles for academic and professional staff which clearly link Boyer's scholarships and Clark's transformational ideas in a way that integrates and enhances the academic work of teaching, discovery and application.

The context

The Faculty of Built Environment and Engineering is one of eight faculties at QUT and is home to about fifteen disciplines (ranging from aerospace engineering, civil engineering and medical engineering to construction management, property economics, and architecture, urban and regional planning, and interior design) housed, until now, in five discrete and independent schools. Born of the federal government initiative to amalgamate universities, institutes of technology and colleges of advanced education, QUT emerged in 1990 from its technical college past to become a 'new' university whose current enrolment is around 40,000 students.

QUT has held three areas of endeavour to be central to its mission – teaching, research, and service. In all kinds of ways these areas are enshrined in the University's descriptions of itself – in its former strategic plans, in the division of its management tasks and even in the academic promotion criteria of the University. Thus (for better or for worse) the discrete areas of teaching, research and service separately frame staff ideas about how to organize and conceptualize academic work. Of most moment to the transformation of the Faculty of Built Environment and Engineering is the fact that the three criteria are defined separately in university policy, in job descriptions and in institutional divisions. And so the academic project of the university is disintegrated in its management and deployment from the point of its conception.

Within this environment the transformation of the Faculty of Built Environment and Engineering, has been based on extensive consultation with staff and other stakeholders. All see the discrete categorization of these areas of scholarship, and of disciplines, as counter to the transdisciplinary way in which society presents its problems for professional solution. In seeking to reintegrate teaching, research (discovery) and service (application) the Faculty of Built Environment and Engineering is pinning Boyer's scholarship of integration to the leadership of the organization so that efforts to promote built environment and engineering education might better reflect the aspirations of staff and the world of the professions and society they serve; a world where problems are not discretely carved into boxes of finite edge.

Our work is for, in and with industry, the community and the professions; they are our cultural community. QUT's new mission is to further build and engage its real world focus with improved connectedness across internal and external boundaries. This restatement and enhancement of institutional mission

has been documented by the institution's vice chancellor in *QUT Blueprint* (Coaldrake, 2003). The emerging QUT-wide strategy for research (Sharma, 2004) is to differentiate through using technology to produce a combination of product, and now, increasingly, service outputs. By virtue of our strategic positioning, we also seek to contribute technology delivered service outputs that specifically serve our cultural context and have cultural content and value. It is in this organizational and cultural context that our reinterpretations of the foundations of scholarship are being made.

The faculty of built environment and engineering's new framework

Boyer's (1990) scholarships are widely known in higher education. The scholarships of teaching, discovery and application map, almost directly, to QUT's three core areas of endeavour (teaching, research and service). Boyer's fourth scholarship, that of integration, can be construed to provide guidance about the leadership and management of the other areas of endeavour. Boyer's integrative idea that "... future scholars should be asked to think about the usefulness of knowledge, to reflect on the social consequences of their work, and in so doing gain understanding of how their own study relates to the world beyond the campus" sits neatly with the emerging vision of the Faculty as a community of enterprising professional scholars. Boyer's observation that academics who conduct research, publish and then perhaps convey their narrow discipline-based knowledge to students, or apply what they have learned, is an outmoded conception of academic work should be noted. As Boyer said "... knowledge is not necessarily developed in such a linear manner". His ideas that teaching might shape both research and practice and that each may influence the other in a complex web of engagement where all forms of scholarship overlap and interrelate has become a powerful pointer to the way in which the Faculty of Built Environment and Engineering is being conceived and re-organized.

Boyer's scholarships are worth discussing briefly, each in turn, as a means of introducing the framework subsequently developed by the Faculty. The scholarship of teaching rests on a premise that "the work of the professor becomes consequential only as it is understood by others" and only as it is pursued by staff who are widely read and intellectually engaged. Above all, those who teach must be well-informed and steeped in the knowledge of their fields, they must also build bridges between their understandings and student learning. As Boyer says, "In the end, inspired teaching keeps the flame of scholarship alive."

In describing the scholarship of discovery, Boyer notes that "... the probing mind of the researcher is an incalculably vital asset to the academy and the world. Scholarly investigation, in all disciplines, is at the very heart of academic life, and the pursuit of knowledge must be assiduously cultivated and defended ... the discovery of new knowledge is absolutely crucial." The celebration of a new idea is at the core of discovery. This form of scholarship might map primarily to a conventional view of research. However, some undertake research which is not discovery-based. Others achieve important discoveries through their teaching and the learning activities of their students. There is also great potential to discover new knowledge in practice through service.

The scholarship of application is primarily concerned with the ways in which knowledge can be responsibly applied to consequential problems. It requires that service activities are tied directly to one's special field of knowledge and relate to and flow directly out of this professional activity. Scholarly application is serious, demanding work which requires rigour and accountability. From such scholarly applications arise new understandings as theory and practice are vitally linked and each renews the other. The scholarship of application demands that our activity is worthwhile not on its own terms but to the world beyond our walls.

The great worth of the scholarship of application in a Faculty like the Faculty of Built Environment and Engineering is that it allows staff to become engaged in ways that may have been discouraged in the

past; its promotion will allow for more diverse contributions to the Faculty's enterprise. It also allows for expert scholars from the world of practice to have a more obvious means of demonstrating their contribution. The scholarship of application has the capacity to further legitimize the value of staff expertise in the real world and it has the potential to open significant new revenue streams and sources of funding. Given the trend of reduced per capita public funding to Australian universities and the sector globally such income is essential. In promoting Boyer's ideas about the scholarship of application the Faculty can promote a climate of academic enterprise.

Boyer's scholarship of integration relies on critical analysis and interpretation. The trends emerging from engagement with the scholarship of integration will be interdisciplinary, interpretive and integrative. The scholarship of integration rests on "... the need for scholars [to] give meaning to isolated facts, putting them in perspective ... making connections across the disciplines, placing the specialties in larger context, illuminating data in a revealing way ... serious, disciplined work that seeks to interpret, draw together and bring new insight to bear on original research" (Boyer 1990). It involves "first doing the research at the boundaries where fields converge ... such work is ... increasingly important as traditional disciplinary categories prove confining, forcing new topologies of knowledge" and "fitting one's own research – or the research of others - into larger intellectual patterns. While discovery asks what is to be known and what is yet to be found, integration asks what do these findings mean." The scholarship of integration encourages interpretation of what's been discovered in ways that provide a larger, more comprehensive understanding of academic work (Boyer 1990).

For these reasons the scholarship of integration is viewed as central to the formation of a community of scholars and is emerging as the object of leadership and management in the model of the Faculty of Built Environment and Engineering. It is the collective and collaborative activity which binds effort together and finds new and renewed groupings across disciplines. The way in which we reconsider Boyer, centred on the scholarship of integration as a leadership value, is illustrated in the following diagram (Figure 1 A Reinterpretation of Boyer's Scholarships).

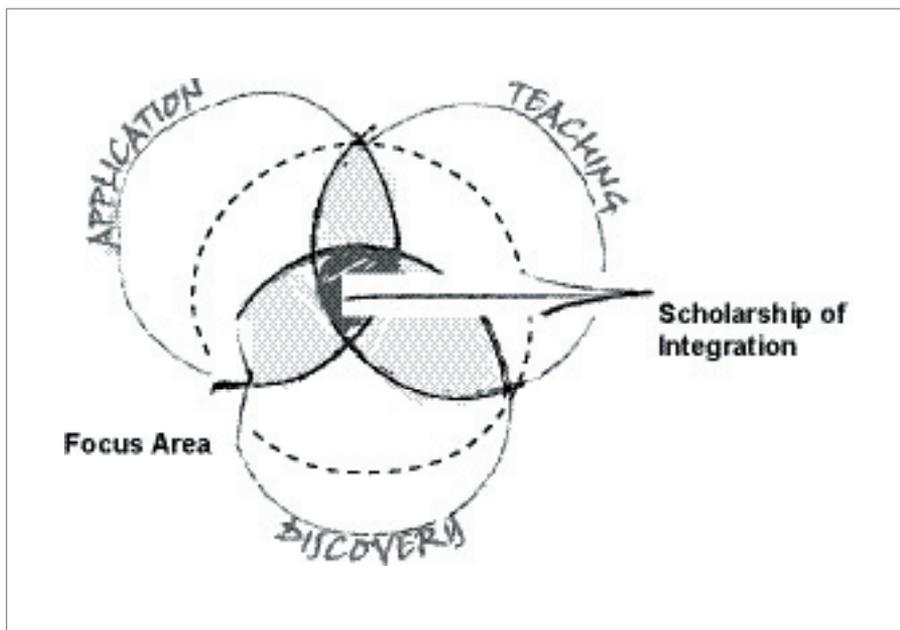


Figure 1. Faculty of Built Environment and Engineering's reinterpretation of Boyer's Scholarships

This diagram suggests ways of reconsidering Boyer's work around ideas of scholarly integration and thus has assisted us to decide what the Faculty of Built Environment and Engineering will do (in the knowledge that it can do anything but it cannot do everything). Of particular interest are the focus areas that emerge at the intersection of the scholarships of teaching, discovery and application allowing development of more integrated academic work, namely:

- Application and teaching – coordination of continuing education for the professions, scholarly teaching of applications in workplaces and on sites pertinent to Faculty disciplines, responsive short course development for professions served by the Faculty of Built Environment and Engineering, working with industrial partners to provide in-house professional development.
- Application and research – commercialization of discovery through strategic bidding for state and private monies, developing an entrepreneurial and coordinated business focus
- Discovery and teaching – discovery of teaching (the scholarship of teaching) in the Faculty of Built Environment and Engineering professions, particularizing the scholarship of teaching for the Faculty of Built Environment and Engineering, promotion and critique of scholarly teaching in the Faculty of Built Environment and Engineering

Considering the resource environment

Conceiving of a community of scholars by reconsidering Boyer's work is, in many ways, the easy part. Dealing with the resource environment of Australian higher education is such that consideration of entrepreneurialism is essential to survival. To this end we sought ideas about scholarly entrepreneurialism, if that's not an oxymoron, and found that Burton Clark's (1998), insights into successful contemporary European universities, were a useful adjunct to our developing model at a time when government funding is diminishing.

Burton Clark's (1998) investigation of five European universities revealed that transformation in academic institutions, as in all large organizations, is difficult. It requires drive, determination and initiative. Clark (1998) noted five major pathways through which successful universities had transformed themselves, namely:

- The establishment of a strengthened steering core.
- The promotion of an expanded developmental periphery.
- The development of a diversified funding base.
- The reinforcement of the stimulated academic heartland.
- The development of integrated entrepreneurial culture.

The establishment of a strengthened steering core

This core in successful universities could, according to Clark, be relatively centralized or decentralized but, wherever it was located, it relied on strong-minded change agents, either individuals or collegial groups of trusted, respected academics to take responsibility for the institution. In Clark's study collegial forms of leadership had been the norm and were developing from older models of strong-minded individual leadership. Central faculty involvement is deemed necessary to avoid perceived excessive fragmentation of management. The strengthened managerial core consists of agents who work to find resources for the institution as a whole. Hard choices are made to support winners, but also to cross-subsidize those unable to achieve the same entrepreneurial results.

The promotion of an expanded developmental periphery

The enterprising universities reported by Clark exhibit a growth of units that, more readily than traditional academic departments, reach across old university boundaries to link up with outside

organisations and groups. Clark argues that discipline-based departments will go on being important – too valuable to discard - and they must protect their own domains. However, successful universities have outreach activities undertaking roles such as knowledge transfer, industrial contact, intellectual property development, continuing education, fundraising and alumni affairs. They had interdisciplinary, project-oriented research activities that grew alongside departments with the flexibility to initiate and to disband, constructed across old boundaries. The centre [the strengthened steering core operating according to our leadership interpretation of the Scholarship of Integration] mediated between the discipline-specific departments and the outside world. The developmental periphery is a place for experimentation. The role of the steering core in relation to the periphery is to ensure that academic values (scholarly values in the case of the Faculty of Built Environment and Engineering) are mediated with budgetary and managerial issues. Clark's observation was that in successful universities the development periphery helped the institution go “up-market” in academic esteem and public reputation.

The development of a diversified funding base

To fashion a new change-oriented culture the university needs greater financial resources providing discretionary and strategic development funds. These need to be separately budgeted and sourced beyond traditional grant funding sources. They might be obtained from a variety of sources – industry, local governments, philanthropy, fundraising, etc. These are the so-called third funding streams. The purpose of these funds should be to enhance Faculty discretion. Organisations, in seeking these funds, also need to explicate what they are and are not willing to do for the funds they receive. It is a role for the central steering core to define limits around the ways in which funds will be used. For us these limits will be defined with regard for our dominant scholarly values as reinterpreted from Boyer.

The reinforcement of the stimulated academic heartland

Clark's research found that in the entrepreneurial universities the heartland was drawn from traditional academic departments and formed around disciplines (old and new) which are the “bedrock keepers of academic norms”. Change depends on one department and faculty after another becoming an entrepreneurial unit, reaching more strongly to the outside with new programmes and relationships and promoting third-stream income. Department members need to participate in central steering groups. There was, according to Clark's investigation, acceptance of the need for enterprising action from within the disciplines. Traditionally social sciences have found this shift more difficult than physical sciences. Entrepreneurship in basic academic units like disciplines strengthens the unity of the whole.

The development of integrated entrepreneurial culture

A long-standing popular misconception about change places a *Great Person with a Large Idea* at the front of the organization. A modern derivative depicts a chief executive officer or management team formulating at the outset a global strategic plan; idea becomes purpose, purpose becomes mission statement, mission statement becomes tactical plan. But according to Clark (1998) the reality of change in complex organizations is different to both these conceptions. At the outset of change, new ideas are typically tender and problematic. They must be tested, worked out and reformulated. An institutional idea has to make headway and spread among participants and link up with other ideas. In this way they become institutional beliefs that stress distinctive ways; in time they spread to embrace much of the institution and thus become part of culture. Significant innovation in the character of a university entails core tasks and deep structures being altered such that the long term course of the organization is changed.

The Faculty of Built Environment and Engineering took from its reading of Boyer and Clark and its consultation with stakeholders, that it should develop as an integrated community of discipline-based

scholars with a whole-of-Faculty approach that is entrepreneurial, focused on the professions and in the best interests of serving the community. It developed core values that embraced: passion and diversity for its work, integrity and openness, forward looking innovation, and a determination to succeed. The values overall add up to a great desire to make a positive difference to people's lives.

When we mapped Clark's ideas over those we'd developed from Boyer we emerged with a model (illustrated in Figure 2 below) around which to consider the ongoing work of the Faculty. The characteristics of the model suggest both new structure and new vision for the Faculty. The model also suggests a sequence and priorities in which transformation and new investment will be made (Figure 3 below). We have determined to focus our energies and resources on developing the Faculty according to the priorities shown.

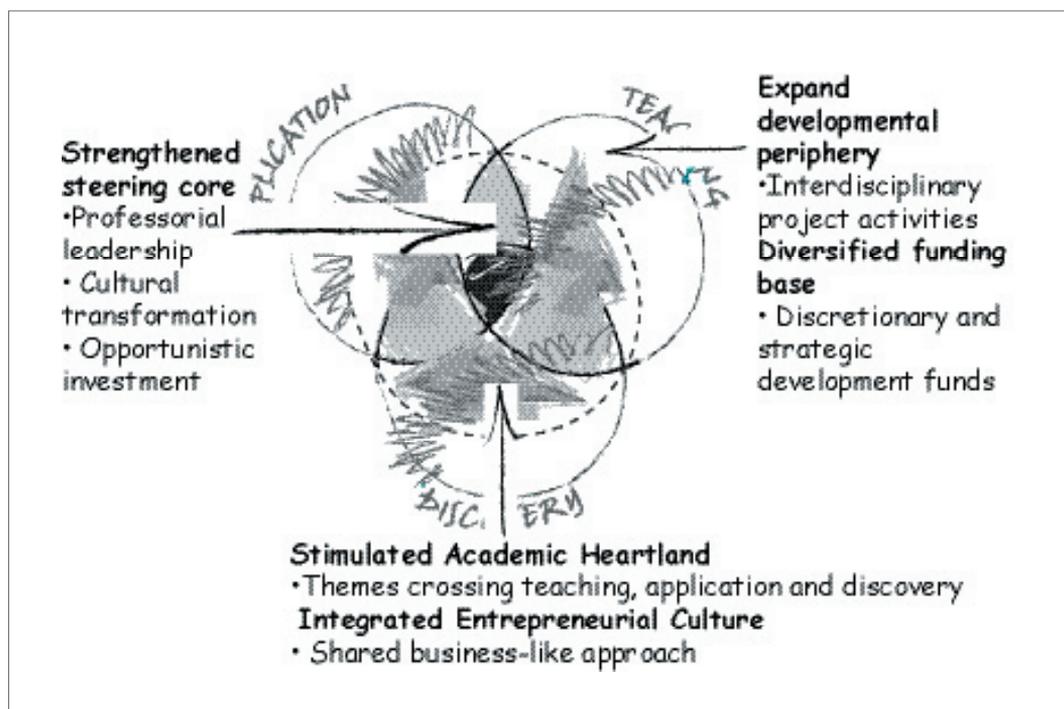


Figure 2. Mapping Clark over Boyer; three areas of integrated scholarship with a strengthened core leading cultural transformation of the Faculty of Built Environment and Engineering

Thematic enterprising scholarship in the faculty of built environment and engineering

Having developed a conceptual framework for an enterprising approach to scholarship with which the Faculty might work within a regenerated University, we are now implementing this philosophy in a range of ways. We are choosing to do so through themes of scholarly integration as points of collaborative focus. Initially these themes are Design, Smart Systems, Medical Engineering and Sustainable Living. They draw from areas of strength in our work with significant external cultural and contextual opportunity. The thematic foci resonate with our values in that they encourage integration of areas of scholarship and draw expertise from a range of disciplines.

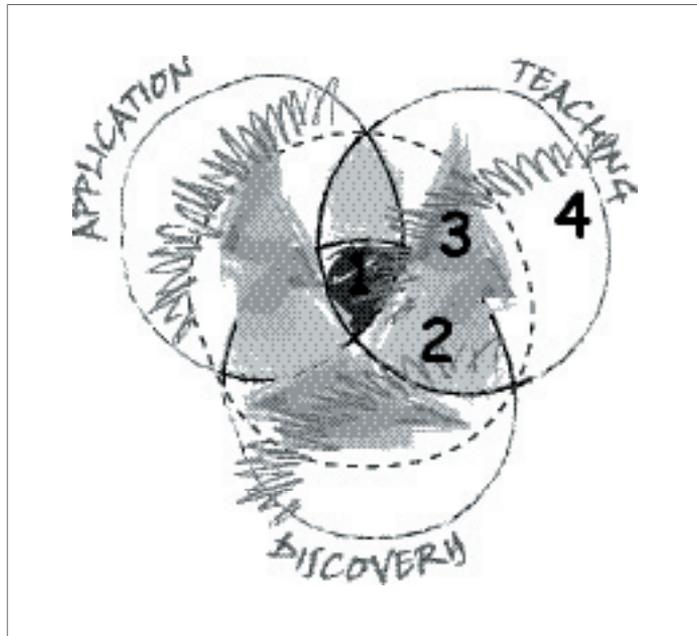


Figure 3. A Faculty model, based on Boyer and Clark combined, identifying priorities for action and funding

The project in Design has embraced the creation of a Centre for Subtropical Design. This is sponsored by QUT's local government, the Brisbane City Council, to pursue practice-oriented solutions for design for living environments for the climatic region in which our University exists. The Centre promotes projects in courses in architecture, planning and landscape architecture which are sponsored by members of the Centre. It also works with the professions and with local practitioners to develop guides and practices and promotes them to become widespread in the design of environments for our region.

In Smart Systems we have pioneered the recruitment of high-achieving undergraduate engineering students as leaders of tomorrow through a Dean's Scholars Programme. These students are mentored by members of the engineering professoriate. They pursue boardroom-exposed, fast-tracked programmes of study in engineering built around smart applications of advanced systems. They are sponsored and groomed by market-leading innovators such as Visy, EGR and Exxon Mobil.

In the integrated theme of Medical Engineering our scholarly application is linked to discovery through a series of joint clinical and academic professorial appointments with partner Brisbane hospitals in areas of orthopedic surgery, trauma and pediatric spinal surgery. This work sees us apply discovery-driven applications of bio-medical engineering in real settings through funded partnerships with direct routes to improvement in clinical practice and clinically-based continuing professional education.

In sustainability our work is leading to the establishment of an Institute for Sustainable Living. There are more than 70 institutes world-wide concerned with the scholarship of sustainability. Few are transdisciplinary, that is, working across a large range of academic disciplines and the professions they serve. None are focused on the subtropics as ours is and few integrate teaching, discovery and applications. The Institute for Sustainable Living is a living laboratory of real projects using joined-up research teams in funded applications with external clients. It will foster a University-wide, transdisciplinary, undergraduate course in sustainability.

These themes of scholarly integration allow a stimulated academic heartland to diversify funding, establish external facing work units, and grow an integrated and entrepreneurial culture under the guidance of a steering core of change agents. The people (both academic and professional staff) working with these scholarly themes are pioneering transformational change within our academic environment. They are our embodiment of Boyer's reconsidered scholarship in the structure, culture, practice and strategy of our faculty.

Conclusion

Boyer, and those at the Carnegie Foundation who published his work, could hardly have known the impact their ideas would have on the ways in which academic work would be conceived. Now, fifteen years after its first publication, at a time when the need for collaboration and greater understanding between parts of academic silos is necessary for the survival, if not the advancement, of academic work, we propose that Boyer's ideas might be reconsidered in a more integrated way. In doing this we herald the scholarship of integration as a primary driver for leadership in a large academic unit; where modeling the academic work as an integrated whole should be the central concern of Faculty leadership and management. We also propose that Boyer's scholarships, in our multivalent context, are probably not as discrete as Boyer's first rendering of them might suggest. We see that, at the intersection of these scholarships, there are multiple opportunities to refocus a Faculty and its disciplines to be more entrepreneurial in line with Clark's observations of successful transformative universities in Europe.

Together Boyer and Clark anticipated the need for contemporary universities to focus both inward, to integrate traditional scholarly values, and outward, to the community and funding sources beyond the university's walls, in order to provide relevance for a world less concerned for rigidly-defined silo-like disciplines or activities than it is for answers to transdisciplinary problems of some significance. For us, framing our work around a scholarly interpretation of these authors, allows us to structure our Faculty as an integrated community of discipline-based scholars with a whole-of-Faculty approach that is entrepreneurial, focused on industry and the professions and in the best interests of civic engagement. Our interpretation provides us with a framework which recognizes a diversity of talents amongst the Faculty's academic and professional support staff and helps us to promote the Faculty of Built Environment and Engineering as a community of scholars.

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