

Evaluating the Strategic and Leadership Challenges of MOOCs

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Abstract

This paper presents an analysis of the strategic and leadership issues presented by the range of massive open online courses (MOOCs) and associated activities happening internationally. The analysis is framed by Porter's Five Forces and outlines a framework for use by institutional leaders and strategic planners exploring specific strategic and operational responses relevant to their particular institutional, social, national, and international contexts.

Keywords: massive open online course (MOOC), institutional strategy, Porter's Five Forces, open education

Introduction

Massive open online courses (MOOCs) have stimulated an international burst of activity examining the role technology plays in higher education ([ACM Education Board / Council, 2013](#); [Armstrong, 2012](#); [Azevedo, 2012](#); [Carr, 2012](#); [Daniel, 2012](#); [Feldstein, 2012](#); [Kop, 2011](#); [Siemens, 2012](#)). The various magazine articles, publicity announcements, blog posts, and research papers, typified by the assertion that MOOCs "are the most important education technology in 200 years" ([Regalado, 2012](#)) are reminiscent of the millennial "global virtual university" hysteria (see, for example, [Cunningham et al., 2000](#)). While MOOCs are very unlikely to radically transform higher education, the attention being paid to the technology and the broader issues of the cost of and access to higher education provide a strategic opportunity for institutions and their leaders ([Armstrong, 2012](#); [Carr, 2012](#)). Interestingly, there is some evidence that MOOCs are being explored most predominantly by large research institutions with no current online offerings, suggesting that it is being used as a strategic tool to explore alternative models of course delivery ([Allen & Seaman, 2013](#)).

MOOCs offer the opportunity to explore models of pedagogy with fresh eyes. The two main types of MOOCs focus on the knowledge to be learned (xMOOCs) and on the student as a member of a community of learners (connectivist or cMOOCs). Both are quite different starting points for education that contrast with the focus on the teacher or faculty member that typifies higher education. MOOCs are actual courses designed and supported by experts in the topic and intended to be taken by cohorts of students. In this, they differ from the myriad of MOOC-like educational media found on the Internet and from the resources commonly used as textbooks ([Young, 2013](#)).

MOOCs have features that are both attractive and threatening. The attraction comes from the promise of a large scale and very cheap course delivery arising from technological support of abundance (Batson, Paharia, & Kumar, 2008), as well as a sense that technology could deliver finally some of the potential it has promised for higher education over decades. The threat is the likelihood of competition and disruption. MOOCs threaten a degradation in the values of higher education, a proliferation of large scale experiences delivered by consortia or institutions internationally and without an awareness of the local students, cultures, values, or needs.

The open nature of MOOCs forces a consideration of the intellectual ownership models underpinning modern education ([Ehlers, 2011](#); [Stallman, 2002](#); [United Nations Educational, Scientific and Cultural Organization \[UNESCO\], 2012](#)). Many institutions are seeking ways of diversifying their revenue streams. MOOCs imply different economic models for education, with MOOCs that use completely free licenses (such as [OERu](#), the Open Educational Resource university) and those which have business models driven by monetization strategies other than up-front fees (e.g., [Udacity](#) and [Coursera](#)), although there is

significant concern about the viability of the models proposed to date ([Allen & Seaman, 2013](#); [Young, 2012b](#)).

MOOCs raise structural questions about education. The most prominent MOOCs exist within collaborations and while many of these are exclusive in their membership, commercial organizations such as [Pearson Education](#), [Instructure](#), and [Blackboard](#) are offering online environments capable of supporting institutional MOOC initiatives ([Azevedo, 2012](#); [Feldstein, 2012](#)). These vendors are clearly positioning themselves in a new educational landscape, moving from a model of passive partnership and content provision to a more active participation in the educational process, including that of accreditation.

MOOCs commonly embody a sense of democratic and free access to education, a developmental agenda, and the philosophy that educational opportunities should not be limited to a privileged few. The implication is that students from diverse backgrounds can equally use these opportunities, something that glosses over the wide diversity in languages, educational backgrounds, social and cultural norms, and abilities that exist in the global population ([Kop, 2011](#)).

This focus on structures and longer-term strategies is distinct from discussions of other educational technologies cast in the mold of innovation. The narrative of disruptive innovation and the call for transformative change stimulated and sustained by new technologies is well established in many contexts including education (Christensen, Anthony, & Roth, 2004; Christensen, Horn, & Johnson, 2008). This paper is positioned within the context of a potential disruption, but rather than advocating a revolutionary disruption it is instead intended to focus on the role of strategy as a form of sensemaking ([Weick, Sutcliffe, & Obstfield, 2005](#)). The next section outlines a model of strategic analysis developed by Porter (1985, 2008) contextualizing it within the MOOC space and then applies it to two representative case studies as an illustration of its utility.

Applying Porter's Five Forces to the Strategic Question of MOOCs

Porter's (1985, 2008) Five Forces model supports a strategic analysis of the interactions between organizations, and the structures that frame their relative success and positions within that structure. The model frames strategic analysis of the structure of any domain using the eponymous five forces (Figure 1). Complementing these forces are other factors that need to be considered, such as industry growth, technology and innovation, and the relationship with other sectors including employers. Most particularly in the case of higher education, there is also the role that governments and accrediting bodies play.

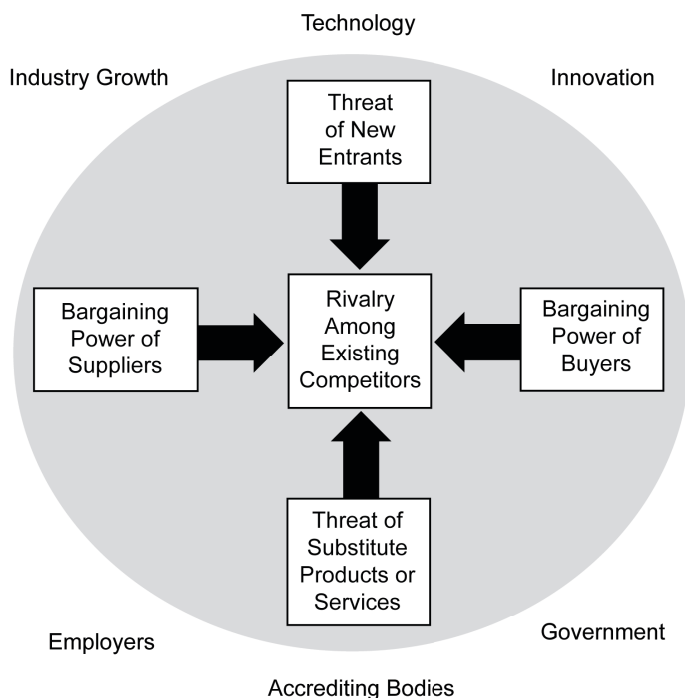


Figure 1. *Porter's Five Forces* (Porter, 2008)

The Threat of Substitute Products or Services

Porter's "threat of substitute products or services" encapsulates the strategic challenge posed by MOOCs. Substitutes offer attractive price-performance outcomes and are easy to switch to from the established product. MOOCs are characterized as free (although they do have substantial opportunity costs if students engage seriously with the courses and use the collaboration and interaction facilities actively) and are very easy to enroll into and commence study. Substitution can be seen in terms of Christensen's model of new market and low-end disruptive innovation (Christensen et al., 2004). MOOCs are clearly a form of low-end disruption where virtually all of the added value and support of a formal education as well as the resulting high-quality qualification are discarded and the focus placed entirely on learning. Barriers to MOOC substitution include the utility ('performance' in Porter's terminology) of the resulting education, certificate, or qualification that almost certainly will be influenced by the common perception that free goods have no value.

Threat of New Entrants

"New entrants" to any industry, Porter's second force, bring new and different capabilities and are energized to compete with established organizations. Often they can draw upon success in other domains to access resources unavailable to the existing organizations. The lack of previous involvement in the new domain means that new entrants are not encumbered by investment (financially or psychologically) in old approaches and potentially they are better positioned to question established wisdom and assumptions that may no longer hold.

The likelihood of appearance of new entrants is a function of the barriers to entry. Higher education has traditionally used the processes of accreditation as a substantial entry barrier; however, its fundamental weakness is its dependence on societal acceptance that accredited institutions are substantially better than unaccredited ones. New entrants such as Pearson Education are demonstrating that they can provide a credible assurance of the achievement of students in non-accredited contexts such as MOOCs ([Mary@Udacity, 2012](#)).

An advantage of a strategy of charging for quality assurance and validation, rather than for education itself, is the ability to manage and control the outcomes. Latterly, for-profit education providers have been under close scrutiny for the quality of their programs and the value that they provide (Tierney & Hentschke, 2007). There is also the problem of plagiarism and fraud in online courses with the risk that this can taint the reputation of a provider and qualification ([Council for Higher Education Accreditation & UNESCO, 2009](#); [Wukman, 2012](#); [Young, 2012a](#)). There are clear models of the types of problems likely to be encountered apparent in the ways online game environments are manipulated by activities such as "gold farming" ([Heeks, 2010](#)), where commercial markets develop for outsourcing key tasks at the individual level, such as contributing to forums or completing assessment activities. These issues are avoided by placing the responsibility of becoming educated onto the student.

The strategic question for an existing provider is their response to these new entrants. Acceptance for transfer credit of the assurance statements of organizations like Pearson is already being implemented by some institutions ([Mary@Udacity, 2012](#); [Young, 2012c](#)) as is the development of processes for validating work done through MOOCs outside the control of the institution ([De Santis, 2012](#); [Kolowich, 2013](#)). The recognition of prior learning, long a challenging space for institutions (Harris, Breier, & Wihak, 2011), is likely now to become a more closely studied process, with the additional strategic risk that unjustified barriers erected as a form of educational protectionism are unlikely to be politically or socially sustainable.

Potentially significant barriers to new entrants are the incumbent institution's access to a substantial resource of expert pedagogical and subject knowledge in the form of the staff of institutions, along with legal advantages in copyright laws permitting the use of third party owned content by formally established educational institutions.

Institutions may find that their own staff are themselves new entrants, limiting the value of the first barrier. Non-tenured adjunct or contract staff working for incumbent institutions are a rich potential source of personnel and expertise for new entrants, and have no contractual loyalties to current employers. Tenured faculty have already been offering MOOCs of one type or another completely independently of any formal institution.

The legal and copyright issues raised by MOOCs are significant. The laws regarding educational use of third-party content vary dramatically from country to country. Individuals and institutions engaging in the

creation and delivery of MOOCs need to be careful to ensure they are not subject unexpectedly to the laws of other countries, as for example might happen if their student body attracts a predominance of people from a single country. This goes beyond copyright to include issues of content (blasphemy and other laws), privacy of information, and protection of educational provision, as well as many others (["Ethiopia Bans Distance Education," 2010](#); [Mangan, 2012](#)).

The question of copyright and licenses is also relevant when considering the question of whether MOOC resources are available for use by other institutions in potentially competing courses. MOOCs, such as those offered by [Coursera](#), are licensed only for use by individual students ([Coursera, 2012](#)). This raises the gray area of staff in other institutions referencing third-party MOOCs as additional readings ([Royal Melbourne Institute of Technology, 2011](#)). The choice of institutional license for MOOC resources will materially affect the strategic decisions being made with regard to investment in MOOC resource creation. Institutions producing MOOCs primarily as videos of lectures will have different perceptions of the value of those resources to institutions producing commercial quality distance education materials from scratch.

The Bargaining Power of Buyers

Porter's "bargaining power of buyers" force superficially describes students, but strategically it is a reflection of the influence and impact of a disparate group of key stakeholders.

Students depend on the system to deliver significant personal benefits, and make substantial personal investments in the system. Beyond fees, students all experience large opportunity costs by engaging in formal education as they forego earnings from full-time employment. Many students are heavy users of a variety of technologies in their personal and professional lives and expect it to play a role in a modern education ([Kennedy et al., 2009](#)). Technology can improve the responsiveness of large organizations, and introductory MOOCs potentially let students engage in study immediately. As alumni or graduates of the system, former students have an interest in sustaining and protecting the value of the qualifications they have achieved. Many institutions recognize this through the role that alumni play in governance.

The parents of students are significant stakeholders in the higher education system commonly through their financial support of students, but also in their influence over the choices students make when moving from the school system to higher education. Parental perceptions of the value of particular qualifications and aspirations for their child's success are likely to significantly influence decisions over the first qualification obtained.

Employers have become one of the most significant stakeholders in the higher education system. The role of employment in economic growth is so intimate that that employers inevitably have a substantial amount of political power and influence over the shape and priorities of the higher education system. Employers also have strong relationships through collaborative research and postgraduate study undertaken by their employees, with many universities benefiting from a regular exchange of staff and expertise with key industry participants.

Like employers, governments have become far more important stakeholders in higher education over the past century through substantial public investment in both institutions and the provision of financial subsidies for students that help mitigate or defer the personal costs of education. The price of that investment has been the growing dependence of institutions on the government for funding and the consequent power that has given governments to influence the shape of the system through quality and performance management.

The last major stakeholder is the academic faculty, particularly in the case of universities. Faculty work defines the university. The reputations and recognition of academics are included in the international ranking systems used to compare universities and many performance measures used by governments assess the success of faculty in their research and teaching work. Faculty members make the majority of decisions about the operational and pedagogical structure of teaching, either individually or collectively. Pragmatically, faculty decide whether or not students have demonstrated the qualities that are expected of graduates, and are substantially responsible for the perceived quality of graduates. This responsibility perhaps contributes to the concerns raised by some faculty regarding MOOCs in particular ([Vardi, 2012](#)) and online education more generally. [Allen and Seaman \(2013\)](#) report that academic leaders suggest that less than one third (30%) of U.S. faculty accept the value and legitimacy of online education, a number that has not substantially changed over the last decade.

MOOCs also have potential as a mechanism for development of faculty. Many of the existing participants in MOOCs state that they are validating or refreshing existing knowledge or skills and there is every reason to suggest that faculty would benefit from opportunities to do so themselves.

Institutional strategies and responses to MOOCs must reflect an understanding of the choices and influence of their stakeholders. The strategies of institutions secure in reputations of international significance such as [Harvard University](#), [Stanford University](#), and the [Massachusetts Institute of Technology \(MIT\)](#) can be quite different to those of institutions that do not have reputational capital to depend upon. It can be argued that the support of MOOCs by institutions with strong reputations is in part a strategy of disruption, shaping the perceptions of stakeholders in education ([Armstrong, 2012](#); Hagel, Brown, & Davison, 2008).

The Bargaining Power of Suppliers

Powerful suppliers transfer costs to the enterprise or retain power and control over key aspects of the industry. Higher education is unusual in that a major supplier is the faculty who normally are the collegial owners of the institution and responsible for much of the leadership of the academy, as discussed above.

Powerful supplier groups also include the academic publishing consortia, typified by [Pearson Education](#), technology companies such as [Microsoft](#), [Google](#), and [Blackboard](#), and a vast array of companies providing specialist functions (many of which are owned or partnered by larger players). These vendors enable an institution to achieve the level of scalability and robustness needed to support MOOCs with potentially hundreds of thousands of students. It can be helpful to think about MOOCs as a platform ([Siemens, 2012](#)). By doing so, strategies can be developed regarding aspects such as course discovery and brokerage, the MOOC equivalent of Google for web pages. Other components of a platform likely to emerge are the brokering of course content licensed for MOOC use; professional skills and consulting in MOOC initiatives; and student recruitment, guidance, and counseling – just to name a few of the more obvious. Finally, MOOCs represent opportunities for institutions to develop experience in their strategies for use of commodity Internet platforms commonly referred to as the "cloud" without risking disruption to existing systems and courses.

Rivalry among Existing Competitors

Idealistically, in many countries the individual institutions comprising the publicly funded education sector should be working collaboratively and cooperatively to deliver the greatest value possible for the taxpayer. In reality, in many cases the individual institutions are run as separate entities and, as a result of management ideologies popular over the last few decades, forced to engage in a form of market competition intended to stimulate efficiency and entrepreneurship ([Andrews, 2006](#); Barnett, 1992; Manning, 2013). Nationally and internationally, institutions compete for reputation, to attract the best and brightest students and faculty, for research grants, and on various ranking and performance tables maintained by governments and media companies. Despite this competitive disposition, MOOC initiatives to date have been characterized by extensive international collaborations.

A Framework for an Institution's Strategic Engagement with MOOCs

This analysis of strategic structure of the MOOC domains has identified a number of questions of institutional strategy and direction that can be used to systematically develop a strategic response to the MOOC phenomenon, and more broadly the use of online models of course and program delivery. These questions provide a starting point for a consideration of the particular situation of a given institution. The specific circumstances of a given institution will naturally steer the analysis towards some questions more urgently than others. The examples that follow illustrate hypothetical examples based on real-world institutional situations in order to demonstrate how different elements of this framework are of greater or lesser significance in different contexts. This quick analysis would clearly only form the starting point for a much more extensive conversation with key internal and external stakeholders questioning the status quo, implicit and explicit assumptions, and identifying additional options for the institution.

The two cases used to provide a context to the framework were chosen from a set of organizational changes cases ([Marshall, 2012a](#)). The responses are derived from those cases and reflect an external analysis of each organization's capability, the opportunities and threats they face from their current positioning. It should be noted that they were chosen deliberately to contrast different analyses, and not as definitive examples. Table 1 summarizes the strategic questions arising from the Five Forces analysis above, and the contrasting analysis of the two institutions.

Table 1. *Strategic framework for MOOCs outlined and illustrated with two institutional examples*

University NZ-C	Private Training Establishment PTE-A
1. Threat of Substitute Products or Services	
<i>a) What are the fundamental qualities of the institution's educational offerings that differentiate the institution?</i>	
Degrees well regarded but of similar quality to other New Zealand universities.	Vocational qualification in a single industry delivered entirely online by experienced staff, only specialist provider of this type in the country.
<i>b) How is the value of the institutional educational offerings communicated to each of the key stakeholder groups and differentiated from substitutes such as MOOCs?</i>	
Traditionally accredited qualifications.	Emphasis made on the quality of the teaching and support provided to the students, very strong focus on pastoral support.
<i>c) Can MOOCs be substituted for existing activities in ways that strengthen the institution?</i>	
Potential to provide preparation activities for students, option for some courses over the third "summer" trimester, option as source for remedial or additional support for students in some courses.	Initial course for students on how to learn as an online student could be reconfigured into a MOOC, may act as marketing tool and means of filtering potential students to select those motivated and able to learn well online.
<i>d) Are MOOCs already, or potentially, a risk for substitution for key institutional offerings?</i>	
Minor risk for technical subjects taught at postgraduate level to students wanting to maintain or develop their skills but uninterested in qualifications.	No risk as qualification is mandatory for employment in industry and legal and ethical issues mean that this is never likely to change.
<i>e) What is the institution's strategy for recognition of student learning undertaken in different contexts?</i>	
Very limited credit transfer systems.	Not accepted.
<i>f) Should MOOC completion contribute towards the achievement of institutional qualifications?</i>	
State of program development and lack of experience in RPL make this unlikely.	Inconsistent with quality assurance requirements.
<i>g) What legal and economic factors affect the viability of MOOCs as substitutes and what risks exist for political influence changing those factors?</i>	
Government very interested in ways by which sub-degree teaching can be delivered at no cost to the taxpayer, conscious of risks to market for international students.	Legal requirement that students be qualified, supervised and registered to work in industry, political interest in minimizing costs but very unlikely to remove qualifications as requirement for large proportions of the workforce.
2. Threat of New Entrants	
<i>a) How is the institution managing its strategic relationships with other organizations that potentially could offer MOOCs as alternatives to the institutions offerings?</i>	
Not currently in any collaborations or similar relationships.	Not currently in any collaborations or similar relationships.
<i>b) Who are the other institutions influencing the institution's own offerings and how is that influence understood and managed?</i>	
Main influences are the other New Zealand universities through shared academic approval processes, and the funding agency the Tertiary Education Commission (TEC), which controls and approves funding levels for all qualifications.	Limited in New Zealand by vocation-specific legal requirements, accreditation and quality assurance requirements, and by the TEC for the number of students and qualifications that can be offered.
<i>c) What strategies are in place to mitigate any risk that MOOCs are able to influence the size of the student cohorts for particular offerings?</i>	
None, presumption that MOOCs are not influencing student choices.	None, existing offerings oversubscribed.

<i>d) What strategies are in place to mitigate any risk that distribution channels might be influenced by new entrants with conflicting agendas, such as existing partners in related industries (e.g., publishing and technology)?</i>	
Not seen as potential threat.	All systems developed in-house and key intellectual property is all owned entirely by the institution.
<i>e) What is the institution's strategy for developing and sustaining a competitive advantage in expertise in areas important to key educational offerings?</i>	
Targeting resources for employment of staff to specific subjects on the basis of their strategic importance, strategic renewal process underway focusing on learning and teaching, with particular emphasis on the role of technology in supporting face-to-face education.	Significant investment in sustaining and further developing expertise in technical and educational aspects of online learning, actively participating in benchmarking activities and collaborative research nationally and internationally.
<i>f) Are there ways by which the institution can act as a new entrant for parts of its business?</i>	
Challenging given the constraints of the local environment and lack of existing resources and experience.	Currently investing in multiple initiatives in other countries where it is acting as a new entrant.
<i>g) What is the institutional strategy for the ownership and management of intellectual property?</i>	
Staff own the copyright in their teaching materials, very limited support for staff although work in progress to expand copyright and license support.	All resources and systems owned by the institution and managed formally.
3. Bargaining Power of Buyers	
<i>a) How is the institution managing the perceptions and expectations of each key stakeholder group regarding MOOCs, technology innovation in general, and most importantly the cost and access to higher education?</i>	
Currently developing a technology strategy for learning and teaching, stakeholder engagement plan not yet developed, cost focus primarily political as fees determined by Government policy.	Clear strategy of positioning institution as high quality online provider with excellent support and engagement systems in place to help students succeed. Very strong relationships with employer groups in the industry and active voice in collective bodies relevant to sector.
<i>b) What is the institution's strategy for developing the skills of its existing faculty and other staff, and how does the MOOC strategy enhance or support this?</i>	
Traditional model of faculty development dominated by optional support. Strategy for digital technology includes strong skills development goals.	Prior to teaching students, all staff required to complete a formal online training program in online teaching and learning, this program includes technical, pedagogical, and institutional aspects.
4. Bargaining Power of Suppliers	
<i>a) How does the institution engage with faculty regarding the strategic direction for its offerings and the role that MOOCs might play formally and informally in the experience of teachers and students?</i>	
Developing a technology strategy for learning and teaching that includes faculty engagement component.	Very clear strategy for technology use communicated to all staff regularly and incorporated into training materials.
<i>b) How are relationships with key partners being used to advance both the strategic and operational interests of the institution?</i>	
Very dependent on key technology partners for nature and types of technologies used in education. Innovation strategy for learning and teaching in development.	Partners used for commodity services only, key systems and resources completely owned in-house.
5. Rivalry among Existing Competitors	
<i>a) What is the institution's strategy regarding the use of resources from its own offerings by other institutions, including those in direct competition?</i>	
No strategy in place.	Complete ownership of resources.

<i>b) How might new or existing institutional relationships be strengthened through engagement with MOOCs?</i>	
Potential for national collaborations in the development and provision of induction and preparation MOOCs for all universities, particularly for students from Maori and Pacific Island groups and those coming directly from schools in low socio-economic areas.	Limited engagement in MOOCs with other institutions in vocational training, particularly those in other institutions, could enhance leadership position nationally and stimulate further improvements and knowledge, as well as potentially new types of business opportunity leveraging the investment in proprietary systems and potential for expert consultancies.

Case Example 1

University NZ-C is a medium-sized New Zealand university with a traditional focus on face-to-face education and an emphasis on research and postgraduate education. The University is financially secure but faces significant challenges resulting from the current Government's decision to change the funding model from one of growth to one where numbers are capped. The University has been recently engaging with the implications of technology in its learning and teaching activities but benchmarking suggests that it is well behind international comparators and has struggled to change ([Marshall, 2012c](#)).

The responses to the strategic framework (Table 1) are consistent with the lack of any strategic position for technology generally, and thus the inability to clearly articulate a response to the concept of the MOOC. In common with many institutions ([Allen & Seaman, 2013](#)) University NZ-C is undecided about MOOCs. The framework responses suggest a degree of strategic and operational risk from MOOCs arising from uncoordinated activities undertaken by individual groups of faculty independently of the institution.

One possible strategy University NZ-C has for avoiding strategic paralysis is in the area of induction and preparation programs. The New Zealand Government has forbidden universities from charging fees for such sub-degree courses; however, the institution still has the materials and designs, which could easily be redeployed in MOOC form. An extension of this would be further work targeting Maori and Pacific Island students while still in school; using the MOOCs to prepare students for the idea of university study well before they complete school education.

Case Example 2

PTE-A is a commercial, for-profit, private training establishment (PTE) providing vocational training to approximately 1500 students engaged in full- and part-time study ([Marshall, 2012b](#)). PTE-A's students are predominantly mature and are based throughout New Zealand, usually in either part-time or full-time employment in a single very tightly defined and regulated industry.

PTE-A has deliberately been engaging in a strategy of renewal and innovation for much of the last decade with a strong leadership focus on the use of technology. As apparent in the answers in Table 1, the institution has invested heavily in the development of systems and resources for online education and has used their experience of distance education to ensure that students experience a supportive and successful online education. Consequently, the institution has been able to achieve high levels of student success in its online courses and in recent years this has culminated in the complete transition to online delivery.

As a successful for-profit online provider PTE-A is hypothetically at risk from wide adoption of MOOCs and the strategic analysis reflects the potential threat. The regulatory context of its industry provides a significant barrier to new entrants and the reality is that this is very unlikely to change. PTE-A's ownership of key resources and systems gives it a strong position with regard to substitution and suppliers, and it has clear strategies in place to manage buyers and competitors within the same industry. Beyond this however, and consistent with the benchmarking of the institution, PTE-A has a strong culture of continuous improvement and innovation that is supporting its own activities as a new entrant into international markets for its courses. Each of these new markets would need to be analyzed using this framework, as different assumptions, constraints and opportunities will be present. In some of these new markets PTE-A may find MOOCs represent either a challenge or an opportunity.

Discussion and Conclusion

The analysis presented in this paper is framed in the context of the MOOC phenomenon and the current economic challenges facing all institutions. It should be apparent, however, that this type of analysis and the strategic awareness it supports must be dynamic. Pursuit of strategies for online education by institutions like Harvard, Stanford, and MIT has already changed the environment they were originally enacted in. Visionary strategists recognize this and adapt the execution of the strategy in real time. Both of the cases presented here are at best starting points. A real strategy would also need to address a number of specific challenges in addition to those identified already, potentially creating niches for differentiation between competitors ([ACM Education Board / Council, 2013](#)):

- Knowledge and information presented over multiple learning platforms;
- Students need to be more responsible for their own learning, able to manage their own time, and maintain their own motivation to complete courses;
- Students need reliable and inexpensive access to the Internet for extended periods of time in an environment conducive to learning;
- Online learning, being designed for a large audience, often lacks any responsiveness to the individual student's cultural and professional experience, particularly students from underrepresented groups;
- Reflection and critical analysis are challenging to support without individual teacher attention on the work of the student;
- Online learning environments struggle to identify students disengaging from courses or failing to cope with material being taught.

Many institutions will be in similar positions to University NZ-C, dimly aware of MOOCs at best, unclear as to the implications, lacking knowledge about key stakeholder needs and expectations, and inexperienced in their own use of technology. In contrast, PTE-A represents an example of the type of institution that might itself be a new entrant, a disruptor of existing assumptions and business models. Education is one of very few industries in which such insider disruption is possible and even necessary (Christensen et al., 2008).

Finally, the model and analysis presented in this paper, while framed and stimulated by MOOCs, clearly applies to a range of challenges arising from online education. Practitioners in the field have watched technology influence and change higher education in many ways over the past decades but have yet to see transformation in the experience of students and teachers. The approach presented here should not be seen as further encouragement for perpetual analysis. The MOOC strategies of institutions such as Harvard, Stanford, and MIT are potentially shaping the perceptions of many stakeholders in higher education (Hagel et al., 2008). By giving away course materials and access to basic e-learning systems these institutional MOOCs are establishing a minimum threshold of quality that must be substantially exceeded by other organizations (particularly non-accredited ones) wanting to charge for their materials. The key idea behind such a shaping strategy is that by articulating it, and stimulating engagement with and responses to the key elements of the strategy, industry participants are motivated to adopt disruptive strategies collaboratively. Shaping strategies act to discourage the natural tendency of threatened organizations to retrench and adopt conservative and self-protective strategies that collectively can cause an industry to stagnate.

Educational institutions have been described as prone to strategic paralysis (Christensen et al., 2008) through their attempts to completely analyze situations prior to acting upon them. The pace of technological change and the intensity of the political and economic pressures upon institutions mean that a strategic response to MOOCs, and online education generally, should involve at least a proportion of action early. Fullan and Scott (2009) argue that institutions should adopt a "ready, fire, aim" (p. 26) attitude, which is to say that strategy should be informed by and evolve rapidly in response to experience, rather than specified completely prior to execution.

In conclusion, institutions are encouraged to analyze the five forces that structure their place within higher education, to think strategically, but above all, to act, to innovate, and to use that experience to stimulate and sustain change.

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