Rethinking Innovation in a Higher Education Context
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Introduction:

As a North American participant to this senior seminar I wish to put before us a phenomenon that to date is in some ways is predominantly "American" but in other ways has become some combination of "international" and "global". In doing so I wish to problematize both the notion of higher education innovation and that of "boundary-ness" to the extent that this sense applies to varied phenomena within knowledge environments, including higher education.

The particular innovation I wish to examine has attracted various labels, perhaps the most common of which is the "disrupting" movement, a term that came into use early in the new century to refer to a wide-variety of phenomena developed as alternatives of one form or another to higher education (and in some frameworks to all of education) as framed and conducted by commonly accepted conventional institutions, e.g. universities. (For a good summary of the state of matters relatively early on in what became a rapidly changing environment see Christensen et. al. *Disrupting College: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education.* 2011) As Christensen et. al. put it:

> "The theory of disruptive innovation has significant explanatory power in thinking through the challenges and changes confronting higher education. Disruptive innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, and convenient and serves many no matter their wealth or expertise. The new innovation does so by redefining quality in a simple and often disparaged application at first and then gradually improves such that it takes more and more market share over time as it becomes able to tackle more complicated problems."

A year after this study by the Center for American Progress, the *New York Times* would be moved to declare 2012 the "Year of the MOOC", focusing on the explosive emergence of entities such as edX, Udacity and Coursera and the soon to follow development of MOOC's in a wide variety of subject matters and taking multiple forms. Dazzled by the unanticipated success of Sebastian Thrun and Michael Sokolsky's course in Introduction to Artificial Intelligence" offered by Stanford University in the fall of 2011, MOOC's captured the logic and technology of on-line education and transformed it fundamentally.

As many have pointed out (and as I will discuss further below) MOOCs are "complicated" at a whole variety of "levels" or "dimensions". (See for example the history and critique of MOOC's offered by Aaron Bady who has framed his discussion as "The MOOC Moment and the End of Reform. Bady 2013). As a phenomenon of *innovation*, however, they can serve as a vehicle for discussing the broader subject of innovation in and through higher education, which is the intent of this paper. I will proceed by framing innovation as a social process and then explore through MOOCs and a variety of other innovations how change is both occurring and proceeding throughout contemporary higher education.

Part One: Innovation as a "thing" and a "process"

In earlier work Christensen suggests that there are two kinds of innovation: disruptive and sustaining. In the commercial realm sustaining innovations are "improvements to products that enhance performance in dimensions traditionally valued by consumers. They make existing products and services better." Disruptive innovations by contrast "change the value equation. Initially, disruptive innovations under-perform mainstream products, but offer some advantages of cost and ease of use. They cause fundamental changes in the marketplace" (Christensen, 2005). This frame of reference, which is widely shared, makes a fundamental assumption that innovation is a social and/or economic good. Clearly much of the role of innovation within environments of economic exchange *is* to produce at some point further market advantage, either through product improvement or cost/price gains for the innovator. This frame, in and of itself, tends to ignore or under-estimate the tension between "change" viewed as a social process and innovation as a sub-category of change. In much of the literature on innovation, and certainly in common use within a marketplace frame of reference, innovation is normatively valued as "good" and the relative proof of its particular good can be determined by marketplace metrics, e.g. placement, degrees and dimensions of acceptance, effects on cost and price, and its role in stimulating further innovation. From such constructions arises a culture of innovation that breeds its own sociology with its embedded normative premises.

To make a broader "sense" of the notion of innovation in a higher education context, I think it is useful to focus on the four broad dimensions of functionality commonly associated with higher education. It is widely held that higher education over the centuries and across a vast array of societies and cultures performs at least four common and essential social functions: knowledge creation (the research function); knowledge transmission (the teaching function); knowledge conservation (the library and museum function); and (with some greater differentiation) contributing to the broader social good (the public value function). It seems sensible to undertake a discussion of the role of innovation in higher education from the framework provided by these functions—to ask in effect at some point whether a given innovation increases or decreases the value embodied in each function.

To make such an assessment requires further conceptual leaps. One is the notion of value over time (and that presumes that agreement might be reached over what might be "reasonable" periods of time for making such judgments). Another is the realization that outside the closed value framework of the market, many innovations might be judged to be of negative value; and indeed, our commonsense language reflects this in such terms as innovation for the sake of innovation, or more condemnatory, even "destructive" innovation. The second conceptual leap is to situate innovation within at least a modest differentiation of types of change. One typology suggests that within contemporary contexts (such as efforts to catalogue and describe the kinds of changes being wrought by contemporary globalization) one can usefully discriminate changes as consisting of genuine novelty, combinatory elements, extinction, constituting predicaments, or as essentially elements of the existing status quo. (These are explored further in Berry and Neubauer, 2008).

Briefly:

Novelty—Genuine novelty often involves new ways of "experiencing the world," creating entirely aspects of processes, and institutions. In this sense the Internet is a paradigmatic innovation that has profound implications for how we communicate, create, and retrieve information globally. Innovations such as these, along with their consequences, make it useful to ask how innovation of this form novelty affects overall processes of change (Castells, 2009).

Combinations—Globalization also changes the world by combining older ways of behaving with what's new, sometimes combining two or more ways of doing things. On-line banking and shopping, for instance, bind together traditional shopping and banking with 24-hour high-speed computer access from home or anywhere in the world. This new combination eliminates the need to travel to shop or bank, producing new ways to accomplish these traditional activities, ways that have considerable impact on individual time management, social organization, jobs, consumption patterns, etc.

Extinction—While globalization brings some practices, values, or institutions into being, it also causes others to disappear. The notion of extinction becomes visible within the United States, for example, when WalMart and other "big box" retailers overwhelm and extinguish local retail stores.

Predicaments— Predicaments in this context refer to complex situations in which it is difficult or impossible to come up with a predictable "solution" in responding to the novelty created by innovation. Conventional notions tend to see change either as essentially reductionist (how the part affects the whole), or as an essentially step-by-step, linear process (beset with significant, often catastrophic interruptions) that societies and institutions use to identify "problems" and in one way or another "solve" them, often with the presumptive innovation Complexity theory and chaos theory, however, offer us new ways to view the world and this dynamic of innovation and change. These

approaches examine how highly complex systems may generate single or simple "outcomes" and resist anything that might be called a solution to the consequences that ensue. Complexity theory, for example, investigates how flocks of birds naturally turn together in flight, and how schools of fish move in synchrony through the sea. It also examines how something happens when large numbers of individual units come together and interact with each other. The emerging knowledge society contains numerous examples of complex interactions that pose these kinds of predicaments (Hershock, 2011).

To conclude this point: it is in this view insufficient to identify innovations occurring either within higher education or without it, but which will affect it without taking the next step and seeking to ascertain that as a change dynamic or episode their nature or probable effects with respect to both the structures or the functions of higher educations as we currently know them.

With these initial distinctions made, I wish to proceed first to an examination of various perceived innovations with contemporary higher education and by doing so suggest the range of dimensions that they represent for the whole of the higher education process. I then in the subsequent section wish to explore how some of the more "present" of these might be valued given some relatively commonplace expressions of value in higher education and from this go on to suggest (a) other innovations that may arise out of them, and (b) broader implications for the future (s) of higher education

Part Two: Innovating in Higher Education

In recent work undertaken through the Western Association of Schools and Colleges (WASC) and in which I have previously provided some partial reporting (Neubauer, 2012), an effort has been make to develop a catalogue of sort for what is being termed the "Changing Ecology of Higher Education." (A set of "concept" papers detailing some of this work can be found at WASC 2013).[1] The notion of an ecology was selected for seeking to identify some of the many innovations characterizing current higher education to self-consciously underscore the highly dynamic and interactive nature of these events. In pursuing this work, we have sought to be sensitive at all times that perhaps the key fact to present about this ecology is its intensely dynamic character—what one "knows" about it today, is not necessarily adequate for tomorrow.

Having made that point, and seeking to keep notions of this constant contingency before us, one approach to this changing ecology suggests that at the very least it may be composed of and examined through the following dimensions expressed as a series of changes:

- *Changes in the characteristics of learners*. These can include the increasing diversity and demographic shifts of students (racial/ethnic, economic background, country of origin, age, disability, and in the U.S. veterans); the extended life span

of learners; increasing numbers of non-degree seeking students; greater mobility within higher education; degree of academic readiness; proficiency in knowledge and information fields and skills; and increasing numbers of students working while simultaneously seeking degrees.

- *Changes the roles and responsibility of faculty*. These include the unbundling of traditional faculty roles especially with respect to course design and execution; recasting instructors as guides to facilitate student learning; the increasing use of non-professorial faculty; and persistent questioning of "faculty authority" within conventional knowledge constructs.

- *Changes in methods of instruction and learning processes.* These include the vast increase in the variety and adoption of different instructional modes including the use of virtual, hybrid, blended, customizable, personalized, self-paced and other modalities; the growth of cross-disciplinary and cross-institutional and transnational teaching; efforts to incorporate into instruction and learning processes increasing knowledge of how people learn, including recent advances in neruoscience; the incorporation of differential learning styles and intelligences and other forms of research based principles of learning; increased use of collaborative and collective learning both inside and outside the classroom; and the incorporation of mobile learning and social media.

- *Changes in the content and focus of instruction.* These include: notions of greening of the curriculum; internationalizing and addressing global issues; expanding service learning and internships; increasing the emphasis on civic responsibility and civic engagement; promoting undergraduate research; incorporating digital literacy (visual information, new media, digital production, programming); and re-mixing, re-using and re-purposing information.

- *Changes in the political and economic environments of higher education.* These include: demands for evidence based on outcomes of student learning (that go beyond standard examinations); demands for affordability of higher education; demands for efficiency and cost control; demands for portability of degrees and certificates; increased perception of higher education by politicians and policy makers as a "failing or deficient" sector; changes in demands for external certification of quality and capability of higher education providers; criticisms of the liberal arts as being increasingly irrelevant to the contemporary world; the growth of new economic relationships between higher education and economic actors in society; the growth of historically non-educational entities into offering degrees, e.g. hospitals, theater groups, think tanks, film production companies, publishers, global internet companies, etc.

- *Changes in the frameworks of higher education.* These include: Do It Yourself (DIY) models of education including students/learners creating their own degree programs; massively open online courses (MOOCS), competency-based instruction and certification; partnerships with industry for workplace training and lifetime learning; and charter universities with novel content and styles.

- *Changes in processes and values of certification, credentials and accreditation.* These include: the creation of badges as new models of competency and

certification; creating common definitions of credentials that have recognition status; certification of prior learning; integrating informal and formal learning with accreditation and certification bodies; developing common standards across regions and common practices of recognition and accreditation.

- *Changes in the policies that frame and govern higher education and the metrics that are being developed to assess it*. These include: new and increased focus on productivity, return on investment and return on value; focus on quality of life metrics; assessing impacts of private equality and for-profit education on the whole of higher education systems, and reviewing the policy structures that interface non-profit and for-profit education; exploring shifts in cost burdens of education in terms of multiple beneficiaries (e.g. business as well as students); and promoting the public good as defined by increased value of higher education to individuals and society.

As indicated, each of these can be viewed as a distinct dimension along which higher education innovation is taking place. One first step toward converting a conceptual array such as this (or some other) into an assessment of transformation within higher education framed in terms of innovation would be to apply the change typology presented above to this catalogue. Such an exercise would perhaps look something like this:

Dimension of Change	Type of Changes			
	Novelty	Combination	Predicament	Extinction
Nature of learners				
Roles and responsibilities of faculty				
Methods of instruction and learning process				
Content and focus of instruction				
Pressures on higher education				
Frameworks in higher education				
Certifications, etc.				
Policies and				

Populating this typology with empirical examples from different types of institutions (e.g. primarily teaching institutions; technical and other research universities; multi-campus global universities) and from different countries would provide us with a base map from which a more formal enumerative catalogue could be constructed. From this database one could both populate and analyze the table to observe both the range of innovations and their presumptive impact. At the very least, having some such categorizing tool coupled with a way of gaining an initial sense of impact would provide us with a quite new and different vocabulary for innovation, especially within the Asia Pacific region. Such an outcome could, potentially emerge as a useful higher education policy tool for both national governments and regional higher education cooperative efforts.

Part Three: Back to MOOCs
The above schema, coupled with the catalogue of items that constitutes this inventory of a changing ecology of higher education (and stressing again that many other approaches to this changing ecology are, of course, possible), give a sense of how one might approach the issue of assessing the innovative aspects present in the disrupting movement. MOOCs have gathered the most attention, not surprisingly, given the huge numbers of participants that have become engaged and the rapidity with which the phenomenon has spread. They have also gained significant attention because of their counter-intuitive arrival on the higher education scene of having been initiated in many cases by very high-statused institutions such as Stanford and MIT and in their early manifestations by their ideology that significant parts of higher education should be available to anyone and without costs. In a world, especially in the United States, in which the costs of attaining an education at the most prestigious institutions have become increasingly great, this is perhaps the most disruptive aspect of this phenomenon. Other forms of higher education dissemination had promoted the open-access aspect of courses, e.g. the Khan Academy and I-Tunes University. What differentiated MOOCs from these earlier "low wall access" approaches to higher education was the entry into the field of HEIs of the highest status and the "massive" nature of such courses; the fact that the technologies of simultaneity could spot-light a distinguished faculty presentation within a context that engaged hundreds of thousands of participants simultaneously from around the world.

From the point of view of this chapter and being led by the logic of the above-scheme we are led to ask at least four fundamental questions about MOOCs as exemplars of a kind of innovation present within higher education:
- One, how extensive are the changes involved? As innovations, how significant are they in affecting the institutional patterns and behaviors that they are disrupting?
- Two, are they, for example, truly novel in that they supplant previous forms of the phenomenon, in this case "traditional" higher education institutions—at least in some important respects? Are they the example of Micro-soft to WordPerfect, or

are they more aptly characterized as combinatorial, such that some genuinely synthetic "product" emerges from the innovation—in this case, the integration of MOOCs into the curricula of conventional institutions.[2]

- Three, to what extent are MOOC's themselves transitional? In the world of constant and continual innovation have MOOC's played a role in recasting strands of innovation within higher education that may lead to even more far-reaching kinds of changes?
- Four, casting back to some of the initial points made in the beginning of this paper, what are likely to be the normative consequences of such changes with respect to our existing patterns of presenting higher education throughout the world?

I do not intend to address these issues here, but I do hold that in one form or another they are all latent and/or manifest in higher education policy agendas, and that by and large as "policy systems of higher education" (if such a thing can be imagined) these are issues not being much addressed. Which is to say, that innovation of these and related forms is actively being enacted and effected throughout our higher education systems, largely outside the conventional policy frameworks. Which, to continue this line, seems to be a guarantee that the conventional institutional systems of higher education—the legacy systems if you will—are soon to shocked by even more massive and far-reaching patterns of innovation and change with the inevitable consequence that many will not survive the challenges presented.

My argument is that at the policy level we need to institute a kind of future thinking that is sufficiently informed, robust and institutionally situated by which we can early identify these kinds of changes and assess their possible/probable impacts on our existing institutions. Such an endeavor will provide us with a set of policy tools from which to began a necessary assessment of the relevance and value of such innovations for the social functions historically associated with higher education. At the margins of this imagined project we need to begin a broader assessment of how many of such functions are coming to be performed by other institutions within the knowledge society.

Part Four: Welcoming Big Data

I suggest in the foregoing that MOOCs and many of the other phenomena touched on in the changing ecology of higher education inventory presented above are themselves highly transitory. [3]MOOCs, as it were, grew out of the dramatic previous innovations of on-line education which over two or more decades had become institutionalized both within traditional HEIs as well as serving as platforms for entirely new ones. As many have suggested in relation to the changing dynamics of the information and knowledge society—and of contemporary globalization itself—change as a social phenomenon has both speeded up and changed (Harvey 1990). One consequence of this is that in many ways our institutional patterns of adaptation may become ever more dysfunctional. This, I am suggesting, is in large part what is happening throughout the disruption movement

Our very institutions of higher education, on the whole, are increasingly out of sync with the change patterns of information and knowledge transformation. As Ken Robinson puts it in his brilliant video on the changing paradigms of education, our institutions had their establishment in the historical enlightenment, gained much of their current form within the industrial revolution, and have been slow to change beyond the painful but necessary structural adaptations documented by Trow from elite to mass to universal institutions. (Robinson, 2012; Trow 1976).

MOOCs and much of the rest of the disrupting movement have grown out of this increasingly dysfunctional relationship between older institutional forms, emergent societal needs and the intervening forces of knowledge society transformation. In some respects every major innovation in knowledge technology adds to the "transformational burden" of higher education. (See for example Kim 2012).

Big Data presents a framework for an entirely new set of disruptions and innovations. Big data—the ability to gather literally untold amounts of information and process it for increasingly fine and distinct tasks—has over the past few years moved out of the laboratory and demonstration stages in a variety of fields, from genetic engineering to data mining by the National Security Agency to Amazon.com. So prevalent has this approach to data become throughout society that in early September 2013, a new website, AbouttheData.com was announced with the specific purpose of permitting individuals to collate and view consumer relevant information that a host of social entities has gathered on *them* (Singer, 2013)*.* (AbouttheData's tag line is: "Make the Data Work for You—Know what data says about you and how it is used.") These movements in Big Data, I would suggest, are individualizing the focus of a variety of applications in genuinely novel ways—promising that individual characteristics can increasingly be accommodated within knowledge applications in ways that significantly increase the direct benefits to individuals, defined by their own unique qualifications and attributes.

One rapidly growing application of these activities is within a subfield becoming identified as "individual medicine", an effort to utilize the vast increases in knowledge about the human genome and DNA to tailor medical applications for discrete individuals. A recent book on the subject by Tim O'Reilly and his colleagues (2012) carries the title: How Data Science is Transforming Health Care: Solving the Wanamaker Dilemma. That dilemma attributed to the early 20th Century American department store magnate John Wanamaker was summarized by him as: "I know that half my advertising doesn't work. The problem is I don't know what half." This has been the dilemma of modern medicine throughout the vast range of its applications, particularly in pharmaceutical and surgical intervention, wherein probabilistic distributions of many complicating factors operating simultaneously impede the effectiveness of such interventions. Big Data science is seeking to develop highly individualized data files for individuals that allow such interventions to be targeted for their specific conditions within the constraints of their own genetic structure and conditions and with gradations of appropriate interventions. Current research is focused on the rapid processing of such massive data coupled with

analytic tools that can efficiently and accurately provide information both necessary and relevant to treatment (Schatz and Langmead, 2013; Rotella 2013).

The analogy with education, at all levels, is lurking just around the corner and beginning to develop both a face and a search for relevant business models. In this frame "individualized medicine" becomes "individualized education". The educational version of Wanamaker's Dilemma might be expressed as "I know what I am teaching, but I don't know what they are learning…despite our heroic efforts in developing ever more sophisticated assessment tools over the years. Parts of the construction of individualized education are already evident within the disruption movement from DIY education—face to face, on-line and blended—provided at any number of institutions to the development of badges and competency based education at the demonstration end. (See for example Leblanc, 2013.) Another thread stretches from the early work of Gardner and his colleagues in differential intelligences to the virtual explosion of research over the past two decades on the neurological correlates of learning, especially when focused on language learning (McLaughlin, et. al. 2004) and more recently in efforts to extend plasticity theory to assess the impacts of digital devices on learning in young children (Carr, 2011). Part of the analogous promise of big data as individualized learning lies in the ability to match up individual learning styles and intelligences, as determined by ever more sophisticated techniques and there by maximize learning outcomes at the individual level.

The business models for big data in higher education are already being experimented with by firms such as Educause (2012). It is not too far-fetched an idea to see that already existing web-based education structures such as I-tunes University or firms that are becoming increasingly sophisticated in big data explorations will now come to view higher education as an enormous market, largely still dominated by legacy institutions. When their capacity to produce, aggregate, transmit and conserve knowledge is linked to the potential markets of higher education and when it becomes tied to individualized big data, the already permeable and transformative paradigm of contemporary education may be shifted further. This has come to be reflected in recent large scale efforts to deliver k-12 curricula digitally, which gives the delivery firms great sway over curricular style and content, but equally, because of the nature of big data gathering and analysis, a significant first step into individual student assessment and all that may flow from that (Rich, 2014.)

Conclusion: So What?
A fundamental question to be asked of these higher education innovations is their degree of reach and their ultimate transformative effect. Like all of the innovations studied by Christensen and others, it is mindful to see that innovation within complex structures is a process. Some will succeed, and many will fail. Our research task, and the task without our own higher education institutions is to investigate and invest wisely without undue caution and to assess results with rigor. This task, common to responsible higher education practitioners and administrators everywhere has become. I

argue, more difficult by significant degrees within the transformative dynamics of the knowledge economy and in the context of contemporary globalization. When seeking to generalize from any single national experience, it is prudent to ask whether the phenomenon under examination are likely to be fore-runner of events and practices in other locales, or whether there are in effect outliers—interesting phenomenon for the moment but in the larger sweeps of time and space, ultimately more epiphenomenal than central.

The American examples alluded to above certainly are due this test. However, I would argue that in radically new ways the boundaries of innovation diffusion are themselves under rapid transformation, as the explosive growth of MOOCs suggests. To a remarkable degree, signaled by data such as the rapid growth of new HEIs, including global universities, and the range of elements that can be inventoried within the changing ecology, coupled with the dramatic growth of cross-border education, the frames of reference for higher education innovation are shifting. My plea is for the cooperative engagement of comparative research that can produce information and recommendations that assist all within the higher education policy process to attend the challenges represented by such innovation.

Appendix One:
Appendix: Bundles Characteristic of the Changing Ecology

<u>Characteristics of Learners</u>
1. Increasing diversity and demographic shifts (racial/ethnic, economic, country of origin, age, disability, veteran, and so on)
2. Extended life-span of learners (life-long learning)
3. Increasing numbers of non-degree seeking students
4. Greater student mobility from college to college
5. Academic readiness of students for college and university work
6. High technological affinity/dependency of students
7. Desire of students to have meaning and make a difference
8. Increasing numbers of working students (with implications for availability of time on task)

<u>Roles and Responsibilities of Faculty</u>
9. Unbundling traditional faculty roles of course design, instruction, grading, assessment, mentorship into separate discrete entities (e.g., the faculty member who teaches the course may not be the faculty member who designed the course)
10. Recasting instructors as guides of student learning
11. Increasing use of adjuncts, part time, and contingent faculty
12. Shifting power relationships between students and teachers
13. Disruption of traditional role of faculty as authority, content provider, distributor of knowledge

<u>Methods of Instruction and the Learning Process</u>
14. Increasing variety of instructional methods including virtual, hybrid, blended, customizable, personalized, self-paced, and so on
15. Growth of cross-disciplinary, cross-institutional, and transnational teaching
16. Increasing knowledge of how people learn; advances in the neuroscience of learning
17. Incorporation of differential learning styles
18. Using research based principles of learning in instruction (i.e., faculty members take into account students' prior knowledge of the subject matter; actively involve students in learning through engaged interactions and discourse; challenge students to meet high expectations; provide opportunities for practice, feedback and review; and help students generalize, apply and transfer what they have learned)
19. Increasing use of collaborative, collective learning inside and outside the classroom
20. Incorporation of mobile learning and social media

<u>Content and Focus of Instruction</u>
21. Greening the curriculum (sustainability, environmental awareness, etc.)
22. Internationalizing the curriculum and addressing global issues
23. Expanding service learning and internships
24. Increasing the emphasis on civic responsibility and civic engagement
25. Promoting undergraduate research

26. Incorporating digital literacy (visual information, new media, digital production, programming)
27. Re-mixing, re-using, re-purposing information

Pressures on Higher Education
28. Demand for evidence based outcomes of student learning
29. Demand for affordability
30. Demand for efficiency and cost control
31. Demand for portability of degrees and certificates
32. Public and politician/policy maker's poor perception of higher education
33. Changes in federal regulations and federal reach into colleges and universities
34. Criticisms of the liberal arts
35. Growth of profit/non-profit arrangements between universities and businesses; mergers, acquisitions, partnerships, conversions
36. Movement of historically non-educational entities into offering degrees (hospitals, theater groups, think tanks, film production companies, publishers, global internet companies, etc.)

Frameworks in Higher Education
37. Do It Yourself (DIY) models of education (creating own degree programs)
38. Massively Open Online Courses (MOOCs)
39. Competency based instruction
40. Partnerships with industry for workplace training and lifetime learning
41. Charter universities

Certification, Credentials, and Accreditation
42. Badges
43. Creating common definitions of a credential
44. Certifying prior learning (e.g., CAEL)
45. Integrating informal and formal learning within the accreditation process
46. Developing common standards across regions and common processes of accreditation

Policies and Metrics
47. Focus on productivity, return on investment, return on value
48. Focus on quality of life metrics
49. Assess impacts of private equity and for-profit education; review policies that govern partnering between non-profit and for-profit institutions
50. Shift more of the cost burden of higher education to business as education becomes more job market oriented
51. Promote the public good (increased value of higher education to individuals and society)

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[1] For full disclosure, I served as chair of a "Changing Ecology Task Force" the results of which triggered the organization of these concept papers and which accounted for much of the work that produced the dimensions of change used as an example within this section of the paper.

[2] Again, the rapidity with which MOOCs have "cycled through" parts of higher education is stunning. On the one hand, they have been eagerly welcomed into the curricula of some large scale teaching institutions—California State University San Jose partnering with Udacityf for example—and they have been quickly judged in various instances to be "seeking to adopt too much too soon" by others. In this regard see http://www.sjsu.edu/plus/ and Roscoria, 2013. 'As massively open online courses continue to gain traction, they're proving a disruptive force in higher education.
The traditional emphasis on in-person classes has brought universities to a price point that does not look sustainable, said Adrian Sannier, senior vice president of product for Pearson eCollege… With mounting student debt, consumers are looking for a lower cost education that they can access in a time and place that work with their hectic lives. And they expect to leave the university with a degree that prepares them for work.
But a general arts or science education is tough to transition into the work environment, said Stuart Bowness, co-founder and CEO of MediaCore..."Generally speaking, educational institutions of today are not training students for the environments in which they're being placed with work," Bowness said. "And what's really beginning to disrupt this is these massively open online courses." These courses allow working adults to learn new skills in small bites, equip them with skills they can use immediately and do not charge students. And when someone can take a course at no charge, Bowness said, it makes a traditional college education a tough sell…"Where institutions are really being challenged is how they add value over and above what a student could learn from a massively open online course," he said.

[3] One view of this issue may be gained from the presumption that as the current technology trajectory continues along its course, an increasing number of "crowd-involving" events will emerge within higher education. For example, if MOOC's then why not, for example MOORs—Massive Open Online Research (s), or MOOEs—Massive Open Online Experiments (Courses)? Once the technology is available, its application is (merely) a matter of introducing it into academic environments and testing to see whether others subscribe to it (Neubauer 2013).