

# Changing times in higher education viewed through the prism of the business model

Lloyd Armstrong

Emeritus Provost and Emeritus University Professor

University of Southern California

Lloyd@ChangingHigherEducation.com

Summary: The environment for higher education in the United States is changing rapidly. The effects of this changing environment will not be the same at all institutions, however. This article uses a business model approach to look at some of these environmental changes from a perspective that gives leaders tools to better understand how various changes might impact their own institutions, and how they might best respond to those impacts

## I. Change and more change in higher education

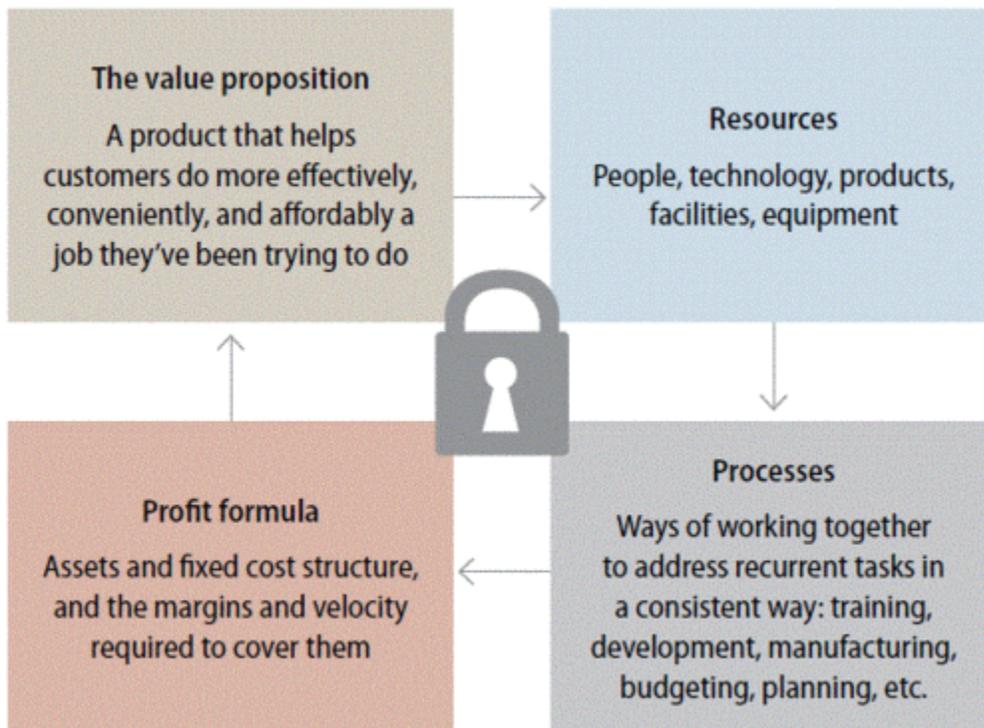
The world of higher education recently seems to be inundated by waves of change. We have had to learn a number of new nouns describing environmental changes, such as MOOCs, competency based degrees, prior learning assessment, adaptive learning, alternative credentials, and flipped classrooms, many with their own verb forms. The economic picture has been dominated by two recessions in the past decade, with an accompanying significant repositioning of the role of US in the world. Real family income has been flat or decreased over that period for the vast majority of families, and family wealth has taken a significant dip. As a result, the ever-increasing real costs of higher education have become ever more onerous. Not surprisingly, we have seen an almost unprecedented agreement between the Democratic and Republican leadership that real increases in tuition must stop, and noted the not-unrelated fact that student loan debt now exceeds \$1T, exceeding that for credit cards or automobiles. On the for-profit side of higher education, we have seen the “1<sup>st</sup> generation” companies get hit very hard by student recruiting and debt issues, but have also seen the rise of “2<sup>nd</sup> generation” companies such as University of the People, University Now and the Minerva Project that seek to provide a college degree much more cheaply than the 1<sup>st</sup> generation – sometimes for free. Other 2<sup>nd</sup> generation companies such as StraighterLine are focusing on some component of the undergraduate degree, typically the first 2 years, where they promise a much less expensive alternative to that offered in the non-profit sector.

Book publishers such as Pearson and McGraw are morphing into online course providers, using increasingly sophisticated pedagogical approaches to present courses based on the materials provided by the best professors in the country. Adaptive learning is joining with big data to enable personalized approaches to education. Knewton, a leader in this field, is playing a major role in the growth of ASU Online. Recently, Pearson partnered with Knewton in order to give a major boost to the pedagogical effectiveness of its own online courses. All of this has led various observers to predict tsunamis, tipping points, crises, and/or disruptions for higher education.

Is there a way that one can begin to look at all of these elements in a step-by-step way in order to see how they might impact a specific type of institution? The business model of higher education may be the best place to start, and the first step toward doing that is to look at characteristics of business models in general.

## II. Business model

The following description of the elements of a business model is a truncated version of the excellent discussion in Disrupting College, by Clayton Christensen, Michael Horn, Louis Caldera and Louis Soares (CHCS). (Clayton M. Christensen, 2011)



This picture emphasizes that there are four key components of a business model, and that all of these components must fit together in an interdependent

way in order for the model to be viable. As anyone who has watched a start-up grow knows, it is very difficult to balance all of these components in a successful way. Often, once the company has assembled the resources needed to make their desired product, and defined the processes by which these resources will be used to create the product, the profit formula shows that the product can't be made for the price the customer demands, or perhaps the customers don't want to buy as many units as the company needs to sell for break-even. In any case, the start-up typically has to cycle through many changes in details of the interlocking components before finding just the right combination that works. The lock on the picture emphasizes that once this equilibrium has been reached, no one component can be changed without causing changes in the other components. Stability in all parts of the model therefore quickly becomes a virtue. Thus, higher education's well known aversion to major change is not a unique characteristic of the field, but simply a natural occurring characteristic of a business model that has found a successful equilibrium.

There obviously are countless possible business models that differ from each other in the ways in which these components are realized and put together. However, CHCS point out that there are only three generic types of business models: solution shops, value-adding process businesses, and facilitated user networks.

*Solution shops* describe organizations that focus on diagnosing and solving unstructured problems. Value depends on intuitive and analytic expertise of employees, and revenue model is typically fee-for-service.

*Value-adding process businesses* have as inputs things that are incomplete or broken, and change them into outputs of higher value, typically using rather repetitive processes. Because of the relatively repetitive nature of the model, value tends to be driven by process and equipment. Revenue model typically is based on charge for an output rather than cost of inputs

*Facilitated user networks* facilitate the ability of participants to exchange things with each other. Value comes from linking participants and mediating the process. Revenue model typically fee for membership or for use.

CHCS describe some of the important characteristics that differentiate these generic types; a more complete discussion can be found in Stabell and Fjeldstad (Fjeldstad & Stabell, 1998)

Most of the research done in universities and colleges closely follows the solution shop model. Teaching can easily be understood as a value-adding process in which faculty guide students through exercises that increases the student's fund of knowledge and skills. Indeed, this growth of knowledge is usually carried out in

a process-laden manner, with semesters, grades, degree requirements, regular exams, etc. Student social growth is largely organized around facilitated peer interactions in residence halls, clubs, student government, athletics, etc. More recently, there increasingly are elements of the teaching function that also can be described as facilitated user networks, e.g. flipped classrooms and online discussion groups. Thus most higher education institutions are actually running a mixture of all three different generic business models simultaneously. This has significant implications for the cost structure for most of higher education. More on this in the section V.d on Profit Formula.

### III. “The” business model for higher education

Looking at “the” value proposition of higher education, one recognizes immediately that there are in reality many value propositions. Different students are hiring higher education to do different jobs, e.g. education that does not interfere with full time work, a residential experience with the associated social growth, a high brand-value certificate that will facilitate entry into upper level jobs, or added skills needed for job advancement. In addition, on a typical campus, students seeking undergraduate, professional and Ph.D. degrees each are hiring education to do very different jobs. To further complicate matters, many higher education institutions also emphasize research to one degree or another and the value proposition for research at a research university is greatly different from that at a college. Thus there is a broad spectrum of value propositions at play in higher education, and these different value propositions will force different ways to resource, produce and pay for that value, i.e. quite different realizations of the business model. In this article we will focus primarily on the business models related to the undergraduate teaching component of our institutions.

### IV. How can business models evolve – evolution vs. revolution, or sustaining vs. disruptive

The business model describes the balance of resources and processes needed to produce a viable profit formula for the creation of a particular product that has value to some set of consumers. Two organizations, e.g. Saks and Target, which share the same generic type of business model (value added process in this case), can choose to offer very different value propositions, and therefore utilize very different resources and procedures to achieve their different profit formulas. In principle, it would seem that one of these organizations could decide that it wanted to incrementally morph its business model into that of the other organization. In practice, however, it turns out that it is almost impossible to incrementally change one successful business model into another that is significantly different – almost a universal law of business.

Christensen’s work has identified two powerful reasons underlying such a quasi-law. The first has to do with the mindset of the workforce, top to bottom, in a

successful company. Almost everyone in a leadership role in the company owes their position in significant degree to a deep commitment to the mission of the company as reflected in the value proposition of its products. That value proposition defines “product excellence” for all employees, and the resources and procedures used to create that product define inputs that are necessary to achieve that excellence. Therefore, any significant change in any box in the business model describes a potential retreat from excellence. Consequently, the changes that are most likely to occur, are those that increase excellence in the value proposition in a recognizable way – essentially “even more of the same”, or lower the cost of production without significantly changing the value proposition. In fact, adoption of new developments in resources and processes (e.g. improved technology and the process changes enabled by that technology improvement) that lead to recognizable change are very common; they are a normal part of the competitive process to attract the best paying customers. Similarly, changes that make a company look more like the market leaders are common. In higher education, for example, we see community colleges becoming colleges that offer bachelor’s degrees, and colleges offering graduate programs in order to become universities. Such innovations are called “sustaining”.

The second barrier to major change is purely economic. Sustaining innovations typically either improve the value proposition, thus attracting a more discerning customer who is prepared to pay more for the improved product, or lower the cost of production of the product. Either way, there is more profit created. Changes that lead to a significantly different value proposition are almost certainly going to lead to suboptimal balancing of the different elements of the business model for an extended period of time – in other words, a decrease in profit. Of course, in non-profit higher education, “profit” is reinvested into reputation-improving changes. Thus a lowering of profit is as undesirable in the non-profit world as it is in the for-profit world. The wise executive in both cases will almost always choose the increase in profit (or reputation).

In higher education, there is yet another barrier to significant change: accreditation. Accreditation is an industry-wide process defined and enforced by people who believe strongly in the definitions of excellence contained in the set of existing value propositions; the goal of the process is to assure that business model changes in higher education are sustaining and serve to increase performance along the existing definitions of excellence. Because there are so few measures of actual quality of outcomes in higher education, this naturally leads to considerable regulation of the resources and processes traditionally required to create such excellence.

Sustaining innovations have a risk, however. Customers who are best served by a product with lower “excellence” find that they are increasingly paying for

components of the value proposition that they do not desire. These customers are “over served” by the increasingly excellent product, and may seek a different, “less excellent” product whose different value proposition better reflects their own needs. For example, in the traditional higher education sector that emphasizes the interlocking missions of teaching, research, and student growth, older learners and part-time learners are over served because their use of the research and student growth components is limited.<sup>i</sup> An unfortunate consequence of this (especially in the higher education context) is that those who are highly personally invested in the model of excellence defined by the dominant value proposition are very likely to view those customers who choose a different value proposition as having made a serious mistake; much of accreditation is designed to help prevent such “mistakes” from occurring.

As the size of the over served community grows, entrepreneurs will seek to create new products with value propositions that better meet the restricted needs of that community. Often this is done by utilizing some newly developed resource or process to build a business model that optimizes the power of that resource or process. Because of this optimization, the resulting product will be cheaper than the traditional product that it replaces, and often has some additional aspects that are a direct consequence of the characteristics of the new resource. For example, Western Governors University and StraighterLine both were created to serve students overserved by traditional higher education. Both are organized around new resources such as generally available online courses and new processes such as competency based education. These new models create value propositions that include enabling students to move at their convenience and own pace, leverage academic knowledge gained in non-academic sources to move more rapidly, and get an education that is much less expensive than possible using most competing traditional approaches. In the course of time, such new products will themselves undergo sustaining innovations that improve their new value propositions. At some point, some of these improving new products may begin to appeal to a larger and larger fraction of the customers of the original product, who then switch allegiance to the new product – and to its new value proposition. Thus, it is possible that the first-two year model of StraighterLine will grow rapidly in educational quality because of continuing advances in online offerings, and that accreditation changes and acceptance of competency based education will make a credential from StraighterLine a reasonable guarantor of transfer credit for an ever-widening set of traditional institutions. All of this could result in increasing numbers of students being attracted by StraighterLine’s value propositions, which in turn would lead to traditional institutions losing enrollment in the general education courses that often provide the “profit” that allows smaller upper division classes. At this point, the new resource and its optimized business model have led to a disruption of the traditional market – a disruptive innovation.

Of course, the traditional producer also may have identified the newly developed resource as important, and set out to use it. However, as pointed out above, the new resource would almost certainly be utilized by the traditional producer in a sustaining way that created minimal change in the existing successful business model. As such, the power of the new resource would not be optimized, and the value proposition of the traditional product would be changed minimally.

## V. Challenges to the higher education business model

There are always challenges to any business model. All four components of the model are constantly being subjected to environmental changes. The value proposition of customers is constantly evolving, potentially useful new resources and processes are always appearing, and the economic conditions in which the business is embedded are likely to be unstable. The challenge for administrators is to understand how robust their specific business models are to these challenges. Which parts in their business model are able to withstand significant challenge with minor reaction, and which are precariously balanced around the *status quo*? In this section, I will look at a few of the current challenges to the four boxes of the higher education business model.

### a. The Value Proposition:

There are enormous changes in job markets produced by globalization and technology. Entire job categories are disappearing over relatively short time periods, and many of these are categories that until recently seemed safe because of the high degree of education required. At the same time, a college degree now costs as much as a pretty nice house in most geographic regions. Not surprisingly, customers – government, parents, and students – are placing an increasing value on an education that equips the graduate to find employment in these shifting markets, and, in particular, employment that provides a reasonable return on the investment made in the degree. This shifting value metric is leading to increasing demands from all interested parties that higher education provide evidence of the quality, pertinence, and value of the educational products that it sells. The comfortable days of "trust us, we are the experts" are rapidly fading.

Unfortunately, most available data indicate that we don't teach very well many of the things we claim to be teaching<sup>ii</sup>. In addition, there has been very little discussion and analysis of how educating students to prepare them to succeed in the future may differ from educating them for success in the past. Thus responding to this changing value proposition could put a great deal of pressure on many components of our present business models.

Another related change in value propositions is the increasing need for high quality continuing professional development. This is a demand coming from working adults who desire “just in time” education that is closely attuned to actual job opportunities and requirements. The demand may be for degree completion, a graduate degree, a certificate, or simply a single targeted course. Convenience and flexibility are highly valued, as is actual (rather than academic) pertinence.

b. Resources:

Until recently, creation and teaching of courses and programs were rightfully relegated to the Process part of the business model. In order to get courses created and taught, one needed a specific Resource: faculty members. One might say that courses were a scarce commodity, created on demand. Over the past few years, however, that situation has changed dramatically: We now live in a course-rich world: Textbook companies such as McGraw-Hill and Pearson have become major online course producers, and even degree-program producers. The internet is filled with free open source courses (e.g. The Open Courseware Consortium); the explosion of MOOCs<sup>iii</sup> with their high-brand providers adds a dramatic level of free or almost free courseware; and organizations such as the Khan Academy and the Saylor Foundation produce courses as part of a larger goal of almost free college education.

This enormous new availability of off-the-shelf courses, many of very high quality, actually signals the creation of a new Resource for higher education. Courses no longer must be created and taught using the traditional Resource/Process combination. The increased flexibility that this brings in how Resources and Processes are structured can be utilized by higher education institutions in ways that range from sustaining to disruptive for existing business models. However, an equally important consequence of this new availability of courses is that learners are freed from the necessity of going to a traditional college in order to have access to college-level courses. This creates numerous challenges to existing business models, and opens up opportunities for new, disruptive competitors.

Obviously, and appropriately, this new resource will impact different classes of business models differently.

c. Process:

Process in higher education currently is constrained and driven by traditional requirements for credentialing. These requirements are organized around measurements of student seat time required to get academic credit, and number of credits required to get a certificate or degree. These requirements are major drivers of infrastructure and staffing levels, and the associated time requirements for certification give a level of predictability to the profit formula. However, the rising acceptance of competency based education and prior learning assessment

greatly changes this key organizational principle of Process. Competency based education depends on a demonstration of competencies that have been defined by experts in a field. Students advance when they can demonstrate those competencies, no matter how, when, and where they learned them. Similarly, prior learning assessment evaluates college-equivalent knowledge gained through such activities as workplace training. These approaches obviously greatly increase the ways in which the new Resource of off-the-shelf courses can be utilized.

Competency based education and prior learning assessment remove "time" from the definition of a credential, and changes the way we look at transfer credits, etc. It also turns attention away from the "inputs" view of quality of education, to a direct focus on "outputs". One of the important efforts in this domain is The Lumina Foundation's Degree Qualifications Profile, which is bringing the competency insights of the European Bologna Process to bear on defining competencies required for many degree programs. ACE has been a leader in developing prior learning assessment. Competency based education and prior learning assessment certainly will impact different classes of educational business models differently, but is likely to have some effect on almost all.

The rise of alternative credentialing e.g. badges and certificates of competency creates a new aspect of process. Combined with the new resource of courses discussed above, this could present a major challenge to many traditional business models.

d. Profit Formula:

The challenge to the current higher education profit formula is simply high and rapidly rising costs, and increasing difficulties of society- both individuals and state and national governments- in paying these -increasing costs.<sup>iv</sup> Real family income has been remarkably flat over more than 30 years for 80% of families<sup>v</sup>, and published real prices of higher education have risen at a compound rate of well more than 3.5 % annually over that period<sup>vi</sup>. Student loans are increasing rapidly (now over \$1T) as a way to bridge the widening gap between family income and price of higher education.

As Herbert Stein's Law says, "If something can't go on forever, it will stop", and there are clear warning signs that the ability of higher education to raise its prices much faster than inflation may be about to end. Both major presidential candidates in the most recent election said it must stop now, and the winning candidate is moving forward with ambitious efforts to fulfill his promises in this matter. It is obvious that societal tolerance for the ever increasing price of higher education, and its ability to continue to meet that price, is rapidly disappearing. This means that the current Profit Formula, which depends on

3%/year real price increases, is very likely to be unsustainable for most institutions. Unfortunately, for traditional non-profit higher education, cost=price<sup>vii</sup>. Thus 3% real annual increases in cost are built firmly into the current business model.

CHCS present an excellent analysis of some of the institutional changes likely to be required in order to significantly lower costs and restrain annual cost increases. At issue are not only key aspects of the individual business models themselves, but also the common institutional organization that simultaneously operates multiple business models of research, teaching, and social growth. CHCS point out that when an organization runs different generic business models simultaneously, a very high overhead is incurred. That is, the overheads of the whole are many times higher than the sum of the overheads that would be incurred if the different generic business models were being run independently. Part of the reason for this increased overhead is that each of the business models is being optimized within a set of constraints that rise from the simultaneous operation of them all. As a consequence, each individual business model is suboptimized both in quality of output and in cost efficiency compared to its optimal stand-alone performance. In addition, when running several business models simultaneously, there is great opportunity for cost shifting from one component to another when the organization wants to discreetly cross subsidize activities. It thus becomes very difficult, if not impossible, for customers to understand exactly what they are paying for<sup>viii</sup>. Of course, operating these multiple business models simultaneously is for many institutions part of their mission and value proposition.

CHCS also point out that a prime driver of the rapidly increasing cost of higher education is sustaining innovation, and that the 3% annual growth in real costs are similar to the cost growth due to sustaining innovation seen in other industries where there are no economies of scale. That is, annual increases in unit price (i.e. tuition) basically can only be held in check if the naturally occurring overall cost increases are spread over a growing sales base (i.e. larger enrollment) in a way that has economies of scale. Of course, most of higher education currently has few ways of expanding enrollment with economies of scale, and much of higher education gains its prestige from exclusion of potential customers, not inclusion. As a consequence, dealing with this issue will require changes in most aspects of the business model

Thus, as might be expected, a significant perturbation to the Profit Formula can put the entire business model at risk (it's always about the money!).

## VI. Challenge vs. opportunity

The ways in which these new pressures on any one component of a higher education business model will propagate around the model will depend critically on the specifics of the individual model. However, one interesting general asymmetry stands out. The environmental shifts in the Value Proposition and the Profit Formula create challenges for established providers who must respond to those shifts, and the changes in Resources and Processes provide those same providers new opportunities to rebalance their models through sustaining innovations or to remake them through disruptive innovations.

This observation suggests that the components that hold the key to understanding the robustness of a business model of an existing institution are the Value Proposition and the Profit Formula. For very robust models, change to these components can likely be handled by sustaining innovations in the Resource and Process components. As the degree of robustness of these components decreases, however, responses with mixtures of sustaining and disruptive innovations in Resource and Process will likely be required.

#### a. Robustness of The Value Proposition

Each institution has its own individual Value Proposition that reflects why its students choose it over its competitors. This is obviously a complicated relationship, and it is not trivial to evaluate how robust it will prove to be in the face of changing societal pressures. One approach to making this evaluation is to start with a step up in abstraction, and look at the overarching way that value is currently determined in higher education institutions.

Higher education is often used by economists as an example of a *credence good* – one whose utility impact is difficult to determine by the consumer in advance of consumption, and remains difficult to determine even after consumption. Thus, in higher education, very little data exist describing what is actually learned and the benefits the consumer derives from the learning. Since little information exists on the primary product, education, value tends to be based on surrogates. One of the primary surrogates for quality and value in education is the relatively easily measured research output of the faculty (thus greatly complicating the issue of decoupling the research and education business models!). Other surrogates include expensive, up to date facilities, extensive student extracurricular activities, and the breadth of the curriculum. As often happens for credence goods, price becomes a surrogate for quality, as is the number of applicants rejected. And, of course, age of the institution is a powerful surrogate – centuries are best!

Use of these surrogates has created a complex hierarchy of perceived quality (call it brand) in higher education. There is, of course, a continuum of brand strength to be found amongst the thousands of accredited institutions that make up the universe of higher education in the United States, but only a few hundred

institutions (at most) have created widely recognized brands. Whatever the current strength of the brand, however, it is primarily a *credence brand*, based on surrogates rather than direct information of value of the educational product.<sup>ix</sup>

It is in this context that the emerging value propositions must be considered. The new push for outcomes information is an effort to make higher education more like what economists call a *search good* – one where the utility of the product can be evaluated before it is consumed. This obviously enables direct comparisons of products and leads to increased competition. Of course, it is clear to everyone who is directly involved that higher education could never completely be transformed into a search good. Many of the benefits of a college experience, especially those that appear over the longer term, are so intertwined with the characteristics of the individual student and subsequent life experiences that they cannot be isolated and measured. However, there certainly are many shorter term outcomes that can be measured that are not currently measured in a meaningful way – such as those outcomes that we currently happily assign a letter grade to without defining in any useful way the learning that the grade represents. As a result, the emerging value proposition will likely contain elements of a credence brand primarily based on surrogates, and a new *search brand* that is based on outcomes of the educational product that can be measured.<sup>x</sup>

In order to begin to see what this evolving value proposition might mean for an individual institution, it is important to recognize that the current credence-based value proposition actually implicitly contains expectations of educational outcomes in both the areas that could be measured at graduation (e.g. levels of critical thinking, subject matter knowledge, ability to get a job on graduation) and those that are very difficult, if not impossible to measure at graduation because they depend on how the education interacts with future life experiences (e.g. ability to function as a citizen, satisfaction with life and work experiences, success) . Thus, some portion of the current credence brand of each institution will be transformed into a search brand by the outcomes component of this changing value proposition. Consequently, in the first instance, the creation of the search component of value will challenge every institution to show that it actually performs in those measurable areas at the level that it now implicitly suggests.

Beyond that, the robustness of an institution's current value proposition is likely to depend on several factors. One can argue that one of the most critical factors will be the relative importance in its current value proposition of the shorter term potentially measurable educational areas to that of the longer term unmeasurable ones. If one thinks of the current brand distribution in higher education in terms of these parameters, a reasonable observation is that the currently highly recognized credence brands actually promise the most in the longer term,

unmeasurable aspects of higher education, and that the ratio of unmeasurable to measurable outcomes decreases as the current credence brand decreases. For example, Harvard's brand might be described as opening up unequalled lifetime opportunities for its graduates (an unmeasurable claim), while a community college prepares students for their next job (a measurable claim). If this argument is correct, it is unlikely that the newer search brand will have a major impact on current value propositions for the institutions with the highest credence brand since students pick those institutions for factors that are primarily unmeasurable. At the other extreme, the potential impact of a search brand on an institution whose credence brand is very low will probably be very significant. In this case, almost the entire brand is due to components that can be measured, a condition that can lead to commodification of product, and competition-driven falling prices.

For the majority of institutions in between the extremes, both brands will have significance in determining the value proposition. All institutions belong to some peer group(s) whose members compete for roughly the same students. The new search component will make direct comparisons on many outcomes possible within the peer group, thus increasing competitive pressures and leading to changing institutional competitive positions. The best response to increased competition is often increased focus and differentiation. Increased focus and differentiation set an institution's mission somewhat apart from the other members of its peer group and enable it to improve outcomes in the areas of focus through prioritized spending.

One can also consider the potential impact of non-traditional players (e.g. University of Phoenix, University Now, StraighterLine) in the higher education market using this same perspective. This group of institutions typically has, or is developing, brands that consist primarily of a search component and relatively little credence component. This is because most of them utilize business models designed to maximize the power and efficiency of the new Resources and Processes described above. As a result, their business models generally only weakly involve many of the traditional Resource and Process surrogates (e.g. number and research output of faculty, resources per student) that define the credence brand. It is not surprising, therefore, that members of this group have generally been strong supporters of outcomes measures in higher education: many of them believe that they will be able to demonstrate better learning outcomes than many more traditional providers – that they will be winners in the search component of brand. Thus, as the search component of brand becomes better defined, these institutions increasingly will be directly competing with traditional institutions that have brands that are based primarily on their search component, but less so with traditional institutions that depend more on the credence component of their brand.

b. Robustness of the Profit Formula.

The robustness of the higher education institution's profit formula is tied to the resiliency and stability of its traditional sources of unrestricted income and an ability to manage the institution in a way that keeps costs within an appropriate range.

Tuition usually provides the largest part of the total unrestricted income. This income flow usually is considered to be robust if there is large and growing reserve demand in admissions that is associated with a flat or decreasing tuition discount rate. These same conditions generally mean that tuition can be raised relatively effortlessly. Endowment income and gifts typically provide another large component of total income. Endowment size is the obvious indicator of stability in this component, with a strong gift history being another positive. Other large income items in the total institutional budget such as research funding or medical facilities income provide primarily restricted income, and will seldom if ever have a net positive influence on unrestricted income. Extended weakness in either of these streams can have a significant negative impact however, because there are many fixed costs associated with these functions that may have to be met through unrestricted funds if external funding weakens. Thus for institutions that incorporate either healthcare or research, strong competitive positions in these areas are supportive of a robust institution-wide Profit Formula, and weak competitive positions lessen its resiliency.

Unfortunately, the past few years have not been kind to many college endowments, and many economists are predicting that market gains in the future will be well below those seen for the past few decades. Thus the potential contributions of endowment to the robustness of the Profit Formula may be less in the future for most institutions than would have been predicted by extrapolating the financial data pre-2000.

As discussed in Section V.a. there are considerable societal and governmental pressures to limit the ability of institutions to raise real tuition significantly annually. Since tuition is generally by far the largest contributor to unrestricted funds, any such limitation would create a very significant drop in expected revenues for future years – expectations that are built into the current business model. Because of the large relative contribution for most institutions of tuition to unrestricted funds, it would be extremely difficult these institutions to increase income from other, smaller traditional sources, e.g. gifts or endowment, sufficiently to replace lost anticipated tuition.

Two broad responses to such a continuing drop in revenues are likely. The first is to increase tuition income by increasing the number of students without increasing costs in a proportional way. Online learning is often mentioned as a way to do this, but it is not the only way<sup>xi</sup>. The second response is to lower costs for the existing programs. CHCS describe some of the changes that would need to be considered if it is necessary to lower costs in a really meaningful way. Of

particular importance is the finding of CHCS that operating multiple categories of generic business models simultaneously – e.g. teaching, research and student growth – greatly increases overhead costs. Thus, if costs must be significantly reduced, CHCS’s results suggest that these generic business models must be disentangled and separated, leading to considerable change in the overall institutional business model. Such separation also would enable optimization of the individual business models, most likely leading to improved outcomes. Improved outcomes in the teaching components would, of course, be important in meeting the challenges to the Value Proposition described above.<sup>xii</sup>

Thus, either of these responses will entail changes in the business model. The magnitude of change required will depend on the robustness of the current Profit Formula – how much of the resource shortfall can be made up by tweaking the existing revenue streams.

## VII. Next Steps: Challenges and Opportunities

No one knows how the business model challenges described above will play out, or what new, unexpected challenges will appear in the future. However, the institution that understands the strengths and weaknesses of its own Value Proposition and Profit Formula will be well positioned to address present and future business model challenges. Recommendations regarding next steps follow from the preceding analysis of business models.

### a. Value Proposition.

Institutions should understand the implicit promises that are contained in their current Value Propositions. Those implicit promises that are testable are likely to soon be tested publicly as a result of the changing Value Proposition. Examples might be “value added” measures of critical thinking, communication, and common aspects of subject matter knowledge, or perhaps career-related claims such as “we train students to enter the world of international finance”. The obvious question to be asked is “how are we actually performing in these areas?” Administrators should focus on getting answers to this question that are based on data, rather than opinion. If improvement is needed, then the Value Proposition is not robust in this dimension, and should be shored up by changes in programs that lead to improved outcomes.

As discussed above, one of the great cost drivers for institutions is the coupling of research and teaching. In cases where significant control of costs is necessary, this relationship will have to be scrutinized and perhaps modified. Consequently, for those institutions that place some emphasis on having research active faculty, it is important to understand how and if that research activity actually contributes to the Value Proposition – from the perspective of the student (the customer), not the faculty (the provider)<sup>xiii</sup>. Does the research activity actually contribute significantly to the education of the students, or is its

presence a consequence of some “up scaling” sustaining innovation that has resulted in the students being overserved? Again, answers based on data rather than opinions are critically important.

In addition, a growing segment of the public is focusing on the relevancy of higher education to employment, with an associated lowered emphasis on the traditional cultural benefits of liberal education. Admission offices need to evaluate how this changing emphasis might change student demand for the current Value Proposition of the institution. If they find that the Value Proposition is not robust in this dimension, this may well call for programmatic change as well.

Finally, increased focus enables institutions to differentiate themselves from competitors, accelerate growth of excellence in areas of focus, and potentially lower costs by decreasing organizational complexity. Does your institution have characteristics that would enable it to strengthen its Value Proposition by focusing its efforts? Are you lowering your ability to respond to change by trying to be too many things to too many people?

#### b. Profit Formula

A simple but very effective way to test the robustness of the Profit Formula is to create five-year budgets based on the current year budget, and see what happens in the out years under different scenarios of change in net tuition, staff composition and salaries, size of student body, non-sponsored research expenditures, endowment payout, etc. This will quickly identify the impact of a possible limitation on annual real growth in tuition or other potential income shocks, and serve as a test bed for remedial actions.

#### c. Resources and Processes

Recent developments discussed above in these two inter-related parts of the business model provide new opportunities to meet the challenges identified in the Value Proposition and Profit Formula. Many institutions will find these challenges to be small enough that they are able to use the new resources (e.g. off-the-shelf courses) and processes (e.g. prior learning assessment) in totally sustaining ways to improve their cost and effectiveness, while others will find they need an approach that is more disruptive in order to meet their challenges. In either case, institutions will benefit from thinking very creatively about how they might use these new opportunities to improve themselves.

As has been pointed out by Christensen and others, however, it is often very difficult to get the desired “blue sky”, innovative thinking from a group that is embedded in the status quo. Thus, formation of a small group empowered to think outside of the constraints of what is and “should be”, but focused on the realities of the problems that must be addressed is important. This group could

later provide the core of a team charged to implement the needed changes.<sup>xiv</sup> MIT seems to be doing this, first through projects OpenCourseWare and then MITx. The first began to explore aspects of massive online education, and the second greatly increases the pedagogical sophistication of the online programs. Most importantly, MITx was explicitly set up to develop approaches and knowledge that could be used to redefine MIT residential education. Two recent reports describe results so far. (MIT, 2013) (MIT, 2014)

## VIII Conclusion

The changing environment for higher education is exerting increasing pressure on many institutions of higher education. Change of some type is increasingly inevitable for most institutions. Understanding how the elements of the new and still evolving environment can be utilized best to create greater institutional effectiveness and stability is essential for the successful leader in turbulent times. The business model approach provides a powerful tool for understanding the nature of the environmental changes and the areas of organizational strength and weakness with respect to those changes. It also can suggest options for effective institutional response.

## ENDNOTES

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<sup>i</sup> Graduate students are another set of over served customers. They get no benefit from the expensive broad undergraduate curricular offerings, or the massive infrastructure of undergraduate social growth such as residence halls, clubs, and advisors. Yet graduate tuition is generally set to be roughly the same as undergraduate tuition (sometimes more) as universities allocate their fixed costs equally over the student body.

<sup>ii</sup> Derek Bok, (Bok, 2006) in *Our Underachieving Colleges*, nicely summarizes two decades of education research described by Ernest T Pascarella and Patrick T. Trenzini (Pascarella & Terenzini, 2005) in *How College Affects Students*. More recently, Richard Arum and Josipa Roksa (Arum & Roksa, 2010) took another approach which they described in *Academically Adrift: Limited Learning on College Campuses*.

<sup>iii</sup> The MOOCs are somewhat different from the other providers mentioned in this section. Most MOOCs have become a sort of educational global logistic service that, like UPS, helps providers (colleges) in every step of producing, selling, delivering, and servicing some of their products. And like UPS, quality control of the product is the responsibility of the producer, not the deliverer who drops the product off at your home or office. Thus much of the speculation about what MOOCs will or will not do to revolutionize higher education is misdirected because MOOCs are not developing as competing educational companies per se, but logistic companies. Consequently, their main impact is simply that they have made available an unprecedented number of online courses from major universities that can now be used by other existing colleges and start ups as tools in a process to improve or transform current educational practices.

<sup>iv</sup> The Delta Cost Project of the American Institutes for Research, a Delta Data Update 2000-2011(Desrochers & Hurlbert, 2014) presents relatively recent data on trends in college costs.

<sup>v</sup> US Census Bureau Historical Income Data, Table H3: Mean Household Income 1967-2012

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<sup>vi</sup> Trends in College Pricing 2014. (College Board, 2014) These data are for the “sticker price”. Actual price paid by the student is lower due to student financial aid, which increasingly includes loans. In most discussions of actual price, loans are simply lumped in with direct grants as lowering the price of college; no consideration of the actual cost to the student of repaying the loan with interest is included.

<sup>vii</sup> The equality of cost and price was famously stated by Howard Bowen in his book *Costs of Higher Education* (Bowen, 1980). His analysis, which has become known as Bowen’s Law, concludes “at any given time, the unit cost of education is determined by the amount of revenues currently available for education relative to enrollment. The statement is more than a **tautology**, as it expresses the fundamental fact that unit cost [i.e., the cost of education] is determined by hard dollars of revenue and only indirectly and distantly by considerations of need, technology, efficiency, and market wages and prices.”

<sup>viii</sup> A combination of this significant hidden cross subsidization and the fierce independence of higher education institutions that leads every institution to create its own idiosyncratic budget categories suggests that one needs to use some caution in using even such excellent efforts as the Delta Cost Project to make policy decisions.

<sup>ix</sup> College rankings such as US News and World Reports essentially formalize this relationship by weighing surrogates (resources, SAT scores, etc) to come up with a numerical ranking of brand

<sup>x</sup> It is clear that what is measurable and what is not measurable is not fixed in time, but will evolve. For example, measuring lifetime “success” would seem to be impossible. However, many individual components of “success” can be measured. For example, one could imagine that in the future a common institutional metric of the search component would be average lifetime earnings by major. Indeed, some researchers have already utilized IRS data to do studies comparing lifetime earnings of graduates from different institutions. Thus that component of success could move from the credence side to the search side over time.

<sup>xi</sup> The University of Phoenix showed pre-internet that it could achieve economies of scale by having satellite campuses housed in inexpensive rented space, located in places convenient to students, and using working professionals to teach courses.

<sup>xii</sup> Several recent articles have described improved learning outcomes obtained when research and teaching functions are separated, with non-tenure track instructors teaching courses. See, for example, D,N Figlio, M.O. Schapiro and K.B. Soter, NBER Working Paper No. 19406, Issued in September 2013; L. Deslauriers, E. Schelew and C. Wieman. Improved Learning in a Large-Enrollment Physics Class. *Science*, 13 May 2011: Vol. 332 no. 6031 pp. 862-864. This is an area of research that is just beginning to grow, so these results must be considered to be indicative of what is possible, but not definitive.

<sup>xiii</sup> This is a difficult question to answer, because higher education has insisted publicly for decades that this relationship has real value. Consequently, surveys of applicants will probably indicate that research activity contributes to their interest in the institution. That provides a rhetorical challenge that would have to be met if approaches change. However, the fundamental issue is the reality of the contribution in a specific institution.

<sup>xiv</sup> An informative analysis of how such a team should fit into the larger organization can be found in V.Govindarajan and C Trimble, *The Other Side of Innovation: Solving the Execution Challenge*, Harvard Business School Press, 2010.

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