

TRANSFORMATION THROUGH ONLINE LEARNING AND COMPETENCE BUILDING

Donald M. Norris and Paul Lefrere
Strategic Initiatives, Inc.

ABSTRACT

Learning enterprises in the United States need better tools to address several key challenges: 1) building the capacity of graduates to use their knowledge to achieve their career goals, thereby raising national productivity and competitiveness; 2) discovering the best course of action for learning enterprises in current circumstances and in changing conditions; and 3) stepping up to new challenges such as the Lumina Foundation's target of 60% of Americans graduating with high-value degrees, certificates or credentials.

To highlight key issues, we present a five-stage model of the evolution of learning and competence building technologies. This is grounded in examples of current practice and future possibility. It describes how leading-edge institutions and learning enterprises are using "expeditionary change" to evolve, innovate more nimbly and establish competitive advantage as they transform. Such changes will be essential to American higher education addressing affordability and establishing financial sustainability.

The five-stage model highlights how to use the organizational capacities developed to enable online learning as an instrument for transforming higher education. Until now, many leaders have failed to grasp the potential of orchestrating those capacities to systemically realign learning to the needs of the 21st Century knowledge economy and to adapt to new patterns of knowledge sharing. However, today's social networking, Web 2.0 and learning technologies are facilitating and accelerating transformations: in the production functions for learning, roles of faculty and mentors, business models, patterns and cadences of interactivity, use of open resources and the roles of independent, "free-range" learners. They are also empowering disruptive competitors and enabling closer links between learning, work, and competence.

Modern knowledge economies have an ever-greater need for individuals who perpetually fill emerging knowledge gaps, using continuous flows of fresh knowledge emerging from open innovation and open research as well as social network-based communities. Traditional knowledge paths and practices leading to certificates and degrees are important for basic learning and socialization of lifelong learners. But they are inadequate to dealing with knowledge gaps and flows at the pace and scale required. By themselves they are not the route to institutional sustainability or to the creation of large numbers of attractive and graduate-level jobs in new areas. **We are preparing further papers on those issues; to be included in our mailing list, contact dmn@strategicinitiatives.com.**

KEYWORDS

Distance Education, Online Education, Blended (Hybrid) Education, Higher Education, Mash-ups, Disintermediation, Self-directed Learning, Knowledge Gaps, Knowledge Flows, Knowledge Paths, Knowledge Society, Innovation, Entrepreneurship, Open Educational Resources, Open Innovation, Organizational Transformation, Expeditionary Planning, Success Making.

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INTRODUCTION

Leading practitioners and policy makers now widely recognize that major changes are needed and possible in higher education, notably regarding its cost to learners and the benefits they derive from that investment. Institutions are finding their existing policies and strategies must be updated or replaced. In particular, they need stronger ways than are in common use today to determine their near-term and future competitiveness, to identify their best course of action in current circumstances and to increase their capacity to anticipate and cope with new challenges.

Further, leading practitioners are realizing that a good starting point to make those changes is to use the organizational capacities inherent in online, Web-enabled learning and competence building as a force for transformation. About fifteen years ago a number of seeds were sown regarding this. Examples include:

- *Transforming Higher Education: A Vision for Learning in the 21st Century* [1], which called for higher education to re-align, re-design, re-define and re-engineer itself to the needs of the Knowledge Economy, including closer linkage between work and learning and lower cost of competence-building;
- Baumol and Bateman wrote “How to Think About Rising College Costs,” in *Planning for Higher Education* [2], which suggested that higher education and health care needed to use technology to transform their practices and dramatically reduce costs – or risk becoming unaffordable for individuals or our nation;
- The Sloan Consortium was formed to advance online, asynchronous learning;
- Twigg and Heterick founded the National Learning Infrastructure Initiatives while at Educom, leading to pioneering work in leveraging technology to re-invent courses and change patterns of interaction, which grew through Pew Foundation Funding into widespread course re-design by the National Center for Academic Transformation [3]; and
- The Mosaic Internet browser and subsequent innovations were introduced, catalyzing the evolution of the World Wide Web, which has emerged as the instrument for so-called Web 2.0 applications,

Jumping to October 2009, the 15th Annual Meeting of the Sloan Consortium explored the state of best practice in online, blended, and e-learning. The progressive growth of online learning had been chronicled by Sloan’s Annual Survey. By extrapolating 2008 figures, Dr. Frank D. Mayadas, founder of the Sloan Consortium, projected that in 2009 well over four million students would be enrolled in at least one online course in the United States [4].

Present-day data shows that projection underestimated the true penetration of online practices. Many students are concurrently enrolled in blended and e-learning offerings at colleges and universities that are enthusiastically rolling out new e-learning offerings from coast to coast and beyond. In addition, course re-design on the Twigg model has led to many advances on individual campuses, where re-invention has both improved learner outcomes and reduced costs. But these proven and well-known techniques, and other techniques and insights that our clients use, have not been deployed universally, *systemically*. As Norris argued several some years ago in *The Encyclopedia of Distance Learning*, higher education institutions tend to set their sights too low in relation to the benefits to learners of online technologies and innovations. An example is the common focus on using e-technologies to digitize existing approaches to teaching, rather than exploring “...new experiences and value propositions that could be created for students, faculty, staff, and other stakeholders. Many institutions have failed to see e-learning infrastructures as part of emerging institutional and system-wide infrastructures that fuse academic and administrative processes, experiences, and value propositions. And many institutions have so far failed to create enterprise-wide strategies for leveraging these resources in new ways.” [5]

Sloan's emphasis has been on the mainstreaming of online learning, rather than on the larger goals that institutions must aim for if they are to prosper in the coming economy – namely, the transformational potential of online practices to deconstruct and re-invent educational practices and change the financial business model for higher education. Yet many of the market-driven (for-profit) providers have followed the suggestions of *Transforming Higher Education*, re-aligning and re-engineering their processes, changing business models, and re-shaping practice. They have become the innovative, demand-driven segment of the higher education marketplace. It is our contention that transformational potential is the real and lasting story about online learning and will be more widely achieved in the future.

FOLLOW THE LEADERS AND THE INNOVATORS

None of this is truly surprising to anyone familiar with the development of online and blended learning in U.S. higher education. Online and blended learning are broadly practiced, but are not sufficiently reflected upon, to identify and deploy broad-application insights that can lead to true breakthrough practices. Such transformations can have implications that go far beyond making savings at the course-level – including implications for national productivity, competitiveness and financial sustainability of institutions, job creation for graduates and raising students' employability.

Online, Blended and e-Learning, Broadly Practiced

Initially, most institutions use online learning to replicate their courses and curriculum practices in an online mode, making adjustments for the differences between the nature of online and face-to-face experiences. From this initial development phase, they progressively improve and enhance the online experience and discover the power that blended learning offers, combining online and physical elements to create more engaging student experiences. Blended learning has become the preferred mode for many practitioners, enabling institutions to reduce the need for classroom space and to change pedagogical practices. Finally, institutional leaders incorporate the lessons learned from online and blended offerings to further enhance all face-to-face instruction with technology resources and techniques that work. As a result, the balance shifts from face-to-face instruction to "e-learning." Institutional leaders leverage this range of technology-supported learning offerings to improve the efficiency and effectiveness of their offerings and to provide learners with a portfolio of choices. Offering a range of instructional choices is especially attractive to adult learners and students who are working (the most recent data from our key clients suggests that greater than 70% of full-time enrolled students are working at least part-time).

Breakthroughs by Market Leaders

Unlike emerging practice elsewhere in the world, the majority of U.S. practitioners have not attempted systematically and systemically to think about themselves as participants in a global Knowledge Society. Nor have they identified which parts of their activities rely on knowledge to which competitors also have access; which parts rely on internally-created knowledge; and in what ways they use that knowledge to create outcomes valued by their various audiences. These perspectives are necessary to identify ways to unbundle learning, assessment, and certification and re-invent faculty roles. Nor have they attempted to fundamentally change the business model or price points for learning. For these reasons, looking at the total U.S. population of online learning practitioners is less instructive than understanding the global leaders and extrapolating their innovations into the future, to highlight effects on U.S. competitiveness.

By examining the breakthroughs achieved in online learning by today's current or emerging market leaders, both in the US and abroad, we can better understand the real story about the potential future of technology-supported learning in all its settings and permutations. In this paper, we use the behavior of market leaders and trend-setters to sketch the likely evolutionary paths of online learning. We also describe how the vast number of mainstream practitioners can position themselves to take advantage of this evolution and for success while others, less well-prepared, face the withering competition to come.

WHY HAS ONLINE LEARNING BECOME EVEN MORE STRATEGIC?

Up to this point in its development, online learning has been waging a battle of acceptance with faculty, institutional leaders, and some students. Yet research has shown that online learning has progressively come to be regarded as equivalent or even superior in some ways to traditional, face-to-face learning, especially among 18- to 24-year-old and working adult learners and faculty who were early adopters.

The so-called Great Recession and the American Higher Education Affordability Crisis have raised the stakes for online learning not just in the US, but globally. The predictions voiced in *Transforming Higher Education* and “How to Think about Rising College Costs” have sadly come to pass: we cannot afford mass higher education using existing models, and students who take courses built on those models seem at increasing risk of gaining outmoded and low-value skills, so may not earn enough to repay their student loans. Transformed versions of online, blended and e-learning hold the potential to be essential elements of the re-imagining of American higher education, post recession, to make it more relevant to societal needs, sustainable worldwide and financially worthwhile for students too. Four factors make this so.

Addressing the American Affordability Crisis

Learners and parents are facing an affordability crisis of unprecedented proportions. In America, the cumulative effect of year-after-year escalating costs of tuition has outstripped the rate of inflation for 30 years running. Gradually American higher education is becoming a pricey if not unattainable proposition for many potential learners. The current recession, rising unemployment and collapse of the housing market have reduced the net worth of families and changed the educational plans of many learners.

Community colleges and for-profit educational providers have experienced explosive growth in demand in 2009-2010 as learners turn to more convenient, local, high-value, alternatives to mid-ranking public four-year institutions and private colleges. Some community colleges in especially strapped states like California have turned away legions of students this year. Truly transformed learning, using combinations of online, blended, and e-learning, has the potential to modernize course content cheaply and reduce the total cost of achieving competence objectives. They also could improve the economic prospects of learners by providing a range and mix of options that meet their personal and financial needs.

The pages of *The Chronicle of Higher Education* and *Inside Higher Education* are peppered with stories of community colleges, in particular, whose leaders are experimenting with increasingly transformative mixtures of solutions to these challenges.

Achieving Financial Sustainability Requires Transformation

The model for funding public institutions is broken, as has been reflected in the diminishing relative level of public support for education in general over the past three decades. Community colleges and other public four-year institutions typically experience their greatest enrollment demand at a time when state and local resources decline and jobs for college leavers are hardest to find. Transformed learning can change the business model so that the marginal cost of learning is consistently reduced to less than the price of tuition, allowing growth to meet demand, even during recession. Market leaders have already achieved this goal. This transformed learning must be matched by transformed content, suited to changes in the wider economy. In particular, content must do more to help students to apply what they learn (to bridge the “knowledge-action gap”), so that they can get a college-graduate-caliber job and add value in it. Post recession, all U.S. higher education needs to adopt and scale these practices.

Transformed Online Learning is a Part of Broader Institutional Strategies

Institutional leaders spent 2008 and 2009 “staunching the flow” of the resource impact of the Great Recession. They recognize that they must use 2010-2012 to aggressively leverage stimulus funding and discover not just efficiencies, but innovations and transformations that will make their courses more attractive to students and will enable them to achieve financial sustainability when the stimulus money is gone. Transformed online, blended and e-learning is one of a set of even broader institutional strategies to achieve financial sustainability that are mentioned in the white paper, “Linking Analytics to Lifting out of Recession.” [6]

Jobs, Jobs, Jobs

Not enough online courses make explicit the links between the content and methods of the course, the metaskills honed in the course (learning to learn) and the requirements of organizations that may hire graduates from that course. Faculty should give thought to this. One possible solution is to set up an online discussion space for current students to hear from students in a previous cohort. Another solution is to link students to professional communities, so that they can find out how to make themselves more employable. The general rule is that learning experiences must be more closely linked to active, immersive application and to the future workplace. The capacity to perpetually enhance competences and meta-skills to maintain or raise competitiveness is enhanced with online learning and Web 2.0 tools and patterns of interactivity. The building of job-related competences, using online learning and related agile organizational capacities, is likely to be a high priority in the near-term future and beyond.

As we look at the potential of online learning and competence building, we should learn from market leaders how to leverage transformation in business models and learning settings, as described below.

TWO TRANSFORMATIONS IN THE MODELS OF LEARNING AND COMPETENCE BUILDING

In studying the strategies and actions of the market leaders, one should examine two transformations that are ongoing and interconnected. These involve the **business models** and **learning settings** of online learning. In our view, these dimensions are undergoing transformations that will shake higher education's world unless institutions take advantage of the new organizational capacities associated with e-learning.

First, there is the evolution of the business models for institutions and formal learning enterprises from today's traditional **premium price model** (bundled learning, assessment and certification; a focus on what constitutes a quality education/institution; and traditional roles for faculty) to a **transformed model** (unbundled and re-imagined teaching, learning, assessment and certification; value-based in times of scarce resources; re-invented roles for faculty, mentors, instructional designers and peer-to-peer learning; and changing the financial model to achieve financial sustainability and lower prices to the consumer).

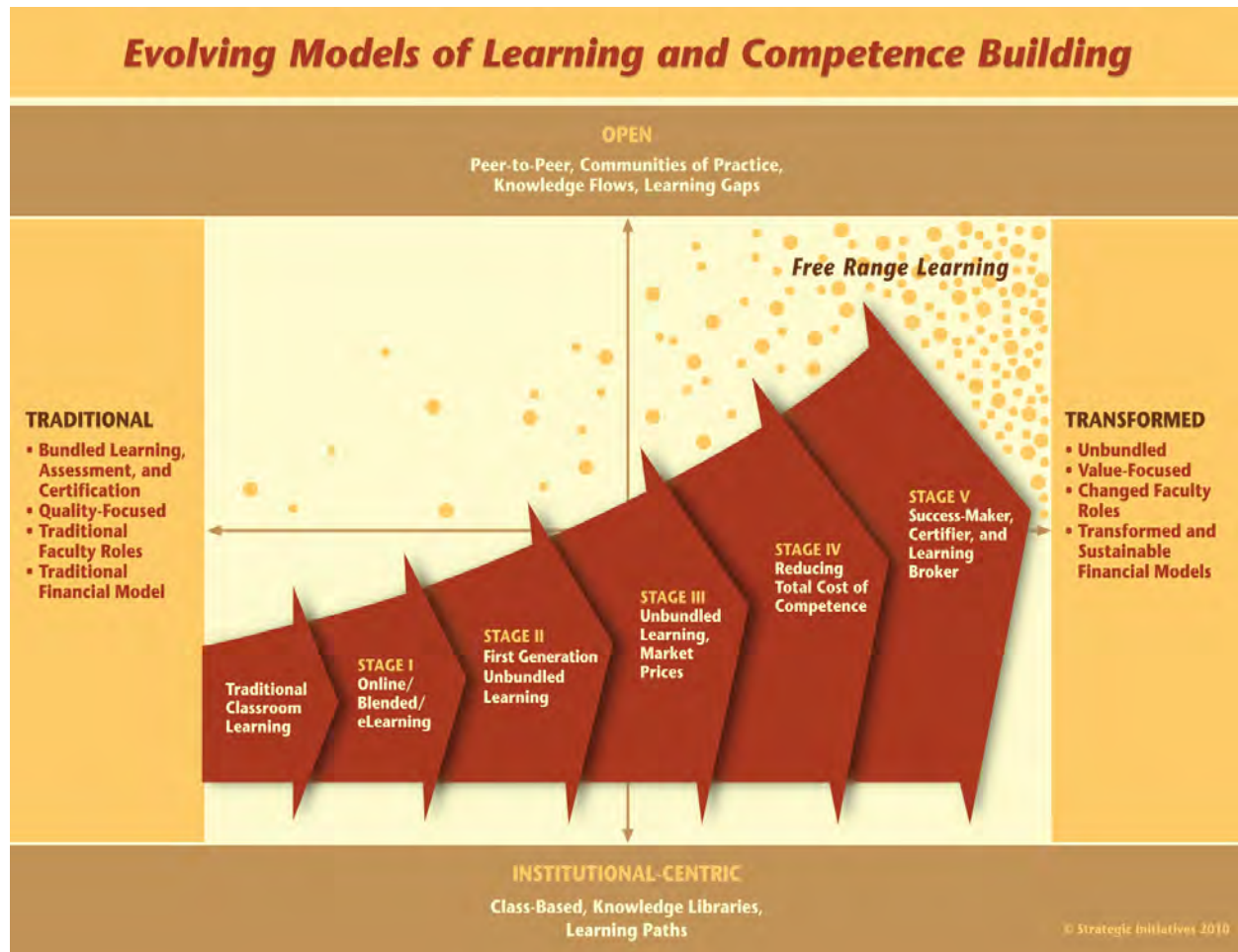
Second, there is the evolution of the learning setting from the **traditional institutional setting** to a **transformed, open setting** in which "open" includes but is not limited to Open Educational Resources (OER) and related resources and practices. Open also means that users have far more choice today about what they learn (not just prescribed learning pathways, but selected knowledge gaps, based on flows of continuously refreshed knowledge), how they learn it, what if anything they pay for it, and who they learn it with/from (e.g. peer-to-peer learning and community of practice-based learning). Open can mean a combination of "free" and "pay a fee."

Some of these transformations are being incorporated in traditional institutional settings, or could be. An example is a modular course from the United Nations University and collaborating universities, "Business and Management Competencies in a Web 2.0 World" (<http://www.open-ed.eu>), relevant here because students can make precisely the choices outlined above: what they learn, how, at what cost, with whom, for what kind of accreditation. Other transformations are occurring outside the realm of accredited institutions and formal learning enterprises (e.g., <http://www.khanacademy.org/>).

So let's begin by discussing five stages in the transformation of the business model for online learning. These are presented in the graphic "Evolving Models of Learning and Competence Building." The horizontal axis represents progressive transformation of business models toward greater value and financial sustainability. The vertical axis represents progressive expansion of open learning practices, both within traditional institutions (represented by the expansion of the "institutional arrow" in each successive stage) and in emerging peer-to-peer environments, communities of practice, focus on knowledge gaps and flows and "free range learning."

This simplified diagram presents these stages as logical, sequential stages of evolution for describing the current state of development of online practices. The reality is substantially more complex. First, individual

institutions are not homogeneous and so may demonstrate characteristics of several stages at any point in time. Second, individual institutions may experience a jump shift and make a leap from Stage I to Stages III or IV if they achieve strong leadership, learn from the best practices of others, and develop or acquire infrastructures, processes and competences. And third, the boundaries between institutional and open learning experiences will blur as institutional practice evolves into States IV and V. Despite these caveats, the model clarifies the evolution currently underway in learning and competence building.



Stage I: Online/Blended/e-Learning Innovations

The first stage is one in which traditional institutions enable their faculty to put courses online and progressively create various forms of online, blended and e-learning offerings under the institutional brand. These offerings are often more expensive to develop and launch than the traditional institutional offerings. They do not achieve any breakthrough economies, may use traditional or adjunct faculty and replicate many existing practices. They do not use technology to truly transform faculty roles and patterns of interactivity, or to link students to discussions in non-course communities that could enhance the ability of students to apply what they learn and/or become more employable. In the long run, this “digitize-the-traditional-and-incrementally-improve-it” approach to online learning is a transitional state. This model will not add to national productivity so it will not be sustainable in the face of global competition.

Online/blended/e-learning innovations can work to reduce the overall cost to students and the institution, even if the tuition charged to students is the same or greater than the tuition for face-to-face instruction. Online students not only save on transportation costs, they reduce the **opportunity costs** of travel time, lost income and such. These can be significant savings. Blended learning can save institutions the cost of new facilities by reducing classroom demand and allowing institutions to reduce the impact of commuter

student traffic and use of on-campus facilities and services. Campuses in hyper-growth metropolitan areas like the University of Central Florida use combinations of online, blended, and e-learning to “sculpt” enrollments at their multiple physical campuses and in virtual learning spaces.

Moreover, the market leaders in online learning have shown that technology can be used to unbundle and transform the existing classroom-centric model for individual courses. The course re-invention efforts of Twigg [3] at the National Center for Academic Transformation (NCAT) have improved performance and student success and reduced costs in virtually every physical or virtual course they have re-designed. Some institutions are scaling these processes to departmental, institutional or even system level. But the greatest challenge to scaling these approaches across the institutions has proven to be getting institutional leadership seriously interested in reducing costs systemically, which some associate with diminishing quality. Twigg has succeeded in achieving enthusiastic and effective faculty participation in course re-design as long as any cost savings remain with the academic units.

In times of constrained resources, institutional leaders need to focus on value, as well as quality, and to systemically reduce costs and “harvest” the savings. A genuine commitment to performance measurement and improvement requires a dedication to cost reduction in ways that do not diminish outcomes.

Recently, Twigg has received support to work with community colleges in redesigning the introductory-level courses that constitute the gateway through which most students must pass. This effort is receiving serious financial support from foundations. Significant redesign of these courses could be part of a broader campaign to improve success, reduce costs and achieve financial sustainability. Efforts at course re-invention can be a good start, but they are not sufficient by themselves to meet the challenges of establishing financial sustainability, post-recession. Sustainable online learning requires pervasive adoption of unbundling, re-invention and a value focus to the entire online learning enterprise.

Many institutions remain stuck in the digitize-the-traditional-but-don't-re-invent stage of development. In the 2009 “Managing Online Programs Survey” sponsored by The Campus Computing Project and WCET [7] most institutions were still searching for satisfactory, sustainable models for organizing and delivering online learning. They will continue to search fruitlessly unless they apply the following principle: The key to evolving new, sustainable models for online learning is to utilize technology to:

- unbundle and re-invent teaching, learning, assessment and certification;
- focus on perceived value, not just quality (perceived value consists of the learner’s perception of achieving desired outcomes in an experience attuned to the learner’s needs and circumstances – especially important for adult, working learners - and at an affordable price);
- focus on value-added approaches: help learners to become more valuable to employers, (e.g. use learning systems to encourage collaborative work-focused application of course content);

Summary of Stage I: Online, Blended and eLearning

Characteristics: Develop and gain acceptance for online, blended and e-learning

Transformative Impact: Typically digitized existing academic roles and practices. In many cases students pay an online “premium.”

Impacts on Institutional/Student Costs: Universities like UCF use a combination of online, blended and e-learning, offered virtually and/or on their main campus and regional campuses to increase student options, reduce opportunity costs for students and reduce need for new facilities.

Exemplary Institutions/Participants:

- **University of Central Florida** – exemplary leveraging of online/blended/e-learning
- **Sloan Consortium** – Gain acceptance for online and blended learning
- **National Center for Academic Transformation** – Course Redesign results in improved results and reduced costs

- change the use and roles of faculty, mentors and peer-to-peer learning; and
- transform business models by: 1) continuously seeking new income streams that can mitigate the need to continuously increase tuition charges to fill revenue gaps; 2) reducing incidental (unrelated to learning) operational overheads such as new administration buildings, parking lots and dorms; 3) seeking lower price points and enabling more rapid completion of learning objectives; and 4) reducing the total cost of achieving learning goals.

We remain hopeful that online, blended and e-learning innovators will seize the opportunity to move on to transformation when they understand the potentials provided by Stages II-V, the challenges provided by the open learning movement and the imperative of the Great Recession. The following stages illustrate how this evolution is being followed by market leaders.

Stage II: First Generation Unbundled Offerings

This stage developed at the same time as Stage I, but in different organizational cultures: for-profit institutions (and a small group of not-for-profit universities that deploy these techniques). In addition to unbundled offering, it featured re-invented business practices, production models and business models, plus the capacity to charge a premium price.

The for-profits such as the University of Phoenix, Capella University, Kaplan and others have utilized technology-supported learning to:

- re-invent their production function (using team-developed resources in all instances of creating courses);
- engage mentors (who are not content experts) rather than traditional, tenure-track faculty; and
- deploy world-class (high-quality, high-value) online support services.

These providers also vet their offerings with employers more extensively, continuously and effectively than traditional universities. This is neither black magic nor rocket science. The not-for-profit UK Open University pioneered and published many of these practices over 30 years ago, although some campus-based UK universities are only now beginning to adopt those practices. The Open University now has a leader from industry with fresh ideas, and seems to be working hard to refresh its model and lead the UK again: to re-invent its mix of practices to fit today's circumstances and to move to Stages III-V. Other non-profits like Regis University have emulated these methods. There may be as many as a million learners involved in these kinds of learning experiences in the U.S.

These institutions focus on consistent, demonstrable outcomes and learning experiences especially attuned to the needs of working adult learners. The for-profits have achieved substantially lower production/delivery costs per student than traditional universities. This means paying close attention to class size: bigger means more opportunity to achieve economies of scale, without sacrificing quality of engagement and outcomes. Course materials are created by teams and used in all instances of the course. The for-profits utilize a core, standardized curricula to ensure consistency and quality of learning outcomes that, in turn, allows for continuous improvements, refinements and ability to quickly incorporate new industry competencies. This practice affords economies of scope.

At the same time, these institutions are able to charge a **premium price** for their offerings because of the recognized value they provide learners (courses taken sequentially with no delay, accelerated time to degree, lack of family/work barriers and premium online services). Even within the market-driven cluster (as some of these institutions prefer to be called), however, there is variation in the relative price points.

The higher resulting margin/profit (difference between price and actual cost) is invested in extending institutional brand, business/industry market research and instructional technology and systems development costs. Most of the for-profit institutions spend between 25-30 percent of their budget on marketing (extending the institutional brand).

In future stages of development, many of today's for-profit providers may not be able to maintain their current premium price levels, in the face of competition now emerging at the low end (from no-fee systems) and at the high end (from innovators such as Capella University who have migrated to a more competence-based approach that achieves a higher perceived value with learners).

Moreover, Capella-type innovators will be able to compete on lowering the total cost of achieving learning and competence objectives and eventually become certifying enterprises. More discussion about that is in the description of Stages IV and V.

These innovators have also succeeded in embedding predictive analytics into their academic and administrative processes, and use those tools to support student success, in a manner that makes traditional institutional practice seem primitive.

Summary of Stage II: First Generation Unbundled Learning

Characteristics: Unbundled learning, assessment and certification; team-based course development, faculty as mentors.

Transformative Impact: Transformed roles, responsibilities, reinvented and sustainable financial model.

Impacts on Institutional/Student Costs: These institutions are able to operate at lower costs, but can charge a premium price because of the value perceived by students. They spend 25-30% on marketing and invest in online support and analytics.

Exemplary Institutions/Participants:

- **The Open University (UK)** – pioneer in unbundling
- **University of Phoenix, Capella University, Kaplan, American Public University System, Regis University (NFP), others** – pushing the envelope of the market-driven model
- **Embedded analytics improve success and performance** – models for higher education in the future

Stage III: Unbundled Learning, Market Competitive Pricing

Institutions like the Western Governors University, Florida State College at Jacksonville's Open College, Ocean County College in New Jersey, and Lamar University in Texas have re-invented the elements of the production function and faculty roles to achieve many of the financial advantages realized by the for-profits.

They have used technology to unbundle and re-invent teaching, learning, assessment and accreditation. While their methods vary from institution to institution, the basic principles are fundamentally the same. These public institutions pass the savings on to learners in the form of more competitive tuition – a strong value proposition. They charge a market-competitive tuition rate that covers the marginal costs of learning.

These public institutions can grow based on tuition alone, rather than appropriations from their respective states or municipality. This is critical during times of financial recession, when student demand spikes and state resources decline. Many community colleges are within striking distance of being able to attain the "marginal cost of learning < tuition" goal.

Achieving this stage is essential for public institutions attempting to attain financial sustainability. It is a strong value position – but even this value position must be improved over time in the face of the withering competition that is emerging globally.

The Western Governors University has spent a long decade developing and getting acceptance for its model. It features faculty as mentors to cohorts of 80-90 students, unbundled learning, assessment, and certification of learning. WGU currently enrolls around 20,000 learners and has the potential to scale sustainably to a much larger size, either by growth in the core WGU or state-by-state franchises

WGU-Indiana is a spin-off formed to test the waters for a franchised approach in the Hoosier State, supported by the Lumina Foundation. WGU-Indiana costs \$3,000 for each six month semester. Since learning is self-paced, learners take about 2.5 years to complete a bachelor's degree. A new report from McKinsey & Co, identifies WGU as one of the lowest-cost institutions in the nation.

WGU-Indiana uses all of the resource materials of the WGU, but its students are eligible for Indiana financial aid, which is considered to be a key factor in its success. WGU-Indiana also has a physical presence in the state, and the local staff of the University play a key role in representing the University around the state. With funding from Lumina, WGU and HCM Strategists are sponsoring workshops on how to set up MOUs and executive orders to establish WGU branches in different states.

Lamar University has developed yet another variation on this theme. Working with a for-profit provider, and partnering with the leadership of school districts, Lamar has launched a masters' education program at half the price of other public universities, virtually cornering the market for this offering in Texas.

An interesting variation on the theme of reinvention at a market price is Fort Hays State University in Western Kansas, although it has taken a somewhat different path. The leadership of FHSU has managed a three-element portfolio of on-campus learning, virtual offerings and international offerings (FHSU has achieved the largest enrollment in China of any American university), always mindful of its position as a highly affordable provider in its different markets.

Fort Hays State University has received kudos from state leadership by keeping the lid on tuition increases through redirecting the margins from its international operations to improve the quality of life of its home campus.

Summary of Stage III: Unbundled Learning, Market Competitive Pricing

Characteristics: Reinvent and unbundle learning, using many of the same principles as used by the pioneering for-profit institutions, but pass savings on to the learners in the forms of a market-competitive tuition.

Transformative Impact: Transformed roles and approaches at a market price. Financial model is sustainable. Can grow on tuition alone.

Impact on Institutional/Learner Costs: Tuition covers the marginal cost of additional learners.

Exemplary Institutions/Participants:

- **Western Governors University** – transformative, competency based
- **Florida State College at Jacksonville Open College** – many CCs are reinvented and market competitive
- **Lamar University** – big impact in Texas
- **Fort Hays State University** – portfolio of on-campus, virtual, international

Stage IV: Reducing the Total Cost of Competence

Inexorably, the affordability crisis will force learners and their families to search for better value/options. And the presence of new, lower-price alternatives will enable potential learners to shop around and consider different options.

Options that accelerate progress and thereby reduce the total cost of achieving the learner's objectives (be they a particular competence, certificate or degree) are being offered by many learning providers.

These range from community colleges to major universities. Most of these do not transform faculty roles or business models, they just accelerate progress, but they demonstrate the concern about the total cost of completion.

Southern New Hampshire University (SNHU) has gained substantial recognition for its three-year programs, which it has been offering for 13 years [8]. SNHU estimates that 50 universities have accelerated three-year programs this year, with the number expected to jump to 100 in fall 2011. The University of Massachusetts Amherst has just launched a three-year track (which leverages high school AP offerings) that will eventually be available to one-third of the university's 88 majors [9].

Another attractive approach to reducing the total cost of competence embraces the pathways, bridging, concurrent enrollment and "early college high school" programs being developed in partnerships between high schools, community colleges and public universities across the nation.

Almost every state has variations on these themes. For example, Northern Virginia Community College and George Mason University have pathway programs in nursing and other selected subjects where students who get on the pathway can achieve a bachelor's degree in nursing three years after high school. Today, typical students may take six years – a year of remediation, a year of taking prerequisites that were missed, and then four years if everything goes well.

Online providers have one interesting advantage: since their relationship with learners is fully online. They can embed analytics, customer services, advising, success mentoring and other services into their relationship, each as a fundamental ingredient, not an add-on feature. So online providers will be driven to continue to re-invent their offerings, enhancing their value proposition through a variety of practices:

Summary of Stage IV: Reducing the Total Cost of Competence

Characteristics: Accelerated degree completion, 3-year degrees. Pathway programs reaching into high school. Full-featured focus on enjoyment, outcomes, price, time, flexibility and capacity to track changes.

Transformative Impact: Focus on *value*. Continue to reinvent the learner experience, changing roles, responsibilities.

Impact on Institutional/Learner Costs: Reduce total cost of competence for the learner, in a variety of ways. *Fast, fluid, flexible and affordable* are the themes of the time.

Exemplary Institutions/Participants

- **Southern New Hampshire University** – three-year degree (College Unbound), College Advantage Program – save 60%
- **100 Three-Year Degree Institutions by Fall 2011 (estimate)**
- **Capella University, others** – credit for prior learning, reduced costs for demonstrated competences

- Compete on enjoyment - create better, more amenable and more effective, engaging learning and support experiences;
- Compete on outcomes - demonstrate that their programs are linked to highly valued, demonstrable competences and employability success;
- Compete on price - decrease tuition and fees, accelerate pace of completion and thereby reduce “total cost of competence”;
- Compete on time - reduce time to achieve competence objectives, certificates and degrees;
- Compete on flexibility - recognize credits from a wider range of institutions and experiences; and
- Compete on tracking change - provide graduates with social-networking-based mechanisms for refreshing and maintaining their competences on an ongoing basis.

These conditions will affect the for-profits as well as traditional institutions. The reduction in time-to-degree will be achieved in at least three ways: 1) giving credit for prior learning more effectively and extensively, 2) achieving competency-based approaches that unbundle and give credit for already-acquired, demonstrated competences, and 3) improving K-12 preparation for college-level work through P-20 improvement initiatives and partnerships. These efforts can substantially reduce the total cost of learning, over time.

A key factor in the price competition will be international competition. India- and China-based providers have entered the online tutoring business for K-12 and postsecondary education. They will soon be a force in online learning, as well, through acquisitions and repurposing of institutional providers in the US. Also, social networking-based learning offerings from commercial providers, perhaps using Second Life-like virtual and augmented reality environments, may soon enter the scene at very competitive price points. New competitors will focus on particular points in the value chain that are underserved or can be offered at a dramatically lower price.

Stage IV will be a time of accelerating competition and increased efforts by institutional providers to demonstrate their adaptation and nimbleness in order to attract learners and offer distinctive, superior value propositions. Increasingly, open learning practices will be incorporated into institutional offerings and accepted for credit if they involve “recognized” providers (accredited with established articulation agreements). Fast, fluid, flexible and affordable will be the watchwords of the day. Institutions will focus on developing the infrastructure, support services, processes and reward systems necessary to support these efforts.

Stage V: Success Maker, Certifier and Learning Broker

The graphic model illustrates that with each successive stage of evolution, institutional learning also expands upward, embracing more open learning techniques within institutional/enterprise learning practices.

During Stage V, institutions will have incorporated open learning practices into their offerings and will accept and certify high-value outcomes provided by other institutions or new learning enterprises. In addition, selected leaders will have developed or acquired the capacity to certify free-range learning and competence building pursued by individuals independent of formal institutions or to certify learning achieved by learners associated with new, low-cost providers. In other cases, learning brokers/agents will aggregate offerings from a variety of providers. Adaptive learning enterprises will enhance their services in mentoring, advisement, and career guidance, hoping to become seen as “success makers.” Some enterprises will combine variations on all of these developments, opening up new services to learners.

An interesting example of elements of this movement is the relationship between the company StraighterLine, the American Council on Education (ACE) Transfer Credit Process, and participating universities..

StraighterLine is a company that offers online courses for \$99 amonth (entire freshman year for \$999) and has been approved by the ACE Transfer Credit Process. Therefore, StraighterLine course are accepted by a long line of participating institutions, most of which are online or virtual universities or institutions with an online affiliate. (<http://www.straighterline.com/partner-colleges/ace-credit-process.cfm>). These sorts of relationships are the “thin tip of the wedge” in further opening up the process of gaining credit for learning from life experience, demonstrated competence, and/or offerings from new, low-cost providers.

Stage V is a natural extension of the credit-for-prior-learning and competence-based-learning movements. Not all institutions will have the core competences to become certification agencies for learning. But organizations like the Council for Adult and Experiential Learning are moving to provide such certification, for a reasonable fee, and become a “utility” that institutions can bank on.

So institutions will aggregate credits for learning achieved elsewhere, in order to award valued certificates or degrees. This will prove attractive as peer-to-peer and “free-range” learning opportunities develop.

Peter Smith describes the College for the Twenty-First Century [10] as such a place, organized around the needs of the learner. It is precisely the growth of non-institutional learning opportunities, plus new low-cost options like StraighterLine, that illustrates the potential growth in the second vector of evolution in e-learning methods, models and practices – the move towards certification of open and other low-cost learning.

Summary of Stage V: Success Maker, Certifier, and Learning Broker

Characteristics: Institutions, accrediting groups and even employers will certify credit or competence based on life experience and prior learning, free-range learning or learning achieved at other providers. Learning brokers emerge to bundle offerings. Learning enterprises offer mentoring, coaching, and success making services.

Transformation Impact: Further transforms the business model, drives down the cost (both for particular competences and in total) and opens the door to new services and relationships.

Impact on Institutional/Learner Costs: Availability of less expensive options will drive down prices institutions can charge, thus substantially reducing learner costs.

Exemplary Institutions/Participants:

- **StraighterLine, ACE Transfer Credit, and participating institutions**
- **Western Governors University and spin-offs (WGU Indiana)**
- **Capella University, Kaplan University, and other market-driven institutions**
- **Lamar University, UT Arlington, StateU.com**
- **CAEL, Learning Counts: College Credit for What You Already Know**
- **Monster.com, data mining on resumes and job descriptions to highlight critical knowledge and pathways to success**

Credit for Prior Learning and Prior Learning Assessment. Online providers like Capella University and the University of Phoenix, as well as many traditional public and private universities, assess and award credit for the demonstrable prior learning of their students, Not all institutions have developed this capacity, nor do they need to. The Council for Adult and Experiential Learning (CAEL) has advocated for the use of a proven toolkit of assessment tools that includes:

- Individualized student portfolios,
- Evaluation of corporate and military training by the American Council on Education;
- Programs evaluations by individual colleges of non-collegiate instructional programs that award credit;
- Customized exams offered by some colleges to verify learning achievement; and
- Standardized exams such as Advanced Placement (AP), College Level Examination Program (CLEP), Excelsior College Program, and the DANTES Subject Standardization Tests (DSST Exams).

In addition, CAEL has introduced Learning Counts, a new online service that offers credible, third-party assessment of college-level learning acquired outside the college classroom. Since Learning Counts can draw upon faculty experts from institutions across the country for assessing portfolios, it has the potential to scale to be a national program of considerable size, serving as a sort of "utility" that can provide benefits to learners, military personnel, business leaders, and higher education institutions. The fee for Learning Counts is a \$500 registration fee for the course through which competence is demonstrated and a portfolio is created, and a fee for portfolio review based on the number of credits sought: 1-6 UG credits, \$250; 7-13 UG credits, \$500; 14-20 UG credits, \$750.

Employers Will Influence the Mix. Outside the U.S., employers seem to be faster than in the U.S. to recognize that they can benefit from the spread of self-directed and informal learning (in which learners refresh their skills in their own time and on their own budget). A few U.S. employers are following the global early adopters and introducing new ways of demonstrating competence, better-suited to global challenges that require a more agile and up-to-date workforce. This is accelerated by enterprises like StraighterLine and its relationship with ACE and participating institutions. When these changes become the norm in the U.S., a learner who is home-schooled, self-taught or educated outside of the U.S. in a non-accredited institution could take competency test/s and be granted a learning certificate or even a degree.

An interesting example is provided by universities working directly with employers in professional fields. By working directly with school districts Lamar University and StateU (www.stateu.com) have taken much of the market for masters degrees in education from other Texas Universities. Moreover, UT Arlington and StateU are collaborating at the RN to BSN level in nursing, working directly with hospitals. StateU also serves as learning broker for undergraduate programs, dual enrollment (high school and college credit concurrently) and eventually high school courses. It also plans to offer job placement services in future.

Leading institutions that develop the infrastructures, practices, processes, and core competences to demonstrate or certify competence will become certifying entities and/or license their practices to other institutions. This could be a lucrative business for forerunners like Capella University or Western Governors University who have led the way in competence-based learning and performance. Indeed, Stage V will likely be characterized by further unbundling, deconstruction and reassembling of roles for participants in the learning and knowledge industry, further reflecting many of the disruptive forces described by Clayton Christenson in *Disrupting Class* [11].

The Linkage between Learning and Employability. The linkage between learning and employability will be paramount for many learners. This will accelerate in the U.S. over the next few years, through a combination of limp economic recovery, limited job opportunities, and changing employment needs.

Rather than focusing on the current iconic role of “provider” of learning, the most nimble learning enterprises may place greater emphasis on serving as “learning agent,” integrating and brokering offerings from themselves and others, “certifying” the competences acquired by learners, and offering career and life success guidance, on a continuing basis. Tomorrow’s learners, keen on achieving high-value learning and development that really does prepare them to play a significant part in increasing national productivity, may prefer to patronize developmental enterprises that can justly claim to be “success makers.” The most adaptive learning enterprises will likely follow the evolutionary path of:

Learning Provider → Learning Agent/Broker → Certifier of Competence → Success Maker

This sort of evolution will continue to shift the balance of power away from traditional colleges and universities, even those that have succeeded in “opening up” their approaches to learning and competence building. It will also stimulate new roles for new players.

In particular, success making services will require spanning the boundaries between learning and work, deploying data mining capabilities and analytics practices to shed new light on patterns of success. Employment, temp, and workforce agencies have massive data resources, both historic and real-time. For example, Monster.com has access to over 100 M resumes and job postings that are being scraped and analyzed to illuminate local, state, regional and national employment and employability matches, pathways that have been followed to success, and a myriad of other employability-related issues [12]. In short order, real-time, scalable, actionable intelligence will be broadly available from such resources. How can such intelligence be used by learning providers to enhance the chances of student success?

Why Is the Role of Success Maker Potentially So Valued in the Marketplace? As one scans the economies and employment marketplaces around the world, a number of consistent observations emerge:

- **Talent Gaps Exist Everywhere.** From Shanghai to Dubai to London to Washington, talent gaps exist in the economies of developed and developing countries. Extreme competition exists to fill these gaps, both within countries’ economies, and globally
- **The Numbers of College Graduates Are Growing in Most Places, Yet Mismatches Exist between the Needs of Employers and What Colleges and Universities Are Producing.** Developed and developing countries have been following America’s example and investing in higher learning. But the results are not aligned with the state of the economy. This year, there were millions of college graduates in China who were unable to find graduate jobs in their majors, because their educations were not aligned with the needs of the workforce. Similar conditions exist in other developing and developed countries.
- **Global Economies Are Not Producing Enough Jobs.** Even before the Great Recession, economies in many settings globally were not producing enough new jobs to keep up with changing demographic conditions in growing nations, and increasing productivity of people in work. Underemployment and unemployment were high in many settings, even before the Great Recession. These conditions have worsened in most places, post recession
- **Following the Recession, Business Practices Are Changing in Every Industry and Profession.** The Great Recession has had two profound effects. First, reducing job and employment opportunities for both currently employed and fresh graduates in hard-hit economies. Second, as recovery proceeds, business practices in virtually every industry, profession, and trade are changing. New practices are reflected in fresh, rapidly evolving knowledge flows, not in extrapolations of pre-Recession conditions.

The upshot of these conditions is that fresh thinking and perspectives are needed by experienced employees and professionals, newly-minted graduates, and learners contemplating their pathways to education and employment. Under these conditions, learners and their families will increasingly look for actionable intelligence to frame their education and career choices. Many graduates, accustomed to being sought after, are becoming “job makers” by becoming free agents and crafting their own jobs. Enterprises that are sufficiently clever, nimble and trusted may deserve the label of “success makers” if they can deliver on the promise.

EVOLUTION OF LEARNING SETTINGS FROM INSTITUTIONAL TO OPEN

The learning settings described in the first vector of transformation are institutional: Traditional colleges and universities (including their extension and continuing education divisions), for-profit universities, other for-profit learning enterprises and learning enterprises in corporations. These so-called “institutional” settings will continue to be the primary players in traditional learning. But they will see their dominance shrink in the face of open learning environments that are the property of the learner, not the institution.

Institutions face the challenge of keeping pace with two trends: 1) the changing nature of knowledge and competence, as well as 2) the inexorable quest for greater value in learning and competence-building experiences. Over time, open learning with the learner at the center of a personal learning environment (such as a free-range learner) will be the predominant mode for the next generation of learners over the course of their lives [17].

Clear, evolutionary “stages” of open learning have not yet revealed themselves. They may emerge over time – or not. Some of the new forms of open learning environments and experiences – and their potential implications – are described below.

Peer-to-Peer Voluntary Associations

In her recent and provocative book, *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education* [13], Anya Kamenetz described the growing movement toward high-tech, do-it-yourself education. Some of these experiments reside within existing institutional settings, such as classes structured like role-playing, serious games that are being tested out in universities across the globe.

Others are occurring in start-up organizations, like Peer2Peer University and the University of the People, attempting to bridge the gap between free online materials (as in the Khan Academy of Salman Khan, which offers admired knowledge-nugget-sized YouTube videos on 1800 topics) and low-cost education. Neeru Paharia and Jan Phillip Schmidt have hacked together Peer2Peer University, which uses a Website to enable would-be students to convene and schedule courses, meet online, tutor one another, all facilitated by a volunteer. This is very much at the stage of demonstration of concept. Shai Reshef founded University of the People and has enrolled the first class of 300 students from nearly 100 countries. His goal is to offer bachelor’s degrees in business and computer science using open courseware and volunteer faculty for a price of about \$4,000 for a four-year degree. Other pundits, such as Richard Vedder, have mused about U.S. associate degrees for as little as \$2,000 (low by U.S. standards, but not globally). As already mentioned, StraighterLine is currently online with a full freshman year for \$999.

Formal Communities of Practice

Informal and formal communities of practice are common in the world of business and professional practice. *Transforming eKnowledge: A Revolution in Knowledge Sharing* [14] described the emergence of communities of practice as the defining organizational form in the Knowledge Economy. These sorts of communities will become the focal points for open learning experiences in the future. Oregon State University is developing an Open Campus dedicated to community-based learning. Extension Divisions in

land grant universities across the U.S. have offerings that could become the basis for community-based learning. Another example is the Food Safety Knowledge Network.

In their partnership with the Global Food Safety Initiative, Michigan State is developing the Food Safety Knowledge Network (FSKN) [15], a program of food safety resources to efficiently and effectively reach competency at all levels of food safety. The FSKN will use open resource techniques (social networking, dynamic knowledge sharing and evaluation tools) to harmonize standards, practices, and training criteria. The FSKN pilot platform will be rolled out globally in 2010. The FSKN will create a curriculum for food safety competency through partnerships with industry, government, academia, local/regional authorities and other stakeholders. Coupled with a unique learning environment using face-to-face sessions, seminars, formal courses and online learning, it will present a low-cost, fast and efficient way for professionals to achieve competence across all sectors of the food safety industry. MSU is also deploying community-based techniques to develop entrepreneurial and innovative perspectives and behaviors in an interconnecting constellation of Michigan-based and international communities.

Community-of-practice learning is likely to thrive in the Web 2.0 environment. Its permutations are many. Brown and Adler described open, community-based environments in their article “Minds on Fire: Open Education, the Long Tail, and Learning 2.0” [16]. One of the advantages of learning based on real communities of practices will be the capacity to receive early warning of the emerging competences that are essential in particular fields of endeavor. Communities of practices will be able to identify, promote and quickly develop fresh competences among large bodies of participating practitioners.

Free-Range Open Learning

Over time, individual learners will have access to a vast constellation of open learning experiences and resources. These will range from formal communities of practice and competence building networks, to easily configured, temporary learning cohorts. Using these tools and experiences, individuals will be able to develop, maintain, and extend their competence in a variety of ways and at very reasonable prices, or even at no cost. Even when “mature,” this array of alternatives will be perpetually changing, adapting and improving. Learning enterprises will need to adapt their technologies, processes, and systems to accommodate this reality. In our experience, working with universities taking that path, it is important to identify, celebrate and build upon the organizational capabilities that a university’s innovators have generated in the course of introducing online learning and widening the alternatives on offer to students.

This broadened environment will constitute a “free-range” option for learners who appreciate alternatives to traditional or even transformed institutional learning. These options will enable most adult learners to more easily advance and maintain their competences by acquiring new and emerging skills at a pace that institutional learning cannot match – at least not today (just as there is no “I” in team, there is no “academic senate” or “curriculum committee” in free-range open learning).

Open learning environments and experiences will interact with institutional learning, assessment and certification experiences. Institutions that do an excellent job of competence-based learning may become certifying entities that charge a fee for authenticating competences acquired through open learning, and awarding credit, certificates and degrees for a fee. This is one way in which the two evolutionary paths of learning and competence link together. Mash-ups to encourage and facilitate these linkages are under development in Europe, in partnerships between business/industry (a primary source of information on the skills that graduates need to be employable) and universities. By way of an example, read through the description and materials on the ROLE project, which is co-funded by the European Union [17].

Many more examples exist across the globe, in a virtual archipelago of open learning experiments, prototypes and expeditions. Recently, some pundits have explored business models for open learning endeavors, not requiring the seed funding from foundations, the European Commission and other parties that have sustained “first generation” open resource initiatives [19]. An apt set of questions may be: Which government(s) or corporate entities from across the globe will invest in open resources in the

future? Will they do so in a manner that will disrupt traditional offerings and create opportunities for continuing re-invention of learning and competence building? How will this foment a change in the balance of competence power and the competition for talent across the globe? Can “open” continue to be “completely free” or will a combination of free and fee be necessary to create sustainable open resource ecosystems?

At the recent conference on “Reinventing the University: New Models and Innovations for 21st Century Realities,” Paul LeBlanc, President of the University of Southern New Hampshire, predicted a dramatic repositioning with the coming of richer, more nuanced, more reliable models for assessing competencies that will enable us to “blow up the delivery model [9].” The price competition provided by self-paced, open courseware, social network-based, community-based, personalized learning environments and others will undermine the economics of traditional higher education providers, who must adapt to survive.

Many Models, Competing for Learners

The two intersecting, evolutionary axes of our five-stage model do not suggest that any single model will become dominant for all learners, at all stages of their development. But they do mean that institutions will need to sort out their competitive position and determine how to provide a range of options that will be optimally attractive to their learners and that will put the U.S. on a sustainable economic course. Merely digitizing the traditional and hoping for the best will not be a winning strategy.

It will be possible for institutions to learn from emerging best practices and skip stages of evolution. In particular, institutions that aggressively practice online, blended and e-learning at Stage I can raise their sights and transform their practices to make a jump shift to Stages III and IV, with further evolution to Stage V and the added-value there for learners, job-seekers and employers. Such leaps could become feasible with strong campus-level leadership, recognizing the strategic potential of online learning.

MULTI-FACETED EVOLUTION OF OPEN KNOWLEDGE

Just as content and learning are evolving from “institutional” to “open,” knowledge is undergoing its own evolution on two dimensions. First, the 2.0 world of knowledge is changing the predominant focus from knowledge as a “thing” or a “stock” of carefully marshaled, explicit knowledge resources in repositories, to knowledge as a “flow,” captured through conversations and interactions with communities. Second, while traditional, degree-based learning experiences have provided carefully drawn “knowledge paths” (sadly including paths that result in high levels of graduate unemployment), the 2.0 world is favoring learning that fills specific “knowledge gaps” (including gaps that correspond to emerging/near-future employment opportunities that become more apparent through discussions in Web 2.0-based networks). These two vectors of evolution will accelerate the emergence of Stage V in the evolution of online learning.

In the January/February 2010 article in the *EDUCAUSE Review*, “Innovating the 21st Century University,” Tapscott and Williams [18] discussed the powerful potential of collaborative knowledge production to open up the university to a re-invented pedagogy of open, social, self-paced learning where faculty and learners collaborate to co-create knowledge. This is an important insight. Yet they failed to clearly articulate two other, critical insights. First, the essential differences between the requirements for knowledge pathways and knowledge gaps/flows. Second, the potential for an increasing emphasis on gaps/flows to transform the balance of power in 21st Century learning and competence building away from traditional approaches to higher education, towards new approaches that meet emerging needs.

From Knowledge Stocks to Knowledge Flows

Transforming eKnowledge: A Revolution in Knowledge Sharing [14] discussed how knowledge is in a continuous state of re-invention, a flow of ongoing discovery culminating in the knowledge being easier to disseminate and appropriate, for example by being expressed in an explicit way in some knowledge store (repository, course, book, technical manual). It also described how the ubiquitous use of ICT and the emergence of Web 1.0 tools were changing the very ways in which we experience knowledge,

accelerating the demise of knowledge stocks and providing new means for individuals to participate in and co-create knowledge flows. This is truly about “Transforming eKnowing.”

In “The Big Shift,” [21] Hagel and Brown argue that the combination of the Great Recession and Web 2.0 is causing every industry to re-imagine its basic principles and practices. In the process, we are shifting from a world where classic forms of strategic advantage were protecting and extracting value from stable, existing knowledge stocks, to a world where the focus of value creation and productivity enhancement is on effective participation in knowledge flows, which are continuously renewed. These knowledge flows are created through communities of practice and social network-based collaborative spaces in professions, industries, commercial enterprises, civic and philanthropic organizations and educational enterprises. Active, free-range learners can participate in these flows continuously, using the tools of the “eLifestyle” – from single devices (such as smart phones and PDAs), to multiple-devices-in-one-package (such as dual books combining an e-reader and a tablet computer) – and applying them to recreation, socializing personal business, work and learning.

New communities, tools and services are emerging to tap knowledge flows and conversations related to them. For example, the Knowledge Media Institute at the U.K. Open University has established an open community for sense-making [18] and for discussing interpretations and experiences of using relevant tools for sense-making. The ascendance of such open knowledge flows seems set to render obsolete the institutionalized, course-based knowledge stocks that change at the pace of curriculum committee review.

From Following Knowledge Paths to Filling Knowledge Gaps

Traditional higher learning is often based on defined learning paths, preordered routes where the teacher passes knowledge to the students, who absorb it and try to apply it to their own pre-existing knowledge in the subject. These structured learning and knowledge paths have always worked best in K-12 and in certificate and lower-division baccalaureate settings, where early stage learners need to complete a prescribed course of student study. But they are becoming far less attractive in the Web 2.0 world of self-directed learning amidst rapidly changing knowledge flows.

Most active adult learners are concerned with filling specific knowledge gaps, rapidly, and for immediate application. In today’s group-based learning experiences, learners fill learning gaps by a combination of asking peers and using stored knowledge, intuition, problem solving, creativity and adaptability. Knowledge solutions are created and shared by the group. Learning gaps will become the primary focus of online learning experiences, where faculty members become brain trainers, not purveyors of one-to-many training on a prescribed stock of knowledge achieved in an ordered pathway. Knowledge gap-focused learning, fueled by constantly changing knowledge flows, will soon be recognized as the new gold standard for 21st century learning and competence building.

Leveraging Pathways and Gaps in Combination

The interplay and competition between traditional knowledge pathways and knowledge flows/gaps-based learning is not some coming conflict that will be played out in the distant future. It is happening today.

Consider the example of the competence gaps that most employers complain are lacking in many current graduates: advanced communication competence – both written and verbal; demonstrated capacity to thrive in team-centered, problem-solving settings; experience and facility in innovation, entrepreneurship, and serving as a free agent in creating personal opportunities; and the habits of mind, body and spirit to be perpetual learners – lifelong and all the time. One would hope that achieving these competences could be embedded in all learning pathways purporting to prepare learners for success in the 21st Century.

A quicker, surer way is to create community-based experiences that immerse learners in ways that enable them to develop and demonstrate these competences. These knowledge-gap-focused community

experiences can occur at the same time learners are engaged in their traditional knowledge pathways. We are working with partnerships of universities, employers, Ministries of Education, and citizens across the world to develop such experiences and make them available concurrently with knowledge pathways.

The challenge to society is how to nurture the completion of knowledge pathways and the filling of knowledge gaps concurrently, using the processes and mechanisms appropriate to each. The emerging ecology of learning and competence building experiences of the 21st century will continuously tune this mixture.

SUMMARY/CONCLUSIONS

For the past 15 years, American higher education has been evolving the technologies, tools and practices that have become the instruments for transformation, and perhaps disruption. Our current and future financial crisis leaves no viable option than transforming to discover financial sustainability in “The New Normal.” The time has come for American higher education leaders to learn from innovators globally – to both get serious and strategic about the coming disruptions and the need to re-imagine PK-20 education, workforce training and competence development for the realities of the post-recession 21st Century.

The disruptive power of the events occurring in American higher education today is discussed in “Linking Analytics to Lifting out of Recession” [6]. If we miss the opportunity over the next several years to leverage these disruptions to increase national productivity and achieve financial sustainability, American colleges and universities may find themselves in an untenable, unsustainable and globally-uncompetitive position by 2020 or earlier [24].

The for-profit (market-driven) sector understands these challenges and opportunities and is responding to them. When Norris and Dolence wrote *Transforming Higher Education: A Vision for Learning in the 21st Century* [1], they suggested the unbundling of offerings and re-invention of higher education business models that have since been embraced by the for-profit universities and commercial learning enterprises. Now is the time for practitioners of online, blended and e-learning to embrace the imperative to leverage innovations and transform practices and business models. This requires creating the **enterprise organizational capacity** to leverage the tools, techniques, processes, and practices of online, blended, and e-learning. This is necessary to create organizational cultures that are dedicated to optimization of performance and productivity.

Enterprise Organizational Capacity and Action Analytics

Enterprise productivity is hard to improve without reliable information (analytics) about current status, progress to desired future states, and successes practices of innovators and market leaders. Analytics is one of the most powerful elements of organizational capacity enabled by advanced online learning. One of the advantages of the online environment is that real-time performance and engagement can be monitored continuously. EDUCAUSE 2010 featured examples of affordable enterprise analytics for every kind of institution [25].

Market-driven institutions such as Capella University and the American Public University System have developed award-winning practices grounded on a range of predictive analytics. Some of these are used to shape recruitment, admission, and shaping of policy. This enables them to deal with at-risk learners. Other predictive analytics-guided practices are embedded in academic and administrative processes to give early and continuous feedback on student performance and levels of engagement, compared with past patterns of successful students. This facilitates the efforts of institutions to deal with at-risk behavior in real time. Many public colleges and universities such as Purdue University, Rio Salado College, and Ball State University are also deploying these tools to good effect.

Enterprise Action Analytics also need to reach beyond postsecondary education; eventually spanning preK-20 education and linking learning and workforce analytics [26]. Previously cited examples suggest

the potential dividends from analytics in improving success in both learning and employability. As the roles of online learning enterprises evolve and transform, analytics will continue to be a key differentiator for some providers.

Practice Expeditionary Reinventing and Re-imagining

As leaders make re-inventing online learning (and its business models and associated processes and workflows) a strategic priority, they should consider the full range of institutional and open learning options that are becoming the learning and competence-building universe in the 21st Century. They should also take an “expeditionary” approach to such new learning initiatives, as initially described in Hamel and Prahalad’s classic article, “Corporate Imagination and Expeditionary Marketing” [22] applied to higher education by Norris [4], and described by Hagel and Brown as “radical incrementalism” [23] – taking incremental, expeditionary steps, guided by radical intent. The expeditionary approach to learning and competence building depends on the following principles:

- Leaders must be capable of and willing to re-imagine practices and processes based on value (outcomes, the experiences through which they are achieved, and price) and on fulfilling critical needs, rather than focusing on year-on-year replicability of experiences, as a proxy for quality.
- Recognize that Web-based, open, learner-centered learning and competence building require continuous experimentation, refinement and re-invention.
- Embed enterprise-wide predictive analytics in academic and administrative processes to support reimagining, enhancing learner success, and achieving financial sustainability.
- Complement existing offerings with new, Web-based mash-ups and communities of practice as “expeditions” relying on learners and participants to continuously provide feedback on what is working and what is necessary in the near future; expeditionary initiatives need to use such feedback to evolve into fast, fluid, flexible and affordable solutions with high value for learners.
- Respond aggressively to opportunities to leverage valuable knowledge flows that fill knowledge gaps and meet critical, unmet needs for potential learners, addressing combinations of innovation, entrepreneurship, employability and problem solving that have eluded traditional institutional-based approaches; then combine knowledge-gap and knowledge-pathway solutions.

To be successful in Stages IV and V of the evolution of e-learning and competence building, future coaches, teachers and mentors will follow, evolve and improve these expeditionary principles.

Focus Energies on America’s “Finishing First in Higher Education”

If America is to soon reclaim top position in international league tables for education and competitiveness, we must focus our energies on relevant factors. Collaborations of key foundations and public agencies have been funding initiatives to accelerate attainment of coveted courses of study, certificates and degrees. Respectfully, we offer the following listing as a way to align online learning with the Lumina Foundation’s Four Principles, and to do this to fit the challenges of the 21st Century marketplace:

- **Reward Institutions that Use Online Learning to Focus on Learners Completing High-Value Objectives and Demonstrating Competences.** Completion of objectives is key; institutions should be provided incentives to improve the successful completion rates of learners. Institutions should also be incentivized to focus on value, meeting the needs of learners and employers.
- **Use Online Learning to Track Students Who Should Be Rewarded for Completing Courses, Certificates, Degrees and Demonstrations of Competence.** Again, it is important to provide support systems, incentives and rewards that emphasize the completion of meaningful learning objectives. These can be courses, certificates, degrees or demonstrations of competence. The

linkage between these learning objectives and the needs of the marketplace will receive increasing and critical attention.

- **Use Online Learning to Expand and Strengthen Options that Reduce the Total Cost of Competence and Transformative Options at Market Prices (Push These Techniques into PK-20).** Policy makers and funders should support the already robust efforts to reduce total cost of competence and go to scale with such efforts. These are critical both to give learners affordable options and to enable institutional financial sustainability. To be optimally successful, these practices must be pushed down into K-12 as well.
- **Invest in Institutions that Use Online Learning to Demonstrate Good Business Practices that Focus on Student Success, Value, Productivity, Financial Sustainability and Linkages between Learning and Work.** Without establishing a foundation for financial sustainability in the New Normal, it will prove fruitless to increase student access, affordability and success. Policy makers and funders should “water where the grass is green,” supporting institutions that are simultaneously achieving efficiencies, innovating in ways that enhance student success and value, enhancing productivity and establishing fresh revenue sources – all critical to financial sustainability.

In all four of these areas, use the organizational competences associated with online learning to strengthen the linkages between learning and economic returns. Also, support the parallel development of knowledge gap/flows approaches in addition to knowledge pathways.

An additional dimension to the four principles is to encourage mechanisms through which institutions and students can strengthen the linkages between learning and economic returns. While this does call for a strengthening of vocational programs that have been gutted in the U.S. over the past decades, it also means providing mechanisms for learners to engage in practical experiences that are grounded in team building, communication, innovation and entrepreneurship – the very skills that many U.S. employers find lacking; their absence is adding to the storm clouds facing the U.S. [24]. Fortunately, community-based learning experiences provide the mechanisms for embedding these experiences into the lives of learners.

The same sorts of embedded predictive analytics that are comparing student performance with successful students in the past may be applied to employability and workforce success in the future.

We Conclude on a Hopeful Note. The emerging combination of institutional and open learning experiences and options will provide both new pathways and mechanisms for exploiting organizational processes that add value (as with some of the knowledge flows in online learning), and discovering fresh approaches to learning and competence building.

These fresh approaches will be critical to reaching the goals that have been set for America – merely extrapolating existing approaches will prove too costly and unworkable. To achieve America’s goals, learning enterprises need to increase their productivity, for example through strategic deployment of the insights that they gained in past innovations, but have not institutionalized as yet. This will help them to deliver greater value, to more students, with less effort, and at lower cost.

ABOUT THE AUTHORS

Dr. Donald Norris, President of Strategic Initiatives, is recognized as a thought leader and skilled practitioner in **developmental consulting** for institutions, states, Ministries of Education and other knowledge enterprises that are striving to re-imagine learning and work in the aftermath of the Great Recession and the realignment of processes and practices in its wake.

Dr. Paul Lefrere of Strategic Initiatives is also Senior Research Fellow at the Open University of the UK (Knowledge Media Institute) and Professor of eLearning at the University of Tampere, Finland (Vocational Learning and e-skills Centre). Previously, he was Executive Director for eLearning at Microsoft.

In collaboration with Strategic Initiatives' other consultants and partners, Drs. Norris and Lefrere are involved in a wide range of projects globally that are finding new ways to leverage the e-Lifestyle to advance learning, entrepreneurship, innovation, commercialization of new ideas and community problem solving. These projects involve leveraging open resources, practices and innovations, combining them with pay-for-use models. They also involve addressing and advancing the different approaches required for knowledge pathways and knowledge gaps. Norris and Lefrere are nurturing partnerships, globally, between universities, commercial enterprises, governments and communities to advance learning, work and entrepreneurship.

As applied to the United States, our developmental consulting practice translates into the goal of increasing the productivity and flexibility of the educational system and the benefits that come from this, while reducing system costs. A key element is increasing the percentage of Americans who benefit economically and educationally from acquiring and refreshing high-value degrees, credentials, certificates, and demonstrated competences throughout productive lives.

Contact - Donald M. Norris, Ph.D.
703.450.5255
dmn@strategicinitiatives.com



Strategic Initiatives Inc.
MANAGEMENT CONSULTANTS

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