Transformation Strategies for Higher Education

As digital technology reshapes the fundamentals of the higher-education industry, the basic tenets of teaching and learning that have endured for centuries are being turned on their heads — compelling institutions in this sector to adopt a new playbook to remain relevant.

Executive Summary

Now more than ever, understanding the intricacies of technology transformation is critical to staying relevant in the higher education environment. The technology landscape has changed dramatically over the past 15 years, along with the baseline expectations of the modern learner. Understandably, higher-education institutions are pressured to meet these new requirements – from personalized and affordable learning, to social media-based learning tools, mobile apps and 24/7 availability of administrative services.

The successful adoption and implementation of these technologies and their underlying infrastructure can be a daunting and complex effort encompassing a comprehensive evaluation of strategies, human resources, processes and technologies.

This white paper explores the business and technology drivers causing change within higher education, describes the new playbook for transformational initiatives and reveals success factors critical to a meaningful business transformation effort.

Business Megatrends

Changing customer demographics, behaviors and expectations. Revenue pressure. Increasing sensitivities surrounding the return on investment for dollars spent on higher education. All are driving a fundamental transformation across the education ecosystem (See Figure 1, next page).

The Student as a Savvy Customer

Today’s higher-education customer relies on university Web sites, student satisfaction ratings (as reflected on social media sites) and university ranking guides when making decisions on where to study. Millennials who have grown up on Facebook, Twitter and YouTube are far less likely to be excited about reading a 500-page textbook or traveling miles to listen to a lecture than previous generations.

Interacting with these students requires managing more communication channels than ever before. Decisions about when and how often to interact with prospective students, what content to communicate and what media channels to leverage for delivery are critical components of an effective enrollment strategy.
Personalized, Affordable and Outcome-Based Learning

Higher education customers now expect affordability as well as more services. Likewise, many institutions are driven by tuition income — and better student services cost more money. Today’s university leaders seek an appropriate balance between these opposing forces. The reduction in entry barriers has resulted in new players entering the market with affordable and innovative learning solutions.

For example, massive open online courses (MOOCs) address a growing customer segment looking for a cost-effective way of learning, with a degree or certification not necessarily being the end objective. Outcome-based and adaptive learning processes bring personalized learning experiences attuned to the distinct learning capabilities of individuals. This often results in improved learning outcomes. Monolithic and linear pedagogical models will soon be a thing of the past.

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Increased Public Scrutiny

External higher-education constituents (taxpayers, students and their families, government regulators and industry analysts, etc.) are increasingly monitoring tuition levels, academic outcomes and process efficiency within the higher-education industry. Since individuals seeking higher education often require tax payer-funded grant aid such as Pell, and loan/self-help like Ford Direct Loans, the general public is more interested in the economic impact of higher education on students. As a result, all levels of government are making adjustments to age-old reporting requirements — and creating new challenges for university leadership.

Tuition and fees at public universities have surged almost 130% over the last 20 years — while middle class incomes have stagnated. With the costs of higher education increasing faster than the median income levels of most families in the U.S., there is growing concern among students about carrying hefty loans when starting their careers — particularly amid a shaky global economy. Hence, customers are expected to look for avenues that offer a greater return on investment for their higher-education needs.

External Funding Levels

Over the last three decades, the amount of state funding for higher education has steadily decreased. This has resulted in institutions seeking new funding sources such as research and philanthropy. However, the area of highest growth has been tuition. More than 40 U.S. states...
reported a budget deficit for the 2012 fiscal year\(^2\) (CNN 2013). As states look to balance their budgets, education funding levels will be carefully scrutinized.

Universities will likely continue to be challenged by the uncertainty around funding sources, with the burden of higher education increasingly falling on the shoulders of students and their families.

**Outsourcing Contextual Services**

As budgets tighten, universities are re-evaluating what student services can be provided cost-effectively. In past years, higher education has outsourced bookstores, dining services and plant operations to optimize costs. More recently, institutions have outsourced e-mail services to Google and Microsoft. Other services ripe for outsourcing include:

- **Curriculum development:** New programs that meet market demand need to be developed quickly. Full-time faculty generally have several responsibilities, and are not always able to contribute sufficient time to curriculum development or help implement a new program in a timely manner.

- **IT support desk:** Today, students want to learn anytime/anywhere — placing an additional burden on IT support teams.

- **Institutional research:** In addition to the fact that campuses have many more reporting requirements, gathering information from a multitude of databases is a challenging task.

- **Business intelligence (decision support):** A single version of the truth is essential for effective decision making. Implementing a data warehouse makes this possible, and is critical for supporting the strategic planning process.

- **Project management:** In addition to the everyday support that is provided by the IT team, other projects such as database, Web site and server upgrades need to be taken care of. External project managers have access to the right people with the appropriate domain knowledge to efficiently execute these functions.

**Achieving Academic Excellence in an Adverse Economy**

Changing expectations from millennial customers, competition from niche players, funding pressures and increased scrutiny from various stakeholders notwithstanding, institutions of higher education are still expected to be centers of excellence — attracting the best brains from student and teacher communities, fostering research and innovation, and opening the doors for successful careers. Degrees from ultra-elite institutions (MIT, Harvard, etc.) are expected to continue to be in high demand, given their high recall values and exceptional lifelong networking reach. This may not be the case with institutions just below that level.

As online and distance learning programs become more popular, they will need to operate in an environment of diminished budgets and cost pressures. Technology budgets are likely to remain flat, and institutions will look for ways to be effective and grow in the midst of tight cost constraints.

**Technology Megatrends**

The business changes described in the previous section have propelled technology innovation and disruptions. In addition, like almost every other industry, the SMAC Stack\(^3\) (comprising social, mobile, analytics and cloud technologies) is disrupting the way higher education players engage their customers and partners and run their businesses.

**The Impact of Mobile Apps**

Smartphone adoption has reached nearly 45% for American adults and 66% for those in the 18 to 29 age bracket. Learners are increasingly choosing to consume media through these devices.\(^3\) IOS and Android smartphone adoption rates have surpassed that of any customer technology in history, including social networking.\(^4\) With the increasing availability of network infrastructures and the growing number of smartphone and tablet users, the mobile app market is becoming an important part of higher education.

Mobile apps are being used by higher education institutions to allow students greater access to administrative functions such as registration, financial aid and student billing. Mobile apps are also being used for teaching and learning. The Apple Store, for example, has over 20,000 education-focused applications. While not all of these are targeted at the higher education audience, the number of applications will continue to grow, and the available features for augmenting the learning process will improve.\(^5\)
Digital Delivery

The college textbook market is making the transition to digital delivery. According to the Book Industry Study Group (BISG), students still show a preference for the printed text, but that number is trending downward. The group's 2012 study revealed that 60% of students prefer the printed text, down from 72% in 2011. Tablet use for reading digital textbooks increased from 26% in 2011 to 37% in 2012.\(^6\)

Students are increasingly motivated to use digital textbooks because of their convenience (carrying a “reader” rather than multiple physical textbooks), interactivity (highlighting of relevant content and “linked” definitions for words in the text), and the potential cost savings.

Social Media and Customer Relationship Management

Engaging the modern student requires managing several communication channels, with social media being an increasingly important one. According to a recent Nielsen Media report, social networks and blogs now account for nearly 25% of total time spent on the Internet. Recruitment efforts within higher education use social media extensively to connect with and research potential prospects.\(^7\)

The modern learner, whether a millennial or an adult, has high expectations in terms of service. Many learners manage difficult schedules that require that they be able to accomplish their learning anytime and anywhere. Some campuses refer to CRM more generically as the “student portal” or “global home,” since it serves as a single online location for the student to connect with various learning tools and administrative functions.

CRM can be purchased as a single application. However, it is often integrated with the student information system (SIS). Access to the appropriate resources is enabled by assigning the student the appropriate “role.” When the student enters her login and password (authentication), the associated roles for the student determine what resources are available through a Web portal (authorization).

Business Intelligence

Understanding the marketplace and assessing the learning process have never been more critical for higher education institutions. Competition to recruit the right student has increased, the recruited student expects better services, and the larger community (e.g., taxpayers) expects to see appropriate educational outcomes.

New Technologies Changing the Learning Environment

![Figure 2](image-url)
Popular higher education terms that can be associated with BI are “assessment” and “learning analytics.” These terms are generally related to the concept of measuring student learning or learning outcomes. With the advent of big data, more information is available for analysis than ever before—from learning patterns and student preferences, to public opinion and feedback. Regional accreditation agencies, faculty and university presidents are very interested in gleaning insights and making more informed decisions from this information.

As a result of the aforementioned business and technology megatrends, the components of the higher education business model—tuition and net revenue models, marketing, enrollment strategy and content distribution—will evolve drastically. Not only are core business processes being altered by technological advances, but the ways in which individuals use technology to learn are shifting as well. Effective sharing, collaboration, virtualization and innovation are emerging as essential ingredients of the physical or virtual classroom (see Figure 2, previous page).

The Playbook for Transformation

Based on our deep understanding of the higher education marketplace and our work with several industry-leading organizations, we believe that the following elements should form the crux of any transformational strategy for higher education institutions.

• **Rethink your positioning:** Today’s customers expect continuous engagement, with the most up-to-date information in their areas of learning across a variety of digital platforms. As customer expectations and technology paradigms change, organizations operating in the higher education industry need to evaluate if they should think of themselves as media and information services players as well. Many of the business and technology imperatives for media and information services organizations, such as data as a service (DaaS), freemium payments, smart content, big data and analytics, and rich media are increasingly applicable to the higher education segment.

• **Make the world your campus:** Aided by technology, institutions of higher education now have the opportunity to take their courses to an exponentially greater number of customers across the globe, who they would never be able to reach otherwise. While emerging economies with massive knowledge-hungry populations like China, India and Brazil are a vast new market, youth in the developed world are also looking to develop skills that will help them compete in the global economy. The growing revenue potential of this new market could very well end up compensating for (or even surpassing) that of the traditional “on-campus” customer base.

• **Enable teacher and student success:** Leading colleges and universities can identify key areas of learning, use their best professors to create online lectures and use them as part of online learning programs, hence taking the expertise of their best teaching minds to a vastly greater audience. The old mindset of learning scarcity—limiting the audience for their best professors and classrooms—must give way to a more open approach of taking the best teachers to students across the globe, using technology as a tool.

• **Build scale on the cloud:** Building scale has been a traditional challenge for institutions of higher learning, be it creating the physical infrastructure for accommodating more students, or the technical infrastructure for managing learning platforms and administrative activities. By hosting learning programs and solutions on the cloud, the problem of building scale can be managed and resolved effectively. Cloud-based national or global content delivery platforms can offer economies of scale, reduce operational overheads and offload work that adds little or no value. In this way, the organization can focus on its core objective of providing better learning outcomes to students.

• **Convert learning data into insights and foresights:** Online learning platforms provide an unprecedented opportunity to capture information about the learning preferences and patterns, areas of expertise and core skill sets of students. This rich information can be used to fine-tune and customize the learning process for each student, either through automated learning algorithms or teacher intervention. This information can also be used...
to cross-sell more products and services. On the other end of the spectrum, insights into the unique skills of their customers could prove to be invaluable to potential recruiters. Analytics can open a host of hitherto unknown possibilities of monetization.

- **Explore affiliated services:** In order to maintain a persistent connection with customers beyond their core learning outcomes, higher education players should explore the associated services they can offer. Options such as curriculum design, placement and career services, corporate training services, enrollment and admissions services can be explored.

- **Leverage cost benefits in operations:** While colleges and universities might regard the reduction in enrollment of their full-time on-campus courses as a hit on their revenue, the resulting reduction in infrastructure costs like real estate, power, staff salaries and physical security can ease the pain of decreased government funding to some extent. Universities and colleges should look to run a tighter ship by shaving administrative costs, eliminating high-cost, low-demand programs, reconsidering course durations and credit requirements, and reducing energy consumption, for example. Online courses do not have the same overhead costs as classroom programs. Partnering with online education service providers and MOOCs can help further lower the cost of online course development.

- **Train teachers and plan for change:** The use of technology can be overwhelming for many teachers, including the best and most loved by students. Institutions, as well as others in the educational ecosystem, must carefully develop the benefits they want to target and tailor appropriate roles for technology. With a plethora of technology options available to teachers, selecting the right tools can be the difference between a successful – or unsuccessful – online program. In today’s digital ecosystem, the packaging and mode of delivery of content is as critical to success as the content itself. Institutions of higher learning should carefully evaluate the technology enablers that are best suited for their subject area, student preferences and teacher competencies. Simply “throwing” technology at this challenge can actually create worse outcomes for students, teachers, institutions – and budgets.

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**A Business Transformation Framework**

To formulate the right strategy for a transformative effort within a rapidly changing environment, it is crucial that a robust and well-defined framework is in place. Such a framework must evaluate an organization across internal and external variables, along a holistic set of parameters. Our Cognizant Value Discovery Assessment (CVDA) is a proprietary tool and framework that informs, transforms and communicates an organization’s strategy. The CVDA’s value is in its ability to deliver a relative diagnosis of the current and planned strategies, and prioritize the areas of change and focus that the organization should pursue. CVDA evaluates the current and future enterprise transformation strategies against the top four levers that deliver value in higher education:

- **Efficiency:** Optimizing the cost structure of the institution, streamlining processes, reducing waste and understanding what programs produce the most value.

- **Effectiveness:** Improving productivity and operational performance in areas such as quality control, student satisfaction and quicker response to market changes (program development to meet student needs and interests).

- **Virtualization:** Sharing learning processes, knowledge and technology both within and outside the institution in a collaborative and flexible manner.

- **Innovation:** Fostering the capacity to create new programs and student services that will result in new revenue streams.

In the information, media and entertainment space, we have used the CVDA framework (see Figure 3, next page) to define long-term business transformation strategies for a global publisher of higher education content and a leading U.S. performing rights organization. We charted variables such as the strength of the organization’s core business, customer focus, revenue diversification, digital strategy, data and analytics, technology footprint, management of costs, strategic partnerships and globalization initiatives across the four CVDA dimensions.

A mapping of the CVDA “diamond” for the client organization against CVDA diamonds of competitors and industry (created through in-depth primary and secondary research) reflected the
areas of focus that should define their business strategies, and the consequent future state of their systems and processes. Based on our experience, we believe that this framework can be used as an effective tool for defining the transformation roadmap for players in the higher education sector.

Critical Success Factors

The success or failure of any business transformation effort largely depends on a few key variables. We believe that players in the higher education market need to keep the following factors in mind during their transformation journey.

- **Agility and Flexibility:** With the technology landscape changing at the speed of thought, organizations must be flexible in their approaches to meeting customer needs. To support business transformation, an organization may need to nurture a set of capabilities it does not currently possess. For example, a higher education institution may need to transfer student experiences, learning workflows and engagement to mobile platforms. In order to provide the flexible schedules that the modern learner needs, an institution may have to migrate course curriculum for online delivery.

- **Accelerate time to market:** Many institutions are steeped in history, and have traditionally been slow to adapt to changing market dynamics. In today’s environment, business model lifecycles can be short. To contend with change, these organizations must find ways to quickly embrace newer business and operating models, and offer new services with greater revenue potential. Delays in initiating or implementing new initiatives can cause an organization to miss the next big wave.

- **Improve customer connections:** If an organization does not know what its customers are thinking on a real-time basis, it will gradually lose the ability to invest and monetize relevant content and opportunities. Tools that mine conversations on popular social media platforms and analyze user sentiment can be used to feel the pulse of the customer. This is especially relevant in higher education, since the overwhelming majority of customers come from the age group that is most active on social media.

Cognizant Value Discovery Assessment Framework

![Assessment Framework Diagram]

- **Virtualization**
  - Improved capital productivity/utilization.
  - Developing offerings through strategic partnerships and joint ventures.
  - Cloud offerings.

- **Effectiveness**
  - Productivity/quality improvement.
  - Enhancement/expansion of existing capabilities and business models.

- **Efficiency**
  - Cost reduction and control.
  - Lowering effort while improving output.

- **Innovation**
  - Innovation.
  - Revenue enhancements.
  - New business models and capabilities.

Figure 3
• **Partnerships:** As technology shifts force higher education players to enter uncharted waters, the importance of key partnerships in areas such as IT infrastructure, MOOCs, learning management systems, semantic search and content enrichment is increasing. Partners can feed off one another's expertise and take more compelling learning solutions and services to customers.

**Looking Ahead**

Higher education institutions will continue to face major challenges from new competitors, changing customer behavior and an unfavorable regulatory environment. A prospective learner's ecosystem will also continue to change, as will their expectations for appropriate and effective learning services. The variable that can and should be managed is how quickly your institution can adapt to meet the market's needs.

**Footnotes**


8. Big Data is the term for a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications. [http://en.wikipedia.org/wiki/Big_data](http://en.wikipedia.org/wiki/Big_data).

9. Data as a Service is based on the concept that the product, data in this case, can be provided on demand to the user regardless of geographic or organizational separation of provider and consumer. [http://en.wikipedia.org/wiki/Data_as_a_service](http://en.wikipedia.org/wiki/Data_as_a_service).

10. Freemium is a business model by which a proprietary product or service is provided free of charge, but money (premium) is charged for advanced features, functionality, or virtual goods. [http://en.wikipedia.org/wiki/Freemium](http://en.wikipedia.org/wiki/Freemium).

11. Smart Content is information, typically originating in unstructured formats, that is findable, reusable, more profitable (however measured) for the producer, and more useful for the consumer. Six Definitions of Smart Content [http://www.informationweek.com/software/business-intelligence/six-definitions-of-smart-content/228901459](http://www.informationweek.com/software/business-intelligence/six-definitions-of-smart-content/228901459).

12. Rich media refers to products and services on digital computer-based systems which respond to the user's actions by presenting content such as text, graphics, animation, video, audio, games, etc. [http://en.wikipedia.org/wiki/Interactive_media](http://en.wikipedia.org/wiki/Interactive_media).


About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 50 delivery centers worldwide and approximately 164,300 employees as of June 30, 2013, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.

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