Pursuit of relevance

How higher education remains viable in today's dynamic world

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Repairing higher education

The demands on – and for – higher education have never been greater. As economic shifts and technological advances dramatically change workforce requirements worldwide, corporate recruiters struggle to find qualified graduates. At the same time, the cost of higher education continues to rise, leading many to question its value. Our recent higher education study suggests that both academic and industry leaders believe the current system is broken. Its repair requires a systemic transformation that prioritizes more practical and applied curricula, exploits disruptive technologies, and strengthens and expands ecosystem partnerships.

Executive summary

Demand for higher education is growing – and so are the costs. According to a 2012 survey, 94 percent of U.S. parents expect their child to go to college. However, 75 percent of Americans believe college is too expensive for the average family, and almost 60 percent believe colleges fail to provide a good value for the money.[1]

Higher education is struggling to keep pace with the changing world. Economic and technological changes are disrupting industries and business models – and dramatically affecting the value of workers' skills. Today, many students who exit educational institutions and enter the workforce find themselves underprepared.

As the value of higher education is scrutinized, so, too, is the continued relevance of traditional education models. A disconnect exists today between educators and industry leaders, with little discussion and no agreement on the skill sets that are essential to successful employment.[2] As a result, many students do not acquire the skills necessary for workforce effectiveness and success.

To better grasp the numerous issues confronting the higher education industry and identify ways to refine an imperfect but crucial system, IBM consulted experts from both industry and academia. In collaboration with the Economist Intelligence Unit, the IBM Institute for Business Value surveyed more than 900 academic industry leaders from private and public colleges and universities, vocational programs, community colleges, education service providers and corporations around the world. We also conducted interviews with 25 leading academic subject matter experts.

Only

49%

percent of industry and academic leaders believe higher education meets student needs.

Only

41%

believe higher education meets industry needs.

Only

43%

across industry and academia believe higher education prepares students with necessary workforce skills.

Through our research, we discovered that most industry and academic leaders believe job placement is the best measure of higher education effectiveness. However, they also acknowledge that the current higher education system does not meet its core customers' needs or sufficiently equip students with the skills required to be competitive. However, despite the current challenges, major stakeholders are actually optimistic about higher education's ability to meet the needs of core customers in the future.

Unfortunately, this optimism might be misplaced, as academic leaders are not prioritizing the actions necessary to transform traditional higher education into a more effective model. Technological innovation and industry demands are now moving too rapidly for higher education to keep pace. Students, businesses and educational institutions themselves are suffering as a result.

The answer to this dilemma in higher education will not be found in incremental improvements. Rather, the system requires a fundamental transformation driven by three key strategies:

- Prioritize creation of more practical and applied curricula.
- Embrace new technologies to improve educational access, experiences, variety and outcomes.
- Build and expand relationships between higher education institutions, employers and other partners within comprehensive and far-reaching educational ecosystems.

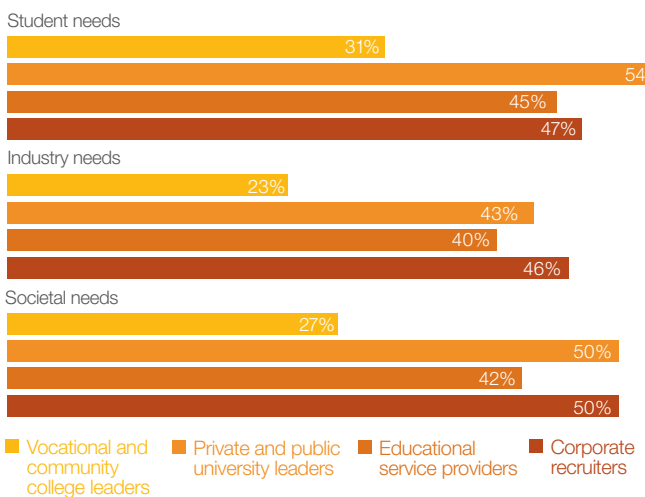
System at a crossroads

Our survey revealed concerns from both industry and academic leaders alike regarding the current higher education system's abilities to meet core customer needs. Less than half believe the system meets the needs of students (49 percent), industry (41 percent) and society (47 percent).

Vocational and community college leaders are most pessimistic (see Figure 1). Being closer to the intersection between academics and employment, they recognize the large gap between what higher education currently provides and what industry, society and students need.

Figure 1

Vocational and community college leaders have the most pessimistic view of higher education's ability to meet customer needs



Source: IBM Institute for Business Value Higher Education Survey 2015. Question: "To what extent do you believe the current higher education system in your country is meeting the needs of the following groups?" n=935

"The biggest challenge facing higher education involves meeting the expectations of customers and gaining an understanding of their needs in the world."

CIO, North American public university

Survey results also point to higher education shortfalls in other areas. In terms of economic value, only 51 percent of industry and academic leaders believe higher education is providing value for money, and just 49 percent view it as contributing to economic growth and competitiveness.

In addition, only 49 percent of leaders believe the current system provides access to students from a broad range of economic and social environments. And only 43 percent believe that the current system successfully prepares students with the skills they need in the workforce. Skill-related gaps are not just a concern among business and academic leaders. According to our 2015 report on long-term unemployment, only 53 percent of public employment service and workforce development experts believe higher education adequately prepares students for the workforce. The report also revealed that the top three characteristics of the long-term unemployed all involve skill gaps.[3]

Our higher education survey also sought to identify the industry's fundamental challenges today. Survey participants' answers point to multiple issues hampering the current system's ability to meet customer needs. Topping the list are difficulties in obtaining adequate funding and difficulties experienced in investing in more engaging and relevant educational experiences. Other challenges cited include traditional delivery models that are misaligned with society, industry and student needs; conservative cultures that are slow to respond to change; and difficulties maintaining curriculum relevant to changing industry needs.

The future

Despite their disappointment in the current system, academic and industry leaders appear optimistic about higher education's future. When comparing the past five years to the next five, respondents predicted significant improvements in meeting industry demands, positioning students for employment and preparing students with the skills they need in the workforce.

However, academic leaders have no plans to prioritize the specific actions necessary to achieve these improvements, such as working closely with industry and helping students establish careers. In fact, when comparing academic leaders' business strategies today to those in five years, we found very little change in terms of priority for most areas (see Figure 2). Actually, respondents predict their focus on launching careers will actually decrease in the next five years.

The higher education model of lectures and examinations has barely changed for centuries, despite dramatic changes in the world and growing numbers of universities and graduates.[4] To adequately prepare students for a continually evolving world, higher education must evolve. Academic and industry leaders need to work together to prioritize practical and applied educational experiences; technology solutions that improve education access, experience, variety and outcomes; and strong relationships within education ecosystems.

"The biggest challenge facing higher education is complacency."

Senior administrative executive, North American public university

Figure 2

Academic leaders are not prioritizing the actions necessary to deliver on their optimistic view of the future

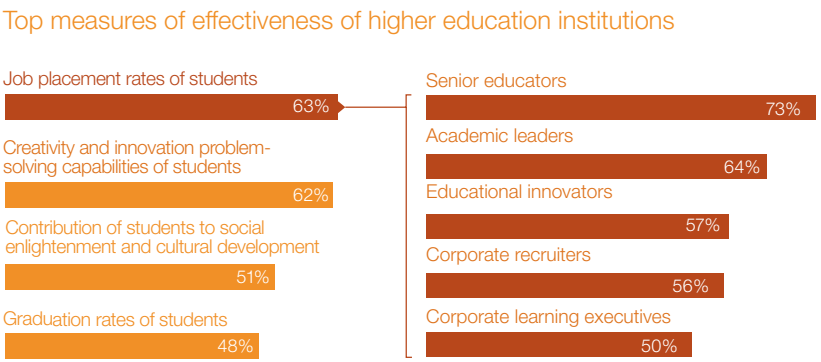
Source: IBM Institute for Business Value Higher Education Survey 2015. Question: "To what extent do you agree or disagree with the following statements?" n=600

Practical, applied experiences

When asked to rank the top measures of effectiveness for higher education institutions, academic and industry leaders put job placement at the top of the list (see Figure 3). When results are broken out by role, it is evident that academic leaders feel particularly strong about job placement: More than 70 percent of senior educators and 64 percent of academic leaders believe job placement is the most important measure of effectiveness.

Figure 3

Most academic and business leaders identified job placement as the best measure of higher education effectiveness



Source: IBM Institute for Business Value Higher Education Survey 2015. Question: "What do you consider to be the best measures of effectiveness or success of higher education institutions?" n=872

Daimler apprenticeship combines classroom, practical training[5]

Daimler, one of the largest producers of premium cars and commercial vehicles globally, is one of many German companies with successful apprenticeship programs. Each year, Daimler selects around 2,000 apprentices for its on-the-job program. Of those selected, nine out of ten likely will land permanent jobs, while others might be offered short-term contracts.

In Germany, development of training plans involves close consultation between employers, educators and the government. The dual training aspect of apprenticeships means trainees split their time between classroom instruction at a vocational school and on-the-job experience with an employer. What students learn in class is reinforced on the job, as they simultaneously learn responsible work habits and corporate culture.

We also polled industry and academic leaders regarding the role of higher education. One out of two surveyed indicated the role includes providing business with an appropriately skilled workforce and students with the fundamentals to launch a career.

Building the right skills

We asked industry and academic leaders to identify the most important requirements for individual success in the workforce, as well as the most significant gaps in capabilities for students exiting higher education programs today. Survey results revealed that the very skills needed for workforce success are the same skills exiting students most lack, including analysis and problem solving; collaboration and team work; business-context communication; and flexibility, agility and adaptability. Underscoring this point, 71 percent of corporate recruiters indicated that finding applicants with sufficient practical experience was their greatest single challenge when recruiting from higher education institutions.

So, how can institutions help improve the employability of students? According to our survey respondents, the best ways to address performance gaps are through experience-based learning and internships and apprenticeships.

By offering more practical and applied education experiences, institutions help students apply the knowledge gained through coursework in real-world settings. It is one thing to study a technique or concept and quite another to perform in a work environment. As one European vocational university leader put it, “One of the biggest challenges facing higher education is optimizing practical learning – focusing on skills and experience rather than transferring a core base of knowledge.”

Today's homework

Below are some next steps for providing more practical and applied educational experiences:

- *Identify high-value opportunities:* Assess existing curriculum to identify where opportunities and needs exist to infuse experienced-based learning techniques, new technologies and real-world learning experiences (e.g., internships, apprenticeships). In addition, look for opportunities to leverage "flip" teaching (where students learn basic content outside class and do homework and problem solve in class) to expand opportunities for incorporating experimental learning.
- *Partner to extend and strengthen capabilities:* Build and expand alliances with industry partners to identify and validate needs and opportunities for specific skills. Work with industry partners to develop or expand programs around real-world learning experiences, and foster support for business investment in apprenticeships, internships and other programs.
- *Apply metrics and refine the education portfolio:* Develop benefits realization plans to monitor and evaluate the impact of real-world learning programs on student skills and capabilities. In doing so, leave room for adjustments that enable program portfolio calibration based on outcomes.

Disruptive technology

Technology has greatly influenced and changed consumer behavior and expectations. New technologies enable deeper, richer experiences, which consumers have come to expect and, in fact, demand. Higher education's consumers – students – are no different. They expect institutions to deliver enhanced experiences.

For the most part, today's higher education experience is not in synch with customer expectations. The bulk of higher education students are Millennials – the first generation to grow up immersed in a digital world.[6] Using mobile and social technologies, immediately accessing data, and instantly communicating and collaborating are all second nature for them. And while Millennials are adept at interacting online, their top-three preferences for learning new skills at work are physical not virtual, tying back to the need for practical education experiences.[7] Infusing technology into the higher education system is not simple. Technology needs to be used in the right ways to enhance the overall education experience.

Technology and education

Technologies – such as social, mobile, analytics, cloud, 3D printing, robotics and cognitive computing – are impacting industry workforce requirements around the globe. Obviously, this creates challenges for institutions whose mission involves preparing students for employment. Recognizing this, more than half of educational service providers identified "keeping workforce skills current with technology changes" as one of their greatest challenges.

At the same time, the higher education industry itself is experiencing shock waves from disruptive technologies. Almost three-quarters of academic leaders believe technology is disrupting traditional higher education models. For example, technology has contributed to:

- Increased competition from new options like blended learning models, online platforms and courses, and massive online open courses (MOOCs)
- Growing demand for rapid curriculum changes as technical advances alter business needs
- Ever-evolving expectations from students – from how they interact with content to increased expectations regarding curricula variety, accessibility and relevance
- Additional opportunities for enhanced learning through more engaging and interactive lesson delivery methods.

Surprisingly, many education and industry leaders do not fully acknowledge technology's potential in education: only 51 percent believe technology benefits outweigh adoption costs. To better meet customer expectations, industry leaders need to embrace technology's ability to *promote access* to education, *deepen educational experiences, expand the variety* of experiences available, and *improve student outcomes*.

Promote access: Thanks to technology, students and faculty can access classes, curriculum and other educational content wherever there is an Internet connection. The California Community Colleges (CCC) system leverages online collaboration tools to hold live online classes, as well as virtual meetings for staff spread across the State of California. In addition to saving money on staff travel, the CCC system retains approximately 10,000 students annually who otherwise might have dropped out of less engaging asynchronous online courses.[8]

"The biggest opportunity facing the industry is capitalizing on technology to improve accessibility and delivery of lower-cost but high-quality education."

President, North American private college

Minerva relies on technology in preparing future leaders[12]

Established in 2012, the Minerva Schools at Keck Graduate Institute (KGI) seek to provide an exceptional and accessible liberal arts and sciences education to prepare future leaders and innovators in a global context. As part of an alliance with KGI, a member of the Claremont University Consortium, Minerva offers an undergraduate degree program featuring a reinvented curriculum, rigorous academic standards, cutting-edge technology and an immersive global experience.

Minerva's small classes are live, discussion-intensive seminars directed virtually in real time by faculty using a platform designed to maximize student interactions. Features include real-time simulations, dynamic quizzes and polling, performance review and progress tracking, and tools to augment studies outside class seminars. Professors provide frequent, detailed evaluations with individualized feedback based on data collected continuously during each seminar.

Deepen experience: Integrating the physical and digital worlds can create a more compelling and engaging educational experience. For example, simulator technology at the University of South Florida Center for Advanced Medical Learning & Simulation (CAMLS) enables more realistic training for medical students. A free-standing assessment and teamwork competence center for medical training programs, CAMLS delivered 638 programs aimed at improving patient safety and served more than 19,000 domestic and international learners in 2014.[9]

Expand variety: Technology expands the educational experience beyond traditional institutions by enabling new options, such as those available at Canvas Network. Offering open online courses taught by educators around the world, Canvas Network provides a platform for teachers, students and institutions to connect and chart their own course of academic inquiry.[10]

Improve outcomes: Analytics solutions can enable improved decision making by focusing on patterns that indicate student success. In addition, data sharing among ecosystem partners can provide greater context and insights. For example, the Predictive Analytics Reporting (PAR) Framework, a non-profit provider of analytics as a service, delivers insights to member higher education institutions. Through predictive models and collaborative frameworks that identify critical risk points, member institutions can help improve student success.[11]

Today's homework

Following are suggested actions for higher education institutions seeking to improve education access, experience, variety and outcomes via technology:

- *Assess current capabilities:* Engage core customers to evaluate existing capabilities and mechanisms for providing access, experience and variety to identify where opportunities for improvements exist. Evaluate analytics capabilities and decision support tools within the ecosystem to identify opportunities to enhance decision making and improve student outcomes.
- *Experiment with new technologies:* Adopt processes to monitor and experiment with new disruptive technologies (e.g., analytics, cognitive computing, virtual reality, simulation modeling) that can enable expanded access, experience and variety and help improve outcomes. Initiate steps to broaden organization culture and openness to experimentation, and recognize and accept that in the process of innovation, some failures are inevitable.
- *Extend capabilities through ecosystem partners:* Identify and evaluate new opportunities to expand access, experience and variety by leveraging capabilities, resources and assets of ecosystem partners.

An ecosystem is a complex web of interdependent enterprises and relationships aimed to create and allocate business value. It is broad by nature, potentially spanning multiple geographies and industries, including public and private institutions and consumers.

Strong partnerships

Beginning with the industrial revolution and continuing through one technological milestone after another, economic activity has become more global, opening up new markets, businesses and business models. Throughout these cycles of transformation, however, the higher education model has remained essentially the same.

Although slight winds of change were felt when the advent of the Internet enabled new education delivery models, nothing has prepared higher education for the changes looming ahead. Today's disruptive technologies have the power to shatter traditional education models and transform the higher education landscape.

To fully exploit technology's potential (as opposed to being steamrolled by it), higher education leaders must collaborate more closely with industry leaders. Industry and academic leaders agree that increased partnership is necessary for higher education improvement. Specifically, 57 percent agree collaboration is necessary to effectively deliver higher education to students, while 56 percent believe collaboration is necessary during curriculum development.

This need for stronger alliances between higher education and industry is symptomatic of the sector's broader transformation from a traditional model into a new economic structure: an ecosystem. In the emerging higher education ecosystem, one-on-one relationships will be supplemented and replaced by multiple player engagement – a network of organizations contributing to system-wide outcomes. In this new system, successful strategies of the past might well become obsolete.

New forms of value

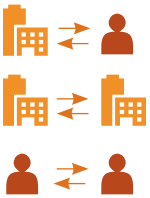
Ecosystems create new forms of value. The defining characteristic of an ecosystem is the presence of orchestration. While market participants operate out of individual self interest, ecosystems operate out of mutual shared interest (see Figure 4). Ecosystems exist because participants can deliver more value acting together within the ecosystem than they can acting alone.

Figure 4

Operating in an orchestrated environment, ecosystem participants can deliver more value acting together than acting alone

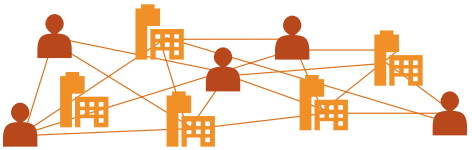
Markets: Entities operate based on self-interest

A set of individuals or organizations exchanging products or services within an environment governed by the laws of supply and demand



Ecosystems: Entities operate based on orchestrated, mutual shared-interest

A set of individuals or organizations formally or informally operating together to produce something of greater value for the mutual benefit of the ecosystem as a whole



Source: IBM Institute for Business Value.

Long Beach embraces collaboration to drive educational improvements[13]

The Long Beach Seamless Education Partnership (the Partnership) was launched in 1994 to help students progress smoothly through the education systems and into the workforce.

California State University at Long Beach, Long Beach City College and Long Beach Unified School District joined forces to improve communication and accountability across the local K-12, community college and four-year institutions. The mission eventually grew and now includes alignment of curriculum and standards in postsecondary institutions. Although education institutions are at its heart, the Partnership has enjoyed support from businesses, media and other organizations since inception. Forging relationships across institutional boundaries has helped the Partnership become a model for higher education ecosystem collaboration.

Several elements are critical to creating and sustaining effective higher education ecosystems:

- Civic engagement and strong leadership from industry.
- Strong connections with government leaders, particularly regional economic development organizations and workforce development boards.
- Intermediary organizations that serve as the ecosystem orchestrators – a role that is critical in uniting organizations and defining the value proposition of taking action (NGOs, economic development organizations and chambers of commerce are potential candidates).
- A common vision and long-term charter that clearly defines commitments, provides for accountability mechanisms through transparency (e.g., publicly released annual reports), aligns with larger economic and workforce development strategies, institutionalizes processes and formalizes commitments.
- Early wins – that demonstrate commitments and results – to keep the business community engaged as partners.
- Collaborative data sharing to enable better signaling of what jobs and skills are in demand. Signaling data should be used to educate ecosystem members, including students and parents.

Today's homework

Below are actions aimed at building, expanding and strengthening relationships within the higher education ecosystem:

- *Identify the right partners and empower an orchestrator:* Identify key partners from academia, industry and the public sector and define and empower a strong intermediary to recruit partners and build consensus.
- *Crystalize the vision, define objectives and gain commitments:* Define and reach consensus on a common vision with clearly defined commitments across ecosystem partners. In addition, define ecosystem business intelligence requirements and strategy for addressing data collection and sharing among partners.
- *Formalize processes and design for sustainability:* Establishing a committee or task force to address a one-time problem is easy. Building an ecosystem that enables sustained collaboration over the long term is much more challenging. To be successful, define and formalize processes and accountability mechanisms to help ensure partners remain engaged and committed. In addition, encourage partners to align internal business metrics to the ecosystem vision.

Malaysia embraces collaboration for economic growth[14]

Since the early 1990s, the Malaysian Ministry of Education has emphasized the need for collaboration between the public and private sectors in the areas of R&D and human capital development to drive economic growth. In collaboration with industry partners, the Ministry of Education has enhanced the market orientation of academic courses to ease student transition into the workforce and to improve overall student employability. The Knowledge Transfer Partnership (KTP) program was introduced to facilitate collaboration between industry and various universities. KTP broadens the industry experience of university faculty members and provides industrial-based training programs to enhance the practical knowledge, business skills and employability of graduates.

For more information

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Pop quiz

Are you ready to seize the day?

Higher education has successfully supported growth, economic development and social change for multiple generations across millennia. However, the industry has never faced the magnitude of change and transformation existing today. Higher education leaders have an opportunity to capitalize on technological, industry and budgetary forces by embracing them to shape new education and economic models. As a first step in prioritizing more practical curricula, exploiting disruptive technologies and building strong partnerships, consider the following:

- How does higher education meet the needs of core customers and equip students with the skills they need to be competitive and effective in the workforce in your region?
- How engaged and coordinated are industry, higher education and other ecosystem partners in your region? What opportunities exist to expand these relationships to improve outcomes for customers?
- To what degree is the higher education system in your region providing practical and applied educational opportunities? What opportunities exist to include more experienced-based learning techniques, new technologies and real-world learning experiences (e.g., internships, apprenticeships) in curricula?
- How are new technologies being leveraged to improve access, experience, variety and outcomes? What opportunities for improvements and new partnerships exist? How can technology be used to improve the efficiency and effectiveness of partner interactions?

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Study approach and methodology

In collaboration with the Economist Intelligence Unit, IBM surveyed more than 900 academic and industry leaders and interviewed 25 leading academic subject matter experts. Five specific groups were surveyed across public and private colleges and universities, vocational programs, community colleges, educational service providers and corporations:

- *Academic leaders:* Included deans, presidents, chancellors, vice chancellors, provosts and senior academic administrators from a mix of four-year, vocational/technical and community colleges.
- *Senior educators:* Included professors, assistant professors and individuals responsible for higher education delivery.
- *Corporate recruiters:* Included individuals from private-sector companies responsible for recruiting talent for their organizations.
- *Corporate learning executives:* Included executives from organizations that provide learning services to public and private sector organizations.
- *Educational innovators:* Included individuals from leading technology companies responsible for developing and innovating new education products and services.

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