

New schools of thought

Innovative models for delivering higher education

A report by The Economist Intelligence Unit



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Foreword

New schools of thought: Innovative models for delivering higher education is an Economist Intelligence Unit (EIU) report that has been commissioned by Qatar Foundation. The findings are based on an extensive literature review and a comprehensive interview programme conducted by The EIU between August and December 2019.

The EIU bears sole responsibility for the content of this report. The findings and views expressed herein do not necessarily reflect the views of the partners and experts.

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About Qatar Foundation

Qatar Foundation (QF) is a non-profit organisation made up of more than 50 entities working in education, research and community development. Now in our 25th year, the mission of Qatar Foundation is to drive regional innovation and entrepreneurship, foster social development and a culture of lifelong learning, and prepare our brightest minds to tackle tomorrow's biggest challenges.

At the heart of everything we do, we strive to unlock the most precious resource of all—human potential. Education City, our flagship initiative, spans more than 12 square kilometers and hosts branch campuses of world-leading universities, a homegrown university, and other research, scholastic and community centres. Together, these elements make Education City a unique model of academic and research excellence, pioneering a new approach to multidisciplinary, global education, and enabling breakthroughs that benefit Qatar and the rest of the world.

Consistent with our mission to trigger thoughtful discussions about choices facing education policymakers around the world, Qatar Foundation is delighted to sponsor “New Schools of Thought” by The Economist Intelligence Unit.

About the Economist Intelligence Unit

The Economist Intelligence Unit (EIU) is the research arm of The Economist Group, publisher of The Economist. As the world's leading provider of country intelligence, it helps governments, institutions and businesses by providing timely, reliable and impartial analysis of economic and development strategies. Through its public policy practice, The EIU provides evidence-based research for policymakers and stakeholders seeking measureable outcomes, in fields ranging from gender and finance to energy and technology. It conducts research through interviews, regulatory analysis, quantitative modelling and forecasting, and displays the results via interactive data visualisation tools. Through a global network of more than 650 analysts and contributors, The EIU continuously assesses and forecasts political, economic and business conditions in more than 200 countries. For more information, visit www.eiu.com

Executive summary

Higher education has long played a critical role in societal and economic development, promising graduates better job opportunities, as well as opportunities to grow in autonomy and self-awareness. Although higher education institutions have existed for more than a millennium, their number and type have increased dramatically over the past six decades. This increase has brought existential questions to the fore: Should institutions focus on ensuring that graduates are job-ready? Should they take the lead in developing and commercialising next-generation research? Should they promote civic engagement to rebuild trust in ever more fractured societies? Or should they do all of the above, and more?

Higher education institutions are also grappling with new pressures. As traditional sources of public funding dry up and advanced technologies threaten to automate more and more jobs, employers and institutions are re-thinking what to teach, and how. One conclusion is increasingly clear: traditional higher education models will need to evolve if their impact on economies and societies is to remain as outsized in the next six decades as it has been in the past.

The most immediate challenge is determining how to tackle 2020's COVID-19 pandemic, which has forced most higher education institutions around the world to suspend face-to-face teaching and shift to online classes. While this will remain feasible for most courses over the coming weeks, it will be challenging to maintain this approach in the longer term. Courses that include vocational training, for example, will struggle to operate if the outbreak persists. Institutions that rely on admission fees from international students will also face financial challenges, which will be compounded by pressure from students to reduce or partially reimburse fees. Governments may provide emergency financial support, but some smaller higher education institutions are likely to fold, and others may be absorbed by larger institutions.

Even after the coronavirus pandemic subsides, the ripple effects will have a permanent impact on the higher education landscape. Students' exposure to online learning will have increased as a result of the outbreak, requiring higher education providers to re-think their delivery methods. Amid what is likely to be a deep economic recession, students and parents will question what type of higher education provides the best value (if any).

The coronavirus outbreak will also exacerbate some of the pre-existing and systemic challenges faced by higher education providers. In this report, we identify five innovative models that attempt to address one or more of these challenges. For each model, we examine one leading institution's experience to date, from the point of view of experts, as well as students and graduates. As our analysis makes clear, each model offers unique lessons for higher education policymakers and institutions, even if there is no one-size-fits-all approach that institutions can seek to emulate.

Future-proofing: Five innovative models of higher education

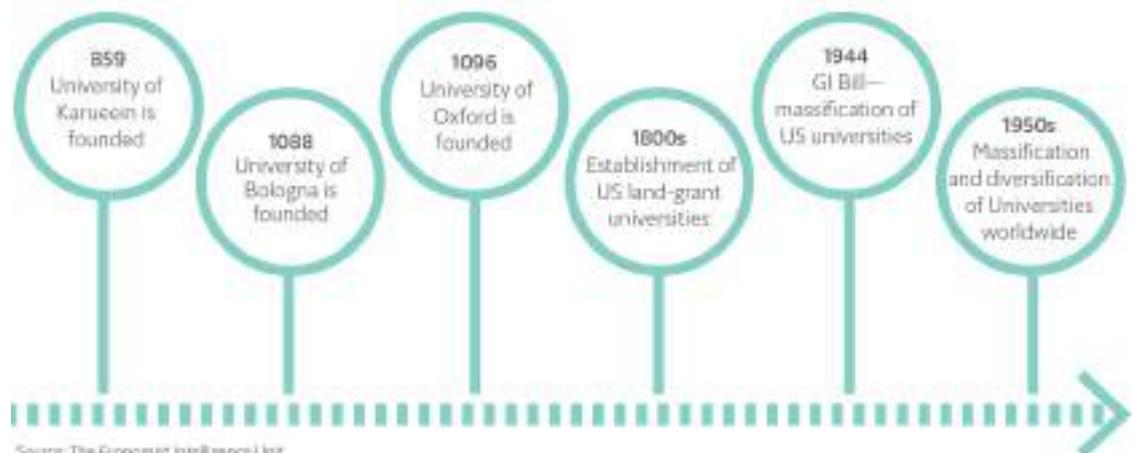
- **Online universities** leverage the Internet to offer higher education “anytime, anywhere, to anyone”. They tap into a growing desire for more flexible modes of learning and promise to dramatically increase access for long-marginalised groups. However, the past decade has also brought a much-needed reality check about the challenges of online learning. Today’s leading online universities acknowledge that successful courses require substantial investment and bespoke materials, as well as a continued commitment to “hybrid” learning for certain students.
- The **cluster model** eliminates the traditional siloed nature of university campuses by fusing multiple institutions. Shared services and facilities aid economies of scale, reducing overall costs and offering students a greater range of course options. However, common priorities do not always exist across or even within institutions, which can make collaboration difficult. Complications may also arise if there is disproportionate demand for academic, administrative or social offerings from one—but not all—of the cluster institutions.
- **Experiential** institutions bring teaching out of the classroom, with learning driven by diverse experiences such as internships or hands-on projects. Such institutions could help students develop priority skill sets that today’s employers expect, such as higher-order collaboration, leadership and communication. However, the experiential model is also a new one and faces several challenges, including finding ways to align looser and longer-term projects with semester-time evaluation constraints. Experiential learning also requires a highly trained faculty who are able (and willing) to move away from traditional lecturing.
- **Liberal arts colleges** are typically smaller institutions that aim to provide a highly personalised university experience with a lower teacher–student ratio. They prioritise developing intellectual capacity over specific technical or vocational skills. This model is already established in the US and is beginning to spread across Europe and Asia. However, higher teaching and facility costs mean that funding remains a challenge. Opinions are also mixed regarding the utility of this form of education; some argue that generalist skills are increasingly needed in the corporate world, but others hold that institutions must focus, at least to some degree, on more targeted pre-professional skills.
- In the **partnership model**, institutions build relationships with external partners in order to secure long-term funding and improve job prospects for graduates. Firms and organisations partner with a university in order to allow their employees to study there at a discounted rate, with employers often shouldering part or all of the costs. Courses focus on upskilling and reskilling and are tailored to particular jobs or skill gaps that partners face. However, low entry-level requirements have led to criticism that some institutions are providing sub-par qualifications to students who would struggle to complete courses at more traditional institutions.

1. Introduction: The evolving goals of higher education

The concept of higher education has existed for more than a millennium. One of the earliest higher education institutions, the University of Karueein, opened its doors in Fez, Morocco in 859, after originally being founded as a mosque. For centuries, the higher education model remained relatively static and narrow—a select group of students studying a prescribed curriculum under the guidance of a learned professor or tutor. Approximately 200 years ago, the concept began to broaden and access began to grow. In the US, following the American Civil War, publicly funded “land-grant” universities emerged with a mission to provide a practical education, in areas related to agriculture and the mechanic arts, to broader swathes of the “industrial masses”.¹

True massification of higher education began in earnest after World War II. Industrialised countries in Europe, North America and parts of Asia built new universities and widened the doors to existing institutions. The US GI Bill made a college degree possible for tens of thousands of veterans who would otherwise never have studied beyond high school. California’s “master plan” set out a more differentiated structure for higher education—one that promised both excellence and accessibility. In Britain, Japan, and Australia, sizeable numbers of new universities, polytechnic institutions, and locally run colleges emerged.

The history of higher education



Source: The Economist Intelligence Unit

Defining higher education: Our approach

Today, multiple definitions of higher education exist, most of which are broad and capture a multitude of institutions. In this report, we take a narrower view. We focus primarily on institutions that confer undergraduate bachelor's degrees

and, when applicable, alternatives such as foundation degrees and higher national diplomas, two-year degrees, or certifications that are typically the equivalent of the first two years of an undergraduate degree programme. Importantly, our analysis does not focus on post-graduate higher education (e.g. master's degrees or doctorates), or on Technical and Vocational Education and Training (TVET) institutions.

Competing goals: Employment, innovation and civic engagement

In 1945 there were 500 universities across the globe. Today there are more than 10,000.² This growth in supply has led to diversity in higher education institutions' stated objectives. In general, there is an accord that institutions should foster students' intellectual abilities, develop their analytical and problem-solving skills, and encourage independent judgement and critical self-awareness. But as agreement about the necessity of higher education grew, so did disputes as to what goals and roles higher education institutions should prioritise: a gatekeeper that guarantees its graduates a middle-class wage? An incubator for the next generation of society-transforming knowledge and research? An institution that is immersed in local communities? Or all of the above, and more? Today, the degree to which different higher education institutions prioritise these goals is a reflection of their relative focus on three primary audiences: students and their parents; government bodies; and the private sector.

Students and parents do not view higher education solely as a means to employment, but also as a chance to explore their passions, both in and out of the classroom. University is also viewed as important developmentally as a chance for students to grow in autonomy and self-awareness and form lifelong bonds and friendships. However, most students and parents continue to view higher education primarily in pragmatic terms. In a 2017 survey by the University of California, Los Angeles (UCLA), 85% of first-year students cited "to get a better job" as a "very important" reason to attend university, more than any other factor.³ Students hope to boost their career readiness not just through classwork, but through internships, networking, and private sector projects. A 2018 survey by the UK's regulatory authority for higher education found that 68% of higher education students consider new access to social and/or industry connections to be "very important" to their degree and institution selection.⁴

For government bodies, higher education institutions have long been seen as a public asset that can provide a well-trained labour force, but also act as a source of research and innovation. In a knowledge economy, universities have become ever more critical to economic health and competitiveness. Leading universities have an outsized economic impact on their city or region: through spun-off research; as a magnet to attract both students and an educated workforce; and as a direct employer. In Australia, the University of New South Wales in Sydney estimates that it contributed A\$1.58bn to New South Wales'

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GDP in 2014, based on analysis by Deloitte.⁵ Beyond economic impact, policymakers increasingly expect higher education institutions to have a public service mission. Cities look to universities to help revitalise local neighbourhoods, and to provide a training ground for an enlightened, responsible citizenry who are committed to a common good and social cohesion. On a global level, universities can act as “soft power” ambassadors, building international ties through faculty collaborations, research partnerships, and student exchanges.

For the private sector, universities are viewed (ideally) as a source of a well-prepared workforce, although there is ongoing debate about what constitutes “well-prepared”: do employers want a specific set of skills tailored to help them succeed in a particular job or field? Or do they want students to master a broader set of competencies that will serve them throughout their career? The private sector also sees higher education as an indispensable partner in research and innovation. Entire sectors have emerged from university know-how, as seen in the role of Stanford University in developing high-tech computing. While successes on the scale of Silicon Valley are rare, the private sector has long sought closer research ties with higher education, and such research is often located on or near university campuses to leverage academic expertise.

The needs of these different stakeholders, and the various permutations of these needs that exist across countries, cities and communities, can influence how these stakeholders view the role of higher education and can put pressure on universities to be all things to all people. Meeting those competing demands will become even more difficult as universities deal with systemic generational challenges, such as declining public funding and automation.

Different stakes

Higher education caters to many stakeholders with different goals

Stakeholders	Students and parents	Public sector	Private sector
Goals	• Employment	• Source of well-trained labour force	• Source of well-trained labour force
	• Avenue to explore academic interests	• Source of research and innovation	• Source of research and innovation*
	• Path to adulthood	• Training of enlightened and responsible citizens	
	• Independence	• Positive regional economic impact	
		• Foster commitment to common good and social cohesion	

Source: The Economist Intelligence Unit.

Employment: How job-ready should graduates be?

Traditionally, the *primary* goal of most higher education institutions offering three- or four-year bachelor’s degrees is to secure high value-added employment for their graduates. To do so, they try to

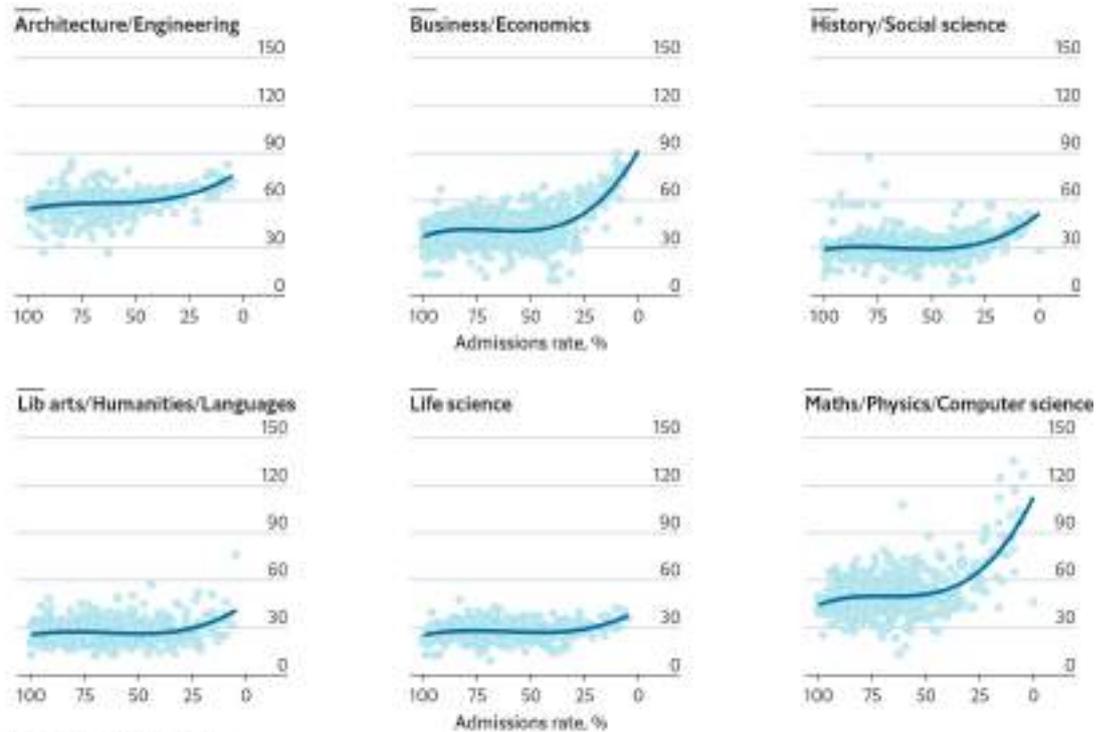
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impart broad-based skills that are in demand across industries—such as critical thinking, teamwork, and effective oral and written communication. They also try to impart topic- or job-specific expertise and skills. The goal is to produce well-rounded graduates who are able to synthesise information, work through assumptions, and solve problems.

Oh the humanities

United States, earnings one year after graduation, 2017-18, \$'000
By major and college selectivity



Source: Department of Education

In aggregate, higher education institutions have been largely successful in this objective. Estimates vary by country, but the “graduate premium”—what graduates can expect to earn over their lifetimes compared with non-graduates—has tended to be significant and positive. A 2018 briefing paper by the UK House of Commons notes that estimates for the size of the graduate premium in the UK vary but are typically above £100,000 across a graduate’s life, allowing for tax and inflation.⁶

Globally, estimates for the graduate premium continue to evolve as economies and employer demands change. Estimates also vary—often strikingly—by degree type and subject. As universities have continued to displace apprenticeships and the armed forces as the main path to careers for many in the developed world, scrutiny of the relative merits of some degrees has heightened. In 2014, Payscale, a research firm, calculated the expected annual return of degrees at more than 900 universities and colleges across the country (net of costs), for somebody working for twenty years.⁷ Estimates ranged from 17.6% at the University of Virginia to -10.6% at Shaw University in North Carolina. While an engineering graduate from the University of California, Berkeley, could expect to be nearly US\$1.1m

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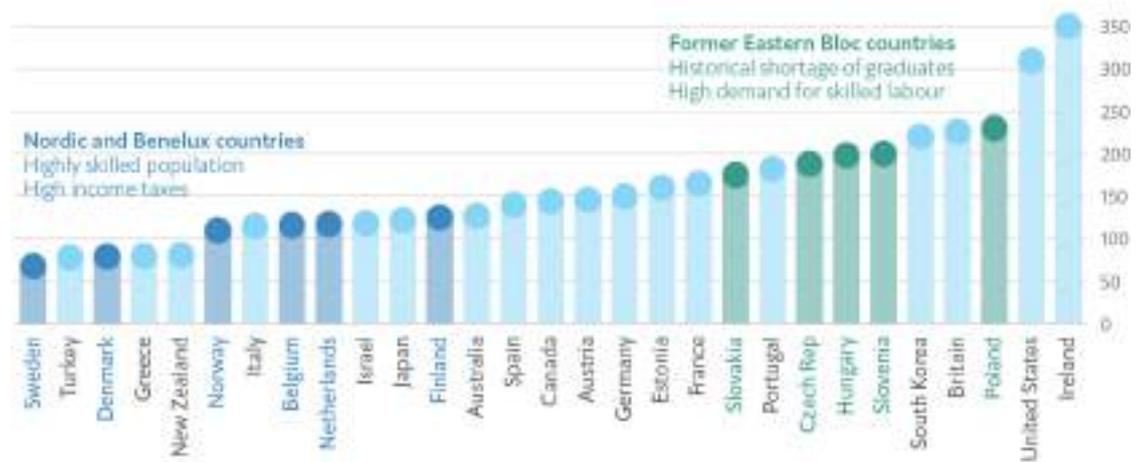
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better off after 20 years compared with someone who never went to college, an arts graduate from Murray State University in Kentucky could expect to make \$147,000 less.

In response to such data, it is tempting for higher education institutions to double-down on teaching the specific skills that employers are most actively seeking, especially as many employers appear dissatisfied with the availability of priority skills among fresh graduates. In a 2018 QS survey of more than 11,000 employers worldwide, for 14 of the 15 key employability skills analysed, a greater proportion of employers considered the skill to be important than were satisfied with the average level of it in their graduate hires.⁸

To the highest degree

Lifetime net benefit of getting a degree compared with non-graduates, US\$'000 at PPP



Source: The Economist IBEI (2017)

However, adapting curriculum and teaching to focus more on employers' needs is not quick or easy. First, some skills will always be *job-specific* and more effectively taught through employer-provided training. Second, given the pace of technological change, it is difficult to predict what specialised skills will be in demand in 10 or 15 years. Rather, higher education institutions need to ensure that they are developing graduates who are *flexible* and can continue to learn throughout their careers and move across sectors. With this in mind, in 2019, Payscale estimated the "transferability" or "flexibility" of different degree subjects, and found that business, social science, and humanities came out top—a result at odds with findings from many graduate premium studies.⁹

To boost graduates' long-term flexibility, institutions increasingly seek to impart teaching *throughout* their careers. A 2018 report from Burning Glass, a labour market analytics company, noted that liberal arts graduates in the US are almost 20% more likely to be underemployed than college graduates overall.¹⁰ However, the report concluded that graduates could close this gap were they prepared to top up their skills with continuing higher education in priority areas, such as programming and graphic design.¹¹ Community colleges, technical schools, and online providers traditionally award such credentials, but universities are also expanding their continuing education programmes. For example, the Harvard

Extension School offers part-time and online graduate certificates in fields from programming to accounting, with “non-traditional students”, such as mid-career employees, in mind.¹²

Research: Commercialisation or knowledge for the sake of knowledge?

Globally, research universities and polytechnic institutes are central to research and development (R&D), which describes work undertaken on a systematic basis to increase the stock of knowledge and to use this knowledge in devising new applications.¹³ The Internet, seatbelts, and rocket fuel are among the innovations to have emerged from university research. In some cases R&D funding, and the innovations it has sparked, have transformed countries. In 1991, as the USSR crumbled, the small state of Estonia resembled many of its new, economically devastated neighbours. Its GDP per capita was US\$2,583, and only half the population had access to a telephone line. Today, its GDP per capita is approximately US\$20,000, and it is a breeding ground for world-leading technology companies such as Skype (now owned by Microsoft), Transferwise, and GrabCad. Many political, economic, social, and cultural factors explain the transformation of Estonia. However, a core factor was greater investment in R&D.

Funding constraints mean that many research-led universities are under more pressure than ever to *commercialise* their research. This requires a clear strategy and close partnership with investors and the private sector. Technology Transfer Offices (TTOs) connect academics and researchers at universities with a network of investors and companies. They help to screen academics’ early-stage research and technologies; carry out “proof of concepts”; assist with patent filings; and plan route-to-market strategies. In some cases they also provide seed money and incubators for start-ups. Their aim is to raise revenue, but also to build closer relationships with businesses that can enhance the relevance of a university’s research.

However, evidence suggests that most university TTOs are struggling to generate profits.¹⁴ This is because they often rely on licensing patents to the highest bidder, but outside of world-leading institutions few seem capable of developing the “blockbuster” innovations that can command high fees. TTOs also require a specialised staff of IP (intellectual property) experts, consultants, and lawyers, and so their costs can easily dwarf revenues. To boost profitability, some universities are partnering with IP commercialisation specialists. In Europe, for example, the IP Group partners with 12 universities and has successfully spun out more than 100 companies.

Innovation, innovation, innovation!

Some of the most groundbreaking research innovations were made at universities



Source: Online Universities

Some researchers and higher education experts take issue with the idea that universities should focus so extensively (or at all) on the commercialisation of their research. They argue that higher education institutions should focus on “basic” R&D that develops new theories with explanatory power, but without a specific application or commercial objection, and leave more “applied” R&D to the private sector. Transformative innovations and inventions including the telegraph, the discovery of AIDS, the mapping of the human genome, and current advances in stem cell research all emerged from such basic research—much of it carried out at universities.

Traditionally, most government R&D funding was channelled into basic research at universities and specialised public research bodies. However across much of the world, government support for R&D is falling (although exceptions exist: in China, government-funded R&D rose thirtyfold between 1991 and 2015).¹⁵ In the US, universities still account for approximately 55% of basic research spending; however, the relative size of US government R&D funding fell from 1.2% of GDP in 1976 to 0.7% in 2018.^{16,17} Government bodies are also under increasing pressure to channel what they are spending into “applied” areas that can have a more tangible short- to medium-term return on investment.

One response to declining funding is to have universities focus more on international collaborations to make transformative basic research more cost-effective. One in five of the world’s scientific papers is now estimated to be co-authored internationally.¹⁸ In 2017, the UK announced a £110m Fund for International Collaborations to promote international R&D collaboration in basic and applied R&D in areas as diverse as crop breeding, tackling infectious diseases, and clean energy technologies.¹⁹

Governments are also exploring models for improving how universities and the private sector work together on R&D, to ensure a sufficient focus on both basic and applied R&D, with both commercial and societal objectives. For example, the Alan Turing Institute partners experts from the Universities of Cambridge, Edinburgh, Oxford, Warwick, and University College London with private sector actors, such as Intel and HSBC, on groundbreaking research into artificial intelligence (AI), from predicting political volatility, to simulating and modelling civil conflicts, and developing new decision-making models to analyse and respond to cybersecurity threats.

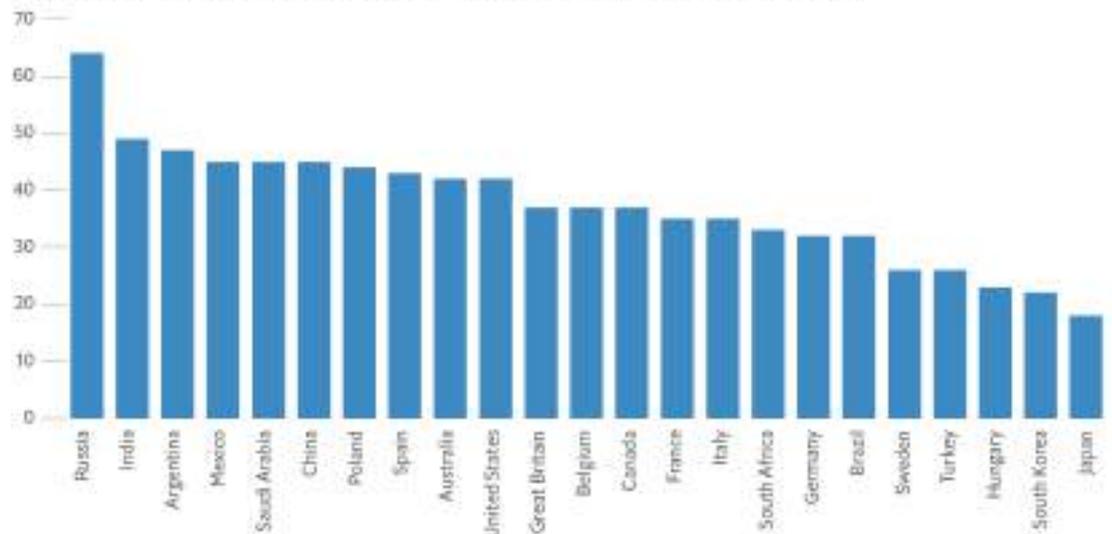
Civic engagement: The greater good?

The American political scientist Robert Putnam describes civic engagement as people’s connections with the life of their communities. It is closely related to the concept of *civic responsibility*—the active participation in the public life of a community in an informed, committed, and constructive manner. Civic responsibility means individuals focus on the public good, rather than on their own day-to-day needs and priorities. As such, they strengthen *civil society*—the space where citizens come together for voluntary, collective action around shared interests. Leading European Enlightenment thinkers, such as Immanuel Kant and Alexis de Tocqueville, championed the modern concept of civil society during the 18th and 19th centuries, viewing it as a way to reconcile subjective individual interests with the more objective common, or public good.

Today, civic engagement is needed more than ever, as societal trust continues to decline and common ties are fractured. A 2019 review by Ipsos noted that it is now rare for a majority of the population in any country to consider that most of their fellow citizens can be trusted.²⁰ Declining trust is not new. In many countries, such as the US, trust has been diminishing for decades. However, declining trust has now interlinked with other trends, such as increasing income inequality, to produce growing political

In people we trust

Percentage of people who think ordinary men and women are trustworthy in their country



Source: Ipsos (2019)

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polarisation. In 2017, analysis by the Centre for Economic Policy Research and Vox, based on European Social Survey data from 2002–15, found a strong correlation between declining trust in national and European institutions and rising voting shares for populist parties.²¹

A boost to civic engagement could help to restore trust and connections between networks of individuals from diverse backgrounds. The benefits would be diverse and substantial. Beyond reducing political polarisation, academics have shown that social ties help to boost economic performance (business relies on trust)²² and reduce violence and mortality.²³ More broadly, social capital helps to cushion society against the impact of major economic, environmental or societal challenges, crises or transformations—of which several are on the horizon (see below).

Higher education institutions have long been seen as natural places to inculcate the value and practice of civic engagement among future generations. The National Committee of Inquiry into Higher Education, in a series of major reports on the future of higher education in the UK, concluded that one of higher education's four main purposes is “to play a major role in shaping a democratic, civilised, inclusive society”.²⁴ Across the world, rather than being viewed as elite ivory tower institutions, universities want to forge greater links with their local communities.

Higher education institutions can foster civic engagement *explicitly*, for example by hosting volunteering programmes and student councils, or by partnering with local government bodies to address local challenges. US land-grant universities, for instance, have long made public service one of their three fundamental missions, along with teaching and research. The universities have built on their old agricultural extension model to reimagine university engagement as a model of community outreach, to help address priority issues from doctor shortages to deteriorating air quality. The University of Georgia's Archway Partnership matches university employees with community leaders to identify and respond to priority local needs. In 2018, the partnership won a national award for its work with Taylor Regional Hospital. University specialists helped the hospital to complete a community health needs assessment, which in turn led the hospital to open a new walk-in clinic, reducing emergency room traffic by 10%—a crucial saving for a cash-strapped hospital.

Higher education institutions have also long fostered civic engagement *implicitly*—by providing groups of students (often youth) with the kind of education, resources, time and facilities that encourage civic activity. In the 1960s, for example, US universities played an important role in fostering youth activism through the famous civil rights sit-ins. In the Arab world, Egyptian and Lebanese universities in particular have been centres for student political movements for decades, usually reflecting national or regional political concerns—from independence struggles to Arab nationalism and opposition to US military intervention. More recently, in Palestine, the United Nations Development Programme (UNDP) partnered with SHAREK (a local youth NGO) to train students from seven university councils to articulate ideas clearly and communicate effectively. The broader objective was to enable university councils to effectively engage with university leaders and policymakers over issues that concerned them.

2. Future-proofing: Challenges facing higher education

In attempting to meet the three core objectives described above, universities face an ever-evolving set of challenges. Some of these are specific to higher education, while others are influenced by broader external trends, from technological change to shifting demographics. These challenges are global, but their impact can vary, depending on institutional type and mission, the students served, and location.



Source: The Economist Intelligence Unit

1. Contribute to an increasingly digital economy and society

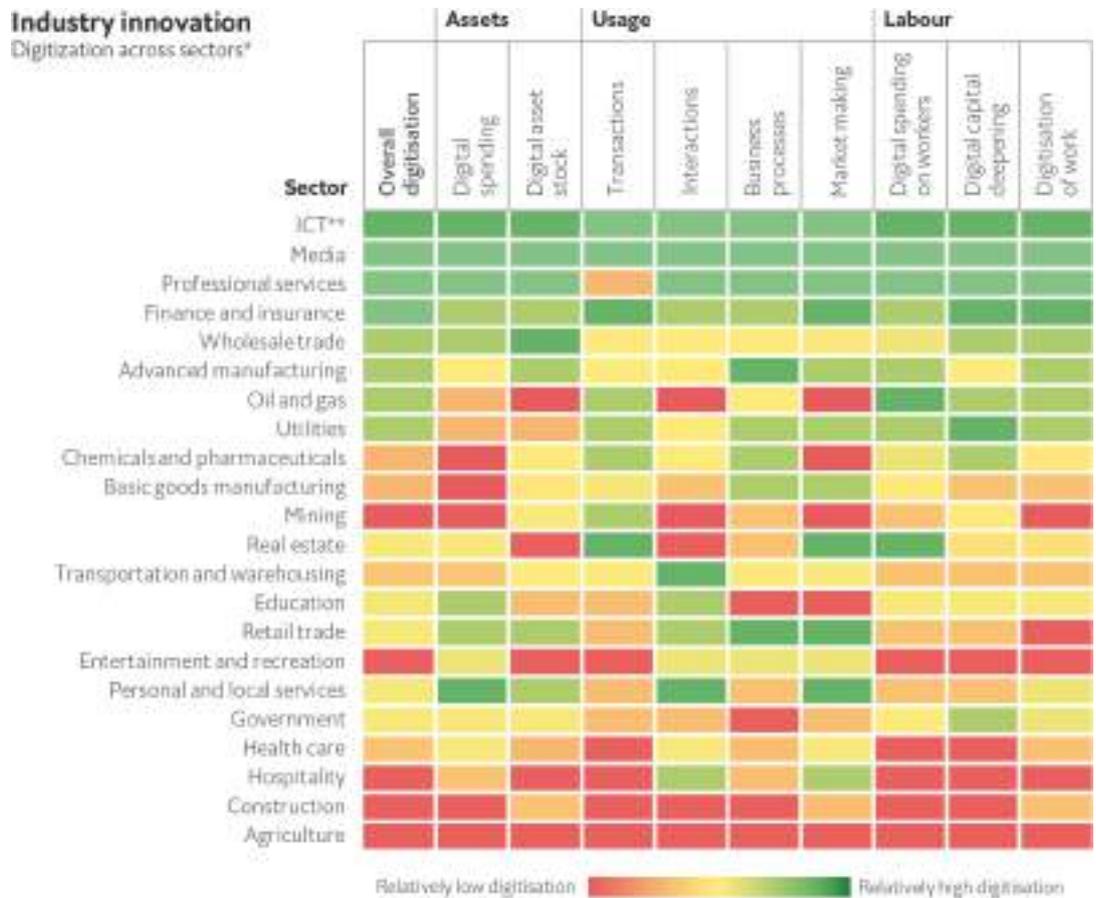
The digital economy does not describe a new industry. Rather it describes the growing economic contribution to *all* industries made by rapidly evolving digital technologies. Across sectors, companies are tapping into technologies—from AI to the Internet of Things (IoT)—to digitally transform their business models, products and services. Globally, a growing number of consumers are purchasing and consuming ever more products and services entirely online, from games to personalised financial applications. Definitions for what exactly constitutes the digital economy vary, but by some estimates it now accounts for as much as 16% of global GDP.²⁵ In the US, the digital economy has been growing at a rate close to 10% per year for more than 20 years, far outpacing overall economic growth.²⁶

Governments are embarking on a similar, but more complex challenge: digitally transforming the state and broader society. Twenty years ago, Estonia set out to “architect” all government services onto a new common platform. Today, 99% of public services are available online, 24 hours a day. The country

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recently opened the world's first "data embassy", a high-security centre in Luxembourg that will store copies of its most critical data. More complex will be the digital transformation of core public services, such as education, healthcare, transport, and justice. For example, governments hope that a rapidly expanding set of mobile health and telemedicine apps, devices and interventions will allow patients to better understand, diagnose, monitor and manage their conditions remotely.



* Based on a set of metrics to assess digitisation of assets (3 metrics), usage (3 metrics), and labor (3 metrics).
 ** Information and communications technology.
 Sources: AppBrain; Bluewin; Computer Economics; eMarketer; Gartner; IDC Research; LiveChat; US Bureau of Economic Analysis; US Bureau of Labor Statistics; US Census Bureau; McKinsey Global Institute analysis; McKinsey (2016).

Such rapid digitalisation will change how people live, work and study. Perhaps most notably, pessimists worry that AI and machine learning-based apps will automate up to 50% of white-collar jobs—pointing to a widely cited (and widely misunderstood) 2013 study by two Oxford academics, Carl Benedikt Frey and Michael Osborne.²⁷ Optimists claim that new and better jobs will emerge, making society as a whole better off—pointing to widely cited prediction suggests that two-thirds of children starting school today will one day hold jobs that do not yet exist.²⁸

Given its inherent unpredictability, claims about the future of work (and what it means for the future of higher education) should be taken with a healthy degree of scepticism. However, one assumption does appear relatively sound. Advanced technologies, in particular AI and machine learning, will automate an increasing number of *tasks* that are today carried out primarily by humans. Jobs that feature large amounts of structured, repetitive tasks—from paralegals to insurance underwriters—will be most affected. Optimists argue that automation will free up these employees to focus on more value-added creative work, while pessimists worry that although automation will not replace all jobs, it will lead to continued aggregation and downsizing of high-value white collar work.

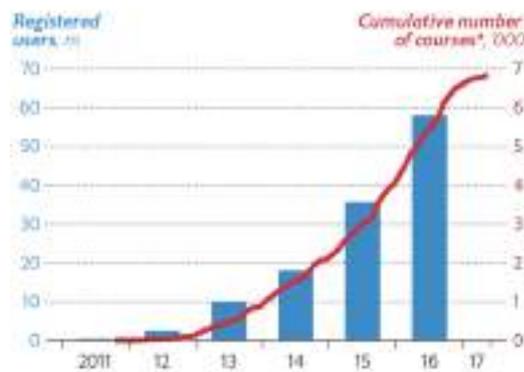
Higher education stakeholders need to respond, without knowing which view will ultimately prove more accurate. Logically, many universities are increasing their focus on teaching STEM (science, technology, engineering and maths) programmes, as well as integrating STEM teaching into other programmes. However, technology is constantly evolving and nobody can predict with any real accuracy the technical skills that will be most in demand in a rapidly evolving AI-enabled future. Indeed, certain STEM skills are among those most at risk of automation and the skills gap for employees with *hybrid* skill sets, such as programming, communication and project management, is outpacing that for pure technical skills.²⁹ As a result, to prepare graduates, higher education institutions must focus more on imparting 21st-century skills, such as collaboration and creativity, which are more difficult to automate, as well as provide graduates with a broader desire and capacity for lifelong learning.

2. Leverage technology to deliver better and more inclusive education

In addition to responding to its effects, higher education institutions must leverage advanced technology to deliver more accessible, impactful and cost-effective programmes. More than a decade ago, the Internet began to shake up higher education with the arrival of Massive Open Online Courses (MOOCs). Observing how the Internet was transforming the music and media sectors, some enthusiastic observers saw the arrival of MOOCs as sounding the death knell for traditional universities. The reality, as with most attempts to disrupt education with technology, has proven more mixed.

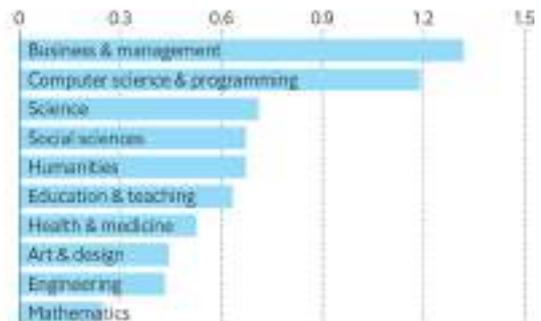
Learning curve

Massive open online courses, main international providers



Sources: The Economist (2017); Coursera

Courses by subject, 2011-17*, '000



*By start date

First, it soon became clear that students do not *just* want education content for free. They care where it comes from and want an official and recognised certification from a leading institution, that employers will value. This meant that many early MOOCs providers, without established credentials, struggled to make a profit. Second, a huge gap emerged between the numbers of students signing up to MOOCs and those completing them. Completing a degree online, or even a module, remains too challenging for many. In 2019, MIT revealed that, among students registering for courses on edX, the joint online learning platform it runs with Harvard, the average dropout rate was 96%.³⁰ This is a strikingly high figure, even acknowledging that some of those who registered likely only did so out of curiosity and never intended to complete the programme.

As a result, a new picture of online higher education is gradually emerging. On one hand, a growing number of targeted online providers offer much shorter and more specific “competency-based learning” programmes, sometimes referred to as “nanodegrees” or “micro courses”. Providers such as Udacity and Coursera promise to teach individuals certain types of programming or data science skills in 12–16-week bursts. Their programmes often feature strong involvement from employers on curriculum design, promising better job prospects to participants. As of the end of 2018, Udacity had over 10m registered students, up from 8m in 2017.³¹

On the other hand, a growing number of traditional universities have launched online degrees, often in partnership with for-profit online programme managers (OPMs), such as Pearson and 2U, who help to recruit students and design materials (and take a sizeable share of subsequent tuition fees). A primary target market for universities’ online offerings are professionals who are unable to leave jobs and families, and other adult learners who want to reenter the job market or upskill.

Owing to shifting demographics (see below), such students are set to make up a growing share of the student base of many established higher education institutions. In California, local administrators decided that even expanded course schedules did not offer enough convenience for adult learners. Instead, they started an online-only statewide college aimed at working adults, allowing them to take courses on demand. If the new college, approved in 2018, enrolls even a fraction of its target audience—there are 2.5m Californians without a degree between the ages of 25 and 34 alone—it will become the largest distance education provider in the US.³²

Evidence suggests that many of these students may struggle to complete degrees entirely online, at least with the type of materials and support that online providers have traditionally offered. Institutions will need to develop more engaging online delivery methods, but also find the right blend or “hybrid” between online and offline learning and interactions (See Section 3, below).

3. Respond to growing demand but shifting demographics

In attempting to predict the scale of future demand for higher education, institutions face clear but conflicting trends. The UN expects the global population to increase by approximately 2bn by 2050, of which more than 50% will be in Sub-Saharan Africa. Another 25% will be in Central and Southern Asia. By contrast, the combined population of Europe and North America will stagnate, accounting for less than 2% of global population growth to 2050, before starting to decline by 2100.³³

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As a result, the traditional student pool of 18–23-year-olds for institutions in Europe, North America, and East Asia will decline as birth rates remain low and societies age (in 2019, for the first time the world had more people over the age of 65 than under the age of five.) The threat to universities in these regions is not just a smaller number of students. As the number of elderly people increases, the tax base will shrink, which could lead to a reduction in public education expenditure, or a channeling of funding elsewhere, such as pensions and healthcare (which growing numbers of elderly voters will be in need of).

Despite these trends, the expected increase in the global population has led forecasters to estimate that the overall number of students in higher education worldwide will triple by 2040 to almost 600m.³⁴ Such estimates are predicated on a huge expected increase in the numbers of students from Sub-Saharan Africa, as well as Central and Southern Asia. Today, just 10% of Sub-Saharan Africa's fast growing youth population is enrolled in higher education, according to the World Bank.³⁵ There are simply too few universities to meet the demand, and those that exist vary in quality and are out of reach of much of the population, leading to chronic shortages of workers in certain critical fields such as education, healthcare, and communications.³⁶

These demographic trends set up a clear mismatch between future supply and demand for higher education between the countries that have historically had the best-resourced and highest-quality institutions and those with burgeoning populations of young people who see a college degree as the key to a better life. In response, countries in Sub-Saharan Africa and Asia will need to set up more local higher education institutions, something which is already well underway in certain countries. StudyPortals, an international-student recruitment company, estimates that by 2030, 75% of STEM graduates will be found in the BRIICS countries—Brazil, Russia, India, Indonesia, China, and South Africa—compared with just 8% in the US and Europe.³⁷

Higher education institutions in the US, Europe and East Asia will also need to adapt. Locally, they will need to appeal to a more diverse student population, shifting from the declining base of traditional college-age cohorts (18–23) to an increasing base of adult and lifelong learners. They will also need to curate their offerings to groups who have traditionally been excluded from higher education, such as first-generation students and low-income households. Institutions will need to pursue multiple strategies to serve this increasingly diverse pool of students, such as offering supplemental language courses, providing greater financial assistance, and working more closely with secondary schools to align their curriculum so that students have a solid foundation to succeed at university-level coursework.

Established higher education institutions are also likely to set up more satellite institutions overseas, while competing ever more aggressively for international students. Again, such trends are already well under way. According to UNESCO, the number of international students studying for degrees abroad reached close to 5m in 2017, rising steadily from just under 4m in 2011.³⁸ StudyPortals expects this number to reach almost 7m by 2030.³⁹ According to EY's 2019 *Going Global in Higher Education* study, as of 2017, there were more than 260 satellite institutions globally, up from approximately 170 in 2007.⁴⁰

4. Strike a balance between public and private provision

The outbreak of the global financial crisis in 2007–08 led to a decade-long retrenchment in government spending across much of the world. In many countries, education—and higher education in particular—bore a disproportionate share of cutbacks. This is in line with historical trends during economic downturns, in part because spending on universities is typically seen as more discretionary than spending on healthcare, welfare, and primary and secondary education.

In the US, public higher education spending has returned to pre-recession levels in just nine states.⁴¹ A 2018 review of higher education funding across EU member states by the European University Association (EUA) found that some countries, such as Germany, Sweden and Austria, have managed to increase their financial support over the past decade. However, in many countries, including Spain and Czech Republic, it is in “sustained decline”. When comparing funding changes with changes in student numbers during that period, the EUA found that just six EU countries were clearly providing “sustainable” funding. As a result, reports of overcrowding and a poor student experience are on the rise at public institutions.⁴² Data on higher education finance in developing countries is more patchy, but a 2014 review claimed that cuts in the preceding years were generally higher, in relative terms, than in developed countries, citing Botswana and India among others.⁴³

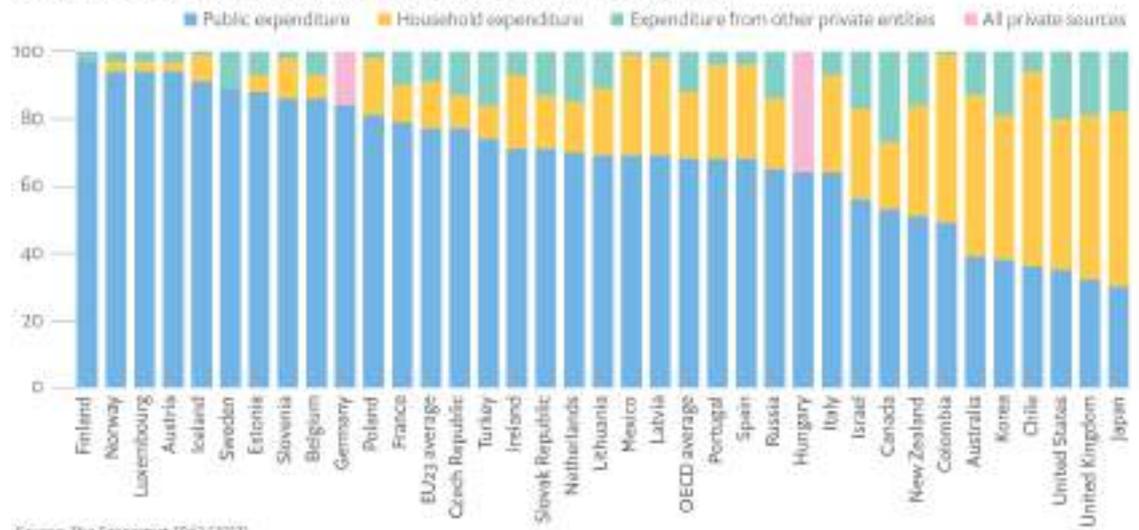
Another driver of disproportionate public funding cuts is that higher education institutions are often seen as having an alternative source of revenue in the form of tuition fees. Traditionally, two broad models of financing tertiary education exist. In the European model, education is often provided free, or close to free, by public colleges and universities, which receive, on average, approximately three-quarters of their funding from governments, according to the EUA. Private institutions are relatively rare, serving only one in seven European students, compared with one in three globally. In the more market-based US model, also seen in countries such as Japan, South Korea, and Taiwan, public institutions do exist, but private ones (both for-profit and non-profit) play a greater role. Students and their families often pay much of the cost, supported by scholarships as well as government grants and loans, which largely target lower-income students.

In response to funding cuts, a growing number of countries are shifting to more market-based models. England introduced tuition fees on a means-tested basis in 1998, following the publication of the Dearing Report, which recommended that students should pay up to 25% of the cost of tuition.⁴⁴ Successive governments have gradually increased the cap on fees that public universities can charge, most controversially in 2010, when it was raised to a maximum of £9,000, a sum most universities subsequently charged.⁴⁵ The increase in fees was accompanied by a new loan scheme with repayment delayed until graduates begin earning a certain amount.

Warnings that higher fees would lead to a rise in dropouts have generally not played out. The number of students enrolled in higher education in England was slightly higher in 2017/18, than in 2012/13 (when higher fees began to be applied).⁴⁶ However, there has been a 20% decline in the number of mature students.⁴⁷ Although overall student numbers have held up, opposition to fees remains high in England, as it does elsewhere. In Quebec, Canada, efforts to raise tuition fees in 2012 led to strikes and the collapse of the province’s government. In Chile, protests by students against the high cost of tertiary education helped oust the government in 2013.

Footing the bill

Distribution of public and private expenditure on educational institutions (2016)



Source: The Economist IBIG (2017)

Critics argue that higher education should be a fundamental right. Several German states introduced tuition fees more than a decade ago but subsequently abandoned them after citizens claimed that higher education should be seen as a public good. Critics also claim that fees saddle today's generation with debts at a time when they already face a fragile job market and high costs of living, making loan repayments challenging, stressful and a threat to graduates credit ratings. In England, estimates suggest that just 30–40% of full-time students will ever fully repay their student loans, meaning that taxpayers may still end up footing the bill.^{48,49} With this in mind, the recent Augar review suggested cutting tuition fees in England to £7,500.⁵⁰ More broadly, critics worry that the “market-isation” of higher education incentivises universities to compete aggressively for students, with investments in marketing and high-end facilities that do little to improve the quality of education.

Supporters of fees claim that higher education students in most countries are disproportionately middle-class and so government-funded provision is regressive. While lower-income students are unable to afford the wider costs of attending university, even if fees are waived or heavily reduced, middle-income students may pursue a university education even if it is one they are ill-suited to. Supporters argue that higher fees free up public funding for young people from disadvantaged backgrounds, as well as induce competition which can improve the quality of teaching and provision. In England, for instance, 20.7% of students from “low participation” neighbourhoods were in higher education in 2018, compared to 11.2% in 2006, although it is unclear if, or to what extent, this can be traced back to the increase in tuition fees.⁵¹

Given its political sensitivity, is unclear exactly how government funding for higher education will play out across the world and what it will mean for the relative mix of public and private institutions and programmes. However, one trend appears clear. The costs of delivering a high-quality higher education are unsustainably high and, in most countries, public funding will be unable to keep pace. In the US, nearly 20m students attend college every year. Between 1990 and 2015, the average “sticker price” of degrees in public and private colleges increased by 104% and 67%, respectively, after inflation.^{52, 53}

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Close to 60% of US students use government loans to help cover their costs, and today more than 45m Americans owe a combined \$1.56trn in student loan debt, significantly more than they owe in credit card or auto loan debt.⁵⁴ While critics point to big-ticket items like sports stadiums and state-of-the-art laboratories, most fee growth has been used to pay increased fixed costs, such as building maintenance and salaries, pensions and health insurance. While institutions increasingly hire professors on contract, many are tenured, meaning universities have few options to reduce payroll outside of attrition.

Such debt levels are clearly unsustainable and lower-cost models of higher education are emerging. At the US state level, some public colleges in Texas, Florida, Wisconsin, North Dakota and elsewhere have developed cheaper degrees, often costing less than \$10,000 for annual tuition. The programmes are typically skewed towards working adults looking to improve their job prospects. Many involve larger class sizes but also more online courses. Minot State University, for example, aims to attract students from across the US, with annual undergraduate tuition fees of just US\$6,086.⁵⁵

Internationally, a growing number of private operators are also emerging, looking to provide a more attractive cost/return offering to students than traditional public institutions. Across Europe, the number of fee-charging private institutions is growing—even in countries where public university attendance is still largely free. According to Parthenon-EY, a consultancy, between 2011 and 2013, enrolment in private higher education in Europe grew at a faster rate than that of public institutions—in Germany by 13% versus 7%; in France by 3% versus 1%; and in Spain by 6% compared with no growth in public institutions. A key reason is that some private institutions are doing more to attract those who may not be well suited to academic life but want a clear progression to a skilled profession. Germany's International University of Applied Sciences in Bonn offers a popular hospitality degree, partly paid for by hotels, where students spend alternate weeks on campus and at work.

A 2018 conference held by the International Association of Universities (IAU) noted that private provision of higher education has grown fastest in the developing world, in Africa, Latin America and South Asia. This is not surprising given the gap between demand for higher education in these regions and the availability of government finance. Traditionally, private providers were often viewed as inferior, but such views are now evolving. In Sub-Saharan Africa, for example, some private institutions are now viewed more positively than public ones.⁵⁶

The evolving landscape in Sub-Saharan Africa also shows a broader trend: the mixing of public and private provision. Makerere University in Uganda is typically viewed as a public university since it admits a fixed quota of government-sponsored students. However, it also admits "private" fee-paying students, especially in the lucrative areas of medicine, law and engineering. In Botswana, as a result of limited places in public institutions, the government sponsors students at private institutions by paying tuition fees and providing living allowances. The setting up of "satellite facilities" abroad is further blurring the lines. The University of Nottingham in Malaysia operates as a registered private company, but the degrees it awards are the same as those offered at its university in the UK, where it is a public institution.⁵⁷

As higher education institutions continue to evolve, and mix public and private funding and models, governance and quality control will be key. While there are many world- and country-leading private higher education institutions, other institutions are routinely accused of weak vetting of students, poor

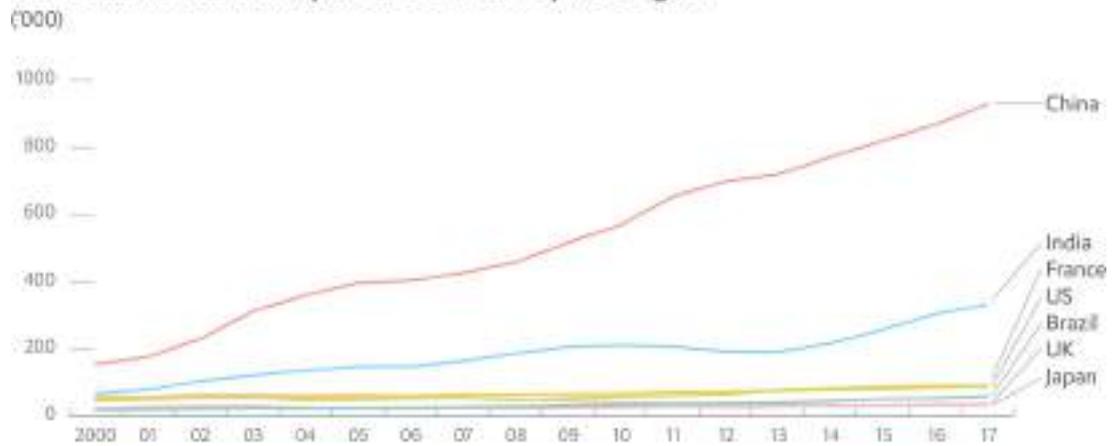
teaching, low graduation rates and even fraud.⁵⁸ As a result, the shift to more mixed models of public and private higher education will require close attention from regulators.

5. Remain global in an age of nationalism

Globalisation is shorthand for the integration of markets across the world. Its driving force is both the technological change that reduces transport and communication costs, and the policies that liberalise trade and investment rules and make migration easier. Globalisation does not refer only to economic processes. It represents the declining importance of national boundaries and geographical distance for the mobility not just of people, goods, capital and technology, but also of ideas, culture and values.

As with many industries, higher education has been dramatically shaped by the expansion of globalisation over the past 50 years, as institutions have formed academic collaborations, conducted research, and offered joint degrees with partners around the globe. Institutions have also attracted growing numbers of international students. As noted above, the number of international students studying for degrees abroad reached close to 5m in 2017.⁵⁹ Large, fast-growing Asian economies like China and India send the most students abroad, while English-speaking countries in the West, including the US, the UK, and Australia, receive the largest numbers, although China is rising as a top sender *and* a top destination for foreign students, drawing mostly from Africa and elsewhere in Asia.⁶⁰ All together, international student mobility is estimated to have a global economic impact of \$300bn annually.⁶¹

Outbound internationally mobile students by host region



Source: UNESCO Institute for Statistics

A rising backlash against globalisation and migration, epitomised perhaps most vividly by the UK's vote to leave the EU and the election of US President Donald Trump, poses a threat to international models of higher education, with growing numbers of international students expressing concern about how they will be welcomed. A 2019 survey by QS found that 21% of prospective international students were less likely to study in the UK due to its decision to leave the EU.⁶²

A crude graph of globalisation over time would resemble a roller-coaster. It rose to an early peak at the start of the 20th century, helped by few restrictions on international mobility (for people of means)

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and advances in transport and communication including the railway, the steamship, the telegraph and refrigeration. The years between 1914 and 1945 saw a prolonged retreat, owing to two world wars, hyperinflation in Germany, the Great Depression and the end of the gold standard. By 1945, international trade was more than 40% below its 1913 level. Following World War II, globalisation began a steady and substantial recovery, reaching a high point in the late 1990s: communism had collapsed, US productivity was surging, and a technological revolution was under way. Commentators pronounced that distance and national borders no longer mattered, and that the nation state and geography were increasingly economically irrelevant.

The past two decades, from the bursting of the dotcom bubble at the end of the 1990s, to the 2008–09 financial crisis and the election Donald Trump and Brexit reflect a backlash against globalisation, and in particular against the effects of trade and migration. Higher education institutions, staff and students have been among those on the receiving end. Foreign students and faculty members were caught up in a 2017 travel ban issued by President Trump, which was imposed so suddenly that travellers to the US were left stranded mid-flight. In the autumn of 2019, students from China, Iran, and Palestine suddenly had their visas revoked. After more than a decade of robust enrolment increases, the number of new international students on US campuses has fallen in the past two years.⁶³

Despite the Brexit vote and growing concerns among prospective international students, the number of international students in the UK has largely held up.⁶⁴ However, universities remain concerned. Some 125,000 EU students study in the UK through the Erasmus programme, and there are 55,000 EU and international staff members on academic contract at UK universities, which equates to nearly 30% of the academic workforce.⁶⁵ Some estimates also suggest that Brexit could leave a £1.5bn hole in research funding for British universities.⁶⁶

However, the backlash against migration and its corresponding negative effects on higher education institutions are not uniform across the world. Some international students have sought out “friendlier” countries, such as Canada, where international enrolments have increased by nearly 75% over the past five years.⁶⁷ Most countries and institutions also continue to actively compete to attract international students.⁶⁸ In Singapore, international students can avail themselves of the Tuition Grant Scheme, where the government pays a share of their tuition fees if they agree to work at a Singaporean entity for three years after graduation—in sharp contrast to Britain, where international students without jobs are obliged to leave shortly after they graduate. Singapore takes its attempts to attract foreign students seriously. Its “global schoolhouse” strategy, launched in 2002, set a target of attracting 150,000 students by 2015. Singapore’s talent scouts travel throughout the region, attempting to attract the best students with the grant scheme. The country views international students as crucial to its broader efforts to improve the quality of higher education output. In 2013, Singapore became the first Asian country to enter the top ten of the Universitas 21 ranking of national higher educational systems. By 2019, it had risen to seventh place.

In other countries, higher education institutions will need to try and attract international students, even while governments’ broader migration policies are tightened. Indeed in 2019, the UK announced a new strategy that aims to boost its number of higher education international students from 460,000

to 600,000.⁶⁹ To remain global, the UK is also looking to boost “transnational education”—where a student studies in a country other than that where the awarding institution is based. The UK delivers transnational education through online/distance learning; local delivery partnerships, such as franchises and twinning agreements; and satellite campuses and “flying faculty”. According to the Universities UK, only 15 countries do not have any higher education students accessing UK transnational education.⁷⁰ Source countries are looking to boost transnational education. In August 2019, the Philippines passed the Transnational Higher Education Act to expand access for Filipino students.⁷¹

3. Innovative models of higher education

Below, we describe five innovative models that could help higher education institutions better respond to some of the challenges described above. Some models take a relatively new approach to delivering higher education (e.g. the partnership model), while others adopt an approach that is well established in some countries but not in others (e.g. the liberal arts model). These models did not necessarily emerge in response to the challenges that higher education faces today; rather, there is a growing realisation that they can now be leveraged to help address these challenges.

Modelling the future

Innovative models of higher education which have the potential to address certain challenges

Open university model	Leverages internet technology to offer degrees to virtually anyone in the world with an internet connection
Cluster model	Brings together independent institutions, leveraging their strengths and creating efficiencies
Experiential model	Blends together traditional learning with hands-on work experience, preparing students for professional life
Partnership model	Involves building relationships with external partners for collaboration, funding and employment opportunities
Liberal arts model	Emphasizes the breadth and depth of learning as well as interdisciplinarity in selective universities

Source: The Economist Intelligence Unit

A. The online university model

Online universities leverage the Internet to offer an “any time, anywhere, anyone” model of higher education. Online learning spans a wide range of modes, including technology-enhanced “blended” or “hybrid” learning, one-off short courses and purely online university degrees.⁷² For the purpose of this report, we will be focusing primarily on the last category: universities that grant degrees wholly through online education. Classes are typically “asynchronous” and students can access lectures and do homework according to their own schedule, rather than the traditional academic calendar. Richard DeMillo, who directs the Center for 21st Century Universities at Georgia Tech, says online universities can often reach entirely new markets that traditional institutions are not attracting.

Online universities include a mix of for-profit and non-profit providers, as well as online arms of established universities, such as the School of African and Oriental Studies (SOAS). Many of the best known online universities, such as Arizona State University Online and Purdue Global, are US-based, but cater to students from across the world. Homegrown institutions also provide important access in the developing world, including in India and Africa. Unlike more traditional institutions, most online universities are disproportionately reliant on tuition fees and typically have less access to government and research funding (although exceptions exist).

Increasing access

With the rise of the Internet and mobile connectivity across the world, online universities promise increased access to higher education, particularly for marginalised groups that have not been well-served by traditional models. A priority audience is individuals on lower incomes. According to Richard DeMillo of Georgia Tech, which has a popular online master's programme in computer science, without the overhead of a traditional campus and its associated facilities, online institutions can often be more cost-effective for students. Online universities can also be more viable for those with disabilities that prevent them from attending classes in person, or those who live in communities without a university nearby. For example, the eastern part of India is home to almost 20% of the country's population, but just 4 of its top 50 business schools.⁷³ Following the decision of the country's University Grants Commission to allow higher education institutions to offer online courses, many new offerings have emerged.

The convenience and affordability promised by the online model have also made it a good fit for adult learners, who account for a disproportionate share of its students, compared to traditional institutions. Moreover, as the world continues its transformation into a digital society, the very mechanism through which online universities deliver their degrees may also make it a preferred option for a new generation of digital natives. DeMillo says he sees a shift in the students who seek online degrees, with many attracted precisely to the opportunity to study online. According to DeMillo, "students who are drawn to online learning have already figured out how to bridge the gap between a cyber and physical experience. What you think would be a sterile, lonesome, dry experience in fact turns into an engaged online community."

Effective online education comes at a cost

In early 2019 Spiros Protopsaltis, director of the Center for Education Policy and Evaluation at George Mason University, published a study examining the evidence on online education outcomes as a part of a broader question about whether the US government should provide federal funding to online universities.⁷⁴ The study pointed to the benefits promised by technology but concluded that most online institutions were failing to deliver. While some online providers would no doubt challenge the findings, the study raises three important challenges for online universities to address.

First, while some online universities promise lower costs to students, developing effective online courses is not cheap. To engage and motivate remote students, particularly those who have not studied before, or who are returning to education later in life after a long break, a substantial investment in bespoke materials and delivery methods is required. With this in mind, there is a risk that online universities could exacerbate inequalities in the provision of high-quality higher education, rather than narrowing them. In the US, leading universities such as Harvard, Yale, and Georgetown have invested heavily in their online offerings, in partnership with OPMs. However, OPMs take a sizeable share of tuition fees, which means that these fees are often substantial. For example, in 2017 Harvard University launched a business analytics programme with the OPM 2U which costs \$50,000 for three semesters.⁷⁵ On the other hand, lesser-known institutions with lower fees are charged with spending little time on designing "digital-first" curricula and investing scant resources in the wraparound support services that lower-income and under-performing students need, such as personalised coaching and advice.

Second, a considerable body of evidence has highlighted the critical role of frequent and meaningful interaction between students and instructors to final student outcomes and satisfaction. Some online providers believe that such interaction can be provided solely online, for example through remote conferencing and more interactive digital teaching software. However it can be difficult and expensive to achieve in practice. The evidence to date suggests that, in aggregate, students still do better with face-to-face teaching, rather than online, especially first generation and adult learners.⁷⁶ This explains why some online universities are now offering more “hybrid” offerings, that mix online and offline provision (see case study, below).

Finally, it appears that many employers retain a high degree of skepticism about the quality of online university education, partially due to the constantly evolving and highly diverse set of providers.⁷⁷ Such skepticism has been in part fuelled by high-profile controversies, lawsuits and run-ins with regulators at some institutions.⁷⁸ To address this skepticism a sizeable number of online universities will have to collectively show their value, through robust evidence on student outcomes.

Case study: The Open University

Online education is not the first attempt to deliver education at a distance. The UK’s Open University (OU) is a pioneer in distance (and now online) education, getting its start 50 years ago by offering courses via television and radio and sending out class materials by post. With a mission of opening education to all, over the past five decades it has provided university degree opportunities to more than 2m learners around the globe, primarily through its online education portal.⁷⁹ This year the OU awarded 8,000 degrees.⁸⁰

Like many online institutions, the OU is open access, meaning that students do not have to have certain secondary qualifications or meet other entry requirements. For those who need a re-introduction to studying, the OU offers a 30-week “access module” that provides an introduction to distance learning and university-level study that includes one-on-one tutoring. As a result, OU attracts students with diverse academic, career and socioeconomic backgrounds. The average student

age is 27 years old and the majority are working and take classes part-time, although the number of full-time students is growing. While the largest share of students are within the UK, the OU attracts students from nearly 160 different countries, many of whom do not have access to high-quality education in their home countries yet lack the means to travel abroad for university.

Indeed, the OU sees its mission partly as a social one, giving opportunity to students who might not otherwise earn a degree, says Rebecca Galley, its director of learning, experience and technology. The OU can help students to overcome barriers including geography, financial constraints, work and family obligations, and physical or emotional disabilities. According to OU data, 23% of their undergraduates come from deprived areas and in 2017/18 more than 24,000 of their students identified as disabled.⁸¹ According to Galley: “I don’t want to fall into the trap of saying that the OU gives adult students second chances or last chances. Students don’t think in those terms. This is about a higher education provision that comes at the right time and in the right format.”

Flexible courses promote accessibility and diversity

Dr Pauline Lyseight-jones first enrolled in the OU in the 1970s when she had two young children and a full-time job. Because of the adaptability of the model “you were able to map the work to your life,” says Dr Lyseight-jones, who originally sought to improve her teaching credentials but ultimately went on to earn a doctorate through the OU. Like Dr Lyseight-jones, many students turn to the OU for lifelong learning, which can range from short-term certifications that can help them improve their skills and change careers through to graduate study.⁸²

One graduate named Liz Fox says studying through OU enabled her to pursue a degree while coping with a mental illness. The flexible structure of the online institution’s courses meant that when she went through particularly tough periods she was able to put aside her coursework and then catch up in the following week without falling behind, something she had not been able to do in a more traditional university setting. “It was ideal with regards to my anxiety that sometimes stops me from going out and about,” Fox says. “The fact that I would be able to study from home, that I’d be able to control when I studied, where I studied, that I’d have that autonomy around it—it was having that freedom that really drew me in.”

Increasing sophistication of materials and delivery modes

At the OU, online courses are designed by multidisciplinary teams that include researchers, academic designers, editors, and audio-visual experts who pay particular attention to the needs of online learners. Today, the full diversity of its courses are available online—students can even take science and engineering classes, in which they operate microscopes and other equipment from their home computers or other electronic devices.

As Tim Blackman, the university’s vice-chancellor, says “It’s like taking a laboratory course from your kitchen table”.

A cost-effective but hybrid experience

Despite the significant investment in course design, online education at the OU is typically more cost-effective for students than traditional programmes, although it remains a sizeable cost for most students. The OU estimates that its average student would spend about £18,000 in total to earn a bachelor’s degree, about two-thirds the cost of the equivalent credential at a campus-based university.⁸³

While pure online delivery is increasingly available, students often need a *hybrid* model to succeed. The OU addresses this issue by supplementing online learning with tutoring and opportunities for face-to-face interaction. The institution has 7,000 associate lecturers throughout the UK, and for most modules there are a series of local face-to-face tutorials, which can also be accessed later online. In addition, there are support centers where students can go for assistance, to supplement online support services.

Future: Targeted credentials

Moving forward, the OU will continue to refine its course content to meet the needs of students and employers alike. Acknowledging the rising popularity of short competency-based learning programmes, such as those provided by Coursera and Udacity, it is increasingly providing learning in “bites,” says Tim Blackman—short-term courses and credentials that give employees the skills that they demand in a way that fits their schedules and needs. In the past six years, 10m people have signed up for FutureLearn, the OU’s portal of “micro courses” which can typically be completed in weeks, rather than years. Subjects range from advanced machine

learning to Italian for beginners. According to Blackman, the popularity of FutureLearn points to how the world of higher education is evolving, and how “the shelf life” of knowledge is getting shorter and shorter.

B. The cluster model

The cluster university model eliminates the siloed nature of university campuses, bringing together multiple different institutions, often in a single location. Some universities that have adopted this model may share administrative services, reducing duplication of activities, realising more efficient economies of scale and reducing overall costs. The cluster model expands the student experience by allowing students to enrol in classes at institutions within the cluster, participate in events and activities on different campuses, and interact with a much wider and more diverse student population.⁸⁴ The five undergraduate colleges and two graduate schools that are part of the Claremont Colleges in California, for example, share a single course registration system that allows students to register for certain classes across all the campuses, including mathematics, computer science and foreign languages.

Other clusters are drawn together by shared research interests, focusing on collaborations between faculty members and joint academic programmes. The 30-year-old Consortium Linking Universities of Science and Technology for Education and Research (CLUSTER) brings together a dozen European universities and research institutes on joint research projects, in areas such as entrepreneurship and engineering. Working together allows the universities to stretch their research budgets, and to be more competitive for grants. Students can also earn joint degrees, getting two different degrees through different CLUSTER members. The benefit, says Dr Jana Freihöfer, CLUSTER’s secretary-general, is the “close network of trusted partners”.

Safety in numbers

Cluster models address several key challenges facing higher education providers. One of the main advantages is that higher education providers overcome some of the difficulties faced by smaller establishments, which include limited financial resources and, as a result, a narrow offering to students in terms of academic courses. By partnering with other institutions, universities and colleges can benefit from pooling their resources for administration-related processes. Centralising admissions procedures and the wide variety of student support services, as well as using shared academic and sport facilities, saves these institutions money. Institutions can then choose to either reduce fees in order to boost demand from potential students or—more likely—redeploy these funds into other areas that add value to the quality of the academic offering.

Allowing students access to the breadth of courses offered by different institutions within the cluster also provides a much wider academic offering to students. Greater innovation in terms of courses is possible, with students able to access more bespoke courses, selecting different modules from institutions within the cluster, or even majoring in degrees that draw on academic offerings across all member colleges. For example, students at any one of the Claremont Colleges can major in Africana

Studies, an interdisciplinary major overseen by the Intercollegiate Department of Africana Studies and taught by professors from all five colleges in the consortium.⁸⁵ These academic offerings provide unique educational experiences to students that might not have been available to them at any single institution.

Balancing act: Collaboration versus institutional autonomy

University clusters have to balance collaboration with individual institutional autonomy. To make a shared structure work, co-operation has to happen at multiple levels. It is not enough to secure buy-in from university leadership; faculty and staff members have to share in that commitment. Building an effective cluster model can be challenging because priorities do not always exist across, or even within, institutions, making collaboration difficult. There can also be challenges with collaboration if the relationship is not felt to be equal. One partner can end up doing more than the others, either because it is wealthier and better resourced, or because it is more willing to shoulder the load, says Cecilia Conrad, former vice president for academic affairs of Pomona College, one of the Claremont Colleges.

This free-rider problem can extend to students. Because of cross-registration, some universities can end up teaching a disproportionate share of students because they offer particularly desirable or unusual programmes. On the other hand, many students may not take full advantage of the cluster's academic offerings, preferring to take most of their courses on their home campus because of convenience or because they may be confused about registering for classes at other institutions.

Case study: Atlanta University Center Consortium

For the Atlanta University Center Consortium (AUCC)—a cluster of four colleges [two colleges, one university and one medical school] within the city of Atlanta—collaboration cuts across all aspects of the partner institutions. The AUCC is the world's largest and oldest consortium of historically black colleges (HBCUs), created 90 years ago during the Great Depression. HBCUs were initially established in the wake of the Civil War, with one explicit objective: to educate black Americans. Up until the Civil Rights Movement in the 1960s, HBCUs provided access to higher education for thousands of students who were denied admission to most institutions of higher learning in the United States.⁸⁶ At the time of the AUCC's founding, African American students were often excluded from majority-white institutions, says Sharon L. Davies, provost and vice

president for academic affairs at Spelman College. Against this backdrop, the AUCC helped to expand access to and establish professional networks for black Americans. The AUCC has a long history of educating black pioneers in American history, arts, science, business and politics, including Martin Luther King, Jr., who graduated from Morehouse; Oscar-winning director Spike Lee, who graduated from Clark-Atlanta University; and politician Stacey Abrams, who graduated from Spelman.

Today, the AUCC serves more than 8,200 students across four institutions, including Morehouse and Spelman Colleges, two of the United States' most prominent liberal arts colleges; Clark Atlanta University, a comprehensive research university; and Morehouse School of Medicine. The AUCC brings these colleges together to address administrative challenges, academic offerings, research priorities and even community outreach. The geographical proximity of the four colleges

adds to the impact of the consortium, explains Sharon Davies, enabling students to physically access each campus, meet with their peers at different colleges and access the consortium's shared library. According to Davies, it is doubtful that the consortium model would enjoy its current success if the colleges were not in close physical proximity to one another.

Shared costs, higher efficiency

As in many clusters, AUCC partners share certain critical and support functions, including procurement, campus safety and security, and information technology. This recognises that certain basic needs and functions are common across institutions and can be provided in a communal fashion. This even extends to their shared library, the AUC Robert W. Woodruff Library. Colleges do not need to bear the costs of building and maintaining their own libraries, says Loretta Parham, CEO and director of the library. Instead, they have a central institution equipped with better resources for all to use, she explains. Working together, the AUCC colleges are able to provide services that are more consistent and effective, says Todd Greene, the AUCC's executive director. "Higher education is a business," he says. "We need to continue to look for ways to extract savings from the cost model."

By decreasing spending on administration and other duplicative services, universities within a cluster are free to reinvest in the academic core or in other priority areas. For the AUCC, academics are at the heart of their long-standing collaboration. Working together, the universities have been able to start a number of innovative joint programmes. In fall 2019 they started the AUCC Art Collective, a programme in art history and curatorial studies to train African American curators and art historians, who are underrepresented in the profession. The

programme was made possible by the Walton Family Foundation, which decided to invest nearly \$5.5m in the AUCC because it had the capacity to become a "national incubator" of African American professionals in the fields of art history and curation, says Sharon Davies.⁸⁷ The partner institutions are now working to build up a joint curriculum in data science, again with the goal of creating a top-tier programme that will bring a more diverse group of students into a field where they have traditionally been underrepresented.⁸⁸ Typically, such ambitious projects are tackled by large research universities like Stanford or Georgia Tech, but the AUCC's joint strengths allow it to punch above its weight. Some of these traditional powerhouses may even want to partner with the consortium to attract more African American students into their graduate and professional schools, Davies says.

Collaboration

Sharon Davies tells the story of Samuel L. Jackson, the actor, who graduated from Morehouse but took most of his classes at Spelman because it had more robust offerings in theatre and film. Brittany Nance, a Spelman graduate, explains that she was able to supplement her degree in psychology from Spelman with business courses at Morehouse, making her better prepared for her graduate programme and subsequent career in HR. This epitomises the cross-collaboration that the AUCC fosters. For instance, undergraduate students are able to gain critical early exposure to the medical school environment through the Morehouse School of Medicine. This can make them more competitive when applying to medical school, explains Todd Greene.

In addition to giving students more academic options than a single institution might be able to provide, a cluster university can offer a more varied social and cultural experience. Students

in the Atlanta consortium, for example, have opportunities to study within a liberal arts college, a single-sex institution (Spelman is a women's college and Morehouse is a men's college) and a research university. Students can also attend plays, concerts and speeches on other campuses. The cluster model can give students a large array of university options while maintaining a small-college feel.

Future: Keeping business in mind

For Todd Greene, developing a long-term, financially sustainable education model remains a top priority. "There is a need to respond to the

competition and consumer choice but also keep an eye out for ways to extract savings from the cost model. We need to look for opportunities that maintain the unique aspects for each institution but also opportunities for creating efficiency that aren't related to the academic side of things," he says. There is a need to boost engagement with corporate partners, in order to scale up opportunities and bring value to the higher education space. While each college retains the right to make individual decisions based on institutional needs, consortium members benefit from a shared strategic vision that supports long-term financial sustainability.

C. The experiential model

In the wake of the 2007–08 financial crisis, unemployment rates in key markets soared. The UK saw unemployment rise by 2.3 percentage points between 2007 and 2009. In the United States, the unemployment rate more than doubled during this period, reaching 9.3% in 2009.⁸⁹ Unemployment rates were even higher among young people aged between 15 and 24. In 2007 the unemployment rate for recent college graduates in the United States was 9%. By 2009, at the height of the financial crisis, this number had jumped to 17.4%.⁹⁰ The assumption that a college degree guaranteed employment proved to be false. As a result, today's students and parents place significant importance on career prospects when exploring their higher education options. The experiential university model provides students with opportunities that are more tailored to this career focus. Experiential university curricula are heavily embedded with tangible work experiences, including internships, practicums and hands-on projects. As a result, students graduate with specific skill sets, as well as the soft skills that today's employers expect—but which they say higher education does not always provide.

According to Tony R. Smith, director of the University of Colorado Denver's Experiential Learning Center, the model is most successful when it combines real-world application with academic and personal reflection. According to Smith, experiential learning requires students to be proactive both inside and outside the classroom, and to engage intellectually with different actors and academic content. A further component of this model involves students, in collaboration with classmates and professors, reflecting on their work experience and identifying linkages between learnings in the classroom and their professional experiences. Through these elements, students are able to extract key competencies from real-world experiences that can help shape their career decisions and give them exposure to potential employers.

Professor of education at Earlham College, Jay Roberts, takes this one step further: “If you think of the larger world context with rapid change and challenges such as climate change, financial instability, globalisation and so on, students have to experience being more comfortable with uncertainty and ambiguity,” he says. “A well-designed experiential learning model can help with this.”

A practical approach

Employers frequently criticise higher education providers for producing graduates with weak skills who are poorly suited to the world of work. Experiential models of higher education address this criticism directly, providing students with a much more hands-on approach to learning. These providers operate on the assumption that it is no longer sufficient to simply amass a pool of knowledge; students must also know how to apply that knowledge in real-world situations. Teaching through this model places much more emphasis on practical application, with feedback allowing students to learn from errors. Student outcomes are also likely to be better, as “learning through doing” leads to greater knowledge retention than traditional forms of higher education, which have tended to rely heavily on impersonal and passive forms of teaching through lectures and seminars.

Experiential models provide more active teaching and learning experiences. There is a greater emphasis on creative problem-solving, critical thinking, reason and logic, and on applying these skills to assess and analyse problems. Given that the digital economy requires unconventional thinking and the ability to gather ideas from diverse sources, this focus is likely to generate graduates with a stronger overall skill set. More extensive collaboration between institutes specialising in experiential models of higher education and the private sector means that students also spend a greater proportion of their time outside of the classroom. This enhances students’ ability to secure a job after university by building their contacts and experience with private-sector firms. It also reduces some costs for universities.

Given that this form of tuition functions best in a collaborative or group setting (reflecting the fact that few tasks are conducted entirely in isolation), students’ social and interaction skills are also improved. Experiential models of higher education mirror the working environment more closely, bridging the gap between education and work by providing more vocational skills. In addition, the focus on feedback allows both students and teachers to monitor progress more closely than in traditional forms of higher education, where students may have to wait until their final exams are complete before they are able to gauge their relative performance.

Still early days

The experiential model is still in the early stages of operation, and many factors can hinder its success. Firstly, the nature of the traditional semester system may not be conducive to experiential learning due to time constraints. Experiential learning is a longer process than lecture-based learning, and it cannot cover the same amount of content. In contrast to offloading swathes of information to students by talking at them, the experiential model gives students the opportunity to work with smaller chunks of information, which takes up more time over the course of the semester. Asking students to participate in robust projects, getting them out of the classroom into the community, and getting them back again in time for other classes is a logistical challenge. The time commitment demanded of instructors is also an

issue. From judiciously building the curriculum to developing the reflection and assessment mechanisms, instructors play a far more involved role in this model.⁹¹

Secondly, the emphasis on group work and interaction raises questions about scalability. Managing an experiential course with 20 students can work, but what happens when this is scaled up to 400? One of the primary features of an experiential model is the interactivity between students and instructors, often in much more intimate groups than in traditional classrooms. According to a 2015 paper published in the *International Journal of Teaching and Learning in Higher Education*, increasing class size is a significant complication in institutionalising experiential learning programmes.⁹² Teaching larger student cohorts may only be feasible through traditional formats, says Jay Roberts. As programmes scale up, it is vital to think much more carefully about what kind of experiential methodologies will work. One key example is the use of technology. As the role of technology in higher education increases, the issue of class size may not be as critical as expected.

Finally, the experiential model has a crucial prerequisite: highly trained faculty. Professors and tutors who are excellent in traditional higher education settings may not be well versed in teaching experientially. Much of the success of an experiential model rests on the ability of teachers to move away from Powerpoints and lecturing, and towards interacting with students and creating open dialogue. A 2015 paper highlights that it is essential for faculty members to wear multiple hats in the experiential model: instructor, mentor and listener.⁹³ Without dynamically trained faculty, students will be unable to understand the importance of experiential learning, and unable to raise any questions they have about the model. In a 2005 paper on experiential learning, Kolb and Kolb state that “one can develop a state of the art learning-focused curriculum that is doomed to failure if faculty members are not on board with it philosophically and technically.”⁹⁴

Case study: Minerva Schools at Keck Graduate Institute

While multiple higher education institutions have attempted to incorporate elements of experiential learning, few have adopted the model in its entirety. Minerva Schools at Keck Graduate Institute is one of those few. Although a relatively young institution, only opening its doors in 2014, Minerva has already established itself as a noteworthy player in the experiential learning space. With an exceptionally low acceptance rate of 2%, Minerva finds itself among the top 0.5% of US institutions for enrolment yield.⁹⁵

The Minerva experience is unique, even within the field of experiential learning. Here, experiential

does not mean vocational. Its founders spent time talking with employers about what they were missing in recent graduates. The answer: thinking critically, thinking creatively, interacting effectively and communicating effectively, says Vicki Chandler, chief academic officer and dean of faculty. These core competencies ground the first foundational year courses that all students must take. Rather than insisting that students absorb a specific canon of thinkers or memorise sets of facts, the curriculum emphasises students’ ability to identify critical information, evaluate systemic bias and assess the reliability of sources—skills they will need in the workplace. “We want to train global leaders,” Chandler says, “not just teach them what is in their major”.

At Minerva, there are no lectures; instead, the emphasis is on active learning in seminars, with students and professors as equal participants. Students are encouraged to assess their own progress based on a set of learning outcomes, including self-management, global and cultural dexterity, professional readiness and interpersonal engagement. These are designed to be tied to students' experiences outside the classroom, in internships and group projects. Despite the unconventional approach, Minerva students perform well on more traditional metrics. In 2016 students scored in the 95th percentile on the Collegiate Learning Assessment.^{96,97}

Minerva's model is not place-bound. Students take their courses in San Francisco during their first year, but in subsequent semesters they travel to other global cities, including Berlin, Buenos Aires, Hyderabad, London, Seoul and Taipei. In these diverse locations, students have the opportunity to combine coursework with internships, and to work with local organisations on civic projects. Minerva expects students to apply what they learn in class to the real world, says Dr James Lyda, dean of students. According to Minerva's founder and CEO, Ben Nelson, "the core, the secret, the holy grail" of experiential learning is not the experience itself; it is the fact that it forces students to transfer their skills and knowledge to new, challenging and different environments. "It makes them cement their learning in a more comprehensive way," he says. "The experiential element is irrelevant if you don't have the curriculum on top."

Bringing theory into practice

According to one of Minerva's inaugural class members, Tanna Krispil, the students were not entirely sure what they were getting into, or what experiential learning truly meant. "We went through this existential incubation piece," says

Krispil, who grew up in Ottawa, Canada. However, hands-on projects, such as working on refugee education during a semester in Berlin, allowed her to apply critical thinking and problem-solving outside the classroom. "The challenge with an education that does not incorporate an experiential side is it is hard to see the outcome of what you're doing in the real world—you spend most of the time studying for a test or writing a paper but once you send it to the professor, it goes into the void," Krispil says. "The most valuable aspect of experiential education is the ability to see the work come to life in a tangible way."

Exposure to different cultures is vital

While Minerva's global classroom approach is not necessarily foundational to the experiential model of higher education, it provides students with another real-world lesson: the ability to adjust to different environments. Minerva students come from more than 50 countries, and there is no dominant culture in the typical class, says Vicki Chandler. The recently added compulsory intercultural competency course formalises students' learning about diversity and working within a diverse group—a vital skill in the modern workplace. Pushing this further, the Minerva model forces students to adjust constantly, practising the skills they learn in a new context, as they would in the workplace with different employers. Experiential universities take students out of their comfort zone but still provide an environment where it is safe to experiment, says James Lyda. They develop autonomy, self-management and flexibility, which are critical competencies, particularly as today's students are likely to end up in jobs that do not currently exist. As recent graduate Zitong Mao explains, "You are always out of your comfort zone but this is a learning opportunity. Now, if I was dropped in a new place

I would not be nervous and would adapt very quickly.”

Trimming the financial fat

The absence of a traditional brick-and-mortar campus keeps Minerva’s costs down because it does not have the infrastructure of a traditional campus. While some may assume that the lack of facilities and physical resources may hinder student development, in Minerva’s case the opposite holds true. In Tanna Krispil’s experience, the lack of institutional resources pushed her to use her diverse surroundings and train herself to be more resourceful. Vicki Chandler says that the model is built to take advantage of the cities in which the students are living. The Minerva model also leverages technology to deliver much of its coursework online, meaning that students are able

to take courses regardless of where they or faculty members are located. This pushes costs down further. As a result, students pay around US\$14,000 a year in tuition—about a quarter of the cost of a top private American university.

Future: Boosting sustainability

As trailblazing as it is, the Minerva model is currently unable to meet demand, according to Vicki Chandler. The low acceptance rate of 2% is a key indicator of this. A prominent factor, Chandler explains, is the nature of the institution. As a non-profit, an essential next step for Minerva is to ramp up its fundraising activities and raise more money for its endowment to help support more students in need. Only once Minerva is able to achieve this can it meet its aspirations for growth.

D. The liberal arts college

At their core, liberal arts colleges emphasise breadth by requiring students to take courses outside of their major, while also pushing students to develop a deep understanding of their chosen field of study. Students are encouraged to think critically, creatively and interdisciplinarily in all their classes, and to take this mindset into their lives after graduation. In the early 19th century, Yale’s president, Jeremiah Day, produced the “Yale Report of 1828,” arguing for a broader educational curriculum in response to recent advances in science and technology. The publication of this report resulted in the founding of several liberal arts institutions in the United States and laid the groundwork for our modern understanding of a liberal arts education.⁹⁸ Today, the quintessential small liberal arts college provides a bespoke educational experience in a close-knit residential community, often (but not always) in a remote location. While the liberal arts as an educational approach can be taught in larger universities, liberal arts colleges are usually distinguished by their small size. Their low faculty-to-student ratios give students more individualised attention, greater research opportunities at the undergraduate level and professors who prioritise their teaching role.

While the liberal arts college is a long-established model in the United States, it is slowly gaining traction internationally, particularly in places like Europe and Asia,⁹⁹ where higher education has typically followed a traditional, lecture-based style of teaching. Bangladesh’s Asian University for Women (AUW), established in 2008, provides liberal arts education to women with the specific aim of enabling them to help solve their countries’ biggest social, economic and political problems. In Singapore, Yale University and the National University of Singapore joined forces to open Yale-NUS College in 2011, with an arts and

sciences curriculum that redefines the historically western liberal arts education for a changing world. The New College of the Humanities in London began its operations the following year, seeking to marry the American liberal arts approach to the Oxford model of one-on-one tutorials.

Thinking critically and creatively

In today's labour market, transferability and adaptability are paramount. Even as technological change threatens to automate 30% of jobs,¹⁰⁰ critical thinking and creative problem-solving (hallmarks of a liberal arts education) remain in high demand among employers. In a 2016 survey conducted by the Wall Street Journal, 92% of executives said they viewed soft skills as equally important or more important than technical skills, and yet 89% reported that they struggle to find new graduates with these skills. CEOs who possess soft skills are more likely to foster innovation and risk-taking within their organisations, which may encourage higher earnings.¹⁰¹ The key skills honed through a liberal arts degree are also increasingly cropping up in the workforces of many technology corporations.¹⁰² This rejuvenated demand for critical thinking and creative problem-solving is driven by firms' need for individuals with both digital and creative skills. "STEM was a priority for the Third Industrial Revolution," says Dr Navin Rajagopal, director of academic affairs and senior lecturer in social sciences at Yale-NUS College. "For the Fourth Industrial Revolution, however, we need graduates who can innovate as well as implement, be creative while being technologically savvy, and be effective leaders and communicators." Liberal arts colleges are by definition breeding grounds for these types of skills. Robert Farquharson, chief executive officer of the New College of the Humanities, says that a liberal arts education is essential for progression: "As people move up the organisation, then having the skills they gained at a liberal arts college allows them to go outside their functional silos," he says, citing intellectual curiosity, creative problem-solving and critical thinking as essential traits in the modern workplace.

A personalised experience with a big price tag

The liberal arts model delivers a bespoke educational experience, providing small classes, significant contact with professors and dynamic extracurricular activities, and all on sweeping grounds, frequently in remote locations. However, this comes at a cost. Dr Navin Rajagopal explains that this, along with building and maintaining the facilities needed for enriching residential experiences, are significant cost drivers. Kari Fazio, chief financial officer and chief administrative officer at Bryn Mawr College, concurs, explaining that liberal arts colleges typically strive to create a learning community, which involves offering a variety of experiences and services. From lectures and performances to physical and mental health support, providing this community involves considerable expense. For liberal arts colleges, maintaining residential buildings and paying the salaries and benefits of the faculty and staff required to provide a personalised educational experience can eat up substantial portions of the college budget.

There is also an ongoing perception that a liberal arts education does not provide good job prospects. Kari Fazio says that there is varied appreciation of liberal arts colleges, but critics of the model continue to make comparisons between the employability of graduates from large research institutions, with a specific qualification such as dentistry, and graduates from smaller liberal arts colleges with a degree in the humanities. In a 2019 paper, Earl Lewis, professor of history at the University of Michigan, argues

that there is a need for a 2.0 version of a liberal arts education to prepare graduates for technological change.¹⁰³ This would involve a curriculum that has the same elements as a traditional liberal arts education, but with increased exposure to digital tools such as coding and design.

Case study: Ashoka University

India's Ashoka University, a liberal arts college located on the outskirts of New Delhi, accepted its first students in 2014. Its mission is to provide students with unique skill sets tailored to addressing the world's social problems. This runs counter to the country's predominant trend of creating professionally focused graduates. India has been "churning out engineers, doctors and lawyers," says Rajesh Garodia, the university's pro vice-chancellor. "Most Indian colleges been training them for a job rather than making them better communicators, thinkers and learners."

Indeed, many Indian employers are dissatisfied with the quality of graduates from the country's universities. Ashoka was founded by a group of entrepreneurs and businessmen who believed that the liberal arts offered a more promising model.¹⁰⁴ Studies suggest that employers want broad-based soft skills such as cross-cultural competency and adaptive thinking, which make for good employees over the course of a long career.¹⁰⁵ Ashoka's curriculum seeks to build these skills. It fosters a common academic grounding among students in the arts, humanities, social sciences, natural and physical sciences, and mathematics, while also developing expertise in a student's chosen major. All students must take a series of nine foundational courses, as well as several interdisciplinary "gateway" courses that provide introductions to academic disciplines like politics and economics. "We frontload breadth," says Raja Rosenhagen, the associate dean of academic affairs.

Sense of community

The university's small size fosters a sense of community. Like most liberal arts colleges, Ashoka is a residential institution. With students on campus around the clock, what happens outside the classroom is viewed as just as important as what happens inside it. Students can attend lectures and performances, play sports, participate in student government, volunteer or join one of 47 different clubs and societies. With over 1,400 students from over 28 states and 98 cities in India, as well as 17 other countries, Ashoka's students are continuously exposed to people from different socio-economic backgrounds, which is essential in India where large socio-economic divides still prevail.

Residential living brings together students from different backgrounds, exposing them to critical lessons in diversity and inclusion. Recent graduate Deva Madala was appointed residential assistant during his studies, which involved providing critical support in the residence halls. The experience gave him the opportunity to work through real-world problems, from having to mediate his classmates' disputes to handling emergency situations. More than other models, the liberal arts model places weight on higher education's role in developing students into responsible adults and citizens. "Ashoka tries to create this 360° human being who is an all-rounder," says Deboshruti Roychowdhury, the dean of student affairs. "It's not about what you learn and what you put on exam paper but about the human being."

Innovating in accessibility and diversity

Liberal arts colleges are generally small and nimble, which enables continuous innovation and

adaptability. When Shakul Raj Sonker was applying for university, larger, more established institutions were not willing to accommodate his visual impairment. India's STEM degrees are typically inaccessible for students with impairments such as Sonker's, but Ashoka stood out in this respect. Not only did it welcome Sonker, it continued to work with him throughout his studies to improve his learning experience. The Ashoka Office of Learning Support was set up in 2016 and provides support across disabilities. "Ashoka does not want to just provide learning," says Sonker, who graduated in 2019. "They want to create an accessible environment." In a country where only 3% of buildings are accessible to people with disabilities,¹⁰⁶ Ashoka is a trailblazer.

Future: Changing perceptions of the masses

One of Ashoka University's key challenges is a lack of awareness about what a liberal arts education can offer. Deboshruti Roychowdhury raises the concern that many parents do not see the value of the model, which they believe will undermine the career prospects of their children after graduating. This lack of awareness extends beyond the parents; students themselves may not be fully convinced of the value of such an education. There is also limited engagement with students who live in rural areas. While there are exceptional students in these regions, there is little knowledge of the opportunities Ashoka offers. Ashoka is making some headway in this regard but sees the next five years as critical in amping these efforts up.

E. The partnership model

In the partnership model, higher education providers build a variety of different relationships with external partners in order to secure long-term funding and improve employability for graduates. This model is relatively new, emerging in response to a combination of tighter public finances and rising overheads for universities over the past decade. The resulting strain on budgets for higher education institutions has created a need to find innovative ways to supplement traditional educational offerings. The partnership model draws on existing models of trade schools and vocational schools, in which providers develop relationships outside of the higher education framework in order to provide training and skills in particular areas (for example, nursing schools have worked with healthcare providers and insurance firms to build courses that target specific job skills).

However, the partnership model is broader than the trade school and vocational school model, involving formal agreements with external partners in order to offer a wide range of courses, rather than targeting one specific sector, as existing vocational training tends to do. In the partnership model, universities partner with stakeholders who depend on higher education as a training ground for talent, such as private-sector businesses or leadership and coaching organisations. Recognising that traditional higher education institutions are often poorly equipped to generate graduates with the necessary skills to succeed in the workplace, partnership universities aim to provide a faculty that is much more closely aligned with private-sector employers. Once employers have partnered with one of these universities, its employees become eligible to study there. Employers shoulder part of the costs, which often makes these universities more affordable in terms of tuition fees.

This model of higher education provides benefits for education providers, companies and students alike. For providers, it creates greater financial security. For companies, it provides an opportunity to outsource in-house training schemes (which can be costly) to accredited higher education institutions. They can also benefit from tax incentives by partnering in this manner, as education benefits provided to employees are often excluded from taxes up to a certain level. Students at partnership institutions tend to be adults who are already in employment, but without a degree-level education. Courses are designed around upskilling and reskilling, with different institutions focusing on different segments of the population. All aim to transition students in some respect; some are interested in low-skill, entry-level students, aiming to facilitate a move towards mid-skilled positions, while others target higher-placed employees with high school diplomas but no degree, who have more experience and want to transition towards higher-skilled positions. Most courses are offered through online learning, supported by employers, which makes larger numbers of staff eligible as geographic location is no longer a constraint.

Linking students with employment

Primarily, partnership universities seek to address weak links between students and higher education on the one hand, and employers and job skills on the other. Employers face two problems: they struggle to secure workers with the appropriate skills, and they find it difficult to provide adequate training to existing staff members in order to facilitate advancement and promotion within their organisations. In-house training can be expensive, with firms often paying high fees to contractors to train staff in particular areas. These high costs mean that this form of training is often limited in duration to a period of several days. Employees are also more prone to a lack of motivation and commitment because they often do not receive any form of certificate or diploma upon completion. These training schemes do not tend to be recognisable beyond the company, contributing little to employees' resumes (and therefore diluting their utility to participants).

In theory, the partnership model offers students the opportunity for college or university tuition with greater job prospects upon completion, thanks to the relationship with private-sector partners. The way in which courses are designed, with greater input from partners in drawing up curricula, means that they are more likely to be relevant to firms' needs. In many cases, employers criticise traditional higher education providers for failing to leverage technology in order to deliver better and more inclusive forms of education; partnership universities address this criticism head-on. Online study with a focus on tech skills means that courses are accessible and relevant to the needs of employers.

This model is arguably more sustainable than other models in the long term. The costs of delivering a high-quality university-level education are unsustainably high, and in most countries public funding will be unable to keep pace. In this model, the fact that higher education providers already have concrete financial arrangements in place with employers will ease financial constraints. With private-sector partners shouldering some of the funding, this model also offers a cost-effective option to students, which in turn is likely to bolster demand. If private-sector partners have large workforces, universities have access to an abundant student body.

Getting it right: Designing programmes that address students' and employers' needs

One of the main challenges that partnership universities face is the wide range of professional experience and skill levels among students. Few universities have an effective assessment programme to assess cognitive ability, literacy levels, communication and problem-solving skills.¹⁰⁷ This means it is difficult to design programmes that are pitched to an appropriate academic level. Some institutions have adjusted courses to make them accessible to low-skilled workers with few formal qualifications. However, introducing low entry-level requirements at some of these higher education institutions has in turn generated criticism that they are providing diploma-level qualifications to students who would struggle to complete courses at other traditional institutions. This dilemma raises issues of reputational risk and calls into question the value of a university degree from non-traditional providers for future employers. Many students may still prefer to study with a traditional higher education institution over more modern providers such as partnership universities.

Proponents of partnership universities argue that well-designed courses that target high-growth jobs with large numbers of vacancies succeed in getting their graduates into well-paid jobs. However, this is not always the case, particularly as some courses are not associated with particular job outcomes. Employers are also getting smarter about the PR benefits of providing higher education opportunities for their workers. Several large, US-based firms have partnered with higher education institutions in order to offer college education to their workers in recent years, and these announcements have been accompanied by heavy marketing and PR campaigns. The retailer Walmart partnered with University of Florida Online, Brandman University and Bellevue University through Guild Education, while beverages giant Starbucks partnered with Arizona State University (ASU) Online. Critics have argued that despite the advertising, these types of programmes do not meaningfully relieve the constraints facing employees who are interested in pursuing a higher education degree, and that they in fact limit the university and career choices for some of their employees.¹⁰⁸

Case study: College for America at Southern New Hampshire University

Founded in 1932, Southern New Hampshire University (SNHU) is a private, non-profit, accredited institution with more than 3,000 on-campus students and over 100,000 online students. SNHU's College for America programmes are designed specifically to meet the needs of working adults, especially those in frontline roles, and their employers. They are also designed to target a specific gap in the market, with SNHU citing the statistic that only 40% of Americans have college

degrees, but that 65% of all jobs will soon require some education beyond high school.¹⁰⁹ Provision is designed to be as flexible as possible, allowing students to attend on campus or study entirely online, or to pursue some combination of the two.

Courses are only accessible through SNHU's partnerships, with many of the partners providing finance to SNHU that feeds through to tuition benefits, allowing students to attend at significantly lower costs. SNHU has partnered with over 100 companies and organisations across the country, and in a variety of sectors including financial services, healthcare, hospitality, manufacturing,

retail and telecommunications, as well as public-sector bodies and not-for-profit organisations. College for America offers over 200 programmes, from certificates to doctoral-level degrees, and in subjects ranging from business, education and liberal arts to social sciences and STEM.¹¹⁰

Competency-based education

One of the hallmarks of College for America's teaching is that it has adopted a competency-based education (CBE) approach, rather than following the traditional model of degree credits and modules. CBE is generally seen as an alternative to more traditional educational approaches, in which students are required to attend a certain number of courses in order to accumulate sufficient credit to graduate. By contrast, CBE focuses on the endpoint and removes the time requirement; this means that diplomas are awarded to students only after they have met particular standards. This approach is more flexible because it allows students to accelerate in areas in which they have already developed skills, and it allows them more time to complete areas of the course in which they have little experience.¹¹¹ Proponents of CBE argue that this is a particularly effective way of teaching at the university level, as adult students can receive academic credit for knowledge and skills they have acquired in their careers to date—an approach that can reduce tuition costs and accelerate their progress towards earning a degree.¹¹²

Benefits to students

The most significant benefit is access to a college education for adults who lack qualifications above the high school level. As the president of SNHU, Paul LeBlanc, states: "Education opens opportunities, through unlocking a first job, or opening a path through the ranks... Too often people disregard the symbolic power of the degree."¹¹³ There are also financial benefits, as College for America programmes are designed to be affordable. Tuition

starts at US\$5,000 per year, with discounts available at many employer partners. College for America's degree programmes are also eligible for federal financial aid. According to SNHU, "60% of our College for America students expect to earn their degree without taking on any debt at all."¹¹⁴ Students can also set their own pace in College for America programmes, with faster progression reducing the overall cost of completing a degree. Fully accredited degrees from SNHU boost the attractiveness of studying with College for America.

Flexibility also benefits students, particularly those combining work and study. Everything that is needed for the courses is available online, with no requirement to attend particular classes or exams in person. This allows students to create a schedule that works for them, with the flexibility to adapt study as other commitments change. Students are assigned an advisor who supports them throughout their degree programme.

Benefits to employers

College for America argues that partnerships provide many more advantages to employers than traditional universities or internal training programmes because their courses are specifically tailored to the needs of employers. There are also benefits in terms of retention: by expanding access to education for employees, College for America claims that the partnership model could reduce turnover, potentially by 10% across a given department.¹¹⁵ Paul LeBlanc emphasises the importance of retention in the current period of extremely low unemployment. College for America courses provide an opportunity to upskill, which drives retention; if employees can see a future at a particular company through job progression, they are less likely to seek employment elsewhere.¹¹⁶ Given that many lower-skilled jobs are at particular risk in the long term as a result of growing automation, upskilling is a necessary progression for many employees and employers.

Conclusion

For decades, universities and other higher education institutions have been grappling with structural questions that cut to the very heart of education provision, funding and organisation. What type of skills should institutions foster through higher education? How should skills be taught in order to ensure the best education outcomes? How should universities fund themselves and their research, and how important is their research to modern-day higher education? Should institutions tailor courses to the needs of employers or to the requirements of students? Should universities emphasise civic engagement as well as educational performance in order to address societal divisions? There are no simple answers to these questions, particularly as institutions provide a wide range of education and training to an increasingly broad segment of the population, all of whom have different abilities, requirements and long-term job goals. Nonetheless, it is clear that societal trends are altering how students and universities think about these questions.

Higher education institutions are also facing new pressures. As advanced technologies threaten to automate more and more jobs, employers and institutions are re-thinking what to teach, and how to teach it. More students are entering higher education, including both high school graduates and adults who are already in the workforce and are looking to upskill. This creates challenges for universities, which need to balance this surge in demand with a reduction in public-sector funding. Course fees are rising as a result, with students shouldering a growing share of the cost of higher education. This, in turn, is affecting students' perspectives on the purpose of higher education. An increasing financial burden does not seem to have dampened demand, but it has made students and parents question the value of particular degrees and seek institutions and courses that offer concrete advantages in an increasingly competitive job market.

This report has identified five innovative models of higher education through which providers have sought to adapt their modes of teaching and funding in response to this shifting landscape. Some models present a novel approach to delivering higher education. In the partnership model, higher education providers build relationships with external partners in the private sector, who in turn provide funding and help design courses in line with their own skills requirements. Building on distance learning, the relatively new online model capitalises on the rise of the Internet and mobile connectivity across the world in order to improve access to higher education, particularly for marginalised groups that have not been well served by traditional models. Geographical or time factors that have previously deterred students from campus-based universities that require physical presence at lectures are no longer a constraint in this model, as students can study from anywhere with a broadband connection, at any time that suits them. The experiential model is also a newly emerging offering from higher education providers. Rather than students learning primarily in classrooms, a significant share of teaching takes place outside university campuses, through in-work project experiences.

The other two models discussed in this report—the liberal arts model and the cluster model—adopt approaches that are already well established in some countries. The growing realisation that they can

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now be leveraged to help address the various challenges and opportunities facing university providers makes these models particularly relevant. Liberal arts colleges respond to employers' concerns about the limited range of skills among newly graduated students by emphasising breadth of study across multiple subject courses. Low faculty-to-student ratios offer greater individual attention, and a focus on soft skills (like critical thinking and creative problem-solving) recognises increasing demand for such skills in the job market. The cluster model also offers a different approach to university provision, bringing together multiple institutions in order to share administrative services, reduce duplication of activities and broaden course provision opportunities for students.

All of these innovative models of higher education provision show signs of succeeding in some areas. Online universities have increased enrolment, investing in digital provision to offer students an enriching and beneficial higher education experience. Cluster universities have provided students and faculty with enhanced social, educational and research opportunities, as well as cost-cutting opportunities through shared resources. Student benefits include a broader array of courses, as well as improved post-graduate networking opportunities among an expanded university alumni. The experiential model is increasingly in demand among students who want a more practical and hands-on university experience, and it is also valued by employers, who acknowledge the importance of the skills gained through this mode of learning. The partnership model succeeds by creating greater financial security for education providers, as well as opportunities for companies to outsource in-house training schemes to accredited higher education institutions, enhance employee engagement and upskill their workforce. In addition to developing new skills, students benefit from reduced costs as their employers sometimes shoulder a large share of course fees.

However, our analysis found that these five models also face challenges, many of which are specific to each model. Experiential universities struggle to design in-work placements that fit into the semester-based calendar, as projects rarely align with university timetables. Online universities continue to battle the perception that students do better with face-to-face teaching (rather than online teaching), and they also face stiff competition from traditional universities that are investing in digital offerings. For cluster universities, collaboration between member institutions can be difficult if the relationship is not felt to be equal. One partner can often end up doing more than the others, either because it is better resourced, or because it is in greater demand from students. For the liberal arts model, cost is one of the main challenges, as delivering a bespoke educational experience (with small classes, significant contact with professors and dynamic extracurricular activities) is expensive.

There is no one-size-fits-all approach that can help institutions to meet the changing needs of students and employers while also addressing growing financial constraints. However, these innovative models of higher education provide good examples of how providers are evolving in line with changing demands. For education providers, the ability to flourish in the long term depends on whether they can overcome challenges unique to their educational model and continue to adapt to a rapidly changing world.

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