

## “Go to college, young men and women, go to college!”

“Go West, young man, and grow up with the country.” This quote was made popular by 19<sup>th</sup>-century American newsman and politician Horace Greeley.<sup>1</sup> At a time when the East Coast was plagued by unemployment and economic stagnation, the West offered plenty of land and opportunity to those with ambition and a willingness to work. Two centuries later, the economies of many developed countries are also plagued by unemployment and economic stagnation. Unlike the American West, however, in these countries opportunity is no longer tied to land but to human talent, productivity, and innovation. It is knowledge, not geography, that will make or break an economy—and a young person’s economic future. Universities are by no means perfect and clearly are not the only places a person can acquire knowledge. However, although there is much today’s universities need to do to respond to society’s new demands, they remain the surest, most effective path for most young people who want to pursue a prosperous and impactful career.

In the United States, concerns about the skyrocketing cost of attending college have led to a wave of criticism in the media. With state support dwindling, public universities have swiftly transferred the economic burden of getting an education to the students. At our university, for example, as state tax revenue appropriations per student have declined by more than half over a decade, in-state tuition and fees have more than doubled, even though our expenditures per student have remained almost flat. Other factors driving tuition inflation include investments in facilities and equipment, increases in long-term debt, and growth in administrative and support services. The result, according to a recent study by consulting firm Bain & Company, is that the average American family now has to dedicate 38 percent of its annual income to pay for a year of college, up from 23 percent a decade earlier.<sup>2</sup> As a consequence, students are borrowing more and more to pay for college, and U.S. student loan debt ballooned to nearly \$1 trillion in the third quarter of 2012,<sup>3</sup> which for the first time is larger than either credit card or auto loan debt.<sup>4</sup>

These trends have sparked a plethora of arguments against obtaining a college degree. Citing examples like tech giants Mark Zuckerberg, Bill Gates, and the late

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*Ángel Cabrera is President of George Mason University.*

*Callie Le Renard is a PhD candidate at the School of Public Policy at George Mason University.*

Steve Jobs, many analysts and commentators have tried to make the point that one can achieve meteoric success without graduating from college.<sup>5</sup> Silicon Valley investor Peter Thiel has gone as far as offering a \$100,000 grant for high school students interested in creating a company instead of going to college. “You increasingly have people who are graduating from college not being able to get good jobs, [and] moving back home with their parents,” Thiel said recently. “I think there’s a surprising openness to the idea that something’s gone badly wrong and needs to be fixed.”<sup>6</sup>

Setting aside the fact that Thiel himself has two degrees from Stanford University and that his generous grant is available to only 20 students per year, the odds of getting a good job remain overwhelmingly higher for people with a college degree than for those without one. Schmitt and Jones found that the odds of getting a good job—defined as one that pays over \$37,000 per year and includes employer provided health and retirement benefits—are three times higher for college graduates than for high school graduates who didn’t go to college. Most importantly, the gap between them has been widening steadily.<sup>7</sup>

Economists have expressed concern about the decrease in median family income over the past three decades. Our colleague Tyler Cowen has reported that the average American family earned less in 2009 than it did in 1999.<sup>8</sup> Whether this worrisome trend can be explained by economic cycles, by our inability to maintain the pace of innovation (as Cowen himself argues), or by our inability to keep up with innovation, the fact is that not every worker is experiencing this wage stagnation the same way.<sup>9</sup> As it turns out, the availability of jobs has become polarized, with rapid job growth at both the high and low ends of the skill spectrum coming at the expense of middle-skill jobs. Moreover, while low-skill workers are seeing their wages shrink, their highly skilled counterparts are commanding an increasingly larger wage premium.<sup>10</sup>

Clearly, the surest path to economic opportunity for youth is not less education but more. Our discussions, then, should center not on how to bypass college but on how to ensure that more youth around the world can participate and benefit from high-quality higher education; how to ensure that colleges respond to the changing needs and lifestyles of an increasingly diverse population; how colleges can help more young men and women to either do or create a job; and how we can finance the whole learning enterprise in a sustainable way.

In the developed world, student demographics have changed dramatically over the last decade. In the United States, for instance, of the almost 19 million undergraduate students, only 7.3 million are full-time students attending a traditional four-year institution.<sup>11</sup> About the same number (7.2 million) attend a community college, with the balance split between part-time students in four-year institutions (about 2 million) and students in for-profit universities pursuing associate’s or bachelor’s degrees (almost 2 million). And while bachelor’s degrees are still the most commonly awarded credential, certificates have now surpassed master’s degrees, comprising 22 percent of the credentials awarded in 2010, compared to 6 percent in 1980.<sup>12</sup>

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Traditional four-year institutions are having difficulty serving the evolving needs of this increasingly diverse student population—or at least students seem to be saying so with their feet. Nearly one-third of all U.S. college students transfer institutions at least once before actually earning a degree. Furthermore, more than half of these students transfer from four-year institutions to community colleges.<sup>13</sup> Dual enrollment—taking courses at both a four-year institution and a community college—is also on the rise. More and more students are also enrolling in private for-profit institutions like the University of Phoenix and DeVry University. In fact, private for-profit institutions awarded 19 percent of all associate’s degrees and 10 percent of master’s degrees in 2010.<sup>14</sup>

As difficult as it will be for traditional American universities to deal with this increased student diversity, it cannot compare to what will be needed in emerging economies around the world. Compared to the advanced economies in the Organization for Economic Co-operation and Development (OECD), where 38 percent of the population between ages 25 and 34 has achieved some tertiary education,<sup>15</sup> in China, only 5 percent have done so. With a current student population of about 30 million students, China would have to increase its capacity to accommodate 200 million students to reach OECD levels. This would amount to building 2,000 new universities with student populations of 100,000 apiece—the size of Arizona State and George Mason universities combined. Given the high costs associated with traditional American research universities, even when adjusted for purchasing power parity, it is clear that new models will be needed to satisfy the massive growth in higher education demand in most of the developing world.

Even though the challenges are not the same around the world, some areas of innovation will prove instrumental everywhere, even if applied in different ways. First among them is online education. After the false start in the late 1990s, when pioneer efforts burst with the rest of the online bubble, online education is finally making major inroads. The vast majority of students at the for-profit University of Phoenix (which, with more than 300,000 students, is America’s largest university) take some or all of their courses online. Even traditional universities are seeing significant enrollments in their online programs; Arizona State University, for example, claims over 5,000 online students.

Research has shown that online education, especially when blended with face-to-face interventions, can lead to higher learning effectiveness than traditional methods.<sup>16</sup> In addition, online delivery can be far more scalable than residential models, not only because it doesn’t require facilities but because it may utilize alternative faculty models. While online is not necessarily low cost, it does open up a new space for innovation that can potentially bring the marginal cost of delivery down to almost zero. An ambitious project led by Israeli entrepreneur Shai Reshef, the University of the People, is trying to offer tuition-free education to students around the world. While the goal of a completely free education has not been achieved yet, the University of the People is finding ways to dramatically reducing the marginal costs of delivery.

In the last year, there has been an explosion in the number of Massive Open Online Courses, or MOOCs, offered to learners around the world, often at no cost to students. For-profit providers like Coursera and Udacity and nonprofit collaborative partnerships like EdX are bringing courses to the masses, regardless of their educational background or university matriculation. Students around the world can now take free courses in subjects like computer science, mathematics, economics, health, and the social sciences from the best professors at top-tier universities, such as Stanford or MIT, entirely online. As with the University of the People, MOOCs are not completely free to the student, as fees usually apply for exams or certifications, but the costs are minimal compared to traditional instruction. Questions about the viability of MOOCs remain unanswered. Coursera and Udacity still have not found financially sustainable business models, and even the wealthy universities behind EdX will not be able to sustain financial losses forever. It is possible that a combination of advertising, corporate sponsorships and added-value services such as certification, examination or employment services will eventually provide sufficient revenues to keep MOOCs growing. Meanwhile, there are early signs that students will soon be able to earn university credit for these courses.<sup>17</sup>

Another avenue of potentially effective innovation will be collaborative, open-source development. Open source models of innovation have already yielded results, both in terms of content (e.g., Open Courseware Consortium) and technology and support systems (e.g., Moodle and Sakai learning management systems or Jasig and Quali administrative software). Open source also can play an important role in diffusing innovations from developed to emerging markets, as solutions produced by better established universities become freely available to new, often less endowed institutions that can then become drivers of additional innovation.

On the other end of the spectrum, for-profit enterprises have virtually no limits on raising capital to drive growth and innovation, as long as they produce adequate returns on investment. In the U.S., the University of Phoenix, DeVry, and Grand Canyon University had market capitalizations of over \$1 billion at the beginning of 2013. Internationally, privately held Laureate International Universities currently has over 750,000 students around the world, and it could join the billion-dollar club if or when it goes public. For-profits have recently raised regulatory concerns after accusations of abusive recruiting practices, but there is no doubt that they will play a role in satisfying the growing demand for higher education around the world, given the scarcity of public funding.

Because the typical student profile is changing so much, a “one-size-fits-all” approach to higher education will not work. Given how distance education breaks down geographic barriers to competition, it is likely that universities will be forced to develop differentiated models to target specific populations or to offer specific types of education. A good example is the development of so-called competency-based models, which measure student learning outcomes rather than time on task or credit hours.<sup>18</sup> Students at Western Governor University, for example, study on

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their own at their own pace with the assistance of a tutor, and they take exams designed to assess whether or not they have mastered the competencies associated with the credential they seek. Competency-based education is especially relevant for adult learners who have some college credit and work experience but no degree. These students enter college knowing different things and learning at different rates.<sup>19</sup> Competency-based education also changes the role of faculty, who don't serve as lecturers but as guides, “answering questions, leading discussions, and helping students synthesize and apply knowledge.”<sup>20</sup> Competency-based education also will allow for the increased use of technology, as questions can be answered and discussions led online rather than in person, once again accommodating the schedules of adult learners. Taken to the extreme, competency-based education could potentially allow students to personalize their education by collecting “badges” or certificates of competence in various disciplines from different providers.

Other models are seeking to differentiate by creating a tighter connection with employers. One example of this is the development of associate's and bachelor's degrees in Texas that are specific to the energy industry. In 2012, the “Texas Higher Education Coordinating Board granted \$1.3 million to five South Texas community colleges to train about 800 workers in oil field jobs.”<sup>21</sup> Although many of these changes are happening at community and technical colleges due to their ability to adapt more quickly, changes are also taking place at four-year institutions. For instance, Texas A&M International University in Laredo is seeking approval for a bachelor's degree in petroleum engineering, and the Kingsville campus “will reinstate a bachelor's degree in natural gas engineering,” which was discontinued over a decade ago due to a lack of student interest.<sup>22</sup>

This kind of specialization is also happening at the graduate level. As interest in traditional MBA programs has stagnated or declined, many business schools have begun to offer specialized one-year master of science degrees designed to give students just out of college an edge on the job market. These degrees allow students to specialize in traditional fields like accounting and finance, as well as in emerging fields such as information technology, supply-chain management, and data analytics.<sup>23</sup> The programs have appealed to many business students at a time when jobs are both scarce and very competitive.<sup>24</sup>

The changing landscape of employment and careers is also raising interest in programs that prepare students not to do a job but to create one. Programs in entrepreneurship, which until recently were limited to business schools, are beginning to shape the curricula of other disciplines. For example, the CIDA City Campus University in South Africa offers a program to historically disadvantaged youth that has a strong emphasis on business creation.

Higher education has never been so needed. In the knowledge economy, higher education is no longer a luxury, but a necessity for both individuals and their communities to remain competitive. However, traditional universities are not yet prepared to meet the growing demand for higher education around the world and to satisfy the needs of an increasingly diverse student population. Major innova-

tions will be needed to transform existing universities and create new alternative models. It is possible that many of today's universities will not survive, and that others will, but in a new form. It is very likely that the next few years will see new entrants that we cannot even imagine today.

As this process of creative destruction unfolds, no one should draw the dangerously misleading conclusion that higher education is no longer needed. Go to college, young men and women, go to college! Or ignore this advice at your own peril.

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