A Brief Scan of Factors Likely to Impact Higher Education Between 2013 and 2025

THE COSTS OF HIGHER EDUCATION

Background

- Between 1980 and 2010-11, tuition and fees at public and private non-profit colleges and universities have outpaced every other sector of the economy.
- Sixty percent of four-year college graduates have an average education debt of $29,400 (up 25% in the last decade) and many are unable to find employment that would offset their debt and their investment.
- Children from families earning more than $90,000 have a one-in-two chance of getting a bachelor's degree by age 24. That falls to a one-in-four chance for those from families earning between $60,000 and $90,000, and a one-in-17 chance for those earning under $35,000.
- In 2012, 53.6% of bachelor-degree graduates under 25 were jobless or underemployed, the highest percentage since 2000, when the number hit an all-time low of 41%.
- Students graduating from the science or professional fields were less likely to be jobless than humanities or arts graduates.

Trends

- The average tuition increase at 4-year public colleges and universities between 2012-13 and 2013-14 was 2.9%, the smallest hike in more than 30 years. A jump in this percentage is not likely in the near term.
- At 4-year nonprofit privates, the average tuition increase over the same period of time was the lowest in four decades.
- The declining rate of growth in tuition and fees is being offset and likely will continue to be offset by a decrease in aid.
  - After real recession-driven increases in Pell funding, the program is facing financial shortfalls.
  - State funding of higher education is unlikely to return to pre-recession levels.
- While institutions are looking at ways to cut costs while maintaining quality, Washington and state governments will continue to explore new funding options like forgivable loans, grant commitments to middle and high school students, federal support of state grant programs, and occupational training grants.

ACCOUNTABILITY

Background

Increasing tuition, student debt, and the unemployment of recent graduates have provided state and federal lawmakers sufficient political traction to devise their own cost mitigation plans for higher education—both public and private. While not all the suggested remedies will be applied, many are being widely discussed.

Trends

- Government, parents, and students are questioning the value proposition of a college degree, demanding evidence of its quality, pertinence, and value. Increased levels of scrutiny and regulation from multiple quarters will continue for the foreseeable future.
- We will see increasing governmental preoccupation with measuring the positive outcomes of a college degree, including employability, time-to-degree, and graduation rates. At the state level, Tennessee, Ohio, and Indiana are already moving in this direction, funding those schools that give evidence of positive outcomes.
- The soon-to-be renewed Higher Education Act could recognize new, cheaper models of learning such as competency-based certification as well as new funding criteria.
- President Obama's top higher education priority is a new federal college rating system with the possible criteria of access (% of students receiving Pell grants), affordability, post-graduate job

placement and earnings. Low-income, first-generation students will benefit most from the new system, which does not require congressional approval and could be in place by 2015.

- New graduation-rate metrics are being proposed that would reflect current enrollment realities such as growing rates of inter-institutional transfer, stop-outs, and part-time study.
- The Council for Higher Education plans to increase standards for assessing student learning, including requiring colleges to have explicit plans for improving student retention and graduation rates.

DEMOGRAPHIC AND POLITICAL PATTERNS

Major shifts in the composition of international, national, and regional populations will require adaptation by higher education.

Global: Background

- New international colleges and universities are proliferating, posing real competition to U.S. institutions for both international *and* U.S. students.
- The trend of annual increases in international students enrolling in U.S. colleges and universities appears to be flattening. After seven consecutive years of double-digit growth in Chinese applications to U.S. graduate schools, the number of applicants declined to 5% for the 2013-14 academic year.
- Recent shifts in study abroad placements for U.S. students reflect the economic and political fortunes of host countries, with South Korea, Costa Rica, Brazil, and India experiencing the largest one-year increases in U.S. students. Greece saw a -7.4% drop and Japan, -33%.

Global: Trends

- Asia, Africa, and Latin America will account for virtually all population growth over the next 20 years; less than 3 percent of the growth will occur in the West.
- Global competition for students will accelerate, with developing nations working as aggressively as developed nations to attract students.
- Almost 1/3 of the globally mobile student population of approximately four million is from either India or China.
- The global affluent middle class will grow, tilting the balance to the point that a majority of the world population will no longer be impoverished.
- Without changes in visa regulations (not likely until the next president), the U.S. will continue to lose qualified Masters and Doctoral graduates to their home countries.

National: Background

- While the number of high school graduates topped out with the class of 2011 at 3.4M, college enrollments declined in 2012 for the first time in 15 years.
- Between 2000 and 2014, female enrollment in college grew by 31% and male by 19%.
- In 2009, 38% of high school graduates were from a minority group.
- Currently, 19% of Hispanics have a college degree, 27% of African Americans, and 43% of whites.
- Seventy-eight percent of U.S. students who studied abroad were white in 2011.
- The percent of college-aged Hispanics enrolled in higher education is now equivalent to that of African American students.

National: Trends

- High school graduate production will be relatively stable between 2011-12 and 2021-22, with 3.2 to 3.3 million students graduating annually. Thereafter, a brief increase is predicted, with a new high point of 3.5 million graduates in 2024-25, followed by a drop back to about 3.3 million by 2027-28.
- By 2020, the percent of minority high school graduates will have increased from 38% to 45%.

- Hispanics will see the largest growth at 41%, followed by Asian/Pacific Islander at 30%. Black high school graduates will decline by 9% and whites by 12%.
- By 2027, female high school graduates will outnumber males in every ethnic group except Asian/Pacific Islander.
- The U.S. Department of Education expects college enrollment growth to slow to a third of the pace enjoyed in the last decade.
- Between 2013 and 2025, the over-60 population will grow by 70%, with many postponing retirement and even changing careers well into their 70's. This shift will have implications for life-long learning programs.

Regional: Background

- **West:** Between 1996 and 2011, high school graduates in the western states increased by 32.5%.
- **Mid-West**: The mid-west has experienced years of significant out-migration due to declines in manufacturing jobs. There are signs that the mass migration may be slowing.
- **Northeast:** The birthrate in the Northeast began dropping in the 1990's**,** declining from 800,000 in 1990 to under 66,000 in 2010.
- **South:** Due to a combination of births and immigration, the south is the most populous U.S. region.

Regional: Trends

- The West will see moderate growth in the number of high school graduates until 2024. Colorado, Idaho, Nevada, Utah, and Wyoming will experience a 20% increase in high school graduates between 2009 and 2014.
- High school enrollments in the Midwest are expected to stabilize.
- In the Northeast, the high school class of 2028 will be 10% smaller than the class of 2009. All Northeastern states are expecting a decline in high school graduates, with New York experiencing the smallest decline at 1.5%.
- The South is projected to experience an 11% increase in high school graduates from 2009-2012, followed by even sharper increases through 2024 for a 16% increase over 2009 levels.
- In most states, the number of Hispanic and Asian/Pacific Islander high school graduates will increase. By 2024, Hispanic graduates will have increased by 66% and Asian/Pacific Islander by 58%.
- The diversification of the student body at every level will require adaptations at all educational levels in every state.

POSSIBLE EVIDENCE OF DEMOGRAPHIC DOWNTURN

The patterns of enrollment decline and revenue shortfall that began in 2012 beginning to be felt at small private colleges. The following small and mid-size private colleges (most of whom are highly tuition-dependent) are beginning to show the stress:

- Midway College in Kentucky: 18% enrollment drop this fall leading to lay-off of ~54 faculty and elimination of 16 staff positions.
- Wittenberg University in Ohio: cut 29 of 140 faculty spots (15 occupied and 14 unoccupied) in an attempt to cut $4.5M from their costs.
- Martin University in Indianapolis enrolled a first-year class that was 25% smaller than what they had budgeted for.
- Woodbury University in California: 22% drop in the size of first-year class.
- Anderson University (Indiana): plans to cut 16/400 faculty spots and eliminate majors in French, philosophy, and theater.
- Goddard College has a $550,000 budget deficit.
- Nazareth College in Rochester NY has made cuts in an effort to save $6M and add $2M more for student aid.

- Houghton College (NY) and Indiana Wesleyan U. (Indiana) are looking into a partnership that would let Houghton offer online courses from Indiana Wesleyan.
- Dowling College (NY) making cuts and reassignments as part of an apparent downsizing effort due to enrollment declines.
- Calvin College (MI) is eliminating and/or reducing programs and reducing staff.
- Burlington College in Vermont is increasing its teaching load and has asked some department chairs to move to half-time positions.
- Pine Manor (MA), a women's college with a 600-student capacity, has had a 50% drop in enrollment and has decided to admit men.
- Mergers under discussion:
  - Point University (Ga.) and Montreat College (N.C.)
  - Johnson University (TN) and Florida Christian College (merged this summer)
  - St. Bonaventure University and Hilbert College

STUDENT ISSUES

Trends

- Increasing numbers of students arrive at college with psychological problems.
- Increasing numbers of these students are on medication when they arrive at college.
- Improvements in diagnosis of and intervention with children on the autism spectrum translates into an increase in the number of college students with the spectrum disorder.
- Despite concerns about the rising cost of tuition, students continue to expect a range of high-end amenities and restaurant-quality dining.
- High school seniors spend less than half the amount of time studying as first-year college students.
- By their early twenties, students have spent on average 10,000 hours playing video games, sent and received 200,000 emails and IM's, and 5,000 reading books.

ECONOMY

(Note: No category in this scan is fraught with more contradictory commentary and projections than this one. After an extensive review of the literature, one could conclude that tea leaves and tarot cards are as useful as the serious projections of experts. The entries below are modest and largely uncontroversial.)

Global: Background

- The global economy has suffered from three years of slashed budgets and tightened policies.
- Currently, the average budget shortfall of the Group of Seven (G-7) nations is at one quarter of what it was three years ago.
- The economies of Greece and Spain are under better control.

Global: Trends

- The budget relaxation of the G-7 group could result in a near-doubling of industrial economies.
- Europe and Japan will continue to significantly outdistance China and India in *per capita* wealth, but they will struggle to maintain robust growth rates because of an aging population.
- China is poised to have more impact on the world over the next 20 years than any other country. By 2025 it will likely have be the world's second largest economy and a leading military power. It could also be the largest importer of natural resources and the biggest polluter.
- By 2030, there will no longer be a single world power, but rather a multipolar world with networks and coalitions.

National: Background

According to the most recent figures, the U.S. economy grew at an annual rate of 3.6% in the third quarter 0f 2013—the strongest showing since the first quarter of 2012. Unemployment claims are dipping, and there has been a recent increase in state-level spending. GDP has seen steady growth since 2008.

- Between 2009 and 2012, the annual incomes of the 1% wealthiest Americans grew by 31.4%.

- Between 2009 and 2012, the annual incomes of the remaining 99% grew by 0.4%.
- U.S. income inequality is highest since 1928 (December 2013).

National: Trends

- Many on Wall Street believe the U.S. economy will pick up in 2014.
- Factors that could result in a long-term slow-down of growth are an aging society, tight immigration regulations, and declining R & D spending in the private and public sectors.

RESEARCH FUNDING

Government and Corporate Funding: Background

- Federal funding for university research has flattened or declined in the U.S. at a time when research budgets in other countries are growing. The U.S. decline is largely attributable to the end of the stimulus.
  - NIH funding dropped 22% between 2003 and 2013.
  - NSF dropped 24% between 2009 and 2013.
  - DoD dropped17% between 2009 and 2013.
- In 2011, 20% of the total government funding for R & D went to 10 universities.
- State funding, eroding in the pre-recession years and declining dramatically during the recession, is unlikely to return to earlier levels
- Basic research has become increasingly international and inter-disciplinary.
- Corporate research labs have largely been dismantled.
- Industry supports ~ 7% of total university research funding and up to 16% in biotechnology areas.

Trends

- Looking at the next 10 years of federal and state research funding, there are few bright spots apparent.
- NSF grants could reduce by 1000 annually.
- The highly-cited research coming out of universities will be the product of international partnerships.
- Reprioritization of state funding may well be permanent.
- The "hot" areas of research and technology transfer will be implantable devices, big data analytics, 3-D printing, and clean energy (which will be *the* defining industry of the 21st century).

Foundation and Private Giving

Background

- 2012 Giving to Higher Education (National)
  - Gifts from foundations increased 5.5 percent in 2012.
  - Corporate contributions were up 4.6 percent.
  - Non-alumni individuals increased their contributions by 3.1 percent.
- Rochester
  - Continuing decline in the number of businesses headquartered in Rochester.
  - Population peaked in 1950 with 332,000. In 2012, population was 210,000.

Trends

- Nationally, total charitable giving will continue to grow, but at the predicted rate of growth it will not reach the 2007 high of $334,488 for 7-8 years.
- Charitable giving is likely to increase no more than 1.6% in the coming year.
- Prospects for private giving in Rochester community are dim.

E-LEARNING

The recent explosion in the sophistication and deployment of e-learning technologies and providers has created a near-deafening buzz. While some respected schools have adopted one or more of these new approaches into their mainstream, measured responses like the following are heard with increasing frequency. "Technology is necessary but not sufficient to drive radical change in higher education. Ultimately, properly combining computer-mediated and face-to-face interactions will leverage the best of both approaches for the benefits of the learners." (Georgia Tech, Center for 21st Universities)

Background

- Blended learning remains the preferred teaching/learning modality of undergraduate students.
- Nearly 80% U.S. students have taken at least one blended learning course.
- Older students prefer online-only courses.
- Undergraduates are only moderately interested in their institutions using learner analytics.
- Thirty-nine percent of students taking exclusively online courses want more face-to-face interaction with their faculty.
- While MOOC's may have enjoyed "one of the fastest uptakes ever seen in higher education," only 3% of enrolled U.S. undergraduates have taken a MOOC.
- During the past 10 years, online enrollments have grown to constitute 30% of all U.S. college enrollments.

Trends

- 57.7% of surveyed undergraduates say they learn most in courses with some online components.
- College students are expecting their schools and faculty to provide opportunities and encouragement to use their mobile devices more for academics.
- Only 3% of enrolled U.S. undergraduates have actually taken a MOOC.
- The global e-learning market is projected to reach $107 B by 2015.

CAREER OPPORTUNITIES/LABOR MARKET

Background

In 2013, 62.8% of Americans have jobs or are actively seeking employment—the lowest number since 1978. Factors contributing to the decline are 1) the widespread retirements of baby boomers; 2) relatively high numbers of workers going to school rather than seeking employment because of an uncertain economy.

In 2012-13, only 22% of hiring managers entered the recruiting season with plans to hire.

In 2012, the percentage of new Ph.D.'s graduating with a job commitment increased by 0.1 of a percentage point (to 65.6%). Broad fields with the highest percentage of job commitments were Social Sciences (69.9%), Education (69.2%), and Physical Sciences (68.2%).

Trends

- The highest proportions of jobs for workers with bachelors and/or graduate degrees will be concentrated in the northeast.
- The labor force will continue to diversify, with Hispanics making up 18.6% by 2020.
- Occupations requiring a master's degree will experience the largest growth through 2020 (21.7%).
- In 2020, the jobs in the highest demand for workers with a master's degrees will be
    - Industrial-Organizational Psychologist (+ 34.9%; $87,330 median salary)
    - Occupational therapists (+ 33.5%; median salary $72,320)
    - Physician Assistant (+ 29.5%; median salary $86,410)
    - Speech/Language Pathologists (+ 23.4%; median salary $66,920)
- At the Ph.D. level, Computer and Information Scientists will be in the highest demand, with jobs in that sector growing by 24.2 through 2020.
- The next decade will see significant job growth in the following broad sectors:
    - Professional services (with the largest growth in management, scientific, and technical consulting services)
    - Health care (with the largest growth in home health care services, and individual and

    - family health care services)
  - Education
  - A rebounding construction industry
- By 2025, there will be a huge shortage of primary care doctors and nurses. Forecasts suggest a physician shortage of 100,000, and a nurse shortage hovering at 1,000,000.
- Manufacturing jobs will continue to decline—from 8.1% of the labor force to 7.0% in 2020.
- A premium will be placed on the following skills:
  - Critical thinking, insight, and analysis capabilities;
  - Social literacy—the ability to collaborate, work in groups, read social cues, and respond adaptively;
  - Cross-cultural competencies and the ability to work well within multi-national and multi-ethnic groups;
  - New media literacy.
- The ideal worker of the next decade will be "T-shaped," possessing depth and breadth, and more specifically
  - Mastery of a discipline;
  - Mastery of a system;
  - Transdisciplinary knowledge used in the system;
  - Mastery of additional systems over time (with implications for life-long learning).

K-12 EDUCATION

Background

In 2012, U.S. 4^{th} and 8^{th} graders scored above the international averages in math and science, but were still outperformed by such countries as Singapore and Japan. In reading, U.S. 4^{th}-graders were outscored by 10 countries and outperformed twenty-two.

At least 34 states are funding public K-12 education at a lower amount that before the recession. Thirteen states have cut per-student funding by more than 10%.

The Common Core Standards has been referred to as "the biggest shift in educational philosophy in the history of the U.S." (Meador)

Trends

- Federal funding on K-12 education is projected to rise slightly in 2014, 2016, 2017, and 2018.
- The Common Core curriculum, adopted in 45 states, has the potential to result in a greater alignment of K-12 and postsecondary curricula.
- Because of uneven and some would say rushed implementation of the Common Core, student report cards (which are changing to reflect the new curriculum) will likely decline before they improve.

SURVEY OF EARLY ADOPTERS

Many traditional U.S. colleges and universities and education-related organizations have responded to one or more trends identified in this scan by making major changes to their traditional operations. The following is a list of some of these "early adopters."

- **University of Southern New Hampshire**
  NECHE (regional accreditor) has approved the university's plan for awarding credit based on competencies through tasks meant to simulate real world workplace requirements like critical thinking, quantitative reasoning, and writing and speech skills.
- **University of Wisconsin**
  UW has a new "Flexible Option" that allows students to earn college credit by demonstrating previously acquired knowledge. The flexible option is in place for the Bachelors and Masters programs in Nursing and in Diagnostic Imaging; the BS in Information Science and Technology and the BS in Professional and Technical Communication.

- **Duke University** has blended its departments of English, ethics, neuroscience, and computing to create a diverse set of certificate programs, including Information Science and Information Studies.
- The **American Council on Education** recently recommended college credit for five Coursera courses, four Udacity MOOCS, and 1 EdX MOOC.
- **Scripps** Health, a major health care provider in San Diego, is adding StraighterLine's self-paced online college courses as an option for their employees. Students can take courses and/or earn degrees as well as receive credit for "life experience.
- **Brigham Young University-Idaho** has adopted the following changes:
    - Faculty are not tenured; all serve on one-year renewable contracts.
    - Adopted a three-semester calendar, allowing students to study year-round.
    - Significantly increased their online offerings, which relying heavily on learner analytics.
- **Arizona State University**
    - Adopted a three-semester year similar to Brigham Young-Idaho's.
    - Focused its research emphases in three areas:
        - Alternative fuels
        - Health care (particularly biomed)
        - Education
    - Increased its on-line offerings and created 6 start dates throughout the year.
- **Georgia Institute of Technology**
    - Partnering with Udacity and AT & T, Georgia Tech now offers a MOOC MS degree in Computer Science for less than $7000.
- **Western Governors University**
    - Founded as an exclusively online university, WGU students advance through degree programs based upon mastery of content rather than time in a course.
- **Lumina Foundation** (nation's largest private foundation focused solely on increasing success in higher education)
    - Lumina has funded the Degree Qualifications Profile—a framework proposing learning outcomes and competencies for the associate, bachelor's, and master's degrees along five dimensions. *Inside Higher Education.* http://www.insidehighered.com/news/2012/02/01/using-big-data-predict-online-student-success

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