The Future of Higher Education: Issues, Policy, and Trends

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Promoting an Educated Illinois

IBHE

ILLINOIS BOARD OF HIGHER EDUCATION

Topics to be Covered

- The Current Situation

- The Changing Landscape

- Forces for Change

- Obstacles

- Conclusion

The Current Situation

The Current Situation

- According to the Higher Education Finance Study Commission :
  - Colleges and Universities are starving for dollars.
  - Illinois' student financial aid system has been eroded at a time when low-income families have less ability to pay for college.
  - Unfunded state mandates and regulatory requirements undermine efficiency and productivity.
  - Institutions often squeeze cost savings out of instruction and student support services.
  - The burden of financing a college education has increasingly fallen on students and families.

The Current Situation in Illinois

- State funding for higher education has declined steadily over the last 15 years.

- The State is currently experiencing a debt crisis.

- Pensions costs are exceeding the rate of state revenue growth.

- The State funding situation has created a cash flow problem for colleges and universities.

- Over the past few years there has been very little funding for capital projects, to include renovation and remodeling.

- The State is facing potential decreases in financial aid funding for both MAP and Pell.

Current Policy Issues

- The dominant policy and top higher education state policy issue is college affordability.

- A second pervasive theme is a shift in conversation from one that has been focused on college access to one that is focused more broadly on both access and completion.

- It has become increasingly clear that meeting educational attainment goals and ensuring economic success will require a dedicated effort to get a larger proportion of students across the degree completion finish line

State Support for Higher Education

- States continue to deal with budget imbalances caused by <u>insufficient revenue</u> streams and a multitude of <u>spending pressures</u>.

- 36 states saw <u>funding reductions</u> for higher education in FY 2012, 15 of which were in <u>double digits</u>

- The greatest pressure point will come from states' <u>Medicaid</u> spending commitments, which according to one estimate, are slated to increase nearly 29 percent in fiscal year 2012 alone.

- State <u>budget pressure points</u> include:
  - State employee pension programs.
  - Unemployment insurance programs.
  - The funding of state public employee health programs.
  - Meeting K-12 education funding commitments

- All of which will continue to drown out higher education as a state funding priority.

Trends in Revenues at Illinois Public Universities 1998-2013 (in FY2013 dollars)
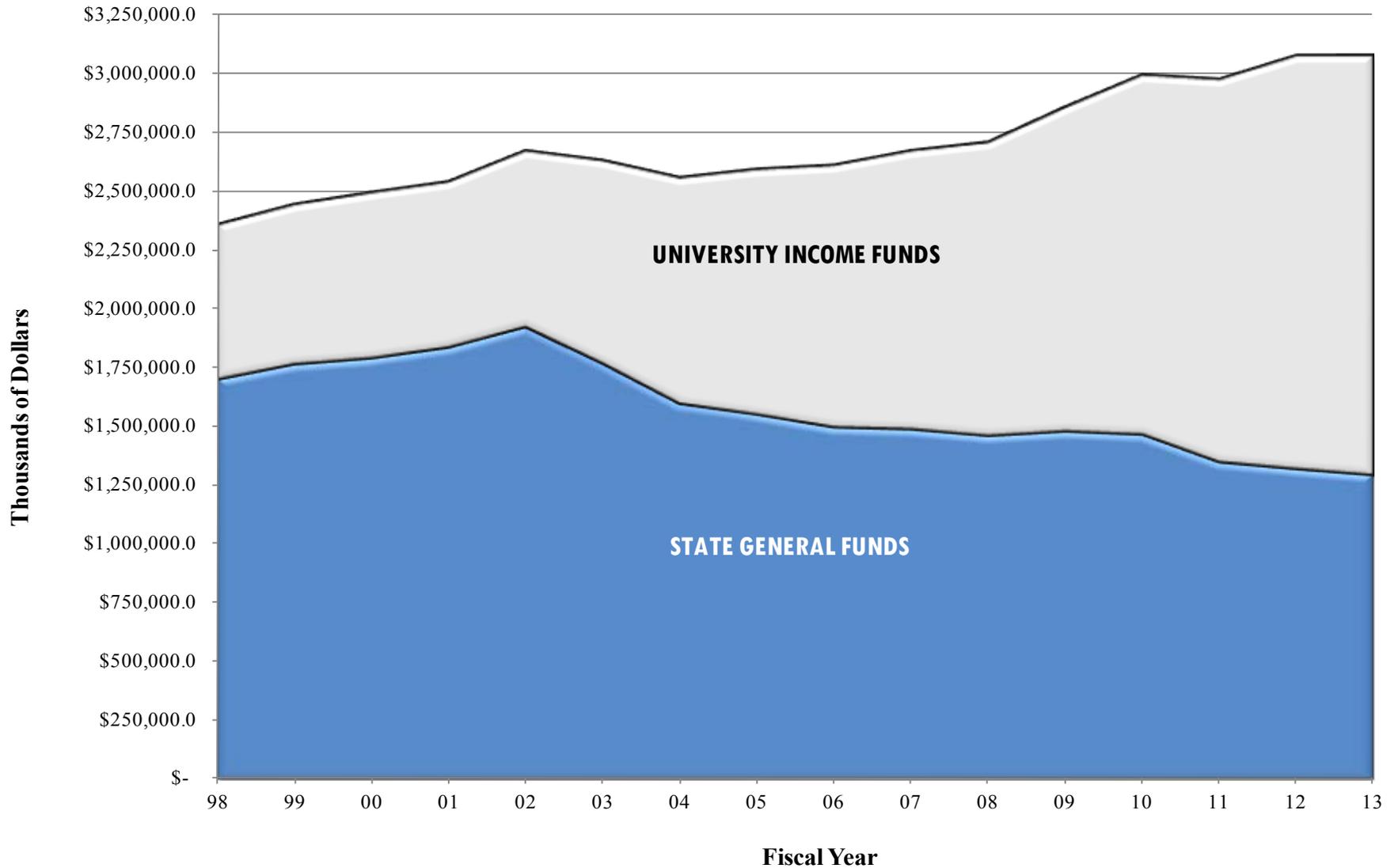
*University Income Funds for fiscal years 2012 and 2013 are estimated.

Source: IBHE records.

Trends in Revenues at Illinois Community Colleges 1998-2013 (in FY2013 dollars)
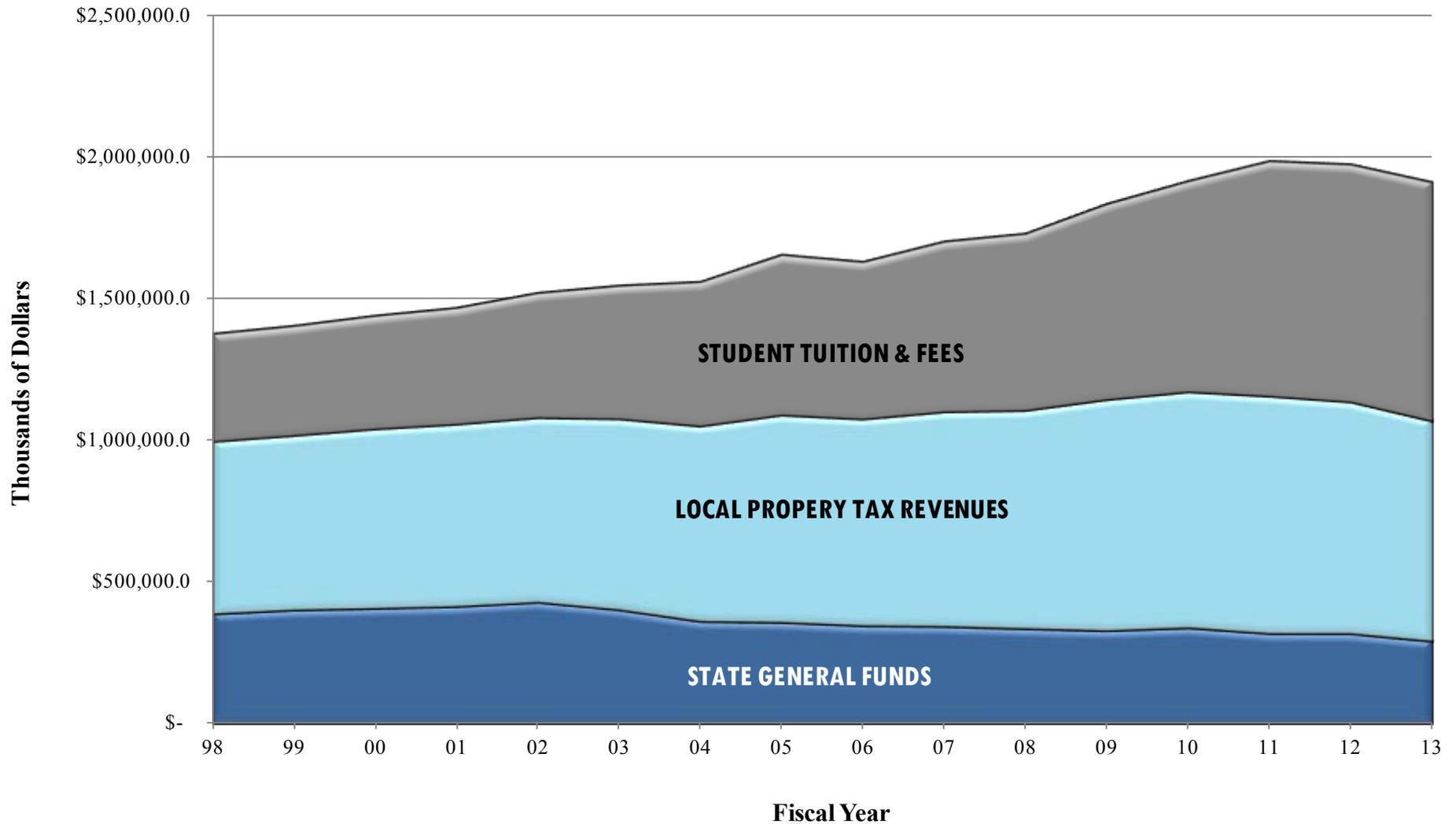
*Local Property Tax Revenues and Student Tuition and Fees amounts for fiscal years 2012 and 2013 are estimated.

Source: IBHE records.

Percent Change in State Appropriations for Higher Education by Sector FY 1998-2013 (in FY2013 dollars)
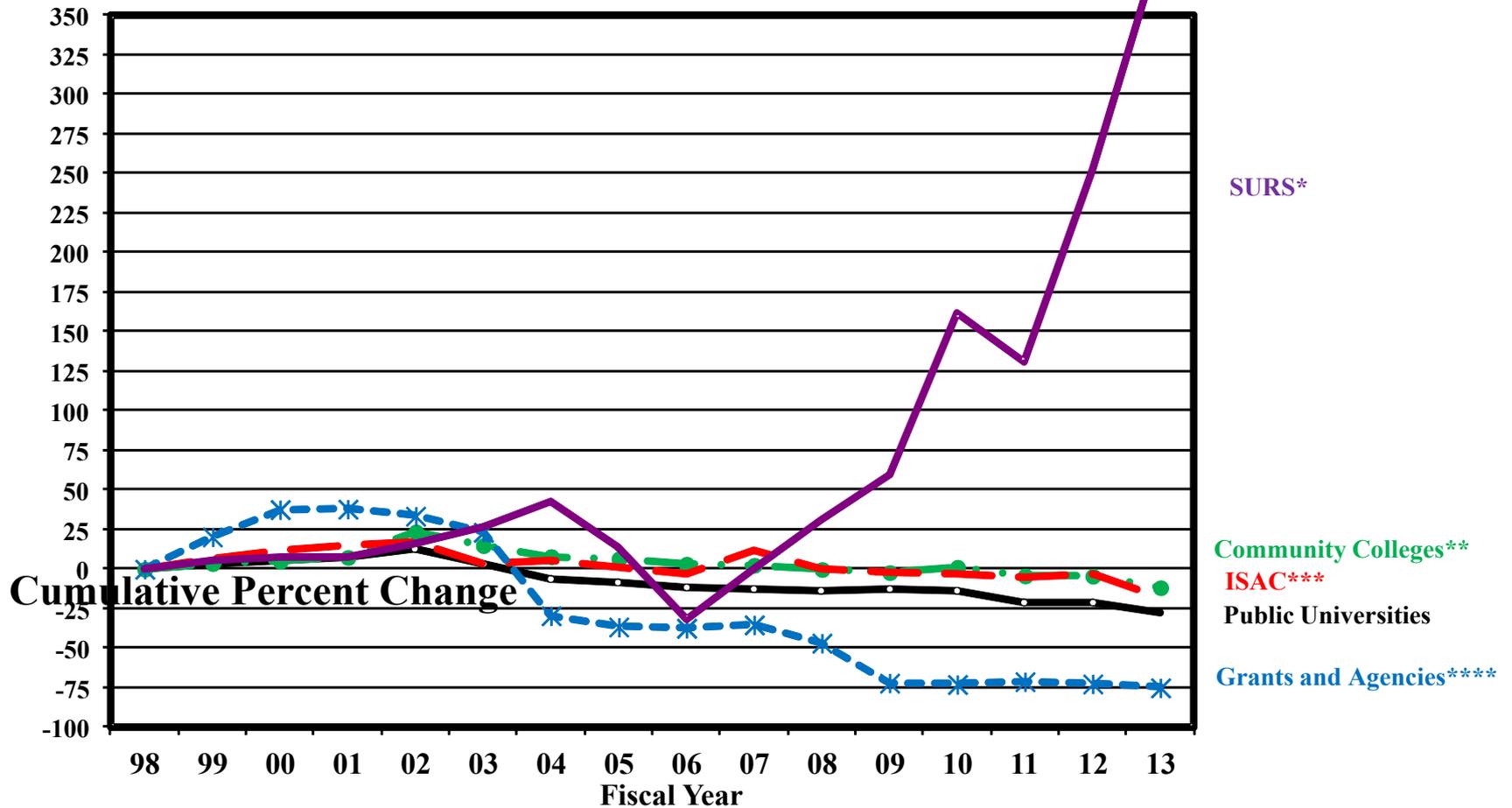
*   Includes State General Funds and State Pension Fund.
**   Includes Adult Ed beginning FY02 and Career & Tech. Ed beginning FY2004. Grants to colleges have declined since FY2002.
***   Includes Student Loan Operating Fund appropriations for MAP (FY07 and FY12 and MAP Plus in FY2007 only).
**** Includes Budget Relief Fund (FY2009 only). Beginning in FY2009, Medical Scholarships transferred to IDPH and beginning in FY2011 Grow Your Own Teach program transferred to IBHE from ISBE.

Source: IBHE records.

State Grant Program Reductions

- As more students apply for state financial aid, states have continued to cut or suspend both need- and merit-based student financial aid grant programs due to state fiscal challenges.

- Individual state-level cuts in 2011 ranged from 15 percent in one legislative year to 70 percent over two legislative years.

- For FY2013 in Illinois:

  - The Monetary Assistance Program (MAP) was reduced by $15.4M (-4%).

  - Illinois Veterans Grants and the National Guard Grants were reduced from $6.4M and $4.4M to zero.

  - IBHE Institutional Grants were reduced by $1.5M (23.8%)

Monetary Assistance Program (MAP) FY2002-FY2012

Academic Year	# of Announced Eligible Awards	% of Eligible Awards Paid
2001-2002	210,299	66.9%
2002-2003	214,179	61.6%
2003-2004	236,631	59.5%
2004-2005	241,024	62.5%
2005-2006	236,168	62.2%
2006-2007	236,306	62.1%
2007-2008	239,455	60.8%
2008-2009	259,333	55.6%
2009-2010	314,198	45.0%
2010-2011	351,188	40.2%
2011-2012	369,674	41.1%

* reduction factor applied to awards

Source: *Data Book* , Illinois Student Assistance Commission

Other Current Issues

- **Productivity**

- **Governance Restructure and Regulatory Reform**

- **College Readiness**

- **College Completion**

- **Performance Based Funding**

- **Tuition Policy**

- **Immigration Policy**

- **Capital Funding and Deferred Maintenance**

- **Longitudinal Data Systems**

- **Teacher Education**

- **Veterans Education**

- **Concealed Weapons on Public College Campuses**

- **Student Enrollment Policy, especially as it pertains to capacity pressures**

- **Oversight and Consumer Protection as it Relates to For-Profit Education Providers**

The Changing Landscape

The Changing Landscape

- While the <u>demand</u> for postsecondary education has never been higher, the <u>cost</u> of obtaining a college degree <u>continues to rise at unsustainable levels</u> with student loan debt at all–time highs.

- At the same time, the <u>United States is losing ground internationally</u> in educational attainment and employers are increasingly finding <u>students ill-prepared for the demands of the workplace</u>.

The Changing Landscape

- Creating the highly-skilled workforce the U.S. needs to drive a high-performing economy means <u>educating and graduating greater numbers of students</u>, including nontraditional and adult students.

- <u>Two-thirds</u> of all future jobs will require some postsecondary training, but today only roughly <u>41%</u> of American adults hold a two- or four-year degree. Experts predict a <u>shortage of more than 14 million college-educated workers</u> by 2020 if current trends continue.

- Meeting this demand requires rethinking established practices, finding new and flexible ways to serve underserved populations, and improving educational outcomes, even as most colleges face tight budgets and shrinking state support.

The Changing Landscape

- Colleges and universities have been protected by the prestige of their brands and the lack of any real competition.

- However, an array of forces is now working to disrupt the traditional business model of higher education.

- Factors threatening the status quo include:

  - A decline in government/state funding => Unsustainable Costs

  - The emergence of new commercial providers => Competition

  - Technology and the digital revolution => Technology

  - Changing demographics

  - New-tech savvy students that expect anytime, anywhere customized learning.

  - Increasing international competition

Perfect Storm

The Changing Landscape

- <u>The traditional model of college is changing</u>, as demonstrated by the proliferation of colleges (particularly for-profit institutions), hybrid class schedules with night and weekend meetings, and, most significantly, online learning.

- <u>Students' convenience is the future</u>. More students will attend classes online, study part time, take courses from multiple universities, and jump in and out of colleges.

- Students will demand more options for taking courses to make it easier for them to do what they want when they want to do it.

- The <u>full-time residential model</u> of higher education is getting <u>too expensive</u> for a larger share of the American population.

- Three-year degree programs, which some colleges are now launching, will almost assuredly proliferate. The trend toward <u>low-cost options also will assuredly open doors for more inexpensive online options</u>.

- The product colleges are offering is in greater demand than ever. <u>But impatience over how slowly colleges are changing</u> is perhaps higher than ever, too.

- That is reflected in significantly higher enrollment levels at community colleges and for-profit colleges.

The Changing Landscape

- <u>Digital technology</u> has transformed many industries by lowering costs, increasing access, and delivering personalized, customized, and interactive experiences that consumers have come to expect.

- While higher education has brought digital technology to the classroom and the back office, it has not succeeded in using it to transform learning or lower costs.

- Universities have taken advantage of software-based solutions to streamline administrative functions such as admissions, student retention, and financial aid management. Information technology has enhanced research and the ability of scholars to collaborate.

- Access to content improved as classrooms were wired, laptops distributed, teachers trained, and curriculum digitized. But these actions fall far short of the transformative change experienced by other sectors.

- As Bill Gates put it, "so far technology has hardly changed education at all."

- In fact, <u>the most significant technology-related development</u> in higher education in the past decade occurred outside of the traditional sector with <u>the rise of for-profit universities.</u>

Demographics

- The <u>population</u> of the United States is projected to <u>grow by about 10 percent</u> from 2010 to 2020 (national population projections, released in 2008 by the U.S. Census Bureau).

- But the Western Interstate Commission for Higher Education projects that the <u>total number of high-school graduates will be virtually unchanged</u> during that period. The locale of the graduates will simply shift around the country.

- The Northeastern states will see a consistent decline in graduates of about 1 percent per year.

- <u>In the Midwest, the number of graduates will fall by about 8 percent by 2014-15.</u> Thereafter, the number of graduates is projected to fluctuate.

- In the West, the peak for high-school graduates was reached this spring. A slow decline will begin that will last until 2014-15. Thereafter, the number of graduates in the West will begin climbing again.

- The South will be completely different from the rest of the country. The number of graduates will consistently increase, and there will be 9.4 percent more graduates in 2020-21 than in 2008-9.

Demographics

- The racial makeup of the high-school graduating classes will also be important as colleges plan their recruiting.

- The numbers of <u>white non-Hispanic and black non-Hispanic graduates will decrease</u> in almost every year until 2020.

- Those decreases will be offset by <u>increases</u> in the numbers of <u>Hispanic and Asian/Pacific Islander graduates.</u>

- The projected result is that <u>white, non-Hispanic high school graduates are expected to decline toward 50 percent</u> of the graduating class, but won't quite reach that mark by 2020.

- The continuing diversification of the college-going population will put pressure on many aspects of postsecondary education to adapt.

- Colleges will have to pay more attention to <u>what factors will allow members of different ethnic groups to succeed</u>, especially because the <u>fastest-growing group (Hispanics)</u> has historically low rates of college attendance.

Demographics

- What used to be called "non-traditional" students are now the majority of the student population in higher education.

- More than half of students enrolled are over 25, and about one-third of students are working full-time while pursuing their education.

- In addition, about one-fifth of the U.S. working population started college but never finished.

- Although there are programs and pathways for these adult learners to re-enter the higher education system and earn degrees, most colleges do not make this population a priority and fail to provide the expertise or support services necessary to keep them engaged and on track.

Higher Education Business Model (?)

- Can colleges and universities continue to manage a fixed asset operating model (with fixed and limited operating capacities) in a time of limited and declining resources, increasing tuition, declining enrollments, and increasing competition.

- Higher education comforts itself with the thought that that universities are more important than ever, because society needs educated citizens more than ever, and <u>only they can issue an accredited degree, the entry ticket to the knowledge economy</u>.

- However, colleges and universities will not have that advantage forever.

- <u>The value of the diploma is symbolic</u>, backed not by gold but by the graduate's sense of its worth relative to its cost, and the employer's willingness to accept it as the currency of competency.

- <u>That view is starting to change</u>.   As average student debt has piled up, students are wondering if the price is worth it, and they have begun to look for alternatives.

Higher Education Business Model (?)

- If traditional colleges cannot keep costs affordable, other college models will take their place.

- Unfortunately, the <u>two strategies </u>of choice, <u>reducing expenditures and raising tuition</u>, will no longer be sufficient to solve the problem.

- Many of <u>the most promising initiatives </u>with the potential to transform higher education are <u>coming from outside the education establishment.</u>

- Many of these emerging innovations challenge the basic cost structure, delivery system, and organization of traditional higher education, and point the way to a new future for education leaders who want to transform their institutions.

Higher Education Business Model (?)

- The <u>traditional functions</u> of higher education could become <u>unbundled</u>.

- Colleges engage in teaching, research, and service -- yet <u>teaching</u> is the <u>only function</u> that is usually thought of as <u>profitable</u>.

- <u>Research</u>, like college football, brings in dollars for only a small number of institutions.

- <u>Service</u>, by its very nature, does not produce a profit.

- Therefore, for-profit and other new providers in higher education are interested only in teaching -- and will compete with traditional colleges solely in the realm of instruction.

Elite Colleges and Universities

- Colleges have <u>three basic business models</u> for attracting and keeping students. Two will continue to work in the next decade, and one almost certainly will not.

- The business model for the most <u>elite colleges</u> with sterling brand names, and for most flagship public universities, will continue to work for the foreseeable future.

- They will always have their constituencies and a ready supply of students looking for a traditional college education.

  - Brand Name Degree (+)

  - Traditional Residence Model (+)

  - Exorbitant Costs (-)

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For-Profit & Community Colleges

- The model for <u>for-profit colleges and community colleges</u> is also strong.

  - Provide Convenience (+)

  - Cater to older students who have no time for a traditional college experience. (+)

  - Capture a large portion of the minority demographic (+)

  - Can have large classes (-)

  - May be unable to provide enough courses in some subjects to satisfy their students (-).

  - Create Greater Debt for Students (-)

- Predictions are that for-profit colleges will be educating 15 percent of all college students by 2020, compared with the 7 percent that they educate now.

Colles in the Middle

- And then there are the many <u>colleges in the middle</u>.

  - For students who cannot get into elite institutions or cannot afford them, the large, nearby public university <u>may be their best choice</u>. (+)

  - They do not have well-known brand names and wide recognition that draw crowds. (-)

  - They have been able to maintain a steady supply of students because the population of 18-to-24-year-olds has been growing for decades, but that population is declining (-)

- Many colleges that have focused on a residential, four-year model will find that they need to attract more adult students, more part-time students, and more students who will want all or many of their courses online.

- This will put them in more and more competition over time with the community colleges and the for-profit colleges that primarily serve these students, and they are historically and constitutionally unequipped for such a major shift.

Colleges in the Middle

- For too long, these colleges have stuck with the <u>same business model</u>.

- They have hesitated to take courses online, to cater to adult and part-time students, and to offer courses at any time other than on weekdays between 9 and 5.

- However, many regional public universities are starting to offer what is a still a <u>relatively inexpensive education</u> in more flexible ways: off campus, online, part time.

- They generally are <u>not research institutions</u>, so they can also offer students more access to professors.

- However, many are <u>stuck with infrastructures</u> that no longer interest a growing number of students - most notably <u>dormitories</u> and <u>academic programs</u> built up in earlier years which now do not attract enough students to justify their existence.

- Additionally, the survival of many of these institutions will be increasingly threatened by both domestic and foreign for-profit institutions, as well as by nonprofit competitors.

Small, Private Liberal Arts Colleges

- Small, private liberal-arts colleges have even more concerns, since they have <u>no state support to fall back on</u>.

- They emphasize a liberal-arts learning model that has been increasingly seen as elitist and out of touch with the job market.

- They have <u>costs</u> that make them <u>unaffordable</u> to middle-class families, and with each scholarship they hand out, they are endangering their ability to balance the books

- When it is common for private colleges to give away their product at about a 40-percent discount, it might be time to question whether the business model can continue

Forces for Change

The High Cost of Higher Education

- In the 1980s, college funding shifted from a <u>low-tuition, high-appropriation</u> model to a <u>high-tuition, high-student-aid</u> model.

- Over the past 20 years, <u>tuition rose four times faster</u> than the consumer price index and far outstripped growth in health care spending.

- A study by the American Institute for Economic Research looked at consumer prices over a 20-year period from 1990 to 2010 and found that <u>only the cost of tobacco products, up 378%, grew faster than college tuition and fees, which were up 286%.</u>

The High Cost of Higher Education

- The College Board reports in its 2009 publication on college costs that:

  - Public four-year in-state tuition and fees average $7,020.

  - Total expenses for a residential student for one academic year averages $19,388.

  - The comparable figure for private four-year schools is $39,028.

- At these rates, students and families are looking at a sticker price of roughly:

  - $80,000 for a public four-year degree.

  - Nearly $160,000 for a private four-year degree.

The High Cost of Higher Education

- The National Center on Public Policy and Higher Education has examined college affordability in a somewhat different fashion.

- While median <u>family income</u> in the period 1982 – 2006 rose by <u>147 percent</u>, <u>college tuition and fees</u> soared by <u>439 percent</u>, outstripping all of the other expenditure categories listed.

- The Center then compared net college costs (tuition, room and board minus financial aid) at public four-year and two-year colleges to median family incomes by quintile, lowest to highest.

- In the relatively short time period from 1999 to 2007, <u>public four-year costs jumped from 39 to 55 percent</u> of the median income of the lowest income quintile families.

- The concern is that rising prices, even when offset to some degree by financial aid, will discourage many low and middle income young people from considering college a realistic option

Disaggregation of the Degree

- Recent reports and studies raise serious questions about whether the skills being taught in college are the ones employers value.

- Employers are finding it increasingly difficult to rely upon the degree as indication of adequate preparation for the workforce.

- What they want is better proof that graduates can think critically, reason analytically, solve problems, and communicate clearly and cogently.

- <u>The ultimate threat to universities could come from the disaggregation of the degree</u>, as students take advantage of the growing availability of open-source learning networks to present evidence of competency to prospective employers.

Disaggregation of the Degree

- A degree now signifies a period of successful college attendance; <u>the class rank indicates the relative success of the student</u>; and the <u>name of the college marks the quality of the degree</u>.

- Reputation and rankings derived from input measures such as class size, student-faculty ratios, and alumni giving are <u>no longer sufficient</u> as a true gauge of <u>academic quality</u>.

- With the change in emphasis from institutional process to educational outcomes, <u>degrees will become far less meaningful</u>.

- A transcript of each student's competencies, or <u>portfolio</u>, including the specific information that the student knows or the skills that he or she can perform, will be far more desirable.

- Why would a student stay at the same college for periods of up to five years if degrees give way to specific competencies?

Disaggregation of the Degree

- Colleges now have a virtual monopoly on higher-education credentials

- Colleges currently emphasize a commonality of process based on "seat time," or the amount of time each student is taught.

- Students study for a defined number of hours, earn credits for each hour of study, and, after earning a specified number of credits, earn a degree.

- However, with the increasing number of educational providers, the individualization of education, and the growing diversity of the student body, that commonality of process is likely to be lost.

- The focus will shift to the outcomes that students achieve.

- "What you know" will become less important than "what you can do."

- Time will become the variable and learning the constant.

- If degrees become less important, how will colleges and universities continue to attract students in a world offering limitless educational choices?

Disaggregation of the Degree

- Such a development raises very large questions about the meaning of a two-year or four-year degree.

- It also shifts the <u>definition of excellence</u> from the institution's selectivity in admitting students to:

  - The <u>value</u> the institution adds to each student's learning experience.

  - The <u>quality</u> of the contributions the institution makes to the student's portfolio of demonstrated competencies.

The Changing Nature of Students

- Higher education is becoming more individualized; <u>students</u>, not institutions, <u>will set the educational agenda</u>.

- Increasingly, students will come from <u>diverse backgrounds</u> and will have a widening variety of educational needs.

- Students will increasingly <u>expect access</u> to classes from cellular phones and other portable computing devices.

- <u>New technologies</u> will enable them to receive their <u>education at any time</u> and <u>any place</u> -- on a campus, in the office, at home, in the car, on vacation.

- Each student will be able to <u>choose</u> from a <u>multitude of knowledge providers</u> the form of instruction and courses most consistent with how he or she learns.

- Classroom discussions, office hours with a professor, lectures, study groups, and papers will all be <u>online</u>.

- Colleges will need to offer those options in addition to the face-to-face instruction.

The Changing Nature of Students

- The <u>average age</u> of students <u>will continue to rise</u>; the mix of cultures, ages, and learning styles will become increasingly varied and rich.

- Over all, the <u>fastest-growing demographic group</u> in the next decade will be those ages <u>25 to 44</u>. They have the greatest potential for growth, and they are willing to pay a high price tag for convenience and support.

- The <u>highest growth rate in the U.S. workforce</u> is among workers aged <u>55 to 64</u>, and by 2015, nearly one in five workers will be 55 or older.

- Community colleges enroll 46 percent of all undergraduates in the country--almost 12 million in early 2009.

- The average age of the student body in two-year colleges is close to 30, and full-time students are in the minority.

- Women make up almost 60 percent and minorities make up 35 percent of the enrollment.

- Student bodies will increasingly be made up of members of minority groups, and at some point, probably just after 2020, <u>minority students will outnumber non-minority</u> students on college campuses for the first time.

The Changing Nature of Students

- For <u>adult students, convenience and support are critical </u>for success. Many adult students have families and go to school at night or on the weekends to keep their jobs. Many of them are choosing online programs and for-profit institutions because they are flexible.

- However, <u>convenience does not equate to easiness</u>, and a lot of adult students don't understand the level of discipline it takes to complete a program entirely online.

- These students come with the <u>diverse abilities, aptitudes, and skills</u>, and many of these students have literacy issues that extend to include technology competency, problem-solving ability, critical thinking, communication competency, and lack of preparedness.

- These issues must be addressed, but many colleges and universities are particularly challenged by the diverse abilities and <u>lack of preparation </u>of many students and the corresponding issues associated with developmental programs or remediation.

The Changing Nature of Students

- At the same time that many students are demanding more online options, some still <u>may want to learn the old-fashioned way</u>—in classrooms.

- This is especially true for older and more non-traditional students.

- Some students may not be comfortable working in an on-line environment.

- Some students recognize that they need the discipline of going to classes at set places and times.

- Some students may need more time to finish their degrees.

- Many high-school graduates are simply not ready for college and may require remediation.

The Changing Nature of Students

- Today's high-school students see their educational <u>futures built almost entirely around technology</u>, and their preferred mode of activity and interaction does not align well with the current educational system.

- They are <u>restless with the traditional forms of learning</u> and eager to incorporate into their educations the electronic tools that have become omnipresent in their lives: their smart phones, laptop computers, iPods, and MP3 players.

- They <u>prefer informal small-group discussion</u>, often through text messaging or e-mail, as a means to gain an understanding of curriculum content, and are not interested in large lecture halls.

- Educators are increasingly finding that students want to design their own curricula and find ways to learn in their own style.

- The success of for profit institutions suggest that there are many who are happy to do all or most of their learning in asynchronous online learning environments.

- Colleges that attempt to cram their styles down students' throats on the basis that it is <u>"good for them"</u> may quickly find themselves uncompetitive in the new higher education universe.

The Changing Nature of Faculty

- The structures of educational institutions and the types of employment relationships between them and faculty will continue to multiply, and <u>inequities among faculty will cause tensions.</u>

- The trends in the use of part-time faculty, a decline in full-time and tenure-track appointments, a shift from the arts to the professions, increasing workloads, wages falling behind inflation, and large applicant pools for fewer positions may continue.

- <u>Faculty members will become increasingly independent</u> of colleges and universities. The most renowned faculty members, those able to attract tens of thousands of students in an international marketplace, will become like rock stars.

- The names of world-class professors may become far more important than the institution for which they work.

The Changing Nature of Faculty

- There is another cloud on the campus horizon—<u>Aging Faculty</u>.

- At many campuses, over <u>one third of the faculty are over 60</u>.

- Senior faculty, seeing retirement savings and investments shrink because of the economy, are now much <u>less inclined to retire</u>.

- <u>Continued employment</u> of faculty beyond normal retirement age:

  - Diminishes prospects for promotion among eligible younger faculty,

  - Reduces the number of new hires with the potential to bring revitalized energy to academic departments.

  - Increases labor costs.

- Leaders will also have to reexamine personnel policies and engage in strategic planning, not just to fill positions when they become open, but to select a <u>new generation of faculty</u> who can deal with a technologically sophisticated, diverse, and growing student body.

Technology and the Digital Revolution

- Technology's ability to take limited educational resources and scale them quickly and affordably to learners across the campus or across the globe is starting to pay off as potentially "game-changing" innovations are emerging from a host of startup ventures.

- Many of these emerging innovations challenge the basic cost structure, delivery system, and organization of traditional higher education and in doing so, point the way to a new future for education leaders who want to transform their institutions to save them.

- Implications:

  - Technology and the digital revolution may have a negative impact on universities similar to that experienced by the newspaper industry.

  - On-line learning may systematically replace face-to-face teaching and learning in the classroom.

  - Entire introductory courses may be developed on-line and used as substitutes for faculty-taught courses at many institutions.

Higher Education Technology Trends

- **The cloud computing movement will continue** – investing in purchase-and-install software is falling by the wayside as institutions catch on to the value of using "cloud" applications that are housed (and accessed) online.

- **More work will be done without wires** – with more and more of students, teachers, and administrators using mobile devices to connect to the Internet, the wireless wave is sure to grow.

- This in turn, will create significant challenges in terms of bandwidth requirements and IT support.

- **Mobile Technologies will continue to proliferate in the classroom** – more and more students access online lectures and other learning resources with their smartphones or tablets, and ed tech companies appear eager to help schools take greater advantage of the potential offered by these devices.

- **Online education will even further displace seat time** – more and more colleges are integrating online learning into their curriculums as core offerings and not just adjuncts to classroom learning.

- Eventually colleges will be less focused on "seat time" and more focused on validating learning regardless of where it takes place (be it overseas, in the community, or in a traditional classroom).

Higher Education Technology Trends

- **<u>Learning Analytics will become more important to personalize the learning environment</u>** - Learning analytics promises to harness the power of advances in data mining, interpretation, and modeling to improve understandings of teaching and learning, and to tailor education to individual students more effectively.

- While learning analytics has already been used in admissions and fund-raising efforts on several campuses, "academic analytics" is just beginning to take shape.

- **<u>E-Textbooks</u>** – Many colleges and universities are moving toward e-textbooks as the preferred format, and in September 2011, *<u>Amazon.com</u>* began offering digital textbooks for on-demand rental.

- Students can download the e-textbooks to their Kindles, PCs, iPads, BlackBerries, or Android-based devices.

- Highlighted text and margin notes made directly on the device can then be saved in the *Amazon Cloud* for access even after the rental expires.

- The trend is not just toward e-textbooks, but also toward digital learning environments, which includes video, Web sites, simulations, and visualizations.

Higher Education Technology Trends

- **Open Resources will be utilized to a greater extent** - The California Senate is currently considering a bill that would nudge colleges toward using open education resources in the form of free online textbooks for the state's 3 million college students. The bill would also establish the online *California Digital Open SourceLibrary*, which will house the 50 most commonly used books for required lower-division courses

- In 2011, the state of Washington developed a plan for an Open Course Library that will contain online texts for 81 of the most popular courses, and the Massachusetts Institute of Technology *OpenCourseWare* initiative publishes almost all of the university's material for its students.

- **The Online Classroom** - While there will still be live classes, more students will experience the class via live or recorded video delivered online than ever before. However, the way it will be delivered will be different.

- There will be just one professor, and as a result, every student will receive the same knowledge and information. This will have significant implications.

- An additional difference will be that with the new technology available, the production values of both live broadcasts and recorded video will be much higher with much more of the focus going into the content of the presentation.

Bricks and Clicks

- Three basic types of colleges and universities are emerging:

    - <u>Brick universities</u> - traditional residential institutions

    - <u>Click universities</u> - new, usually commercial virtual universities, like University of Phoenix, Capella, and Canadian Virtual University.

    - <u>Brick and Click universities</u>, a combination of the first two.

- If current research on e-commerce is correct, the most competitive and attractive higher-education institutions will be <u>"Brick and Click."</u>

- While consumers appreciate the convenience, ease, and freedom of services online, they also want a physical space where they can interact with others and obtain expert advice and assistance face-to-face.

- However, the question is – Who will control the Brick and Clicks?

    - Will the for-profit sector buy or build the "Bricks" before traditional colleges develop the capacity to operate in the "Click" environment?

    - Or will the opposite occur?

Public Sector Innovation

- Massachusetts Institute of Technology's *MITOpenCourseware* program boasts over 2,000 free online classes. However, college credit is not issued.

- Yale University offers free online classes through its *Open Yale* program. Open Yale courses span the liberal arts with topics as varied as philosophy, art history, religious studies, sociology, environmental studies and Italian language and literature, but are non-credit. In addition, Yale University offers some Web-based classes through its Organizational Development and Learning Center for a nominal fee.

- Stanford University's Stanford Center for Professional Development offers professional certificates, master's degree and doctoral degree programs online. In addition, Stanford offers a variety of free online seminars and webinars to the general public.

- Harvard's Distance Education program offers over 150 courses, but course fees can cost well over $1,000. However, several free, non-credit, Harvard courses are available online at AcademicEarth.org.

Private Sector Innovation

- Many of the most promising initiatives to reshape higher education are coming from <u>private sector companies</u> and <u>grassroots entrepreneurs</u> with the ideas and energy to challenge the status quo.

- Unlike traditional higher education, the private sector has a <u>strong incentive to innovate.</u>

- Promising technologies can attract the large amounts of capital necessary to quickly scale up products and services to meet consumer demand.

- The private sector is <u>market driven</u>, and acting under the discipline of the market, products that fail to satisfy consumer need fade quickly, while those that succeed grow rapidly, particularly in technology-related fields.

- The philanthropic sector also has a vital role to play in driving innovations outside of traditional institutions.

- <u>Foundations</u> can fund research on new learning and teaching models, pilot experimental programs, and ensure that innovation reaches low-income and first generation students.

Innovations in Access

- **Peer 2 Peer University (P2PU)** is another nontraditional learning model—an open education project that organizes learning outside of institutional walls and gives learners recognition for their achievements, but no credit or degree.

- P2PU, which began offering courses in 2009, has about 33,000 registered users, with about 1,700 new users joining each month.

- Peers teach each other in courses covering subjects such as software skills, music theory introduction, and finance.

- The courses, which are offered in five languages and typically last six weeks, are offered through "schools" dedicated to education, Web design, mathematics, and social innovation.

- Students can earn badges—informal alternatives to diplomas that some online programs offer—to show what they've learned, although P2PU has no accreditation.

- Courses and workshops are offered by facilitators, only some of whom have teaching experience. Some are students who enjoyed their experiences in a course and decided to lead their own.

Innovations in Access

- The hugely popular **TED** (Technology, Education, and Design) site presents crisp, beautifully packaged, and engaging <u>lectures from the world's leading experts</u> on an array of subjects, including science, culture, technology, arts, and business.

- TED's mission is to use the power of ideas to change attitudes and lives by building a <u>global clearinghouse of free knowledge</u> and inspiration from the world's most inspired thinkers.

- TEDTalks began as a simple attempt to share what happens at TED with the world. Under the moniker "ideas worth spreading," talks were released online. They rapidly attracted a global audience in the millions

- More than 900 TEDTalks are now available, with more added each week. All of the talks are subtitled in English, and many are subtitled in various languages

- TED is now developing a set of free online educational talks designed to stimulate discussion on how to fundamentally reform teaching using videos and other technology.

Innovations in Access

- **<u>Massive Open On-Line Courses (MOOC's)</u>** are classes that are taught online to large numbers of students, with minimal involvement by professors.

- Typically, students watch short video lectures and complete assignments that are graded either by machines or by other students. That way a lone professor can support a class with hundreds of thousands of participants.

- So far there aren't any colleges that offer credit for their MOOC's. But some MOOC participants can buy or receive certificates confirming their understanding of the material.

- This makes some college leaders nervous about having to compete with free courses from some of the world's most exclusive universities.

- Several start-up companies are working with universities and professors to offer MOOC's, some colleges are starting their own efforts, and some individual professors are offering their courses to the world.

Notable MOOC's

- **edX**
  - A nonprofit effort run jointly by MIT, Harvard, and Berkeley.
  - edX plans to <u>freely give away the software platform</u> it is building to offer the free courses, so that anyone can use it to run MOOC's.
  - They intend to slowly add other university partners over time.

- **Coursera**
  - A for-profit company founded by two computer-science professors from Stanford.
  - The company's model is to <u>sign contracts with colleges that agree to use the platform to offer free courses and to get a percentage of any revenue</u>.
  - More than a dozen high-profile institutions, including Princeton and the U. of Virginia, have joined.

- **Udacity**
  - Another for-profit company founded by a Stanford computer-science professor.
  - The company, which <u>works with individual professors</u> rather than institutions, has attracted a range of well-known scholars.   It currently has over 740,000 students.
  - Unlike other providers of MOOC's, it has said it will focus all of its courses on computer science and related fields.

Notable MOOC's

- **Udemy**
  - A for-profit platform that lets <u>anyone set up a course</u>.
  - The company encourages its instructors to charge a small fee, with the revenue split between instructor and company.
  - Authors themselves, more than a few of them with no academic affiliation, teach many of the courses.

- **Khan Academy**
  - Khan Academy offers informal but <u>highly engaging YouTube video lessons</u> on topics such as quadratic equations, photosynthesis, credit default swaps, exchange rates, and the French Revolution.
  - <u>The library</u>—which has received financial backing from the Bill and Melinda Gates Foundation and Google, <u>hosts more than 3,000 videos</u> on YouTube.
  - By the end of 2010, its videos were viewed an average of 70,000 times a day.
  - Khan Academy does not <u>provide content from universities</u>, but it does offer automated practice exercises, and it recently debuted a curriculum of computer science courses.
  - Much of the content is geared toward secondary-education students.
  - Google has joined the effort with a multimillion dollar donation to expand the Khan library and translate it into other major languages.

Characteristics of MOOC's

- 74% of Coursera students come from Brazil, Britain, India and Russia;

- Almost 20% of Coursera's enrollees are graduate students, 11.6% undergraduates, 3.5% unemployed, 2.5% employed other than the in the course subject area, 1% attending a K-12 school, and 11.5% "other".

- The largest percentage of responses (39%) as to why Udacity MOOC students took a particular course was that they were "just curious about the topic", followed by 30% wanting to "sharpen their skills";

- At edX, the MOOC platform provided via Harvard and MIT, 6% of the students claimed doctorate degrees, 28% a Master's degree, and 37% stated they had earned Bachelor's degrees; 30% of the students said they did not have a bachelor's degree;

- edX has seen student dropout rates almost equal to enrollments - of 155,000 students enrolled in one of their courses, 7,000 (4.5%) passed the course and earned the certificate.

- MOOCs seem to appeal to a very non-traditional type of student, mostly foreign, most of whom are already working professionals and looking to add courses to a résumé.

Innovations in Access

- **DeVry University** serves more than 85,000 students at more than 90 locations in the U.S. and in Canada, and is one of the leaders in career-focused education,

- Using a combination of online learning and classroom instruction, DeVry offers associates, bachelors, and masters degrees in a wide variety of disciplines, generally oriented to business and specific trades.

- They offer courses in technical fields that are well-suited for online instruction, and in which student ability varies widely, and their courses and programs are developed quickly in response to workforce needs and requirements.

- DeVry offers programs in most locations—and most can be done either in the classroom, online or in a flexible combination of the two.

- DeVry reports that more than 90% of its graduates on the active job market are employed within six months of graduation.

- DeVry was named to the 2010 InformationWeek 500 List of Top Technology Innovators in America for the creation and development of its "iLabs," an online environment that allows hands-on, learn-by-doing experience with the flexibility for students to access the lab from anywhere on campus or at home

Innovations in Access

- **Moodle**, which stands for Modular Object- Oriented Dynamic Learning Environment, now helps teachers and schools create online versions of their courses.

- Moodle has many of the features of the typical e-learning platform, such as electronic versions of course material, multimedia capability, support for examinations, assessments, grading, content delivery, and calendars.

- But unlike other learning platforms, Moodle embraces an open source philosophy and assures its users that, regardless of the ownership of the company, the software will remain free to the public for use and modification.

- Because it is open source, with more than a million registered users exchanging ideas and programming code, and it has more than 41 million users in 213 countries.

Innovations in Affordability

- **StraighterLine** provides students an easy way to lower the cost of a degree by offering online access to 17 three-credit courses, mostly introductory and remedial courses in math, science, and business for a single fee of $999 for up to 10 courses, which equates to a savings of more than 90% versus the first-year tuition at many colleges.

- It offers perhaps the most affordable for-credit online courses on the Internet, and keeps costs down by presenting McGraw-Hill textbook material in simple electronic format using Blackboard's highly-regarded learning management system.

- StraighterLine courses have been evaluated and approved for transfer by the American council on Education.

- It does not grant degrees, so it cannot be accredited, however, StraighterLine was able to overcome this hurdle by entering into agreements with more than 20 accredited, degree granting institutions guaranteeing transfer credit for StraighterLine classes.

- The American Council on Education's College Credit Recommendation Service has evaluated almost all nine StraighterLine courses and approved them for transfer credit, which virtually guarantees credit at more than 1,000 participating colleges and universities.

Innovations in Affordability

- **<u>Flat World Knowledge</u>** has taken on one of the biggest cost-drivers in education—textbooks—by offering <u>free, peer reviewed textbooks</u> to students worldwide

- Flat World's open license and online editing platform enables professors to modify the content and create the book most appropriate for their course.

- The company then offers every textbook published for free using online delivery under the open content paradigm.

- Flat World provides integrated audio and video, interactive tools, search capabilities, and other features with their online books, and they also provide educator teaching supplements and materials consistent with industry norms at no charge.

- The company generates revenue if students choose to buy a paid format such as a low-cost printed textbook, audio book, e-book for a device, individual chapters to print themselves, or study aids

- The company plans to publish open textbooks for the 125 most enrolled in college courses by 2014

Innovations in Affordability

- **MyEdu** began as an Internet startup that was founded in 2008 with venture capital financing.

- The MyEdu platform brings together information on colleges, career salaries, degree catalogs, course listings and descriptions, semester schedules, professor ratings and reviews, key dates, textbook lists, and Advanced Placement and transfer credit equivalencies

- It helps students select the best courses and degrees, build a graduation map and choose the best professors, and provides a variety of methods for tracking and improving performance.

- Full of graphics, easy-to-use data tables, and social networking, the portals help students complete their degrees on time with considerable potential cost savings.

- MyEdu has worked with more than 750 universities to accumulate and create the largest warehouse of academic data in the U.S. and has been used by more than 1 million students

Innovations in Affordability

- **Western Governors University (WGU)** was founded in 1997 as a nonprofit virtual university by 19 western governors.

- It is <u>fully accredited</u>, and offers both undergraduate and graduate degrees in four colleges: the College of Business, Teachers College, College of Information Technology, and College of Health Professions.

- It currently enrolls more than 20,000 students in all 50 states, and graduates more than 2,000 students per year.   Tuition is only about $6,000 per year, and the average student is 36 years of age. 66% of them work full-time.

- Credits are awarded based on students' <u>demonstrated competency</u> in a subject, rather than requiring the completion of a certain number of credit hours.

- All courses are online, students are given an <u>option to test out of courses</u> before they take them, and they then proceed at their own pace, guided by a mentor who helps them manage their course schedule.

- This model allows the average WGU graduate to receive a B.A. in two and a half years, significantly increasing the affordability of a college degree.

- It is important to note that 95% of employers rate WGU grads as equal to or better than employees who graduated from other colleges or universities.

Innovations in Quality

- **2U (formerly 2tor)** works with college and university faculty to develop high quality e-learning versions of their course materials.

- Using the 2tor platform, online students are able to engage in real time with their in-class counterparts and professors via video.

- This offers selective universities a way to maintain quality, but also extend their reach and enhance their revenue opportunities.

- 2tor has partnered with the schools of education and social work at the University of Southern California (USC), the business school of the University of North Carolina, and the nursing school of Georgetown University.

- USC's graduate program in teaching traditionally enrolls about 75 students on campus. Now it has about a thousand students online—paying the same tuition as a result of their partnership with 2tor.

Innovations in Quality

- **Knewton** is pioneering the field of adaptive learning, developing software that manipulates and shapes course material according to each student's strengths and weaknesses as the student moves through the course.

- Its technology responds dynamically to each student's learning style so that course material can be presented in text format to some students, in graphical or interactive exercise format to others, and in video—or even video-game—format to still others.

- When students log in to Knewton, they find their way to the materials they most need to learn, in the formats most appropriate for them—and to the peers who are most likely to be helpful in mastering the material.

- When teachers log in to Knewton, they can see not only how their students are progressing generally, but a much more complete picture of each student's strengths, weaknesses, proclivities, and needs.

- Knewton recently announced a new, cutting-edge partnership with Arizona State University (ASU) to integrate its technology into two remedial and two introductory math classes for entering students.

Obstacles

Obstacles to Innovation

- Innovation can save higher education, but it has to be allowed to flourish. Unfortunately, a number of <u>barriers</u> stand between what students need and what private entrepreneurs and visionary campus leaders can deliver.

- These barriers include the following:

  - A <u>financing system</u> at the state and federal levels that provides few incentives for universities to control costs or improve learning outcomes.

  - Numerous state and federal <u>agencies</u> are involved in regulating some aspect of higher education, creating onerous <u>compliance burdens</u>, and discourage new entrants, preventing innovation, and driving up costs.

  - An <u>antiquated accreditation system</u> that stymies new providers, imposes significant costs on existing ones, and is based largely around educational <u>inputs</u> instead of educational <u>excellence</u>.

  - A complex <u>50-state regulatory structure</u> that is poorly suited for the reality of online education.

Resistance to Change

- The shift to a global, technology-based knowledge society, as well as competition from international and for-profit institutions, has created a new playing field for higher education.

- However, the <u>pace of change is stuck</u> somewhere <u>between sluggish and glacial</u> as higher education priorities, governance, instructional design, and cost structures—have hardly budged.

- About the only thing within academe that has moved rapidly is <u>tuition</u>.

- The problem is that until colleges accept the need to change, they have <u>little incentive</u> to overcome their natural inclination to stay the same.

- The reverence for tradition is a hedge against whatever barbarians are assaulting the academy in the present, and this has stifled the willingness to adapt to the changing environment and address the rapidly changing pathways to learning.

- Unfortunately, many of these institutions have not yet come to terms with how academic programs and instruction must be transformed to serve the changing educational needs of a knowledge economy.

- These institutions run the risk of being <u>left behind</u>, and like it or not, over the next decade they will be forced to change for better or for worse.

- For if they do not change, they run the risk of becoming <u>irrelevant</u>.

- This may be the biggest challenge of all.

Conclusion

Conclusion

- The question is not whether higher education will be transformed, but <u>how</u>.

- <u>Advances</u> in communications and information technology have begun to <u>disrupt</u> the business models of traditional colleges and universities by creating a global market for knowledge delivered in new ways and in new formats, and frequently at less cost.

- The <u>current business model</u> in a time of limited and declining resources, increasing tuition, declining enrollments, and increasing competition, <u>is no longer sustainable</u>.

- To compete for students, many colleges will need to <u>re-imagine</u> themselves as more convenient and more open, and they will have to <u>leverage technology</u> to make themselves more efficient and more responsive to the needs of the students.

- They will have to successfully <u>confront</u> the impact of globalization, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterized by new needs and new paradigms.

- The <u>competition is stiff</u>. Many colleges, particularly in the for-profit market already have a huge head start.

- But if colleges and universities wish to remain <u>relevant</u> in the future, they will have to <u>catch up</u>.

- The question the have to answer is - <u>how quickly can they do so</u>?

Questions?