Peril and Promise in a New Age

Portland State University
Winter Symposium 2013

George L. Mehaffy
January 16, 2013
We are confronting a period of massive change and great uncertainty.

Our institutions are challenged as never before.
The Overarching Theme of This New Age:  
**Shifting Power**

- The loss of power by traditional institutions to control events and processes.

- The increased power of individual students to create and recreate. The power of students to interact and learn without mediating agents.

- The power of organizations and groups outside of traditional providers to enter and compete in the marketplace.
7 Critical Challenges

1. Core Concept
2. Structural Model
3. Funding Model
4. Cost Model
5. Business Model
6. Evidence of Success
7. Public Opinion
1. Our University Model

Was created in the 11th century to prepare our students for life in the 21st century.

Operates on a 19th century agrarian calendar.
2. Structural Model

In *The Innovative University*, Christensen and Eyring argue that higher education has developed a common DNA:

- Face-to-face instruction, self-governance, departmentalization, summer recess, athletics, general education, majors, tenure, externally-supported research.

Their conclusion... We have created
- confused, multiple-purpose missions... and
- unsustainable institutions

As a result, we are vulnerable to disruption.
3. Funding Model

National Governors Association (NGA):

“…state budgets will not be balanced until the latter part of the decade.”

“Health, criminal justice, and the K-12 schools will consume an increasingly larger share of the state’s resources.”

“Many states have structural deficits…”

http://www.cbpp.org/cms/?fa=view&id=711

Based on the trends since 1980, average state fiscal support for higher education will reach zero by 2059.

State Funding: A Race to the Bottom. Thomas G. Mortenson
http://www.acenet.edu/the-presidency/columns-and-features/Pages/state-funding-a-race-to-the-bottom.aspx
44 states are reporting fiscal year 2012 shortfalls

<table>
<thead>
<tr>
<th>State</th>
<th>Shortfall (in billions)</th>
<th>Shortfall as a percent of FY2011 budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>$0.27</td>
<td>2.0%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>0.155</td>
<td>4.1</td>
</tr>
<tr>
<td>Montana</td>
<td>0.08</td>
<td>4.3</td>
</tr>
<tr>
<td>Iowa</td>
<td>0.264</td>
<td>5.6</td>
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<tr>
<td>Massachusetts</td>
<td>1.8</td>
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<td>New Mexico</td>
<td>0.41</td>
<td>7.6</td>
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<tr>
<td>Hawaii</td>
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<tr>
<td>Michigan</td>
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<td>Kansas</td>
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<tr>
<td>Georgia</td>
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<td>South Dakota</td>
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<tr>
<td>Ohio</td>
<td>3.0</td>
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<tr>
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<td>11.3</td>
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<td>Arizona</td>
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<td>11.5</td>
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<td>Maryland</td>
<td>1.6</td>
<td>12.2</td>
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<td>Idaho</td>
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<td>12.6</td>
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<td>Missouri</td>
<td>1.1</td>
<td>14.4</td>
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<tr>
<td>Virginia*</td>
<td>2.3</td>
<td>14.8</td>
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<td>3.6</td>
<td>14.9</td>
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<td>Texas</td>
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<td>New Jersey</td>
<td>10.5</td>
<td>37.4</td>
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<tr>
<td>Illinois</td>
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<td>44.9</td>
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<tr>
<td>Nevada</td>
<td>1.5</td>
<td>45.2</td>
</tr>
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Total estimated fiscal year 2012 shortfalls for all states: $124.7 billion. (Most states’ fiscal years begin July 1.)

At right, an oil drilling rig near Stanley, N.D. Energy wealth has helped keep that state in the black longer than any other.

44 states are reporting fiscal year 2012 shortfalls, including New Hampshire and Tennessee, which do not have specific estimates yet. Delaware and Alaska haven't yet reported budget estimates.

*Kentucky and Virginia have two-year budgets; they have closed FY 2012 shortfalls listed here through cuts and revenue increases.

Source: Center on Budget and Policy Priorities

4. Cost Model

The unsustainable funding trends at public 4-year institutions, 1988-2008

The Rising Cost of College, 1988-2008 (based on increases in current dollar amounts)

Cumulative growth since 1988

5. Business Model

Higher education is a set of cross-subsidies: graduate education subsidized by undergraduate; upper division subsidized by lower division

Jane Wellman, Delta Project
http://www.deltacostproject.org/
# Credit Hour Distribution and Average Instructional Costs

**Public-four Year Averages, 4-state cost study**  
*(SUNY, Florida, Ohio, Illinois)*

<table>
<thead>
<tr>
<th></th>
<th>% of all credits taken</th>
<th>% of total spending on instruction</th>
<th>Avg weighted cost/credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Division</td>
<td>36%</td>
<td>23%</td>
<td>1.00</td>
</tr>
<tr>
<td>Upper Division</td>
<td>48%</td>
<td>44%</td>
<td>1.42</td>
</tr>
<tr>
<td>Grad 1</td>
<td>12%</td>
<td>23%</td>
<td>2.88</td>
</tr>
<tr>
<td>Grad 2</td>
<td>4%</td>
<td>9%</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>1.55</td>
</tr>
</tbody>
</table>

SHEEO, 2010  
Courtesy Jane Wellman
Percentage of All Dropouts by Cumulative Months Enrolled, Beginning Postsecondary Students 2003-04

60% of attrition occurs in lower Division courses.. Where spending per student is lowest

NCES, BPS, undergraduates only
Courtesy Jane Wellman
Moody’s Inventor Services
Report January 23, 2012

Mixed outlook for higher education.

“Tuition levels are at a tipping point”

Higher education must innovate to remain viable
• Collaborations between colleges
• More centralized management
• More efficient use of facilities
• Reduction in number of tenured faculty
• Geographic and demographic expansion of course offerings

http://chronicle.com/article/article-content/130434/
We get lots of advice from business about the way we do business.

Bain and Co. found $112 million in annual savings at the University of California, Berkeley.

“A growing percentage of our colleges and universities are in real financial trouble. And if the current trends continue, we will see a higher education system that will no longer be able to meet the diverse needs of the US student population in 20 years.”

The Financially Sustainable University. July 2012
6. Evidence of Success

Academically Adrift
R. Arum & J. Roksa

45% of students did not demonstrate any statistically significant improvement in Collegiate Learning Assessment (CLA) performance during the first two years of college.

A further study has indicated that 36% of students did not show any significant improvement over four years.
Real Consequences for CLA Outcomes

Spring 2011 Unemployed

Top 20% CLA .... 3.1%
Bottom 20% .... 9.6%

Moved Back Home After Graduation

Top Quintile .... 18%
Bottom Quintile .... 35%

Significant Credit Card Debt

High Scorers .... 37%
Low-scorers .... 51%

2006 American Institutes of Research (AIR)

20% of U.S. college graduates only have basic quantitative literacy skills

...unable to estimate if their car has enough gasoline to get to the next gas station or calculate the total cost of ordering office supplies

More than 50% of students at 4-yr colleges do not score at the proficient level of literacy... lack the skills to perform complex literacy tasks, such as comparing credit card offers with different interest rates or summarizing the arguments of newspaper editorials.

Graduation Rate, 2010 Study

63.2% of 2003 students who began at a 4-year college earned bachelor’s degree by 2009.


New Study 2012

Full time students: 75% in 6 years
Part time students: 32% in 6 years

Public 4 year starters: 60% in 6 Years

New National Tally of College Completion Tries to Count All Students.
http://chronicle.com/article/New-National-Tally-of-College/135792/
Student Debt

Student loan debt outpaced credit card debt for the first time last year and is likely to top $ one trillion dollars this year.

Average debt for those with loans is now $ 24,000.

http://www.nytimes.com/2011/04/12/education/12college.html?_r=2
7. Public Opinion

60% (six out of ten) of Americans in 2010 said that colleges today … focused more on the bottom line than on the educational experience of students. (Increased by five percentage points in the last year alone and is up by eight percentage points since 2007).


In a recent survey, 80% said that at many colleges, education received is not worth the cost.

Time Magazine, October 29, 2012, p. 37
“...the choice for higher education during this critical juncture is “reinvention or extinction.”

E. Gordon Gee
Ohio State University
Robert H. Atwell Lecture

http://www.acenet.edu/media/mp3s/AM09_Gee.mp3
Is Disruption Coming?

Clayton Christensen

Disruption comes from cheaper and simpler technologies that are initially of lower quality. Over time, the simpler and cheaper technology improves to a point that it displaces the incumbent.

He argues that technology, and especially the online course, is the disruption enabler.

The Innovative University.
Clayton Christensen and Henry J. Eyring. 2011
AASCU’s Red Balloon Project

- Declining Funding
- Increasing Expectations
- Technology Revolution
Defense
Advanced Research Projects
Agency

Red Balloon Contest

- 40th Anniversary of the Internet
  1969 - 2009

- Contest: Find Ten (10) Bright Red
  Helium-filled Balloons
  Located Somewhere in
  the United States

- Prize: $ 40,000
DARPA Red Balloon Contest

1 - Union Square
San Francisco, CA

2 - Chaparral Park
Scottsdale, AZ

3 - Tonsler Park
Charlottesville, VA

4 - Chase Palm Park
Santa Barbara, CA

5 - Lee Park
Memphis, TN

6 - Collins Avenue
Miami, FL

7 - Glasgow Park
Christiana, DE

8 - Katy Park
Katy, TX

9 - Waterfront Park
Portland, OR

10 - Centennial Park
Atlanta, GA
How long did it take to find 10 randomly placed 8 foot high bright red weather balloons, suspended 30-50 feet above the ground, somewhere in the United States?

8 hours, 52 minutes
The Red Balloon Contest Is Both:

**A Metaphor**

And

**An Analogy**
The Red Balloon Contest is a Metaphor for the new ways that knowledge is now being:

• Created
• Aggregated
• Disseminated
The Red Balloon Contest Is an **Analogy** for the way that we might work together collaboratively to re-design undergraduate education
Technology
Changes
Everything
Think about the impact of technology:

On journalism...

On the music business...

On the photography business...

On the book publishing/selling business...

The Long Tail. 
Chris Anderson (Hyperion, 2006)
The new era of TECHNOLOGY will challenge our historic models of:

1. Institutional Organization and Structure

2. Teaching and Learning

3. Our Concept of Expertise
1. Institutional Organization and Structure

Technology is creating opportunities for the unbundling or disaggregation of educational activities and processes, within a course, within a program, within an institution, and beyond.
2. Teaching and Learning

Technology Changes Instructional Design

• From instruction to discovery
• From individual to collaborative learning
• From broadcast to interactive learning
• From teacher-centric to student-centric

3. The Concept of Expertise

Study in the journal *Nature* comparing the accuracy of entries in two well-known on-line references:

*Encyclopedia Britannica*

*Wikipedia*

*Found that error rates were about 3 per entry for Encyclopedia, 4 per entry for Wikipedia*

http://www.nature.com/nature/journal/v438/n7070/full/438900a.html
Encyclopedia Britannica

Founded in 1768, on-line version started in 1994, the first internet encyclopedia.

English print edition is (was) a 32 volume set, 64,000 articles, 4,300 contributors, latest print edition 2005.

Breaking News. 13 March 2012

After 244 years, Encyclopedia Britannica has decided to stop publishing its famous and weighty 32-volume print edition.

http://www.bbc.co.uk/news/business-17362698
Wikipedia

Edited by anyone, 7th most visited website in the world.

78 million readers in U.S., 365 million worldwide, each month.

250+ languages

3,514,326 articles in English, 14 million articles total. 22,711,389 pages

Staff of 30, started 2001, not-for-profit organization

Wikipedia’s Evolving Impact. Stuart West. TED2010
A more recent example

Researchers at the Jefferson Cancer Center (Philadelphia) compared Wikipedia entries on 10 forms of cancer to entries in the National Cancer Institute’s online Physician Data Query (PDQ) and oncology textbooks.

Less than 2% of the Wikipedia entries differed from either the PDQ or textbooks.

But the Wikipedia entries were college level reading, while PDQ entries were 9th grade level.

http://jop.ascopubs.org/site/er/JOP000209.pdf
We now live in a world where solitary expertise is still important, but increasingly we use networked knowledge and linked/shared information to advance knowledge and understanding.
Researchers at Carnegie Mellon University have found that “crowd-sourced” articles written piecemeal by dispersed writers stack up well against those drafted by one author.

CrowdForge

Networked knowledge…

The wisdom of crowds…

And now, perhaps the most critical component…

Vast improvements in technology
“WISCONSIN appears to be in the driver’s seat en route to a win, as it leads 51-10 after the third quarter. Wisconsin added to its lead when Russell Wilson found Jacob Pedersen for an eight-yard touchdown to make the score 44-3 … .”

A typical sports article that might appear in a local newspaper?

Yes…but this one was written 60 seconds after the 3rd quarter by a computer…that charges less than $10 for articles of less than 500 words.

IBM’s Watson played Jeopardy

For each question, Watson evaluated information from about 200 million pages of content, or 1 million books, in 3 seconds.

Watson won the 3 rounds, with 3 times ($77,147) as much as the next competitor, Ken Jennings ($24,000).
“Artificial intelligence machines are getting so good, so quickly, that they’re poised to replace humans across a wide range of industries…

…diagnosing your diseases, dispensing your medicine, handling your lawsuits, making fundamental scientific discoveries and even writing stories just like this one.

Soon …military robots will be able to pick out human targets on the battlefield and decide on their own whether to go for the kill.

An Air Force report predicted …
“by 2030 machine capabilities will have increased to the point that humans will have become the weakest component in a wide array of systems.”

A dangerous future of killer robots
Tom Malinowski, Washington Post, November 23, 2012

At a conference last month in Tianjin, China, Microsoft’s top scientist, Richard Rashid, gave a lecture while a computer program simultaneously displayed the words in English on a large screen. He paused after each sentence and the words were translated into Mandarin Chinese characters, accompanied by a simulation of his own voice in that language, which Dr. Rashid has never spoken.

Science Fiction?

Brave New World?

End of Civilization?

Evolutionary changes take hundreds, sometimes thousands of years.

Meanwhile, every 18 months, computing power doubles while computing costs drop by half.
What’s Changing?

1. The Role of Venture Capitalists
2. The Models of College
3. The Course Models
4. Data Analytics
5. The Cost: Reduced and Free
6. Measuring Success
7. Threats to the Credential
1. The Role of Venture Capitalists

New Start-Ups
Udacity
Udemy
University Now
Coursebook
Coursekit
Courseload
CourseRank

http://chronicle.com/article/A-Boom-Time-for-Education/131229/

Note: Data include educational-technology companies in elementary and secondary education, higher education, lifelong learning, and informal education.

Source: National Venture Capital Association, thomson Reuters
2. The Models of College

University of the People (UoPeople):

Tuition-free online institution, 1,000 students in 115 countries. In June, New York University announced it would consider transfer applications from students who complete a year at UoPeople.

http://chronicle.com/article/A-College-Education-for-All/128162/

Advisors: John Sexton, NYU; Stephen Trachtenberg, GWU; Michele Gendreau-Massaloux, Academy of Paris; Devang Khakhar, Indian Institute of Technology; Colin Lucas, Oxford University
DIYU  (Do It Yourself University)

DIY_U  Anya Kamenetz

Western Governors University (WGU)

Competency-based model

now also WGU Indiana,  WGU Washington (state), and WGU Texas
Peer to Peer University P2PU

“The Peer 2 Peer University is a grassroots open education project that organizes learning outside of institutional walls and gives learners recognition for their achievements.”

http://p2pu.org/en/

Udacity
Sebastian Thrun, David Stavens, Mike Sokolsky

“We believe university-level education can be both high quality and low cost. Now we're a growing team of educators and engineers, on a mission to change the future of education.”

http://www.udacity.com/us
Udemy:

We're a small team with a big vision - to democratize education:
1) Enabling the top experts in the world to teach any student, anywhere, and
2) Radically lowering the price point on a top quality education.
And new forms of collaboration and sharing...

The New Paradigm Initiative

The 16 liberal arts colleges of the Associated Colleges of the South (ACS) will join forces to offer online, interactive, upper-level courses to students on any ACS campus.

...blend traditional classroom instruction with the latest technology—webinars, teleconferences—so a student is no longer limited to the curriculum at his or her home college, but can select a course taught at any participating ACS school.

http://www.rollins.edu/magazine/stories/brave-new-academics-new-paradigm.html
The Associated Press is an American news agency. The AP is a cooperative owned by its contributing newspapers, radio and television stations in the United States, which both contribute stories to the AP and use material written by its staff journalists. Many newspapers and broadcasters outside the United States are AP subscribers, paying a fee to use AP material without being contributing members of the cooperative.

3. The Course Models

• Cottage Industry Models

• Open University (UK) – University of Phoenix Models

• Partnership Models (USC)

• Individual Course Models

• Massive Open Online Courses
Cottage Industry Model

Everyone designs his or her own course, from scratch, each semester.

And no one learns anything about the most effective course content or most effective teaching practices…

except that individual teacher, who learns only from his or her own experiences.
Open University of the UK - University of Phoenix Model

- Huge resources (money and people) put into course design
- Taught by a large number of adjuncts in a fairly similar way
- Evaluation of learning outcomes conducted by another unit
- Huge scale involved (U of Phoenix 450,000 students)
Partnership Model (USC)

Venture capitalist partners with a public or not-for-profit university

- 2tor USC and John Katzman. MAT
- Academic Partnerships. Example, Lamar University and Randy Best: MA in Education – reduced cost and time to completion.
- 2U. Semester Online. 10 universities

The last frontier, when outsourcing finally penetrates the academic center.
Individual Course Offerings

StraighterLine:

- offers courses for $99
- entire freshman year for $999

Blackboard and K-12, Inc

- Selling online courses to community colleges
Massive Open Online Courses (MOOCs)

Stanford University
Computer Science (CS) 221

Offered Fall 2011 by Sebastian Thrun and Peter Norvig. Curriculum based on Stanford's *Introductory Artificial Intelligence* course.

More than 160,000 students from 190 countries enrolled. 44 languages. 23,000 students completed. 200 Stanford students enrolled; by the end of the course, only 30 were still attending the lecture.

Great resource on MOOCs: [http://iberry.com/cms/mooc](http://iberry.com/cms/mooc)
edX  (https://www.edx.org)

Harvard and MIT (and now Georgetown, UT System, Berkeley, Wellesley):
“…offer online learning to millions of people around the world for free.” No university credit but certificates. $ 60 million committed.

Coursera  (https://www.coursera.org)

Stanford, Michigan, Princeton, the University of Pennsylvania (33 total)

“We offer high quality courses from the top universities, for free to everyone.”

“…wide range of courses from our partner institutions, spanning the humanities to engineering.”
But MOOCs are not–for-credit.
So what’s the threat?

• Pennsylvania State System of Higher Education (PASSHE) will work with the Council for Adult and Experiential Learning (CAEL) to give college credit.

• UMUC, UMassOnline are looking at credit options for MOOC courses.

• Colorado State University’s Global Campus will give full credit for Udacity’s MOOC computer science course.
• The campuses delivering MOOCs will learn how to deliver high quality online education.

• “Shifting Ground: Technology Begins to Alter Centuries-Old Business Model for Universities.” Moody’s Investor Services Report (private report available only to members)

• And now MOOCs will be offered by edX, by Coursera, Semester Online, and lots of others.

We are now in a hype-competitive environment, unlike any we have seen before.
And at the end of 2012, the year of the MOOCs, Semester Online

http://semesteronline.org

Fully online, credit-bearing courses, a new form of MOOCs

10 universities- Emory, Washington University, Duke, Brandeis, Northwestern, UNC Chapel Hill, Notre Dame, Rochester, Vanderbilt, and Wake Forest.

Partnership with 2U, John Katzman’s for-profit company.

Watch for a variation of the MOOC…

the “Supersized” classroom

A professor at Virginia Tech taught an introductory course, World Regions, to 2,670 students.

Used Facebook and Twitter to communicate with students. Used Skype to bring in world figures. Allowed students to attend in person or online.

http://thejohnboyer.com/world-regions/
4. Analytics and Personalization

A method of warehousing, organizing, and interpreting the massive amounts of data accrued by online learning platforms and student information systems …

… in hopes of learning more about what makes students successful…

… and by giving instructors (and the platforms themselves) the chance to adjust to improve learning outcomes.

Analytics provides:

Information for the Institution
- Predicting academic demand
- Tracking course success
- Dropout prevention, social integration
- Reporting information: state, federal, accreditors

Information for Faculty Members
- Student Progress and Success
- Areas of Confusion or Misunderstanding

Information for the Student
- Course selection and progress
- Major selection
- Program progress
5. Reducing Costs

Textbooks

State of Washington: Community and Technical Colleges. 81 highest enrollment courses. Course materials capped at $30 per course, open to all

Rice University  http://www.media.rice.edu/media/NewsBot.asp?MODE=VIEW&ID=16745


Student-Created and Faculty-Created Books

Other Ways to Reduce Costs

Time to Completion

A. 120 hours for all majors

B. Reducing bottlenecks in program completion

C. Charging out-of-state for 30+ credits beyond graduation requirements

D. Intrusive advising and early remediation

E. Flat rate for summer courses
6. Measuring Success

CAAP (ACT)
MAPP (ETS)
CLA (CAE)

Lumina’s Degree Qualifications Profile (DQP)

National Institute of Learning Outcomes Assessment (NILOA)

New Leadership Alliance for Student Learning and Accountability
7. Threats to the Credential

Free Degrees (MITx, etc.)

Badges (Kahn Academy, etc.)

Certifications (CLA and Straighter Line)
So Where Do We Go From Here?
The Key Challenge

How do we educate more students, with greater learning outcomes, at lower costs?
The key institutional question:

What is the unique value the institution adds?

What does this institution do that cannot be done as well or better by others?

The key question for faculty members:

What is the unique value I add?
What do I do that cannot be done as well or better by someone else?
What is likely to change?

Course Design

A. Flipped Courses
B. Open Learning Initiative (OLI) and Open Educational Resources (OER)
C. Science Classes
D. Math Emporiums
E. Other NCAT Redesigns
F. Blended Courses
A. Flipped Courses

Used to transform courses from delivery of information to interaction and comprehension, particularly in STEM disciplines.

Delivering content is done as homework. Class time is used for collaborating with others, increasing understanding, addressing misperceptions.

Eric Mazur at Harvard was one early adopter.

http://media.convergemag.com/documents/CDE12+BRIEF+Echo_V.pdf
Khan Academy:

2,400 videos covering everything from arithmetic to physics, finance, and history. 125 practice exercises. Goal: “to help you learn whatever you want, whenever you want, at your own pace.”

The “flipped” course. You do homework by watching lectures. You go to class to work on problems together.

http://www.khanacademy.org/

And now, TED-ED is creating powerful educational videos from TED talks and other YouTube videos.

http://www.ted.com/
B. Open Learning Initiative (OLI) and Open Educational Resources (OER)

OLI Carnegie Mellon University

Free Courses include:

Biology, Media Programming
Engineering Statics, Chemistry, Statistics
French 1 & 2, Anatomy and Physiology
Speech, Logic and Proofs

http://oli.web.cmu.edu/openlearning/index.php
Study of a OLI Statistics Course Experiment

Results showed that OLI-Statistics students learned a full semester’s worth of material in half as much time and performed as well or better than students learning from traditional instruction over a full semester.

http://oli.web.cmu.edu/openlearning/publications/71-effectiveness-statistics
C. Science Classes

The Carl Wieman Science Education Initiative

http://www.cwsei.ubc.ca/

Three strategies:
1. Reducing cognitive load
2. Addressing beliefs
3. Stimulating and guiding thinking

One Wieman Experiment

Two Physics Classes
1. One taught by an experienced, highly rated professor with no training in new cognitive insights and physics education

2. One taught by an inexperienced professor with training

Students in the course taught by the inexperienced professor: Increased attendance, higher engagement, and two times as much learning as the students in the course taught by the experienced professor.

D. The Math Emporium

“Higher Education’s Silver Bullet” Carol Twigg
http://www.changemag.org/Archives/Back%20Issues/2011/May-June%202011/math-emporium-full.html

3 Keys To Success:
1. Interactive computer software
2. Personalized on-demand assistance
3. Mandatory Student Participation

Virginia Tech is the most prominent example of this approach
E. Other National Center for Academic Transformation (NCAT) Redesigns

Six Models
1. Supplemental Model
2. Replacement Model
3. Emporium Model
4. Fully On-line Model
5. Buffet Model
6. Linked Workshop Model

www.thencat.org/PlanRes/R2R_ModCrsRed.htm
In Twigg’s first cohort of 30 redesigned large courses,

• 20 of the 30 courses showed learning gains (the others showed no significant differences)

• Average savings of 40%

• Increased course completion and retention rates

• Improved students attitudes about the subject matter and course design
F. Blended Courses

Blended (hybrid) courses combine fact-to-face classroom instruction with online learning and reduced classroom contact hours (reduced seat time)

• Shift from faculty-centered to student-centered
• Increased faculty-student, student-student, student-content, and student-resources interaction
• Integrated formative and summative assessment mechanisms

Typical 3 Hour Course

Why Focus on Blended Learning?

1. Proven Success
2. Data Analytics
3. Entry Way to Collaboration
Proven Success

U.S. Department of Education Study

Evaluation of Evidence-Based Practices in Online Learning: Meta-Analysis and Review of Online Learning Studies

September 2010

Broad Course Re-Design

George Kuh  *High Impact Practices*

- First-year seminars and experiences
- Common intellectual experiences
- Learning communities
- Writing-intensive courses
- Collaborative assignments and projects
- Undergraduate research
- Diversity/global learning
- Service learning, community-based learning
- Internships
- Capstone courses and projects

What is likely to change?

Free and Inexpensive Materials

- Free textbooks
- Creative Commons licensing
- Free courses
Open Educational Resources

In 2002, the Hewlett Foundation launched a bold initiative to make high-quality educational materials openly available anywhere in the world: the Open Educational Resources (OER) initiative.

The Education Program has invested more than $110 million in OER, which itself has blossomed into a worldwide movement.
Estimated 15,000 on-line free courses.

Growing number of MOOcs

How could free courses be used with other activities to increase access, reduce costs, and increase learning outcomes?
“One potential future of higher ed ... more collaborative, social, virtual, and peer-to-peer—and where introductory courses are commodities offered free or close to free.

That vision leaves room for a slice of traditional colleges to compete either by essentially moving down market or by validating such learning by being the gatekeeper at the end by offering capstone, upper-level courses and granting degrees.”


What happens to your business model if a substantial number of the first and second year courses are free?
Randy Bass: The Post-Course Era
Where do significant learning experiences occur?

High impact – outside the classroom
Low impact – inside the classroom

Can you imagine the first year of college without courses but with rich, powerful, engaging learning activities?

What would that look like?
What is likely to change?

The Nature of Faculty Work

- Changing Teaching from Solitary to Collective Work
  --- with other faculty
  --- with other specialists

- Moving from Model of All Faculty Doing the Same Thing to a Highly Differentiated Model
Entry to Collaboration

Old Model: Single expert, my classroom, closed door (a mysterious black box), reinventing the wheel

New Model: A networked world, collaboration of faculty, other experts, and students across time and space, continuous improvement of the course (materials, etc.)
What is likely to change?

A Focus on Learning Outcomes

- **New Tools**  (*CLA, CAAP, and MAPP*)
- **New Organizations**  (*NILOA, New Leadership Alliance, etc.*)
- **New Initiatives**  (*Degree Qualifications Profile DQP*)
- **New Pressures**  (*Academically Adrift*)
- **New Expectations**  (*business, parents and students, government, accreditors*)
From Teaching to Learning – A New Paradigm for Undergraduate Education

Robert B. Barr and John Tagg

In the Instruction Paradigm, the mission of the college is to provide instruction, to teach. The means is the end.

In the Learning Paradigm, the mission of the college is to produce learning. The method and the product are separate. The end governs the means.

Change Magazine. Vol 27, no. 6, 1995
...the college takes responsibility for learning.

The point of saying that colleges are to produce learning—not provide, not support, not encourage— is to say, unmistakably, that they are responsible for the degree to which students learn.

The Learning Paradigm shifts what the institution takes responsibility for: from quality instruction (lecturing, talking) to student learning.
Students, the co-producers of learning, can and must, of course, take responsibility for their own learning.

Hence, responsibility is a win-win game wherein two agents take responsibility for the same outcome even though neither is in complete control of all the variables.
Focus on Student Success and Student Learning

A Shared Culture About Student Success

A Particular Approach to [Academic] Leadership

Diverse Programming Driven by a Few Core Features and Values

Peter Ewell. National Center for Higher Education Management Systems (NCHEMS)
http://www.nchems.org/pubs/docs/AASCUGraduationRate.pdf
The Ultimate Question For Our Institutions

Can we transform ourselves before we are disrupted?
America is making a transition from a national, analog economy to a global, digital information economy. All of our social institutions – government, media, healthcare, finance, and higher education – were created for the former. Today, all appear to us to be broken.

Time Summit on Higher Education
October 18, 2012
The challenge is enormous. We have a confusion of purposes, distorted reward structures, limited success, high costs, massive inefficiencies, and profound resistance to change.
America's economy is caught up in a "race between innovation and calcification--between the power of new ideas to lower costs and boost quality, and the power of entrenched interests to protect their habits and incomes."

Matt Miller, Washington Post, September 22, 2010
The Pony Express

A Cautionary Tale
PONY EXPRESS
St. JOSEPH, MISSOURI to CALIFORNIA
in 10 days or less.

WANTED

YOUNG, SKINNY, WIRY FELLOWS
not over eighteen. Must be expert
riders, willing to risk death daily.
Orphans preferred.
Wages $25 per week.

APPLY, PONY EXPRESS STABLES
St. JOSEPH, MISSOURI
The Pony Express
A Cautionary Tale

St. Joseph, MO to Sacramento, CA 1,900 miles
Stations set up every 10 miles (as far as a horse can gallop); Riders changed every 60 to 100 miles.

Reduced letter delivery from 24 to 10 days
Started: April 3, 1860

Ended: October 26, 1861

19 months later

Why?

The completion of the transcontinental telegraph
“It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change.”

Attributed (apparently incorrectly) to Charles Darwin
For a detailed discussion of many of the issues in this presentation, see:

“Challenge and Change.” *EDUCAUSE Review.*
George L. Mehaffy. (vol. 47, no. 5. September/ October 2012).