



Peril and Promise in a New Age

Society for College and
University Planning
(SCUP)

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A Presentation in Three Parts

1.The Challenges

2.What s Changing

3.What Disruption Looks Like

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**We are confronting massive
change and great uncertainty.**

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The Overarching Theme of This New Age: Shifting Power

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The Great Unbundling, when we can:

- **Separate course elements from a course**
- **Separate courses from a degree**
- **Separate students from a specific college or university**
- **Separate faculty from a specific college or university**
- **Separate support services from the rest of the college or university**

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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

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2. Structural Model

In The Innovative University, authors argue that higher education has a common DNA:

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

(and a very unhealthy aspirational culture)

Their conclusion ! We have created

- **confused, multiple-purpose missions ! and**
- **unsustainable institutions**
- **As a result, we are vulnerable to disruption.**

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3. Funding Model

National Governors Association (NGA):

! state budgets will not be balanced until the latter part of the decade.

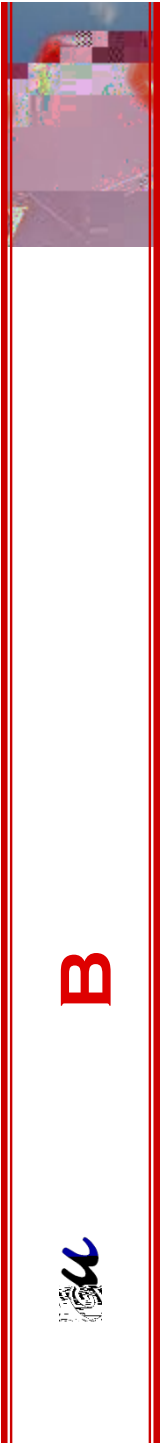
Health, criminal justice, and the K-12 schools will consume an increasingly larger share of the state s resources.

Many states have structural deficits !

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State Expenditures for Higher Education (as a percentage of all expenditures: local, state, federal, personal)

1975: 60%

2010: 34%

But huge variations in states: From 1980 to 2011-

Colorado	69 % decline
Minnesota	56 % decline
North Dakota	1 % increase
Wyoming	3 % increase

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>

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Simple Numbers:

Median inflation-adjusted household income, 2006 – 2011



7%

Tuition at public four year Institutions, 2006 – 2011



18%

http://www.nytimes.com/2013/02/01/opinion/my-valuable-cheap-college-degree.html?_r=0

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Public higher education – an historic threshold: Students about to pay a higher percentage than the state. 2012 – net tuition 47% of public colleges costs.

<http://chronicle.com/article/StudentsStates-Near-a/137709/>





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/>

We also have cross-subsidies by disciplines.

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Credit Hour Distribution and Average Instructional Costs

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

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Moody s Inventor Services Report January 23, 2012

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/>

6. Evidence of Success

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.

More than 50% of students at 4-yr colleges lack the skills to perform complex literacy tasks, such as comparing credit card offers or summarizing the arguments of newspaper editorials.

http://www.air.org/news/index.cfm?fa=viewContent&content_id=445

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Graduation Rate, 2010 Study

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

Beginning Postsecondary Survey, National Center for Education Statistics, U.S. Department of Education.

<http://www.quickanded.com/2010/12/u-s-college-graduation-rate-stays-pretty-much-exactly-the-same.html>

New Study 2012



Student Debt

debt for the first time last year.

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

<http://www.nytimes.com/2011/04/12/education/12college.html?>

**Americans aged 495 and older owe \$ 139
billion in student loans.**

College (Unbound). Jeffrey J. Selingo. 2013

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.**

http://www.highereducation.org/reports/squeeze_play_10/squeeze_play_10.pdf

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

Time Magazine, October 29, 2012, p. 37

***** Lumina survey in November/December 2012, three quarters (3/4) of respondents said that college is unaffordable.**

<http://chronicle.com/article/Americans-Value-Higher/137023/>

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AASCU's Red Balloon Project 2010

- Declining Funding
- Increasing Expectations
- Technology Revolution



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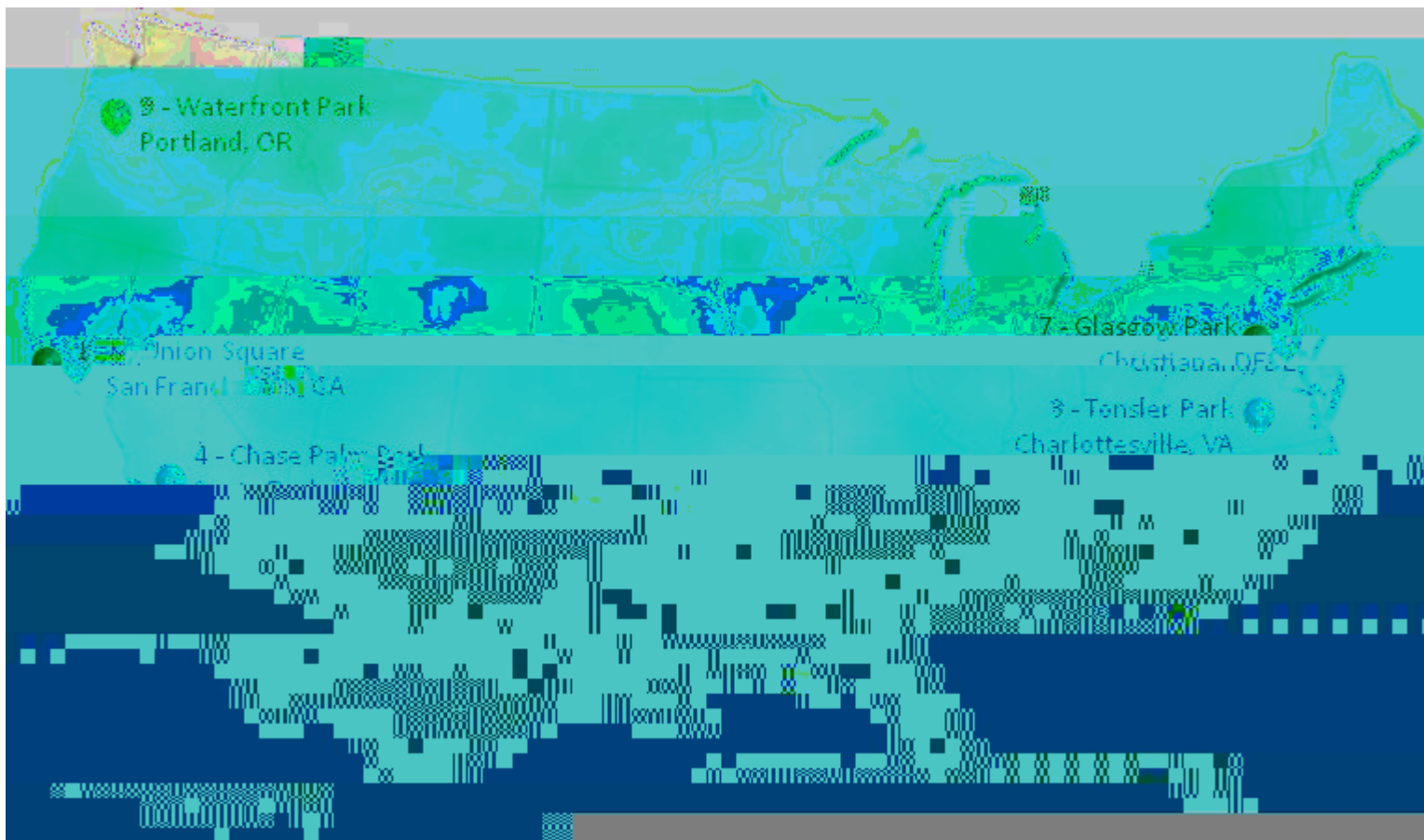
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Red Balloon Project





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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?

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8 hours, 52 minutes



The Red Balloon Contest Is Both:

A Metaphor

And

An Analogy

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

- ! **Created**
- ! **Aggregated**
- ! **Disseminated**

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The Red Balloon Contest Is an Analogy

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Technology Changes Everything

- **Place**
- **Expertise**
- **Processes**
- **Scale**
- **Imagining what is possible**

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The Concept of Expertise

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

Encyclopedia Britannica

Wikipedia

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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.

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Devin Bloom and a team of ichthyologists collected 5,000 fish specimens from Guyana's Cuyuni River system in South America.

They needed to identify them quickly.

**They loaded pictures of all 5,000 fish onto Facebook.
Within 24 hours, all 5,000 were identified.**

http://www.sciencedaily.com/releases/2011/05/110513204526.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29&utm_content=Google+Feedfetcher



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WISCONSIN appears to be in the driver

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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.



Farhad Manjoo. Meet Mr. Bot. He's the competition. *Washington Post*. October 2, 2011. P. G5.

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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 (Moore's Law).**



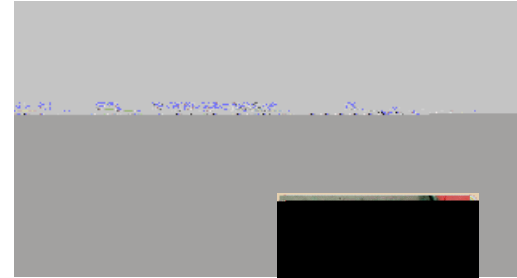
Technology Changes Everything

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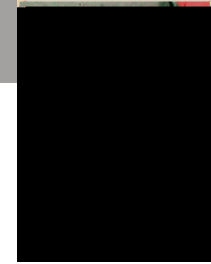


Think about the impact of technology:

On journalism !



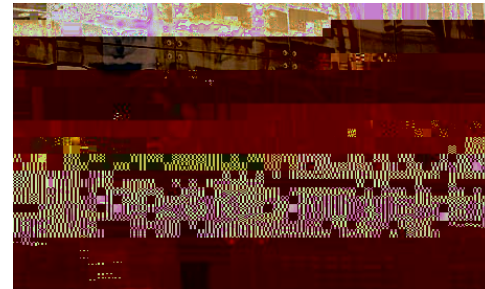
On the music business !



On the photography business !



On the book publishing/selling business !



The Long Tail.
Chris Anderson (Hyperion, 2006)

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Headline in the Washington Post, Spring 1900, just before its first auto show in December 10, 1900.

Horse Market Active. Effect of Automobile is Not

- **Overman Automobile Company**
- **Riker Motor Co. Knox Automobile Company**
- **Woods Motor Vehicle Company**
- **Pennsylvania Horseless Carriage Manufacturing Company**
- **Electric Vehicle Company**



What's Changing?

1.The Role of Venture Capitalists

2.The Models of College

3.The Course Models

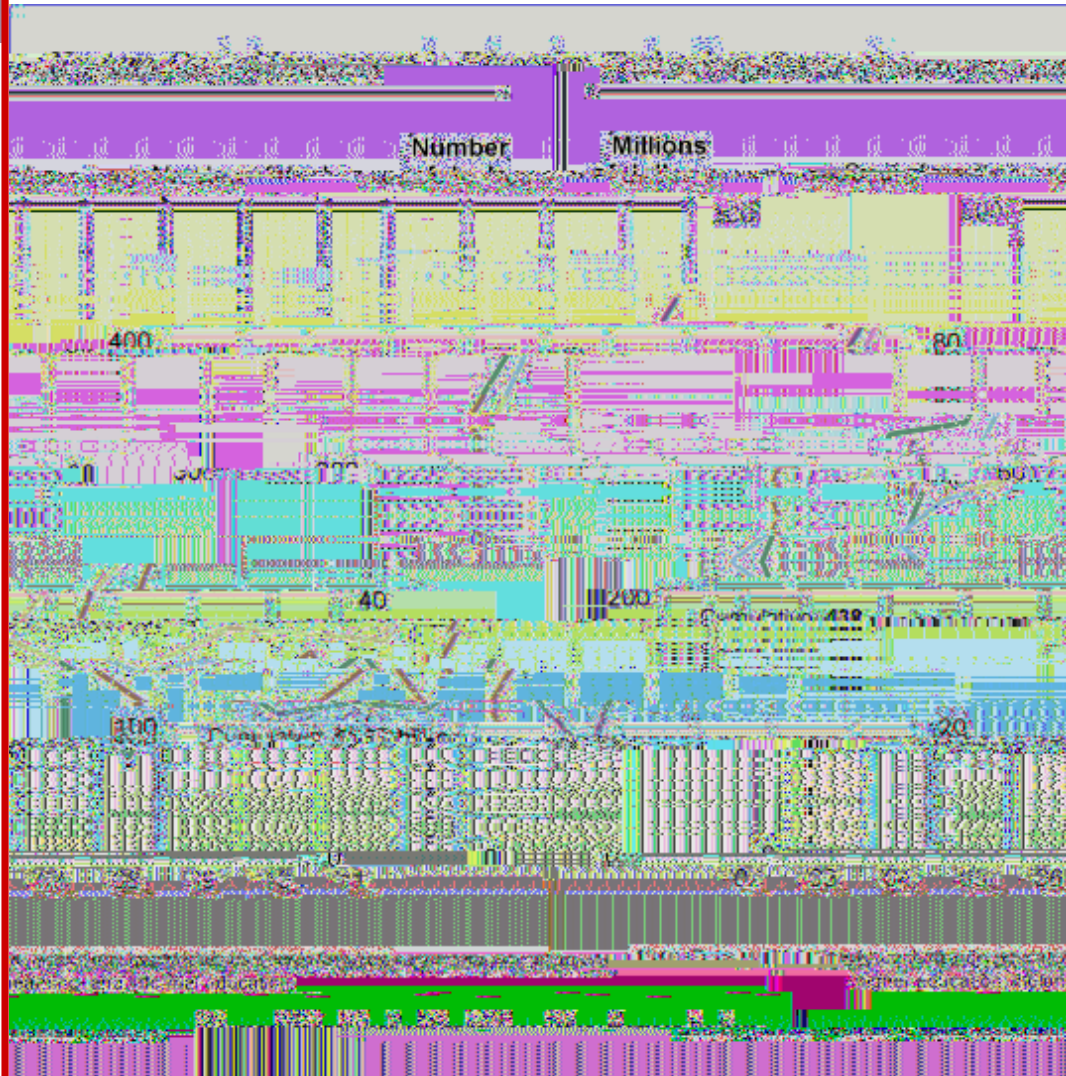
4.Data Analytics

5.The Cost: Reduced and Free

6.Measuring Success

7.Threats to the Degree

1. The Role of Venture Capitalists



New Start-Ups

Udacity

Udemy

University Now

Coursebook

Coursekit

Courseload

CourseRank

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

2. The Models of College

- **University of the People (UoPeople):**
- **Western Governors University (WGU)**

now also WGU Indiana, WGU Washington (state), WGU Texas, WGU Tennessee, and WGU Missouri

- **Peer to Peer University P2PU**

- **Udemy**

and new forms of collaboration and sharing !

- **The New Paradigm Initiative**

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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)

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Massive Open Online Courses (MOOCs)

**Stanford University. Computer Science (CS) 221
Offered Fall 2011 by S. Thrun and P. Norvig.**

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The State of the MOOCs

Mixed messages

Bad News

1. Hype cycle
2. Lack of completion
3. Credit for MOOCs
4. No one wanted credit for MOOCs, Colorado State
5. Udacity MOOC at San Jose State on hold

Good News

1. Coursera got \$43 million in additional funding
2. Institutions/systems, 9 states, signed with Coursera
3. Many institutions experimenting with MOOCs
4. 6 million students enrolled
5. EdX MOOC at San Jose State succeeds

**MOOCs are not the future of
higher education-----**

**----- that future will be far more
various and surprising than we can
see now-----**

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4. Analytics (Big Data)

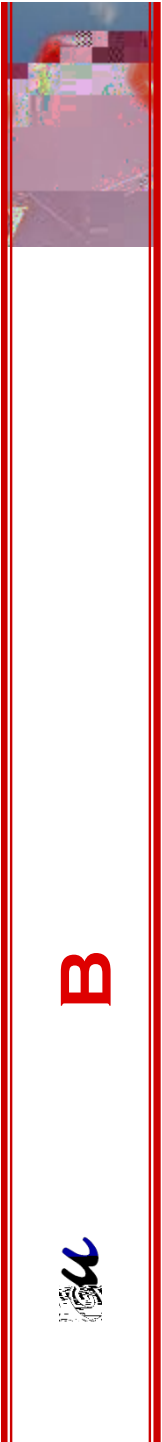
A method of warehousing, organizing, and interpreting the massive amounts of data accrued by online learning platforms and student information systems !

! 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.

<http://www.insidehighered.com/news/2010/11/09/completion>

Analytics provides:





5. Personalization

The capacity of software and systems to tailor course materials, learning processes, and approaches to the unique circumstances of individual learners.

- **Individual characteristics**
 - Learning style**
 - Memory decay**
 - Pacing**
- **Obstacles or misunderstandings**



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7. Measuring Success

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

Lumina

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So What Does Disruption Look Like?

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Drivers of the New 21st Century University

Cost
Efficiency
Effectiveness

Strategies for Success

Scale
Experimentation
Differentiation
Partnerships
Challenging Old Models and Paradigms
Reliance on Evidence



Changes in Physical Space

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Flipped Courses

The flipped

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Open Learning Initiative (OLI)

Carnegie Mellon University

<http://oli.web.cmu.edu/openlearning/index.php>

**Team: content specialist
cognitive scientist
instructional designer
graphic designer**

**Results showed that OLI-Statistics students
learned a full semester's worth of material in half**

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Science Classes

The Carl Wieman Science Education Initiative

Three strategies:

- 1. Reducing cognitive load**
- 2. Addressing beliefs**
- 3. Stimulating and guiding thinking**

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

Experiment produced two times the learning outcomes

Deslauriers, Schelew, and Wieman. Science. 13 May 2011, pp. 862 – 864.

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Math Emporiums

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**

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Online Classes

Potentially the greatest disrupter of all

- **Scale**
- **Cost**
- **Features and Tools**
- **Competitiveness**

Different infrastructure, reduced need for physical facilities, fewer place-based faculty





Free and Inexpensive Materials

Free courses: 15,000+ free courses

Free textbooks: Temple, Rice, Flatworld

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Changes in Academic Structures

- **Course (set of competencies)**
- **Credit Hour (based on seat time)**
- **Semester (unlike Facebook)**
- **Curriculum (interdisciplinary, community-**



Changes in Administrative Practices

- **Outsourcing**
- **Campus Consolidation**
- **Multiple-institutional Courses**
- **Strategic and Corporate Partnerships**
- **Contingent and Flexible Workforce**
- **Alterations in Benefits**

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Changes in Faculty Work

- **Faculty will work in a networked world --- collaboration of faculty, other experts, and students across time and space.**

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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*)

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Old Arguments, New Narratives

- **Online v. Face-to-Face**
(same stupid arguments)
- **College Algebra**
(guess what ! not everyone needs it)
- **Job Preparation or Career Preparation**
(a false dichotomy)



One important institutional question:

**What is the unique value
that your institution adds?**

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

The 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?**

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**Our system of higher education
was originally built on scarcity;**

**Now it has to be re-built on
abundance.**



**Our system was originally built
on faith; now it will have to be
built on evidence.**



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**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 Ultimate Question For Our Institutions

**Can we transform ourselves
before we are disrupted?**

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The challenge is enormous. We have a confusion of purposes, distorted reward structures, limited success, high costs, massive inefficiencies, and profound resistance to change.



The Pony Express

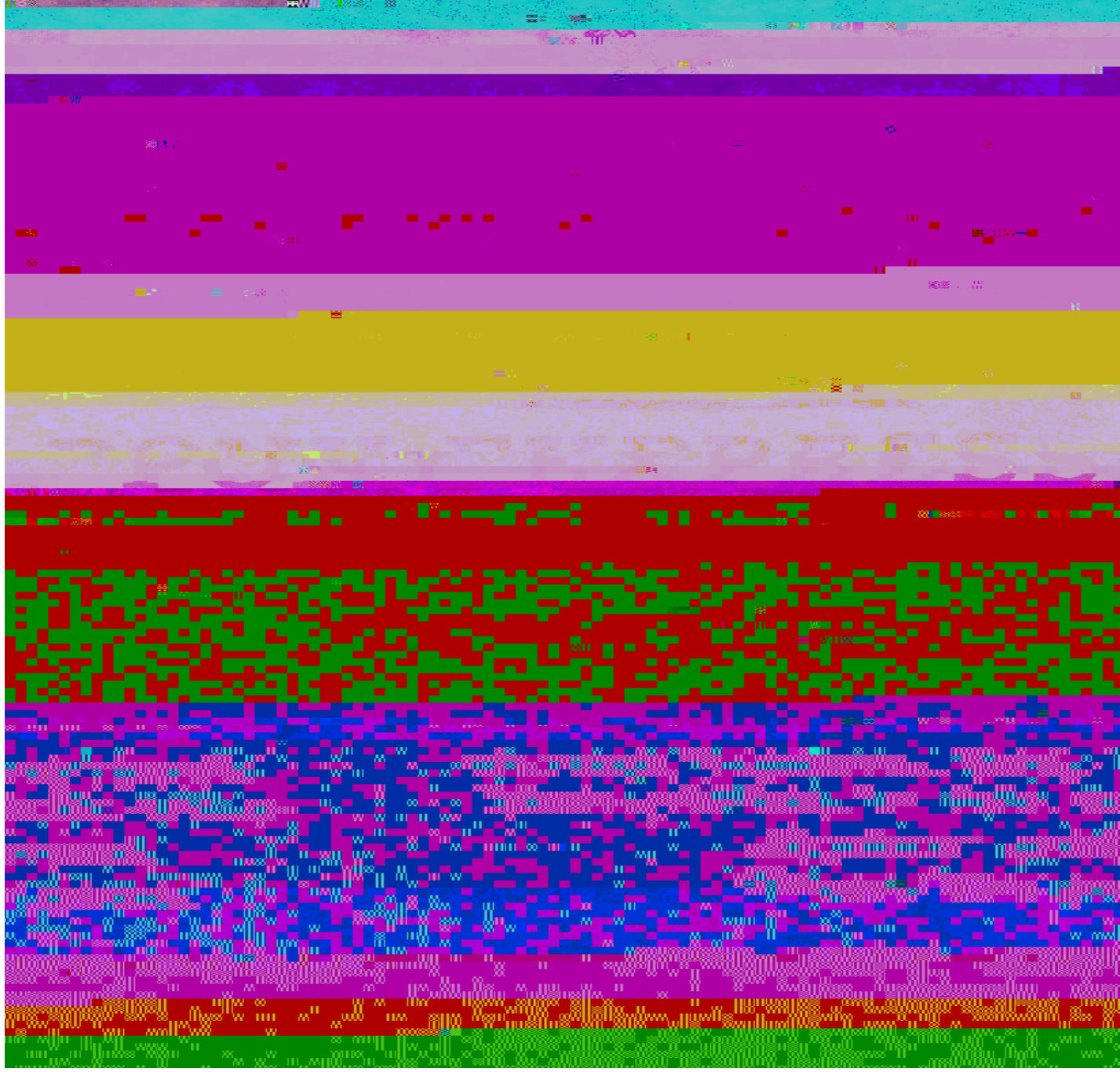
A Cautionary Tale About Disruption

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**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.**

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**For a detailed discussion of many of the issues
in this presentation, see:**

Challenge and Change. H+*EDUCAUSE Review*.

George L. Mehaffy. (vol. 47, no. 5. September/ October 2012).

<http://www.educause.edu/ero/article/challenge-and-change>

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