

High Expectations-No Money

Universities **WILL** Change the World

-Everyone wants universities to change,
but exactly how is not so clear

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Boston, MA



University of Massachusetts

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The Paradox

- At the same time that universities are facing extraordinary financial pressures due to a collapse of state revenue and endowments
- Everyone is looking to universities to lead us out of the economic decline
- Creating futures for students and communities
- And solving social challenges like
 - improving college readiness
 - Reducing disparities (racial, economic, gender, etc)
 - Increasing graduation rates
 - Attracting students into STEM fields
 - Better matching workforce needs

President Obama's Goal

- To be first the world by 2020 in the proportion of college graduates.
 - ▣ -Address to Congress on Feb. 24, 2009.
- The US was tied for 6th place at 30% according to 2006 data.



How can we do this?

- The **only way we can possibly approach these goals** is through a much more intense focus on professional education, continuing education, online learning and technology enhanced learning – from MOOCs to flipped classrooms..
- Otherwise we do not have the traditional capacity to meet the increased needs for both quality AND quantity.
 - Need to deliver educational experiences to K-12 that are not presently uniformly available.
 - Improve success, retention, persistence, and graduation rates through higher quality learning experiences.
 - Reach students unable to participate in traditional learning settings for a variety of reasons.
- Are we ready?

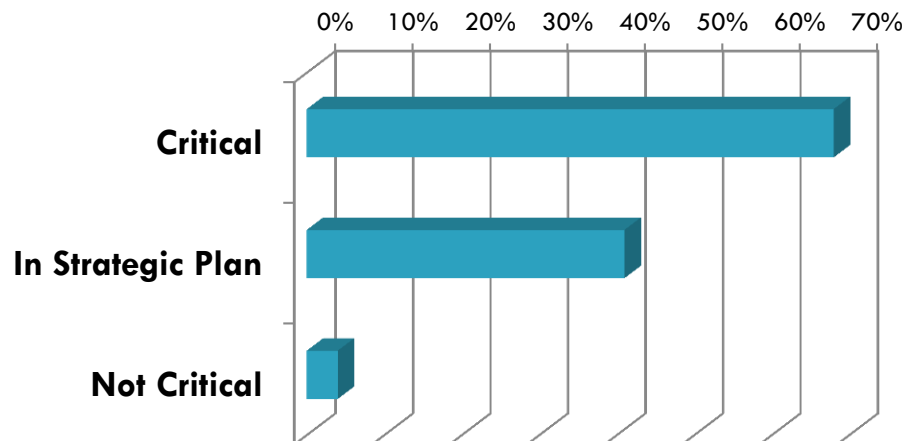
American Public and Land-grant Universities

□ APLU-Sloan Survey -2009

▣ Strategic Importance of Online Learning

- ▣ interviews conducted with administrators, faculty, and students at 45 public institutions across the country and more than 10,700 responses from faculty across the spectrum of teaching positions – tenure/non-tenure track; full- and part-time; and both those who have and those who have not taught online

- Critical to long-term strategy of institution - 68%
- Represented in institution's strategic plan - 41%
- Not critical to long term strategy - 4%



Online Learning as a Strategic Asset

6

- Survey revealed that President's know that continuing education and distance learning needs to part of the strategic plan,
- However, many of them **were not well equipped by past experience** to understand how these programs, once considered peripheral, could become an **integral tool of their institutions strategic plans.**



The Catalyst for the Future

- What do Boston, Bombay, Beijing, Bangalore have in common with
- San Francisco, Austin, Raleigh, Cambridge, and other world economic leaders?
- They are vibrant economic regions nucleated by world class universities.
- The President is right: we must do better!

The Secret Sauce?



- Universities pouring out highly educated graduates with skills and intellectual property.
- World class research that is curing illnesses and creating new jobs, companies, and even entirely new industries.
- And doing this at very large scale.

The Path



- The path to economic and social development in the world goes through our world class universities.

But all is not well!

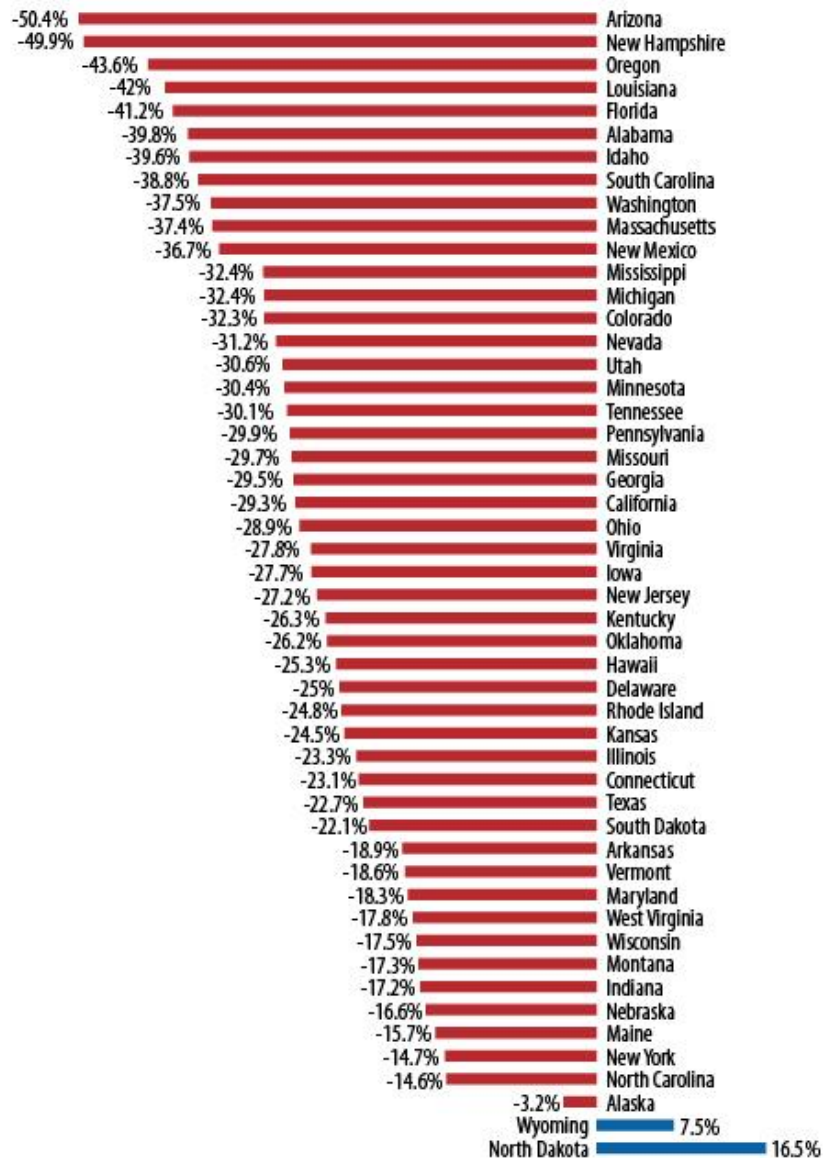
- Many think that Higher Education **costs** too much
- Higher Education has not yet taken full advantage of the research into how students learn –**cognitive** sciences.
- Higher Education reflects **disparities** in access and quality
- While **technology** has certainly pervaded higher education, it has not as significantly changed it.

Higher Education costs too much?

- This widely held political position is most notable for the lack of understanding of why this might be –if indeed it really is!
- Nonetheless- we should buckle our seatbelts for a ride to drive down the cost of higher education -and many of the “well meaning” efforts will be far more damaging than helpful. Some will be downright foolish
 - like government attempts in Florida and Texas to mandate \$10,000 bachelor’s degrees –based upon political rather than academic considerations.
 - "New University of California," an institution with no faculty and no tuition
- As state support for higher education has been withdrawn, it is partially replaced by financial burdens on students.
 - *“Our public higher education institutions have faced the dual challenge in recent years of falling state appropriations and large increases in student enrollment,”* APLU President Peter McPherson
 - *“These factors have caused a substantial increase in tuition, even though public schools have kept their education cost per student to an average of just 1.2 percent above the rate of inflation for many years,”*

States Have Cut Higher Education Funding Deeply in Recent Years

Percent change in state spending per student, inflation adjusted, FY08 - FY13



- Median Cuts were 27.7%
- Press reports like to focus on two numbers for effect:
 - ▣ The high posted price of privates
 - Which are often deeply discounted
 - ▣ The large percentage increases of publics
 - Which are applied to much lower costs and driven by state cuts.
 - Actual cost increases are only 1.2% over many years.

Source: CBPP calculations using data from Illinois State University's annual Grapevine Report. Illinois data is provided by the Fiscal Policy Center at Voices for Illinois Children. Because enrollment data is only available through the 2012 school year, the enrollment data for 2013 used in these calculations is estimated based on enrollment trends from past years.

The 3 C's - the forces on education -*

- **Computers**
- **Communication**
- **Cognition**
- Many of the innovations that catch the eye of the public do a good job on the first two and a lousy job on the third.
- We know much more about how students learn, and learning environments need to change to create the engagement that leads to student learning.
- That is indeed happening at many places
The NCAT, NRC Report, White House Conferences

* "Using the Computer in Teaching Physics," J.M. Wilson, *Physics Today* 42(1) (January 1989).).

Cognition

- My involvement with the recent National Research Council report reminded (and saddened) me to note that educational innovation often reinvents the wheel rather than advancing our understanding
 - –based upon the research on the way students learn.
- There are notable exceptions like:
 - The National Center for Academic Transformation
 - The Rensselaer Studio Courses
 - Carnegie Mellon Open Learning Initiative (OLI).
 - Many others but not enough.

TheNCAT –A brief mention

- Whenever anyone suggests that you cannot simultaneously enhance **quality**, **access**, and **cost** in traditional universities, I always ask them to look at the website of the National Center for Academic Transformation.
- Conventional wisdom is that universities do not change, but many do –and many are documented here.
- It is particularly notable because many of these reforms were driven by research in the cognitive sciences and make student engagement paramount.

The Reality of Online Education transcends

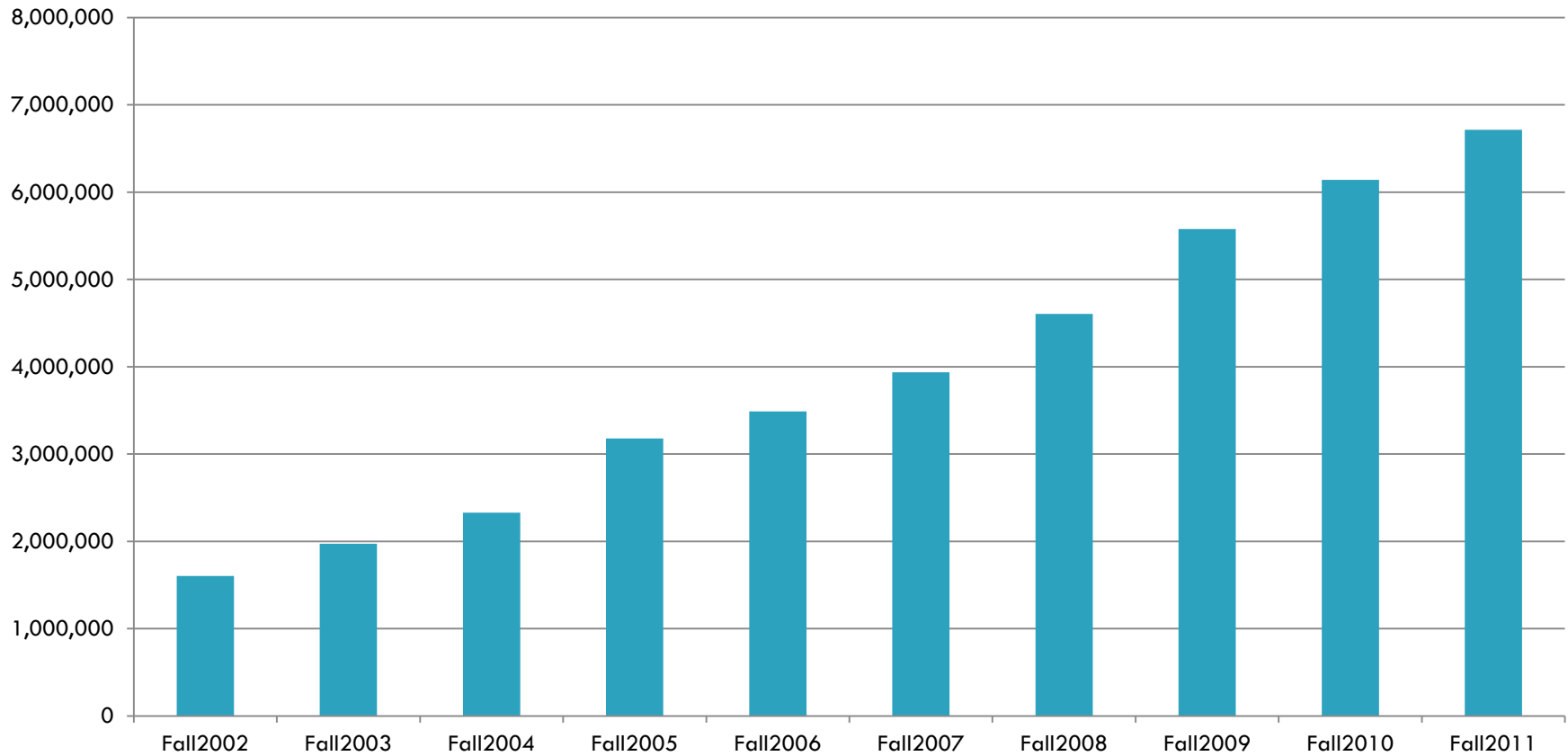
- If one reads the traditional press coverage of online education it is dominated by either
 - ▣ Skepticism
 - Can students learn?
 - Cheating
 - etc
 - ▣ Hype
 - MOOCs will change the world and make higher education obsolete
 - The hyper prestigious universities drive the change
- **Not!**
- So what is the reality and the future?

Nov. 2003 Press: Has Online Learning failed?

- In November of 2003, the press was ready to pronounce online learning dead!
- Hardly!
- The rapid demise of Fathom, Cardean, Pensare, Virtual Temple, Harcourt University, Caliber and others
- The Red Sox, the Cubs, and 29 other teams didn't win the world series again this year either.
 - ▣ (ed. remember this was **2003!**)
- Just like baseball, distance learning has it's winners and losers!

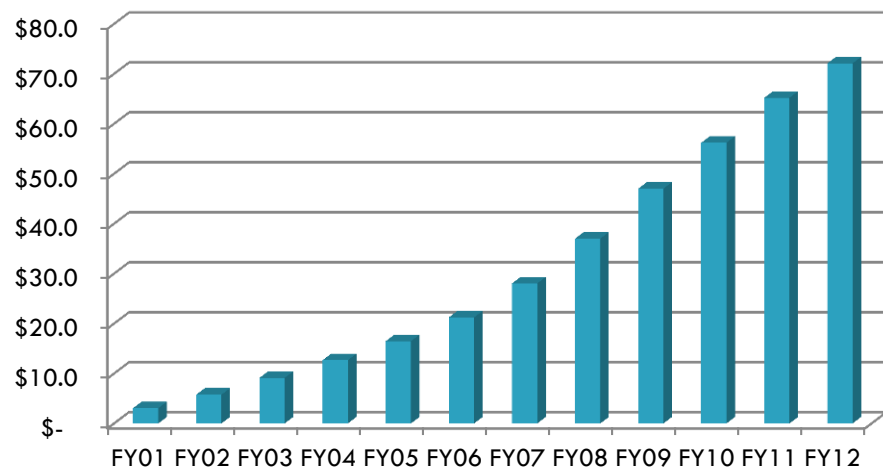
Relentless growth nationally

Sloan Alt C- US Growth in Online

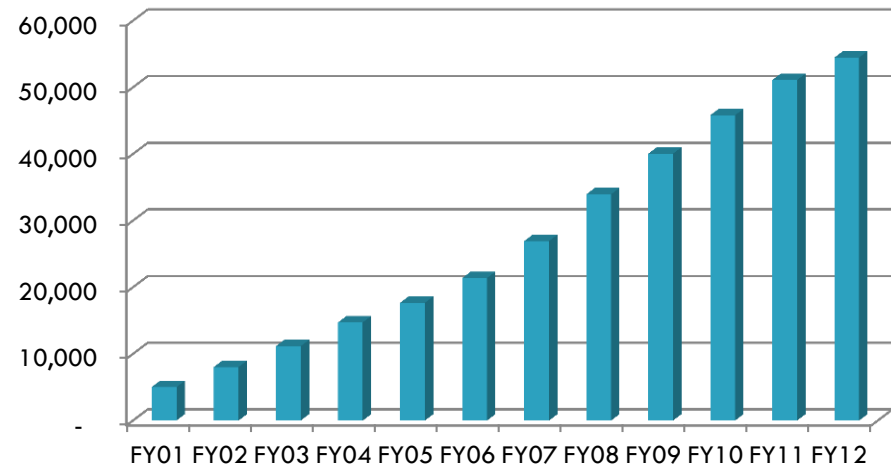


UMassOnline Growth 2001-2012

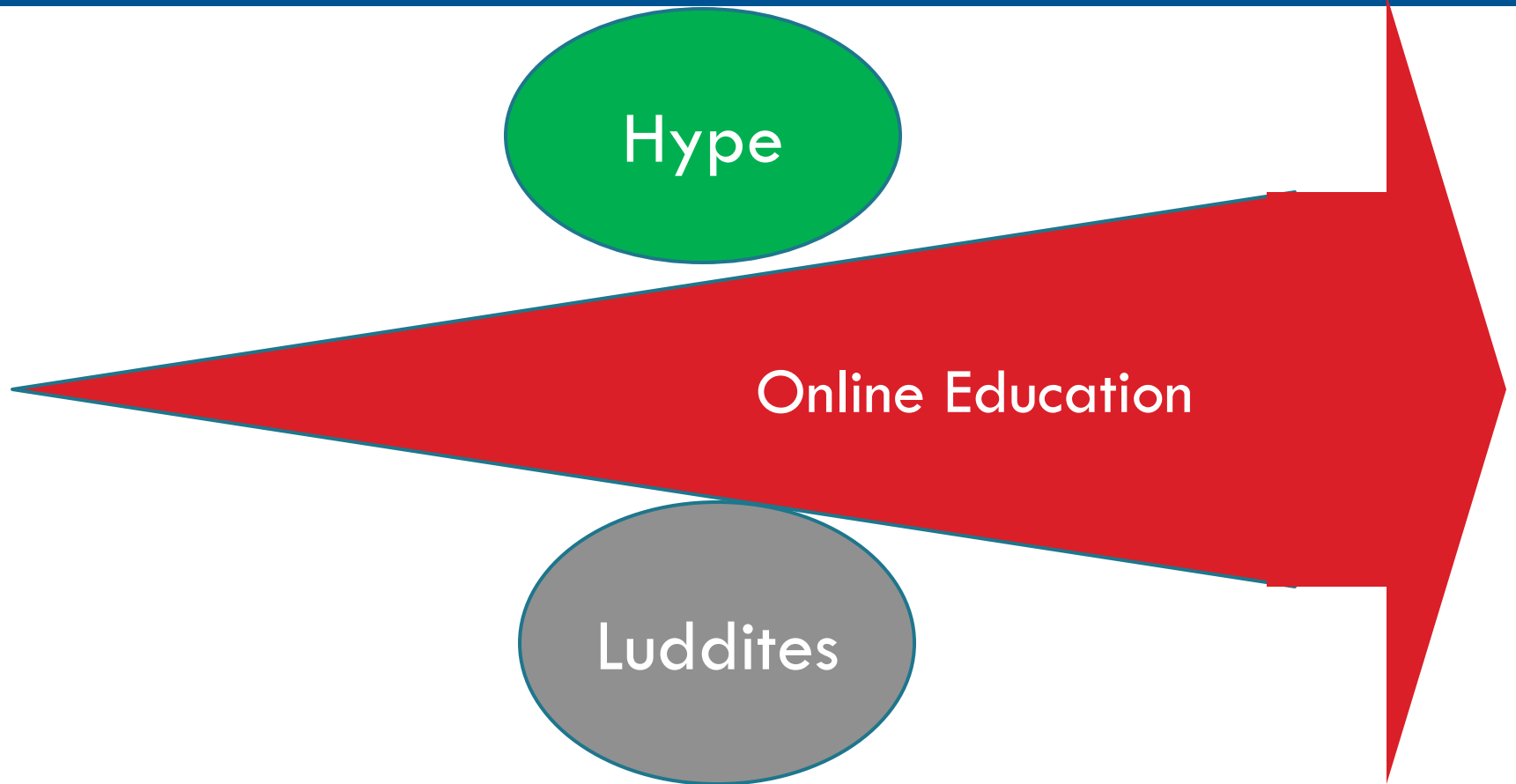
Revenue (\$ Millions)



Enrollment



A Relentless Force that Will **Not** Be Denied



But far too many are in denial

- While change has actually been rather large scale, the conventional wisdom is that there has been little change.
- It is also probably accurate to say that even the large scale changes have not penetrated the culture of higher education nearly as much as necessary.
- There is no shortage of contrarian voices that decry even those changes that HAVE occurred.
- The disparity is creating a vacuum into which politics is inevitably drawn.

Are MOOCs going to change the world

- Too late. The world already changed without MOOCs even if Stanford, Harvard, MIT and others had not noticed!
- “the vast majority of people who sign up for MOOC’s don’t complete their courses, yet MOOC creators are hailed as visionaries rather than being denounced for their 10-percent completion rates” –Kevin Carey –Chronicle Blog
- MOOCs are interesting and valuable experiments, but they are not on the critical path of online education –at least in their current form.
- Online education is changing the world, and MOOCs can be a part of that.

Massive Open Online Courses MOOCs

- Kahn Academy -2006
 - ▣ Salman Kahn –non-profit -2006
- Udacity -2012
 - ▣ Sebastian Thrun, Stanford - for-profit
- Coursera -2012
 - ▣ For-Profit – Andrew Ng, Daphne Koller, Stanford
- edX (MITx -2011 and edX in 2012)
 - ▣ Harvard, MIT, Berkeley –non-profit
- Udemy -2010
 - ▣ Eren Bali and Gagan Biyani –for profit

The dangers of hype

- Students get hurt by well meant, but poorly designed experiments.
- Money gets wasted at a time when every dollar is precious in higher education
- Good ideas get discredited by over-reaching and then failing.
- To anyone in the audience that I offend, I offer this prior apology but.....
- I hope that it encourages you to adopt a position of scientific skepticism and innovative optimism.

What MOOCs Bring to the Party

- Most importantly they bring a recognition by the brand name universities that online education has changed the world and they almost missed the bus!
- They encourage faculty who have not been involved to become involved.
 - Faculty who get involved in online education become more self reflective on teaching and learning.
- They create good content presentations with (in the best of them) built-in assessment tools for student self assessment of progress.
- They generate interest in the press that the larger and more successful online programs never have!
- They attract venture capital to the education space.
- They create a data rich learning environment that can provide extensive data to help us understand how students learn through cognitive research.

What MOOCs need to work on

- Content and self assessment do not constitute a learning environment
(More on that on a future slide)
- The large numbers of users is vastly inflated by window shoppers.
 - ▣ exponential drop-off power law that characterizes participation in today's MOOCs (i.e., the final course lectures have 5% the viewing rate of the earliest lectures).
 - Mehran Sahami, Stanford University at SIGCSE
- The percentage of students who successfully finish is tiny.
- Credit is not (usually) given by the institutions creating MOOCs.
- MOOCs thus far are **courses not curricula**
- MOOCs do not (generally) provide the kind of engagement that has been shown to encourage learning. (See George Kuh....)
- Some assume that although their “good” institutions will never use MOOCs, that this will be a charitable donation to the “lesser.”
 - ▣ Data on that is coming in the next slide

What do the Professors Creating MOOCs Think?

- Some results are what most of us would expect.
 - It takes an extraordinary amount of work to create a MOOC and even more to create a good one!
 - Faculty had to do this on their own time and did not get credit of doing this through their teaching load assignments.
- Some of the results are more revealing:
 - **75%** of the respondents did not think that MOOCs would significantly reduce costs at their institution (35% none and 40% marginal).
 - That certainly goes against the conventional wisdom! “*everyone at the US Dept. of Ed thinks that MOOCs finally will help to make significant cost reductions in higher ed!*” –Dept. Of Ed. Official.
 - **72%** of those teaching MOOCs did **NOT** think that students who successfully completed their MOOC should get academic credit at their own institution, and **66%** believe that they **NEVER** would grant that credit.
 - The article makes that a positive in that 28% actually DO think they deserve credit. Some truth to that.
- The most revealing result: When those same two issues were explored for **SOME OTHER** institution, the respondents thought that they might have **far more impact**.
- At this point, those involved with MOOCs are quite **excited** about the possibilities, **daunted** by the work required, and convinced that they will not significantly change their institution, but that they might change **others**.
 - http://chronicle.com/article/The-Professors-Behind-the-MOOC/137905/?cid=at&utm_source=at&utm_medium=en#id=overview

The Biggest Myth of MOOCs

- Education will be free –or at much lower cost.
- “How can colleges charge \$50,000 a year if my kid can learn it all free from massive open online courses?”
--Thomas Friedman –NY Times March 5, 2013
- “The question is not just whether MOOCs are going to disrupt traditional education, but how. Is it just about lower costs and access?”
-Clayton Christensen, Harvard
- The threat is to the random little-known accredited college and the person you’ve never heard of who is employed there teaching garden-variety, highly-replicable three-credit courses. As Thrun credits become widely accepted, people will be less willing to pay for the other kind. -Kevin Carey, Chronicle of Higher Ed. Dec. 14, 2011.

MOOCs are not cost free.

- They look cost free because they have been done on the margin by outstanding faculty who wish to devote the time to create them, but who may not wish to continue to devote the time to operate them and revise them with the change of both content and technology.
- The unit cost can indeed be made lower by large scale use, but that does not take into account the costs of other portions of a learning environment that do not demonstrate the economies of scale.
- People do not pay for content, they pay for something much larger.

Content and the Value Chain

- “Given what MIT has done (OCW), how can UMassOnline compete?” – Boston Globe reporter

What MIT provides

- Course materials

No access

- Reputation
- Courses
- Faculty
- Credentials
- Students
- Alums
- Library
- Facilities

Content?

- The smallest part of the value chain.

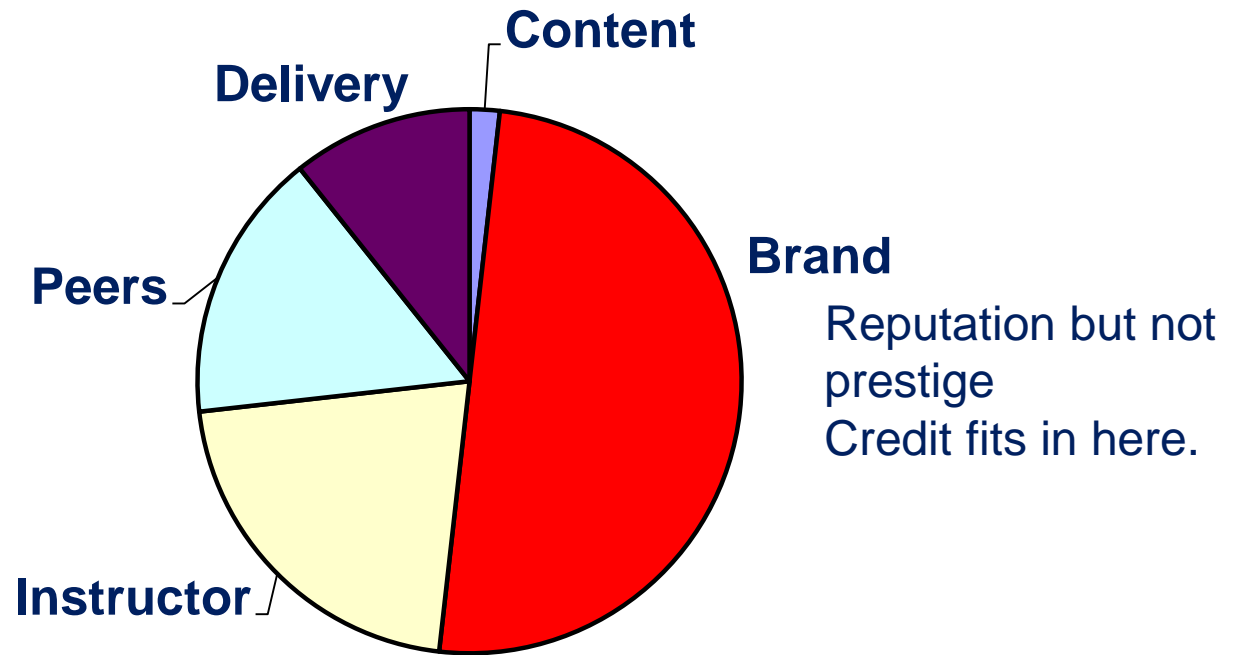
- A Techno-MBA Course that I taught at RPI
 - ▣ 75-125 students (business execs)
 - ▣ **\$ 3000** per student (indicator of value?)
 - ▣ A book might be **\$50** (content)
 - ▣ MOOC or Web site is open and free
 - ▣ Revenue: **\$225,000 - \$375,000**
 - ▣ One faculty, one full time TA

- Content is king?
- What do students REALLY pay for?



The Value Chain

What do students want and pay for?



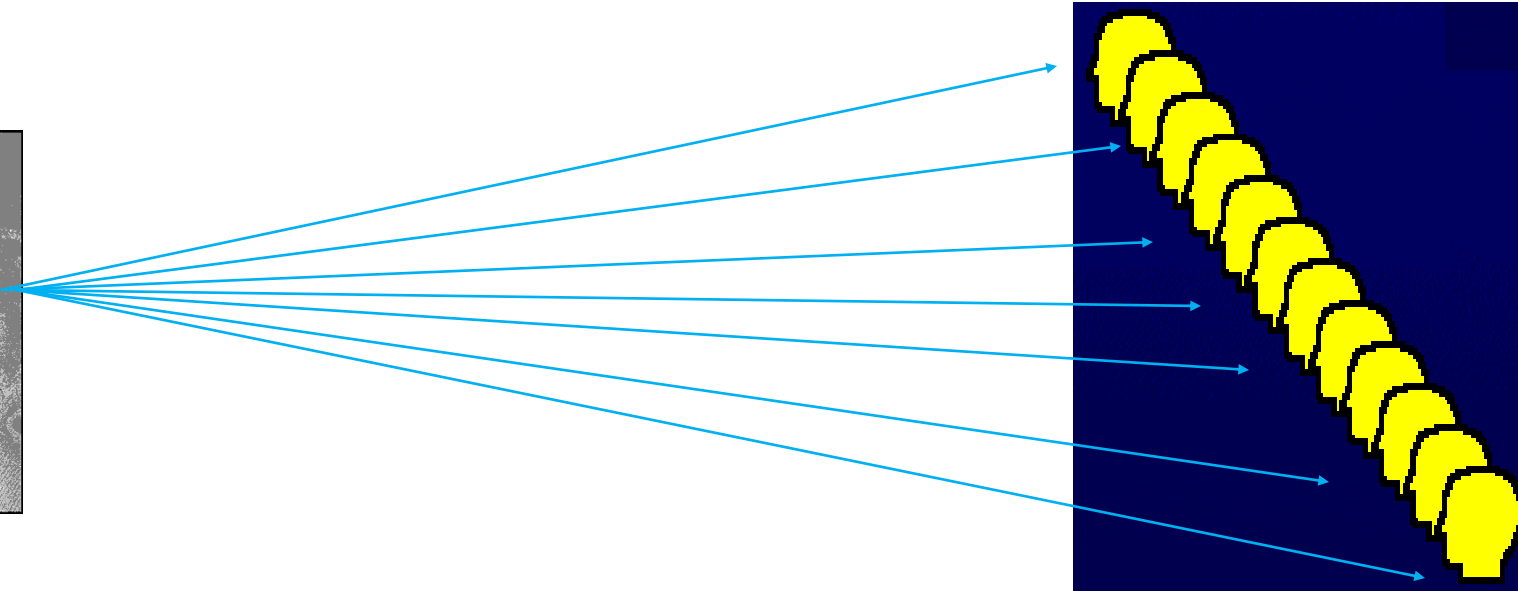
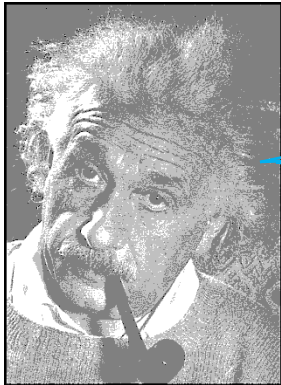
A Brief History of “Distance Learning”

- Correspondence Courses
- TV Courses – Cable, Satellite, Videotape
- Interactive Video Courses (2-way satellite, videoconferencing, and now Skype)
- ALN – “traditional” online education
- MIT OpenCourseWare
- Carnegie Mellon Open Learning Initiative
- MOOCs

- Unfortunately many of the MOOCs look eerily like the “moving hand writes and then moves on” of the video days!

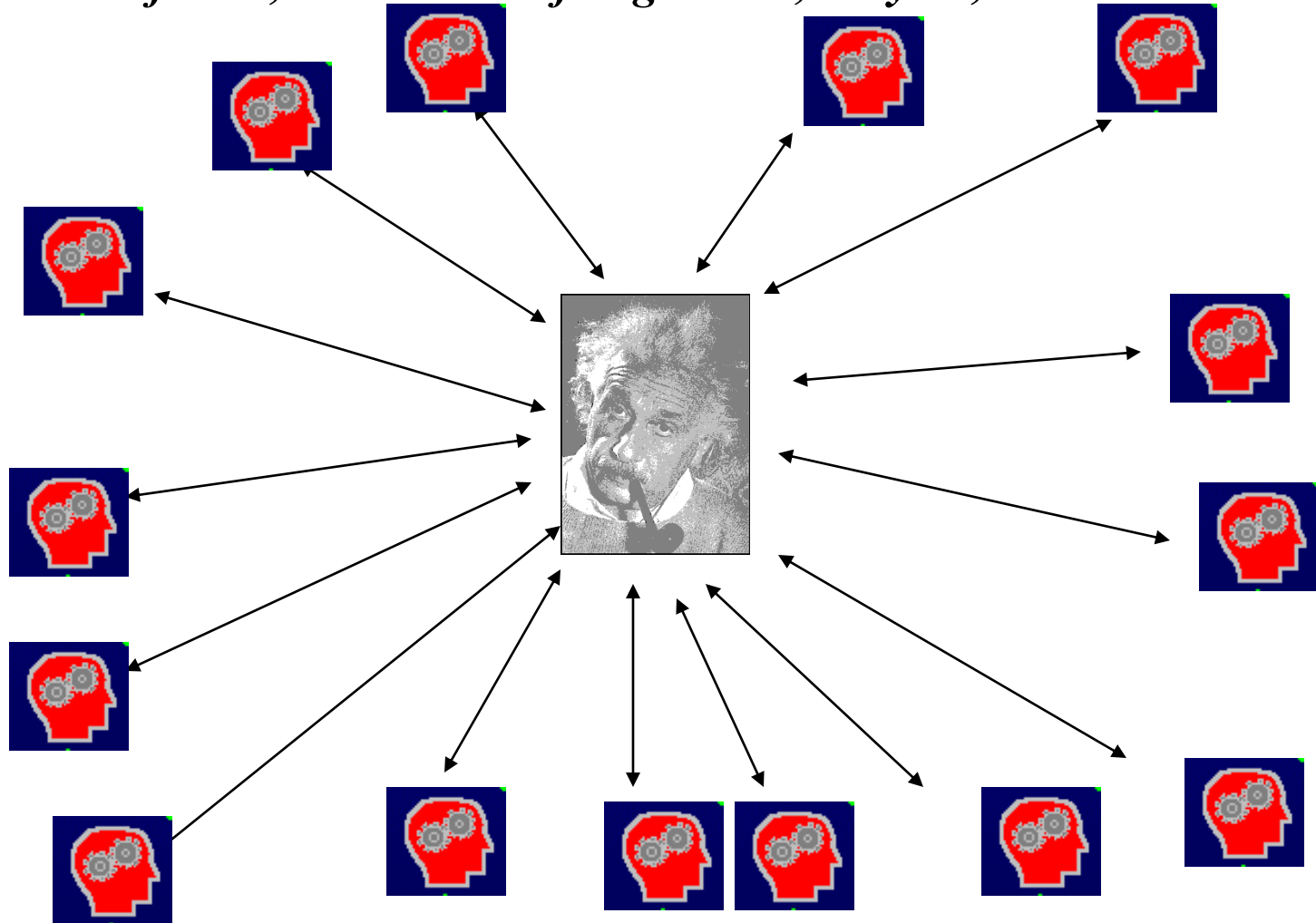
The transmission (lecture) model

- The mainframe approach
 - ▣ Face to Face: The Lecture
 - ▣ Distance: TV (Cable, Video, Satellite, or MOOC)
 - Pushes the back wall out a few thousand miles



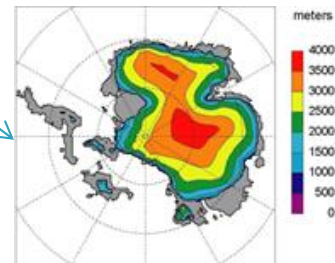
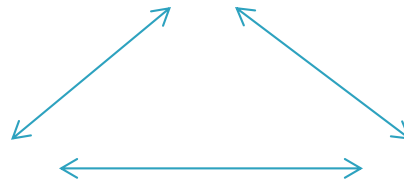
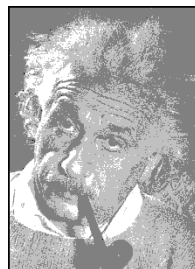
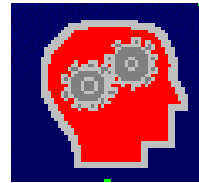
Which can become the usual on-line course organization

“The 24-Hour Professor;” Chronicle of Higher Ed; May 31, 2002



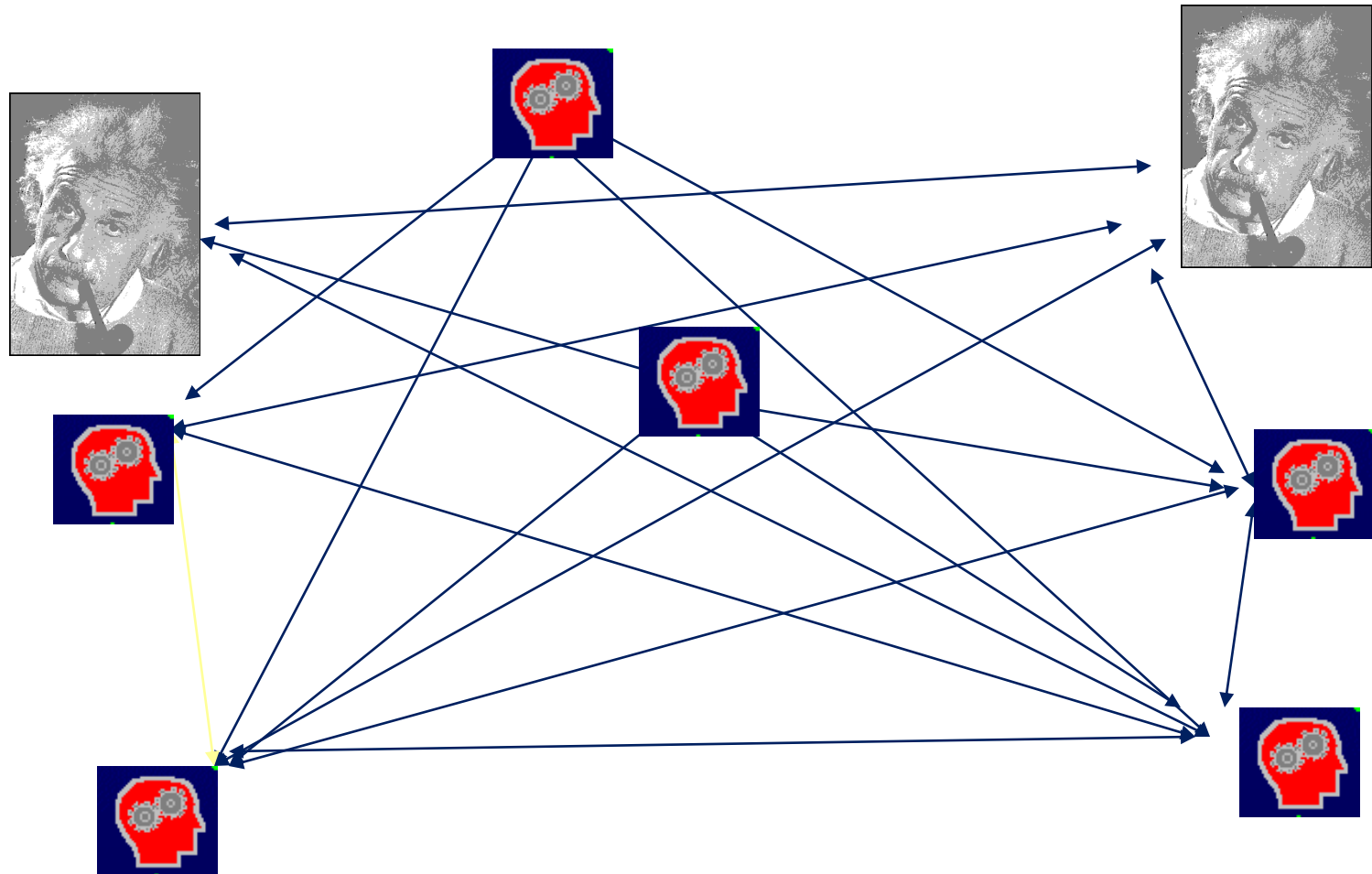
Engagement

- Faculty with student (half done in lecture)
- Student with material (reading, homework, papers, adaptive tutorials, most MOOCs, etc)
- Student with Student (peer learning, small groups, team based projects, studio classrooms, etc)

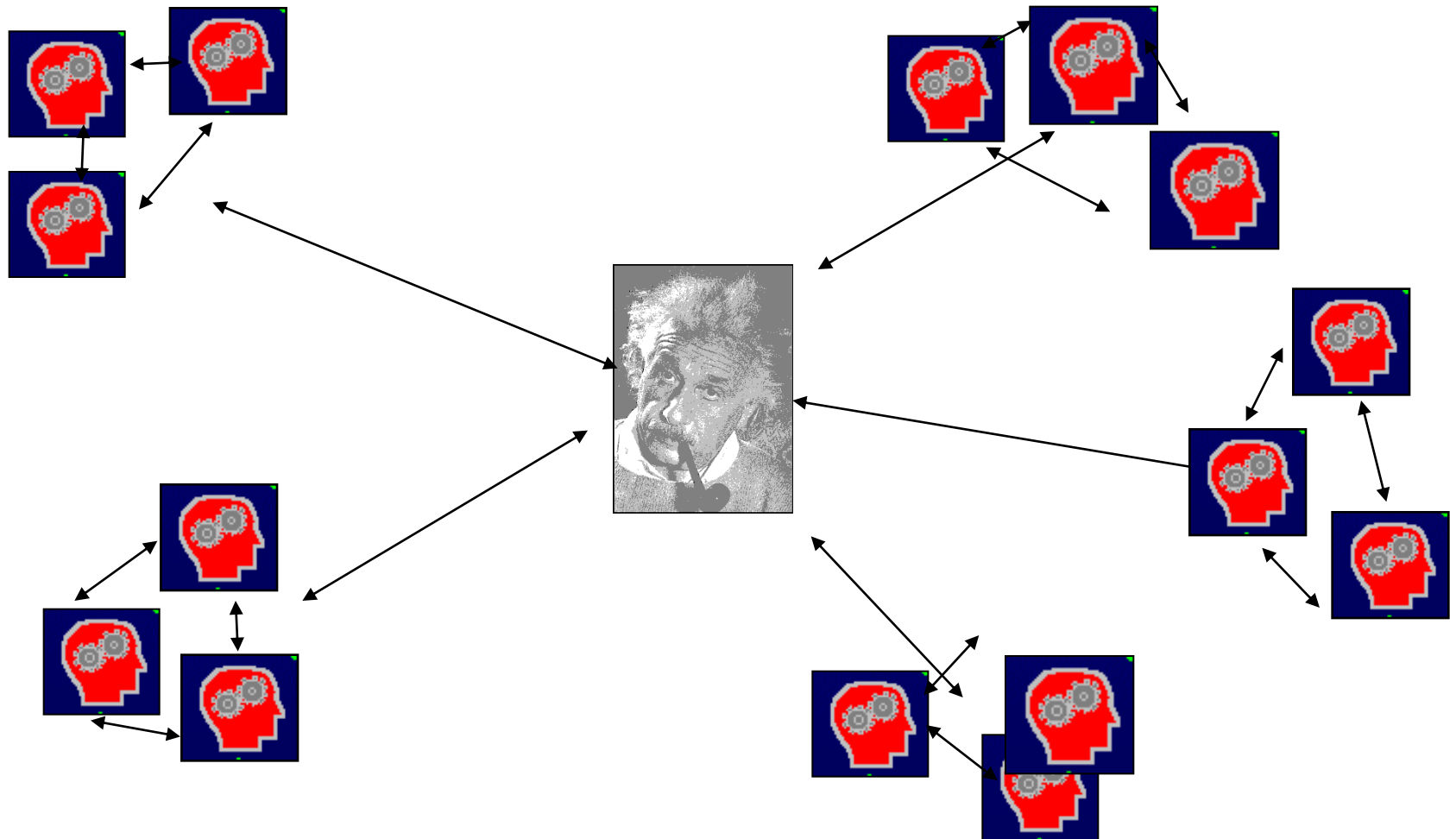


Climate change models, R. Decanto
UMass/Amherst

Distributed Collaborative On-line Model



Collaborative Learning, Peer Learning.....



MOOCs Forum

An international publication dedicated to discussing and resolving the pedagogical, legal, academic, record keeping, and security issues related to Massive Open Online Courses and emerging opportunities for collaborations between academia, industry, and government agencies.

Multidisciplinary in scope, *MOOCs Forum* is the public venue for examining key issues paramount to the success of MOOCs such as:

- Development, challenges, and success of massive open online courses
- Student registration and identification
- Successful business models
- Course content and quality
- Course testing and grading
- Increasing completion rates
- Course credit and matriculation
- Security
- Material copyrights
- Acceptance standards for professional continuing education
- And all evolving topics related to the field!

For more information visit www.liebertpub.com/mooc

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Summary

- Universities have changed rather radically in many ways.
 - ▣ Meteoric rise of online learning
 - ▣ Involvement in economic development
 - ▣ Deployment of 2 of the 3 C's
 - ▣ Disinvestment by government
- The future will continue to be quite a challenge for leaders of higher education.

Thank you.

- Jack M. Wilson
 - ▣ President Emeritus and Distinguished Professor of Higher Education, Emerging Technologies, and Innovation.
 - ▣ www.jackmwilson.com