Distance Learning as a Self Sustaining Enterprise

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An Oxymoron?

- Distance Learning? Self sustaining?

- Is this an oxymoron?

- When the Chronicle of Higher Education can ask: "Is Anyone Making Money on Distance Education?"
  - Chronicle of Higher Education, Sarah Carr, Feb 16, 2001.

Another one bites the dust

- "After Losing Millions, Columbia U. Will Close Its Online-Learning Venture"
  - Scott Carlson, Chronicle of Higher Education, January 17, 2003.

- Columbia University closes Fathom after losing over $20 million and after its champion, Michael Crow has left Columbia.

Is it over?

- Is all the excitement over eLearning over?
  - Question from a reporter at the Chronicle of Higher Education in early 2002.

High hopes for eLearning

- Columbia formed Fathom & teamed with XanEdu.
- U. of Penn Wharton School teamed with Caliber, a spin-off from Sylvan Learning.
- Cornell spun off eCornell with $12 million internal investment
- UNext created Cardean University with Columbia, London School of Economics, Carnegie Mellon, Stanford, and Chicago.
  - Reportedly Cardean had pledged to pay Columbia, and perhaps the others, $20 million dollars if they failed within five years.
- Temple formed "Virtual Temple"
- Pensare teamed up with Duke.
- Click2Learn teamed with NYU Online.
- North Carolina, Harvard, and USC went to University Access for help in getting online.
- Harcourt Higher Education was launched as a college in 2000 and confidently predicted "50,000 to 100,000 enrollments within five years."

And Now?

- **Pensare** is gone.
- **Fathom** needed ~$30 million in internal financing
  - Faculty became restive, closed in early 2003
- **Cardean** laid off half work force –"restructures".
- **Temple** University closes virtual Temple.
- NYU folded **NYUOnline** back into the campus.
- **Harcourt** gone after enrolling 32 students in 2001.
- **eCornell** open BUT with reduced expectations.
- Britain's **Open U**. closes US branch -$20 M later.
- **Caliber** goes bankrupt- acquired by iLearning(Sylvan).
- **University Access** -> Quisic withdraws from H.Ed.

So?

- Has Online learning failed?

- Hardly!

- The Red Sox, the Cubs, and 29 other teams didn't win the world series again this year either.

- Just like baseball, distance learning has it's winners and losers!

Is this unusual in history?

- Take the railroads. The 1880s saw more miles of track built than in any other period.
  - By the 1890s, more miles were bankrupt than at any other time.
- From 1904 to 1908, more than 240 companies entered the automotive business.
  - In 1910, a big shakeout occurred because too many companies were operating at an inefficiently low scale. Today only two US companies remain.
- The early days of radio and TV saw both a proliferation of entrants and a valuation bubble. It took decades for the values to recover and the three main broadcasting systems emerged.
  - RCA $114 (1929) -> $3 (1932) (adjusted for split)

Is it over?

- Hardly!

- No one has repealed Moore's Law
- The Bandwidth Law (Gilder's law) is slower but still on track
- Metcalf's law remains the a key indicator for success.
  - Microsoft, AOL-TimeWarner, eBay, Amazon all demonstrate the power of the large network.

UMassOnline

- UMassOnline ended the year 2002 with
  - over $10 million in revenues
  - 10,038 enrollments from students outside th campuses
  - an annual growth of over 50%
  - 37 (and growing) degree and certificate programs
  - Serving the educational needs of students in Massachusetts, New England, and the U.S.
  - Over 450% growth in inquiries through it's web site
  - 55% of inquiries from outside Massachusetts.
  - 8% of inquiries from outside the U.S.

A few successful on-line initiatives

- Arizona Regents University   12,353 Ex
- Univ. of Maryland Univ. Coll.   68,250 New
- Florida Virtual Campus   56,198 Ex
- FL Comm. Coll. D.L. Consortium 85,278 Ex
- Maryland Online: 27,060 Ex
- Georgia Globe: FY2002:   40,000 Ex
- Illinois Virtual Campus: 46,678 Ex
- eArmyU (23 campuses)   12,000 New
- Connecticut D. L. Consortium   9,683 Ex
- UMassOnline   7,824 New
  - Ex=>primarily existing students
  - New=>primarily new online students

For-profits

- Phoenix   37,000 / 110,000
- Capella   5,000 / 5000
- DeVry   ? / 56,000
- Strayer   ? / 14,000
- Sylvan (NTU)   ?
  - (Walden U, NTU, Canter, Caliber, iLearning, etc.)

Models for Virtual Universities

- **For Profit Universities**
  - Pure plays: Phoenix, Capella, DeVry University, Strayer University etc.
  - Joint Ventures: Cardean, Caliber, Pensare, U21
  - Internal: eCornell, Fathom etc.
    - (formerly UMUC,NYUOnline)
  - Outside VC (Original Fathom plan) versus internal
- **Not for Profit**
  - Internal Collaborative (UMassOnline etc.)
  - Independent (WGU, etc)
  - Solo or Consortia (UMUC)

Higher Ed. Strategies for Online education

- Distance learning strategies have been developed in the following categories:

  - Cost Avoidance: Can an institution serve larger and larger constituencies without additional investments in physical plant and infrastructure.

  - Cost Reduction: Can an institution become more productive through the use of technology and thereby reduce costs.

  - Revenue Enhancement: Can an institution increase its revenues by marketing their programs to a much wider audience (i.e. regional, national or international).

Cost avoidance

- How can we serve an increasing number of potential students without building additional campuses or buildings.

- Example: California Tidal wave II
  - How to accommodate a 40% increase in students over the first decade of the millennium
  - "One of the major reasons behind the creation of the CVU includes the increasing needs of business and industry for employee training, particularly to fit varying schedules. In addition, the projected demands from the 400,000 new CCC students expected from Tidal Wave II over the next seven years can not be met with the current rate of capital construction in the CCC's. "
    - http://www.tipsnews.org/newsletter/98-02/cvu.html

Cost Avoidance

- Western Governor's University (WGU)

- In areas of the country that are growing rapidly, there is little hope of being able to keep up with the demand by building new campuses. Virtual universities have been seen as the answer.

- Thus far this has not established itself as a credible option.
  - The jury is still out!

Cost reduction

- Pew Grant Program in course redesign
  - "The purpose of this institutional grant program is to encourage colleges and universities to redesign their instructional approaches using technology to achieve cost savings as well as quality enhancements. Redesign projects focus on large-enrollment, introductory courses, which have the potential of impacting significant student numbers and generating substantial cost savings."
    - http://Center.rpi.edu
- Examples can be found on their web site.
  - Carol Twigg and I founded this Pew Center for Academic Transformation together.
  - Goal : Improve Quality, Access, and Cost.

Cost reductions

- University of Central Florida
  - "… substituting Web-based, asynchronous, modular learning for two-thirds of the in-class time and creating small collaborative learning groups within this online structure."
- University of Wisconsin
  - "… substituting Web-based, asynchronous, modular learning for two-thirds of the in-class time and creating small collaborative learning groups within this online structure." "UW Madison expects to reduce the cost-per-student from about $257 to $185, a reduction of 28%. Because this course affects 4,100 students per year, this saving translates to an annual saving of approximately $295,000."

Cost reductions

- In the first round of the Pew Program 10 institutions project an average cost savings of 37%.
  - IUPUI, Penn State, Rio Salado, U. Buffalo, U. Central Florida, U. Colorado Boulder, U. Illinois, U. So. Maine, U. Wisconsin Madison, Virginia Tech.
- Staff analysis showed an actual cost savings of 33% after implementation
  - http://center.rpi.edu/PewGrant/Rd1saving.html

- Possible? Definitely! Easy? Not at all.

Cost reductions -summary

- In spite of all the "experts" telling us that there is no way to save money using technology…..

- Technology has proven itself beyond a shadow of a doubt to be an effective way to reduce costs.

- How to explain this disagreement?
  - There are lots of poorly designed and expensive innovations out there.
  - For political reasons, some try to attribute the dramatic increase in cost of technology to the education programs.
  - Innovations that are well designed pedagogically and from a business perspective can be a tremendous improvement in quality, access, and COST!

It depends upon design!

"The 24-Hour Professor;" Chronicle of Higher Ed; May 31, 2002
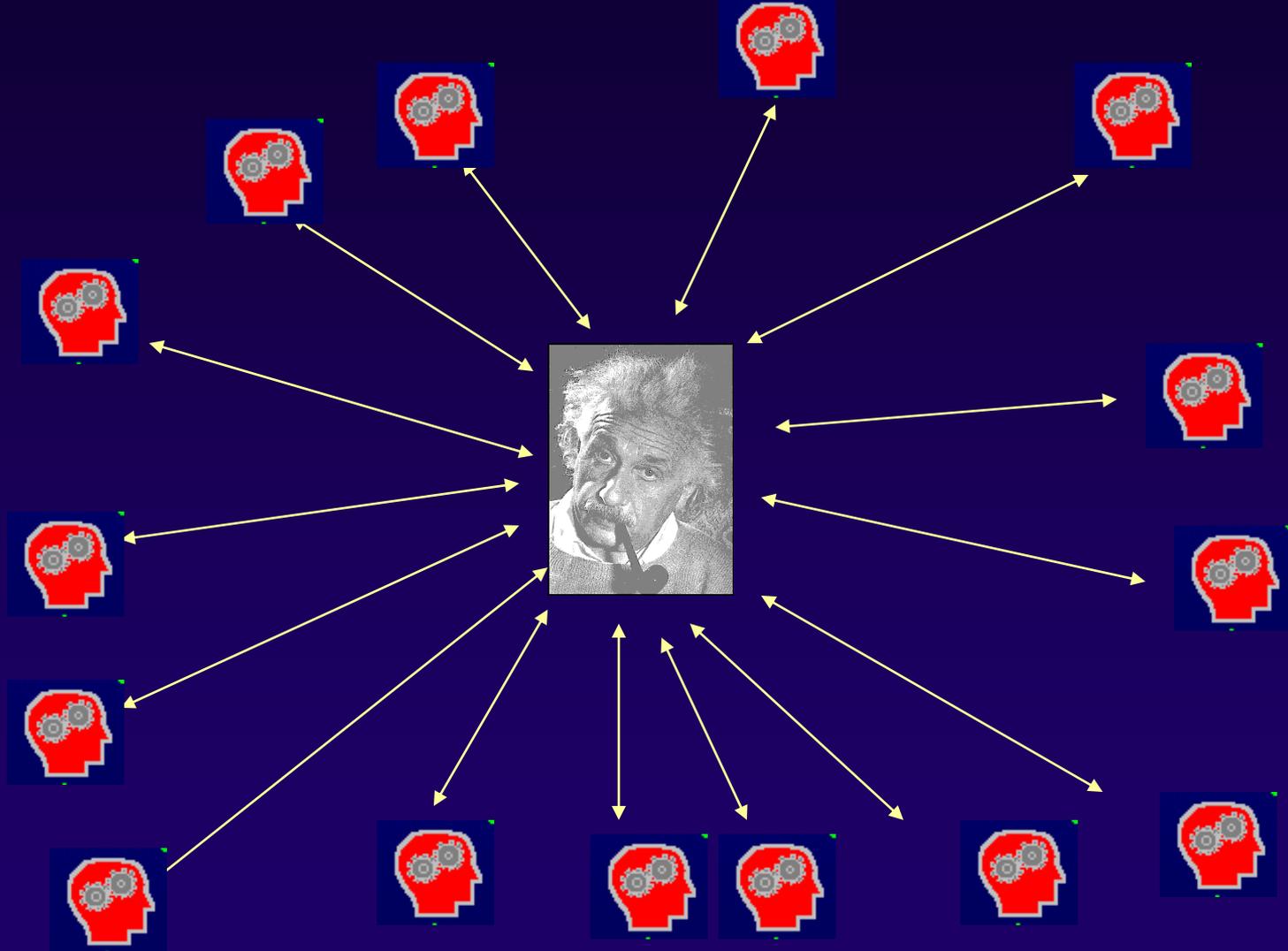
The 24 hour professor

- I was torn between thinking:
  - "what a wonderful dedicated professor!"

  - And

  - "what a complete idiot for designing a course that assumes that the only valid interactions are between him and the student."

- What about peer learning, virtual team approaches, interactions with rich media materials?

- Good pedagogy also happens to be more efficient!
  - More on this later

Revenue enhancing?

- Can an institution increase its revenues by marketing their programs to a much wider audience (i.e. regional, national or international)?

- Cases:
  - UMassOnline
  - Rensselaer Polytechnic Institute

UMass Online Mission

- to **provide access** to a University of Massachusetts education to students who are unable to attend one of the campuses.

- to **serve community needs** for education in critical areas of economic development, health and welfare and education.

- to **raise revenues** for support of students, faculty, teaching, outreach, and research.

- includes undergraduate degree completion, graduate study, specialty certification, non-degree enrichment and support for the K-12 system.

UMassOnline:
A Collaborative Campus Model for Distance Education

- Intellectual capital of the UMass system.
  - Amherst
  - Boston
  - Dartmouth
  - Lowell
  - Worcester (Medical School)
- Non-Profit System-wide Collaboration (profit considered)
  - Financed by $15 M loan at 7.5%
  - Follows local governance and existing campus policies
  - Degrees and credit programs from five campuses
  - Grants of $ 2.25 M & $ 459K for platform
- 10,038 enrollments in 2002. (NEW students –not existing!)
- 2002 tuition revenue of $7.89 million
  - Growing at over 50% per year
- Grants of $2.4 million
- Staff of 7.5

UMOL Enrollment Distribution

UMA 20%
UMB 10%
UMD 5%
UML 65%
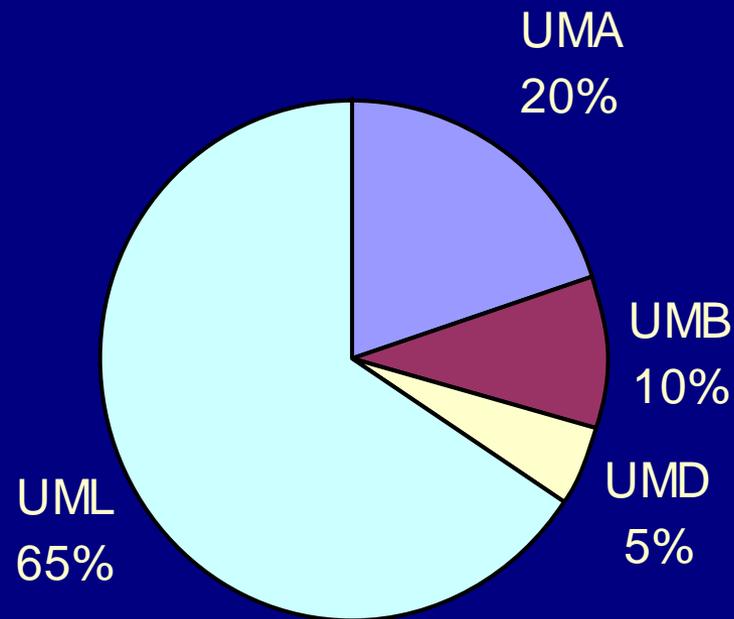
Programs - Graduate

1. MBA Professional Program (Amherst)
2. MPH in Public Health Practice (Amherst)
3. Master's Degree in Educational Administration (M.Ed.) (Lowell)
4. Master of Arts in Criminal Justice (UMass Lowell)
5. Master of Ed. for Science Teachers Program (Amherst)
6. Master of Ed. in Counseling: School Guidance (Boston)
7. Master of Ed. in Counseling: Mental Health Counseling (Boston)
8. Master of Science (Nursing) Community/School Health (Amherst)
9. Master of Ed. for Science Teachers Program (UMass Amherst)
10. Master of Ed. in Counseling: School Guidance (UMass Boston)
11. Master of Ed. in Counseling: Mental Health Counseling (UMass Boston)
12. Certificate in Foundations of Business (UMass Lowell)
13. Certificate in Adapting Curriculum Frameworks for All Learners (Boston)
14. Certificate in Clinical Pathology (Lowell)
15. Certificate in Foundations of Business (Lowell)
16. Certificate in Instructional Technology Design (Boston)
17. Certificate in Photonics and Optoelectronics (Lowell)

Undergraduate Degree Programs

1. Bachelor of Liberal Arts (Lowell)
2. Bachelor of Science in Hotel, Restaurant, and Travel Administration (Amherst)
3. Bachelor of Science in Information Technology (Lowell)
4. Bachelor's Degree in Information Technology: Business Minor (Lowell)
5. RN to Bachelor of Science (Nursing)   (Amherst)
6. Associate of Science in Information Technology (Lowell)

Other Undergraduate Programs

1. Certificate in Community Media and Technology (UMass Boston)
2. Certificate in Communication Studies (Boston)
3. Certificate in Contemporary Communications (Lowell)
4. Certificate in Data/Telecommunications (Lowell)
5. Certificate in Fundamentals of Information Technology (Lowell)
6. Certificate in Intranet Development (Lowell)
7. Online Communications Skills Certificate (Dartmouth)
8. Certificate in Multimedia Applications (Lowell)
9. Certificate in Community Media and Technology (Boston)
10. Criminal Justice Series (Amherst)
11. Certificate in UNIX (Lowell)
12. Fundamentals of Arts Management Certificate Program (Amherst)
13. Certificate in Plastics Technology (Lowell)
14. Certificate in Technical Writing (Boston)

- Online Communications Skills Certificate (Dartmouth)

- Fundamentals of Arts Management Certificate Program (Amherst)

Financial Model - Overview

- UMassOnline is designed to funnel revenue to the campuses.

- It is a **non-profit** model and does not need to return an overall profit centrally. It must cover costs.

- It is expected to pay interest on the loans each year and to begin repayment of the principal within five years.

- Profitability is determined on a campus by campus basis.
  - Since 92.5% of all revenues are directed into the campuses, the major expenses also lie with each campus.

- Goals for program growth are set by campuses in consultation with UMassOnline.

Revenue History (86.4% annual growth)

(Future projected at 50% per year for three more years.)

Total Revenues

	Revenue FY01	Revenue FY02	Proj.Rev. FY03	Proj. Rev. FY04	Proj. Rev. FY05

Y-axis: $0, $5,000,000, $10,000,000, $15,000,000, $20,000,000, $25,000,000

Advertising

- Budget: $400,000

- National and regional advertising, as well as targeted local advertising:
  - Online: Petersons.com, AOL, Fathom
  - MBTA commuter car cards
  - Newsweek
  - Business Week
  - US News & World Report
  - New York Times
  - Boston Globe
  - Radio: WBZ, WBUR, WINS (NY), WAMC (NY)

Advertising

U.S. News and World Report

Growth in inquiries

UMOL Traffic

Legend:
- Visitor Sessions
- Unique Users
- Most Hits on most active day
- Visitors Who Visited More Than Once
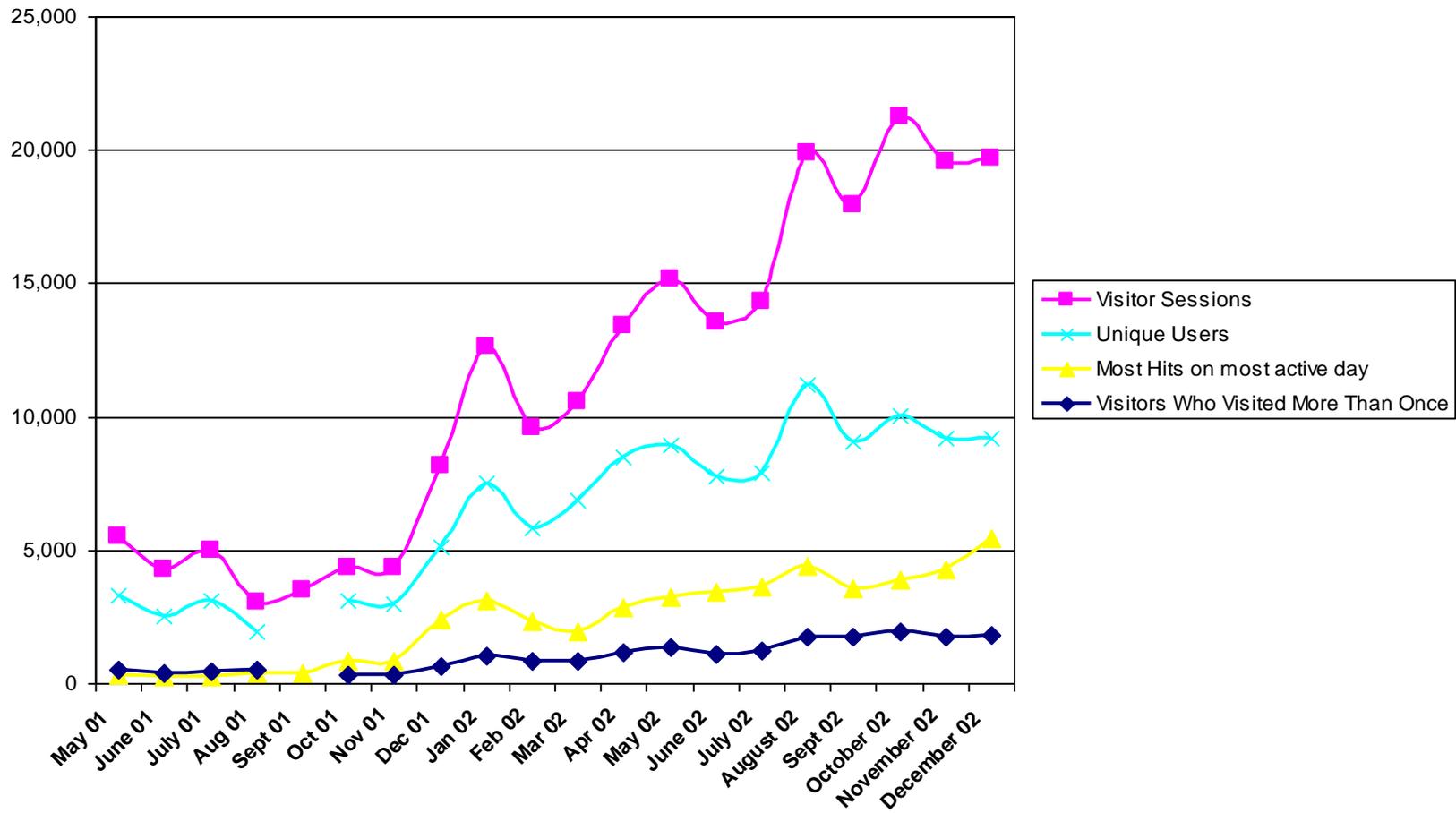
What is working?

Lead Sources

- Events 2%
- Magazines 13%
- Newspapers 7%
- Online promotion 65%
- Outdoor advertising 2%
- Radio 1%
- Word of mouth 10%

Legend:
- Events
- Magazines
- Newspapers
- Online promotion
- Outdoor advertising
- Radio
- Word of mouth
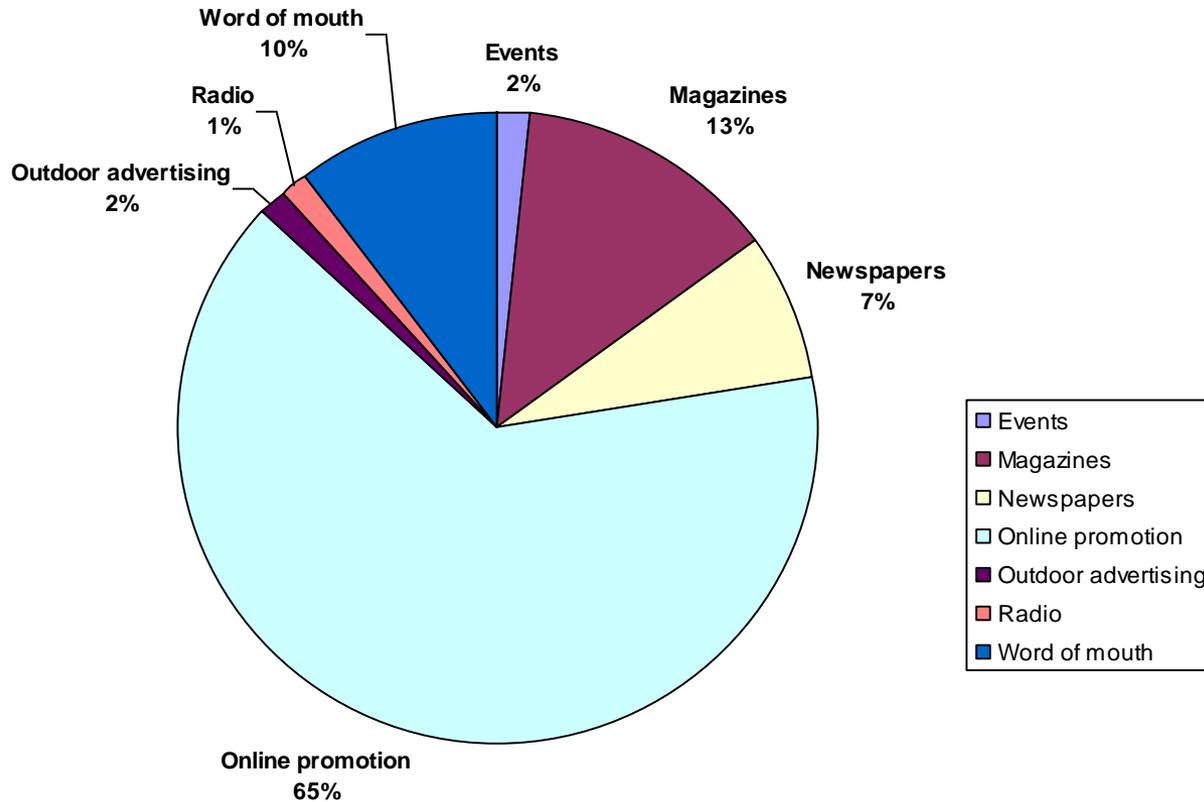
Most popular programs.

- Bachelor of Liberal Arts (UMass Lowell)
  - 689 inquiries
- MBA Professional Program (UMass Amherst)
  - 532 inquiries
- Bachelor of Science in Information Technology (combined with BS in IT with Business Minor) (UMass Lowell)
  - 413 inquiries
- B. S. in I.T. - Business Minor (UMass Lowell)
  - 383 inquiries

- And these represent only 3% of the inquiries that identify themselves! 97% of customers anonymous

Where do they come from?

Results: State	Inquiries	Percent of total
Massachusetts	780	29%
California	194	7%
New York	193	7%
Texas	132	5%
Florida	118	4%
New Jersey	100	4%
Pennsylvania	86	3%
Georgia	85	3%
Virginia	73	3%
Connecticut	64	2%

Technology Infrastructure

UMassOnline is developing it's own platform with partners.

- IntraLearn and Prometheus share LMS duties
- A common portal is being developed as a cross campus initiative.
- Video Servers have been acquired:
  - Real and QuickTime
- Centra: Live On line education is being added this summer.
  - Audio, video, collaborative document sharing, polling, application sharing ……..

Questions

- What are the advantages and disadvantages of various financial models?
- Are joint ventures between universities and for-profits viable (Pensare, Caliber, NYUOnline, U21 Global, etc)
- Can one borrow brand equity from one institution to another: (Cardean, Pensare)
- Can one transfer brand equity from a different business to eLearning (Harcourt)
- Given that content is a commodity, how much to invest in content?

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.

- Introduction to eBusiness
  - 75-125 students (business execs)
  - $ 3000 per student (indicator of value?)
  - A book might be $50 (content)
  - Web site is open and free
  - Revenue: $225,000 - $375,000
  - One faculty, one full time TA

- Content is king?
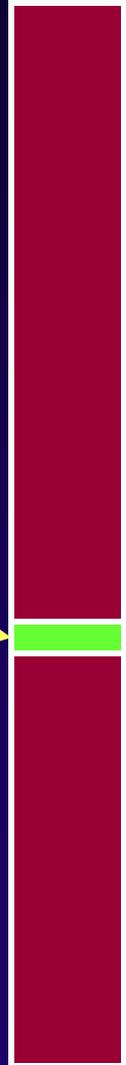
# Brand ~ Reputation (not just prestige)
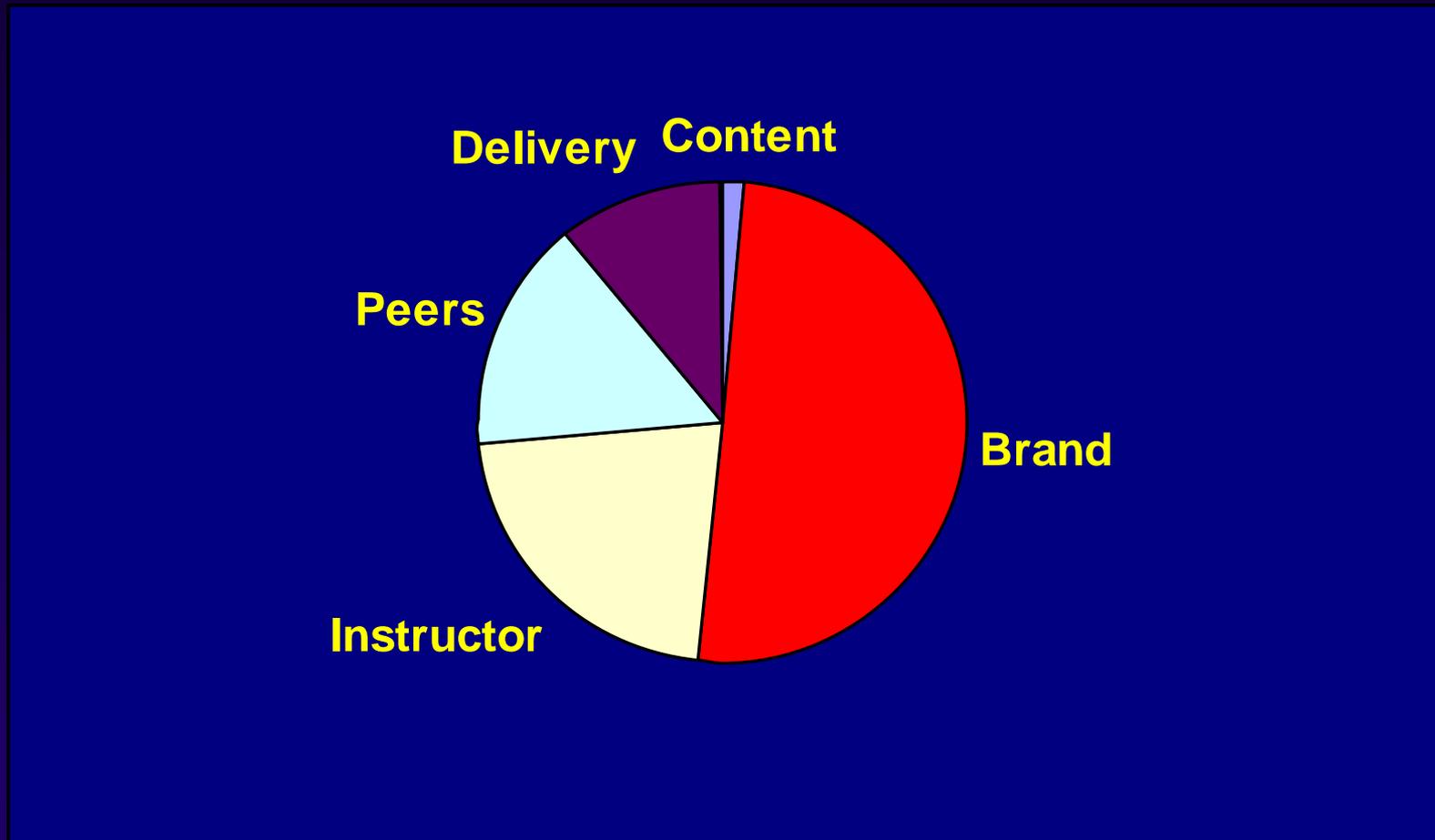
NY Times Midnight Question

- "Dr. Wilson, Governor Kean told me that all this technology emphasis was fine but the the best education was:
  "Mark Hopkins on one end of a log and the student on the other."

- "Could you comment on that?"

 – Rosalie Stemer, New York Times in a late night call

The Electronic Log?

- "Rosalie, I couldn't agree more…… as long as you will allow me to make it an electronic log."
  - A sleepy Jack Wilson:

- This became the lead for the NY Times piece.

- My other hours of interviewing at other times did not appear.

  - **NY Times:** The Virtual Classroom: Colleges face tough questions about using technology to teach more students. Can video lectures and E-mail offer the give-and-take of real learning? By Rosalie Stemer; The New York Times, Sunday, January 8, 1995

The (electronic) Log
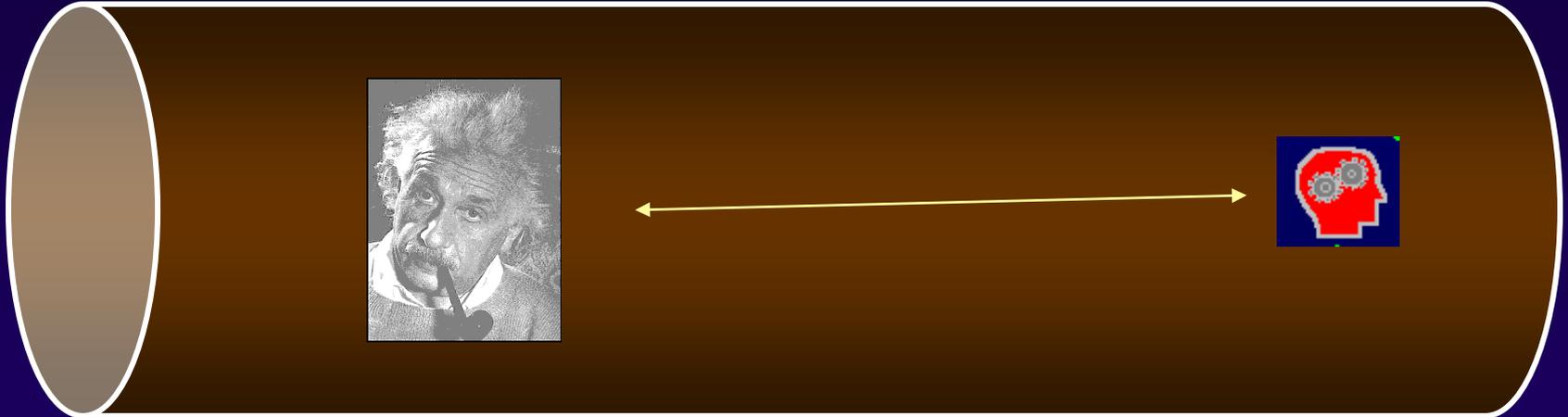
The transmission model

- The mainframe approach
  - Face to Face: The Lecture
  - Distance: TV (Cable or Satellite)
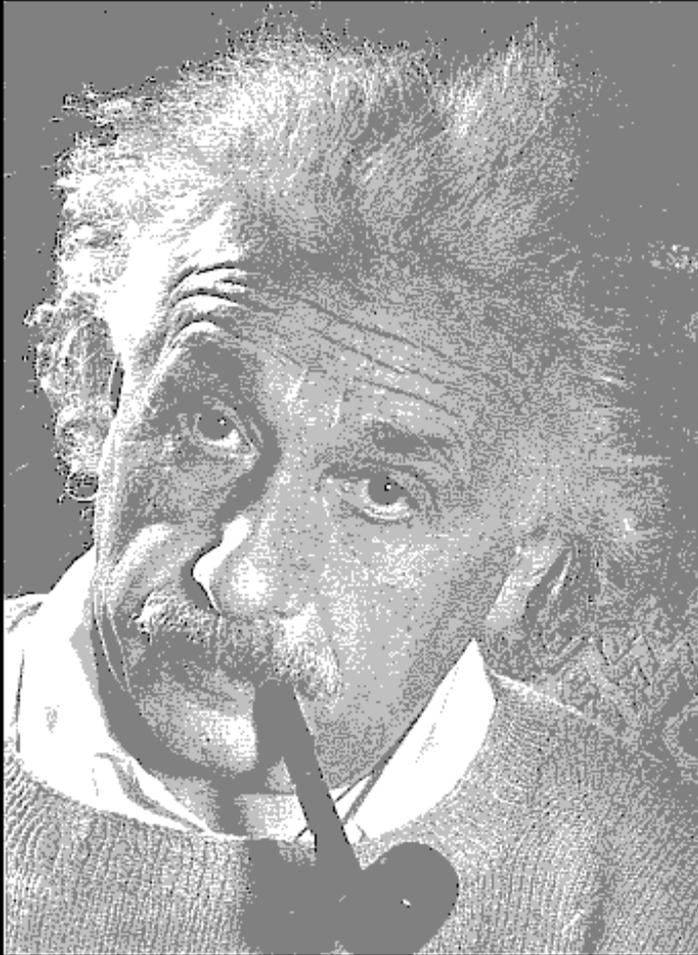   - Pushes the back wall out a few thousand miles
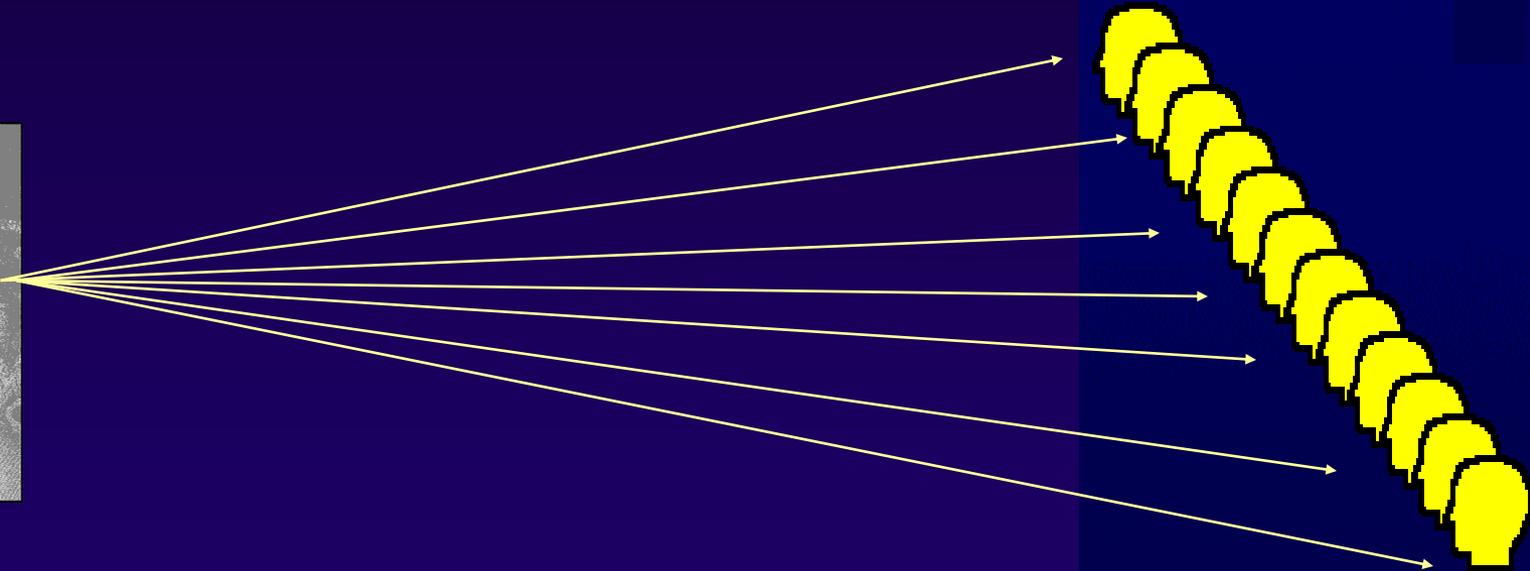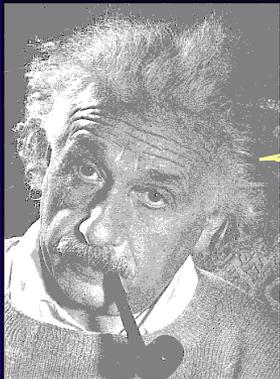
Faculty fears and legislators hopes

- Prism Magazine (ASEE):

  "If a student can zoom the best professors into his or her living room, then what is to happen to the rest of the countries professors?" (the mainframe model!)

  – In a word: hogwash.

  Presenting is not teaching!

What happens to me?

- Will a

  Web site
   or a CD-ROM
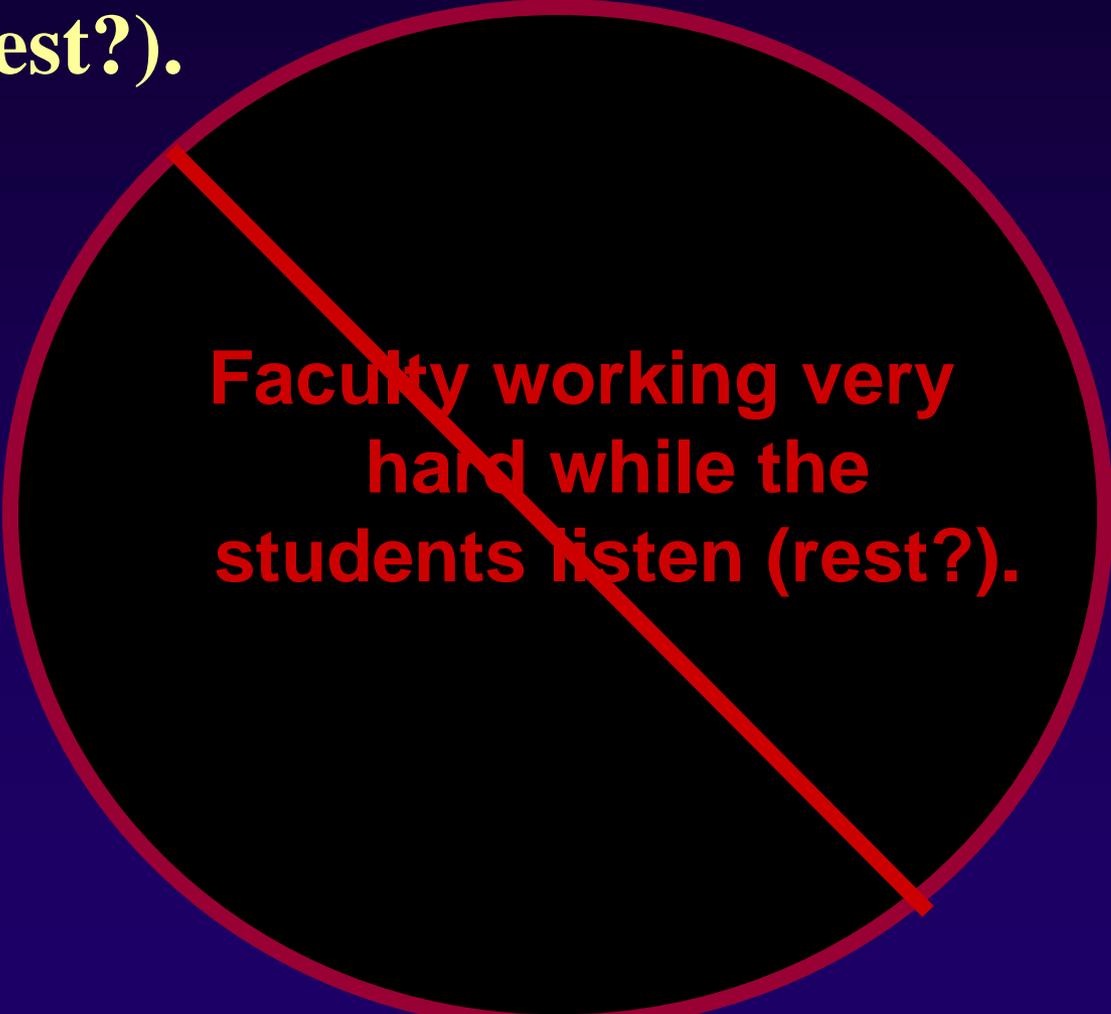   (or a videotape)

  replace your <Blank>
  Instructor?

- People change very slowly
  - Both a comfort and irritant!

- Technology changes very rapidly

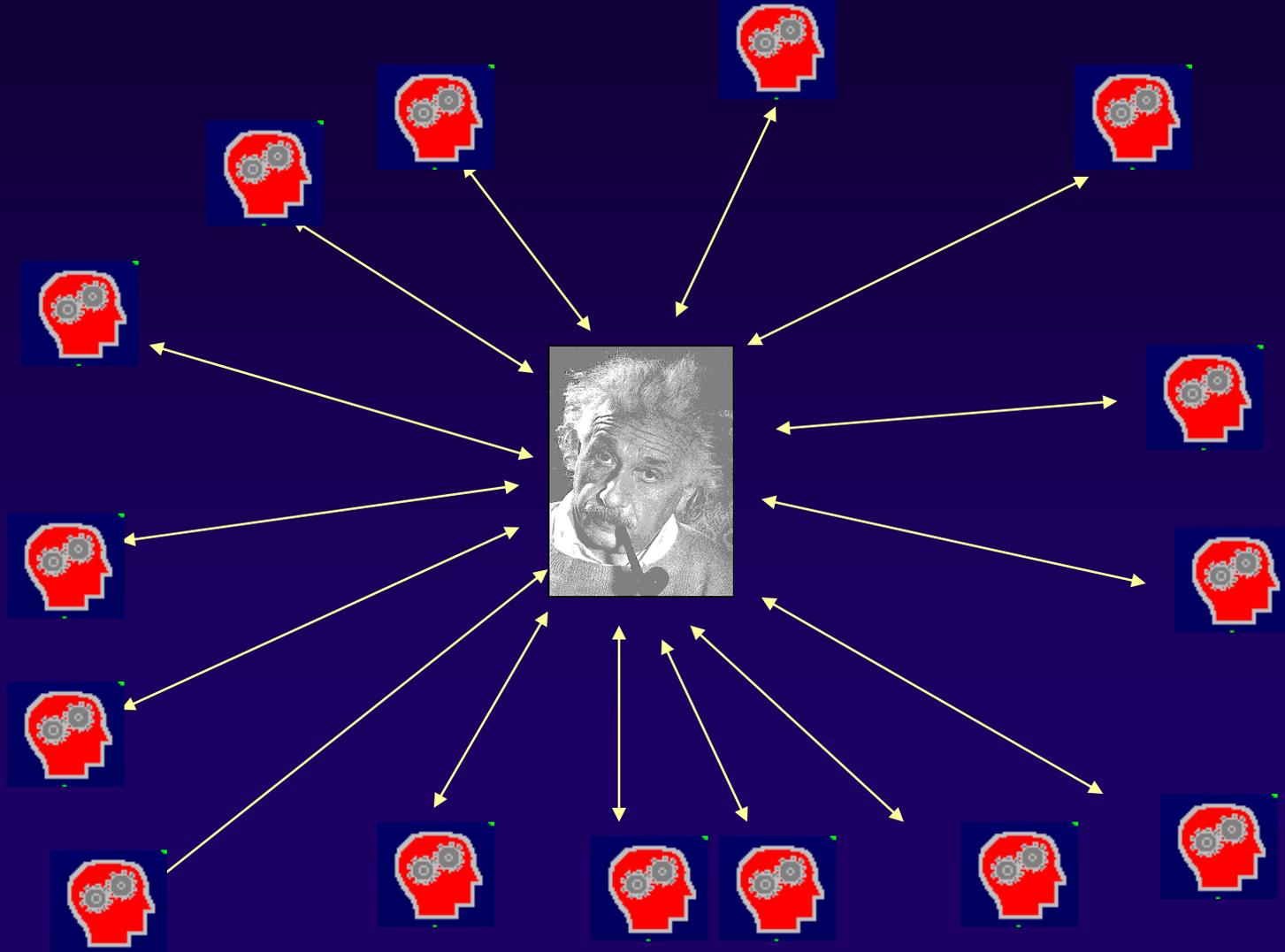**Faculty working very hard while the students listen (rest?).**

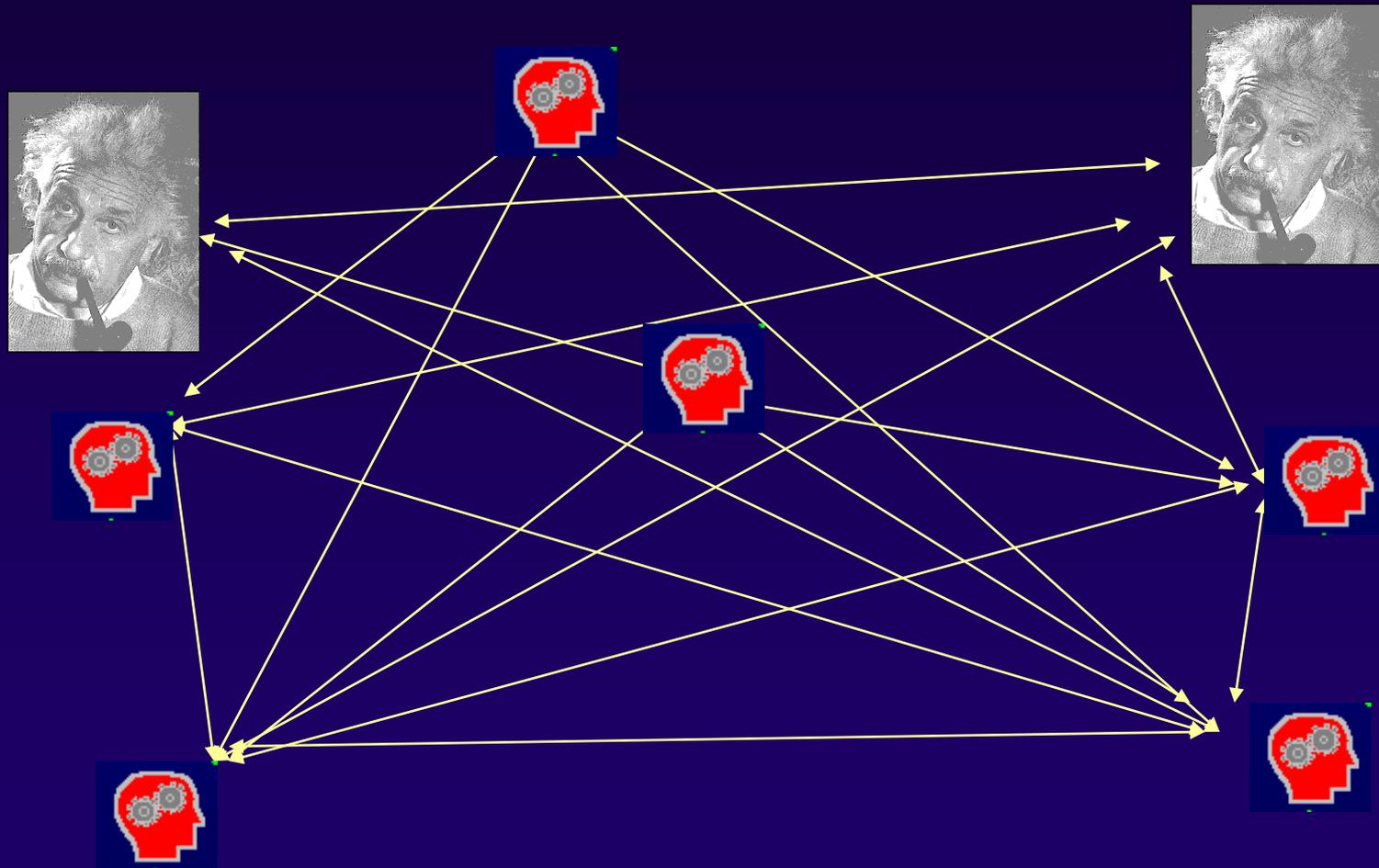**Students working very hard while the faculty listen (rest?).**

Faculty working very hard while the students listen (rest?).
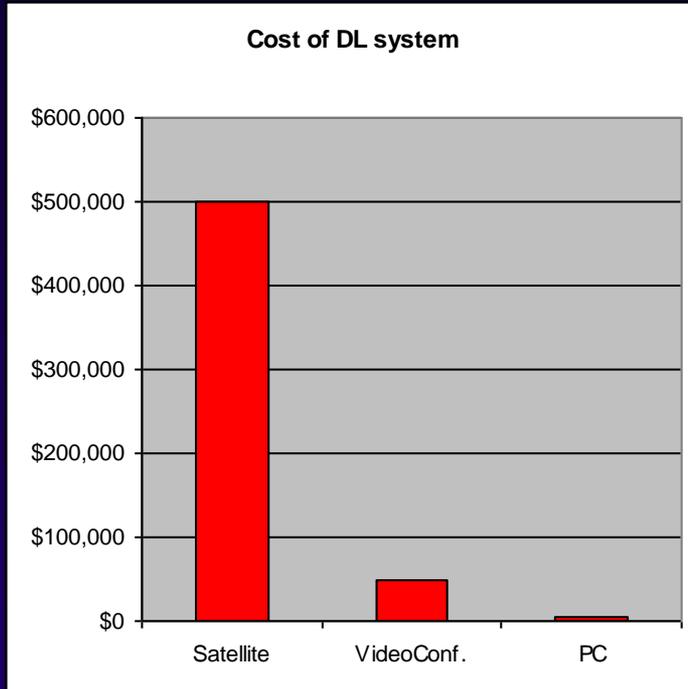
Usual On-line course organization

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

Distributed Collaborative On-line Model

Distance Learning Technologies

Cost of DL system

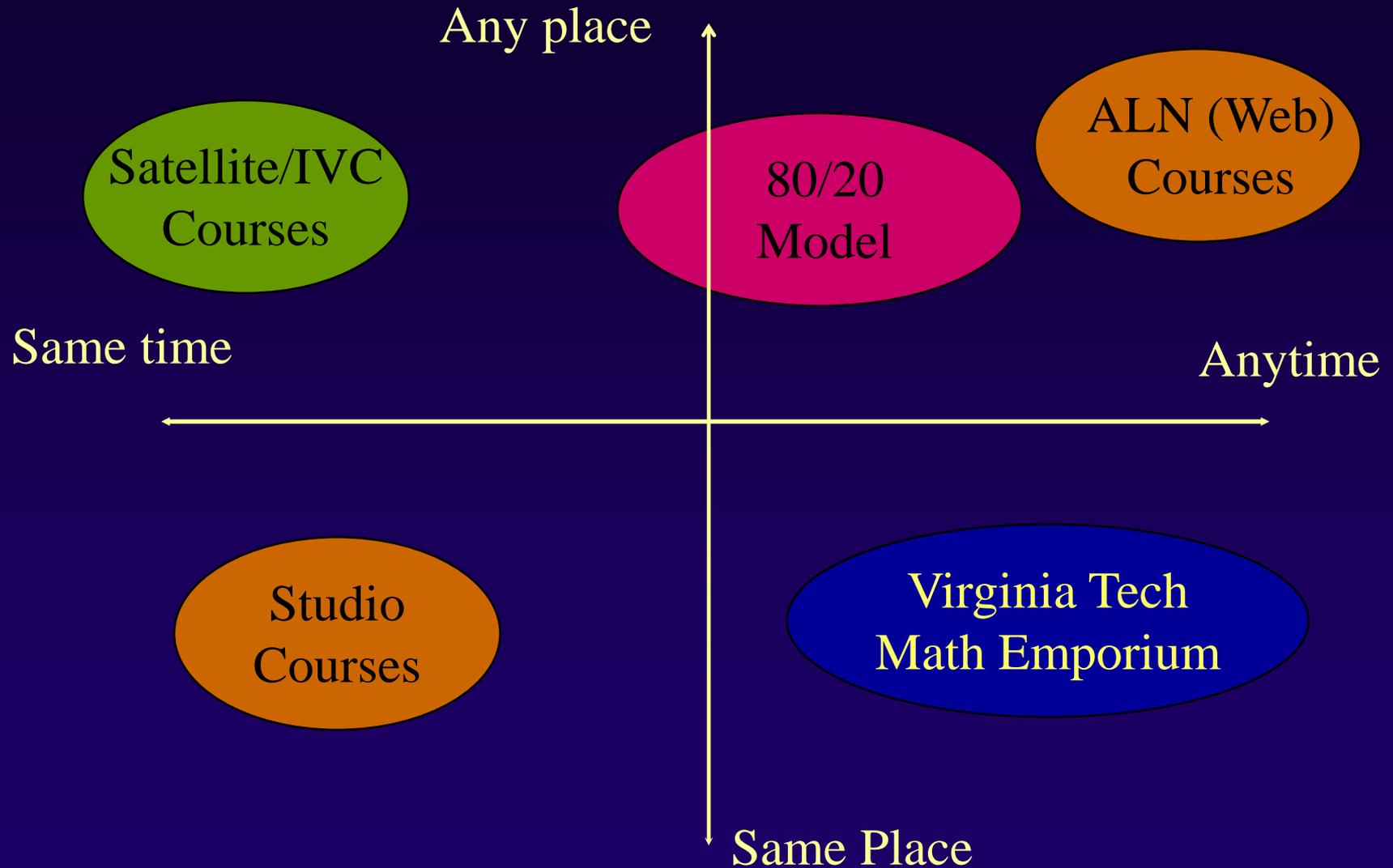|	
$600,000	
$500,000	Satellite
$400,000	
$300,000	
$200,000	
$100,000	VideoConf.
$0	PC

- Satellite Video ($500,000)

- ISDN Videoconferencing ($50,000)

- PC Collaborative (LearnLinc, Centra, Interwise, Placeware, etc) ($5,000)

- Web Based Asynchronous (ALN: Prometheus, WebCT, BlackBoard, eCollege, etc.) ($5,000)

Models of eLearning

- **The Satellite Model**
- **IVC: Interactive Video Conferencing**
- **ALN: Asynchronous Learning Network**
  - Especially popularized by the Sloan Foundation
- **Live eLearning on networked PC's**
  - Voice and video over ip – multicast
  - Often use voice and no video
- **Blended Models**
  - Live or ALN plus face-to-face
  - Live or ALN plus IVC

The Studio at a Distance

Any place

Same time

Anytime

Same Place

Satellite/IVC Courses

80/20 Model

ALN (Web) Courses

Studio Courses

Virginia Tech Math Emporium

The ALN model

- Advantages
  - Flexible: Anytime and anyplace
  - Cheap
  - Allows anonymity

- Disadvantages
  - best for highly motivated discretionary learners
  - Completion rate is often a problem
  - Larger upfront investment in time and resource
  - Chat is a poor substitute for live interaction
  - Does not allow for visual cues and interactions

The IVC Model

- Advantages
  - Allows visual and audio interactions
  - Widely available
  - Adapts to usual faculty approaches
  - "Made fresh daily"

- Disadvantages
  - Not anytime and limited anyplace
  - Poor quality video, awful graphics
  - Often leads to poor faculty student interactions
  - No access to polling, chat, threaded discussion….
  - Expensive

Live On Line Learning

- Advantages
  - Inexpensive PC based
  - Requires only 33kB reliable connection
  - Allows spontaneous live audio interactions
  - Allows live polling and discussions
  - Also accommodates all ALN functionality

- Disadvantages
  - Anyplace but only partially anytime
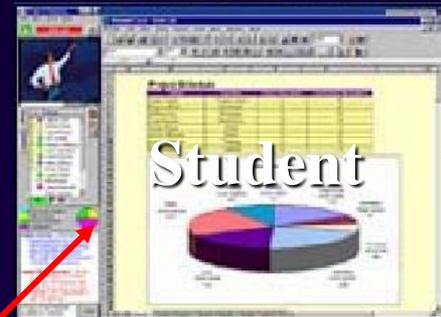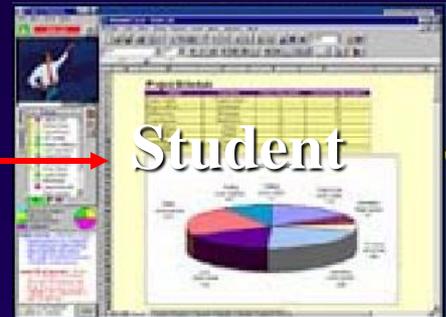 - Requires that student PC's have sound cards and microphones.

WebServer

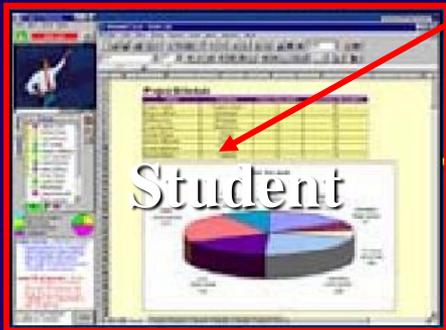**Student**

Instructor
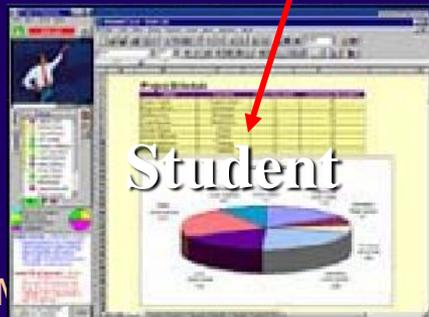
Student

The Internet
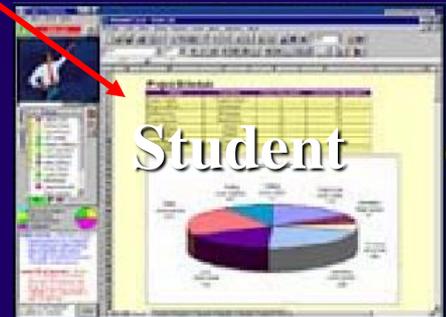# Voice & Data
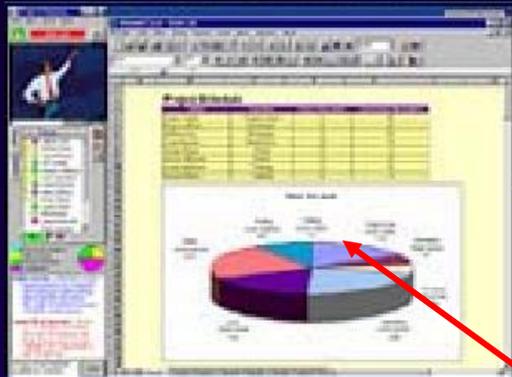
Student

Student

Student

Student

Coping with change

- Design for the future not the present
- Design based upon human learning and not technical limitations
  - Focus on the student experience
  - And also the faculty experience
- When forced to compromise by technology
  - Remember it is a compromise
  - Do not enshrine compromises
 - Watch how technology changes can eliminate need to compromise.

Components from which to select

- Live-online mini lectures & discussions (VOIP)
- Live polling
- Java applets for interactive simulations
- Microcomputer based data acquisition
- Web based multimedia
- Online texts
- Customized homework.
- Threaded ALN discussion
- Live Chat
- Virtual laboratories and team based case studies
- On-line surveys and tests.

Introduction to eBusiness
The hope, the hype the power, the pain

- Live Online Learning
- Fall 2000: 125 (50 on/75 off) campus students
  - IBM, Ford, GE, Lockheed Martin, Pratt and Whitney, Ford, Consolidated Edison, NY Power, J. P. Morgan, Carrier, Otis, etc.
- Extensive Website:
  - http://www.jackmwilson.com/eBusiness/Syllabus-Spring2001/
  - MBA, MSIT, MS
  - On-line studio style miniLectures, Discussion, Student presented cases, & asynchronous interaction (ALN)

(They can't smell my fear.)
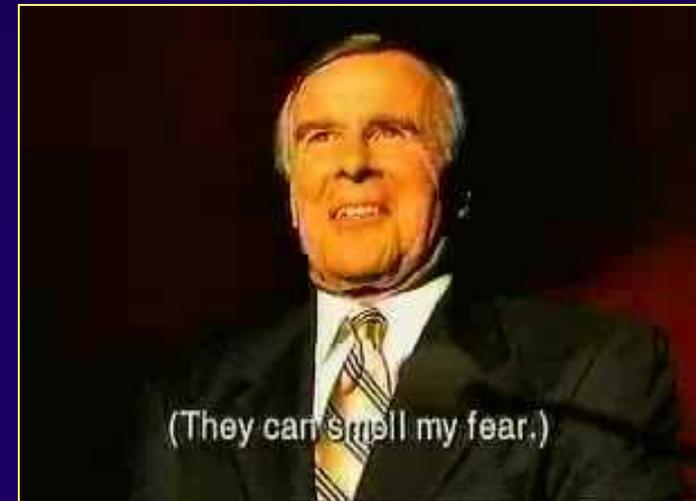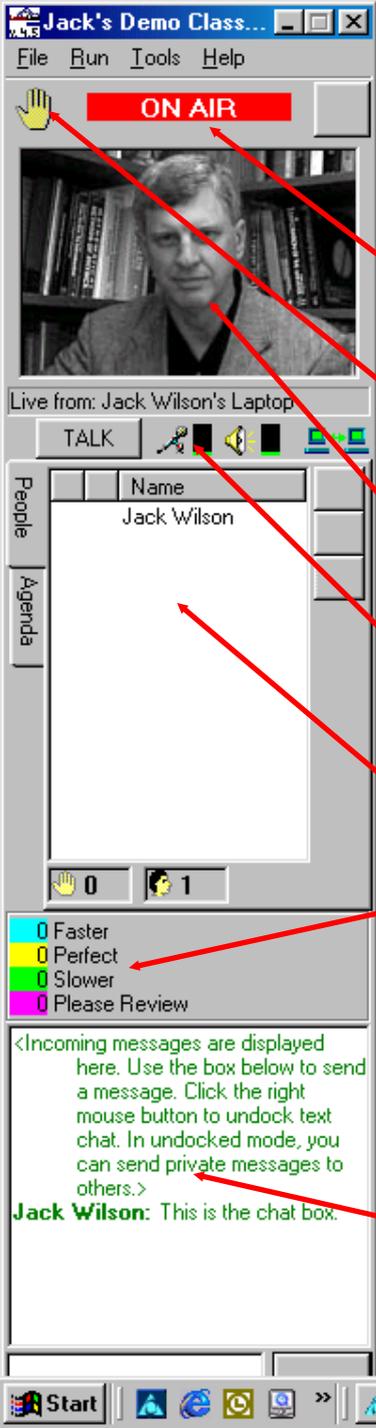
- On- Air indicator

- Raise your hand

- Picture or video of speaker

- Audio and Network controls

- Agenda or class roll

- Feedback section
  – (can be pace, agreement, T/F, Yes/No, etc.)

- Chat Window

- Survival Skills for Astrophysics
  - Graduate Students in Astrophysics
  - Video/Audio/ **Learn**Linc Web Data Conf.
  - Both ISDN and Internet connection
  - 7 am Eastern (6 Hong Kong)
  - Student Collaborative Presentations
  - One Semester length
- Two classrooms with live video wall of the other
- Blended Live Online and IVC

My Messages

- On-line Learning (as is learning) comes in many and diverse styles. Not monolithic.
- Campus based education will not be displaced by on-line learning.
- Some designs have proven to be more successful than others.
- Good on-line programs are driven by pedagogy and constrained (and enabled) by technology.
- Build on core competencies
- Focus on the Learner
- Keep it interactive.
- eLearning is certainly not over! It will be a truly "big thing."

- The Dinosaurs Die

- The Mammals Inherit the Earth

- The insects go on as if nothing happened

  – Are you a dinosaur, an insect, or a mammal?

Jack M. Wilson

http://www.UMassOnline.net

The End

www.JackMWilson.com/eLearning

What shapes my views?

- Service as:
  - 31 years as a professor,department chair, research center director, dean (4 flavors), and provost
  - RPI: J. Erik Jonsson '22 Distinguished Professor of Physics, Engineering, Information Technology, and Management.

- Founder, CEO, Chairman of LearnLinc
  - a successful eLearning Co
  - Now Mentergy Corporation (NASDAQ: MNTE)
  - Sold in February 2000.

What else shapes my views?

- Industry Consultant (IBM, AT&T, Lucent, Ford, GM...)
- Army TRADOC Advisory Committee
- Pew Center for Academic Transformation ($8.8 M)
- One of founders of the Nat. Learning Infrastructure Init.
- Chair, NY State Task Force on Distance Learning
- Wash. DC: 8 yrs on Science Education: HS. and Univ.
- National Acad. of Science/National Research Council
  - Committees on Information Tech., Physics Decadal Overview Committee, and National Digital Library Committee
- Lots of visits, speeches, writing, reading, and visitors

A personal journey

- Began career as a research physicist
- Research required high performance computing
- Why are students not learning about this?
- How can this help learning?
- Restructuring physics education.
- Computing Communication Cognition -> The Studio Classroom
- Restructuring Undergraduate Program
- How can the studio experience work at a distance?