

Future Vision & Research

Distance/Asynchronous Learning Tutorial
October 31, 2000

Lawrence A. Rowe
Berkeley Multimedia Research Center
University of California at Berkeley
<http://bmrc.berkeley.edu/~larry>

Outline

- Predictions are dangerous – most are false
 - Errors are can go either way – too optimistic or too pessimistic
- Future visions
 - Education
 - Distance learning
- What's on my mind right now?

My Beliefs in 1997

(updated in fall 1999)

- Intel machines will dominate desktop
 - Win95/WinNT work fine \Rightarrow good-bye UNIX except for servers
 - ...WRONG: Linux making significant inroads – certainly for servers and embedded systems, but what about desktops?
 - iMac will succeed (<10%)
- World Wide Web will be UI to everything
 - Netscape sets standard (>60% desktops) and Microsoft (<40%)
 - ... WRONG: IE>50% market (6/99)
 - JAVA has a ways to go before it can be deployed in production
 - ... Well, now it can be used for many apps if performance acceptable
- Internet standards will dominate
 - TCP/IP/RTP over everything
 - Long-haul Internet service will be ATM?
 - Multicast will be important -- and evolving

My Opinion

- The web is a new media
 - It is still rapidly evolving
 - Technologists invent, artists explore/create
- Content matters more than technology
 - People accept poor quality if they want the content
- Interactive TV will be the Internet
 - It will still be displayed on a TV and controlled by a wireless device
- Bandwidth will be relatively free in 5-10 years
 - Rapid decline in revenue finally hitting TELCO market
 - TV industry will be significantly impacted by transition to thousands of Internet webcasts
 - Researchers should focus on effective bandwidth use

Other Technical Issues

- What about PDA's?
 - Sure, but do they really simplify your life
- What about wireless?
 - Makes sense for mobility and when wireline too expensive or unavailable
 - Need more spectrum – push TV broadcasts onto cable
 - 75% of homes in US have cable/satellite and 100% homes passed*
 - <http://bmrc.berkeley.edu/~larry/futureTV00>*
- What about pen-based computers?
 - I want a pad to replace my spiral notebook, but the interface has to work as well as pen and paper

Education in the Future

- For-profit universities will have an impact
 - They will skim profitable businesses (e.g., professional education, vocational training)
 - They will displace some conventional colleges
 - They will satisfy some of the increasing demand for college-educated workers by industry
- User-centered learning will have an impact
 - Transition will be slow because it is expensive to produce and support

Education in the Future (cont.)

- Important trade-off between authoring cost, quality, and applicability
 - High quality requires high cost
 - High cost requires large market
- Universities will continue to exist for the foreseeable future
 - New technologies are well-suited to on-demand training and continuous learning, but not formative and graduate education
 - University education encompasses more than what is taught in the classroom

Distance Learning in the Future

- Multimedia conferencing will become as widespread as the telephone
 - Standards will evolve and eventually cameras and microphones will be everywhere except “private spaces”
 - Audio/video will be manipulated by everyone just as images, drawings, and text are manipulated today
- But it will not change the learning process
 - User-centered learning will change it

What's on my Mind?

- Larry's mantra
 - Multiple video streams and user-controlled selection of content
- Development of good collaboration tools is a systems problem
 - Need changes to all components of the system
 - Advantages possible by optimizing across boundaries
- We are fortunate to live in such exciting times!