


Emerging e-Learning:  
Innovative content, technologies and  
services for the next 5 years

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**What are “technologies”?**

- Early humans devised tools for hunting and fishing, fire for warmth and cooking, marks for directions signaling, and language for communication.
- These were the first “technologies” – techniques, materials, and devices that extend human abilities.
- Educational/Learning technologies extend our ability to teach and learn.



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**History of Learning Technologies**

- Seeing – markers on a path
- Speaking – oral techniques
- Drawing – early cave drawings
- Writing – clay tablets

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**Lecturing**

Lecturing (meaning to read to someone) developed before the printing press, as a way to more efficiently copy books by hand. The lecturer would read, and the scribes would write down what he said.



Later, lectures were used in universities to disseminate information to large groups.

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### Printed Books

Printed books allowed a much wider distribution of knowledge, from a few literate clergy to a much wider group of literate readers.



The introduction of textbooks for teaching was a result of mass education in the late 19<sup>th</sup> century.

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### Classroom Technologies

Schools did not always have classrooms organized as we know them today. The modern classroom with rows, raising of hands, class periods, detentions and recess, were first introduced in Prussia (Germany) in the 1770s.



With these reforms, the classroom became *industrialized*, similar to the organization of factories. Learning became *standardized* and *linear*.

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First version of e-learning is putting industrialized, linear teaching techniques online

#### **Complexity theory:**

“Chaos” – unorganized learning

“Control” – industrialized learning

“Complex Adaptive Systems” – personalized collaborative learning

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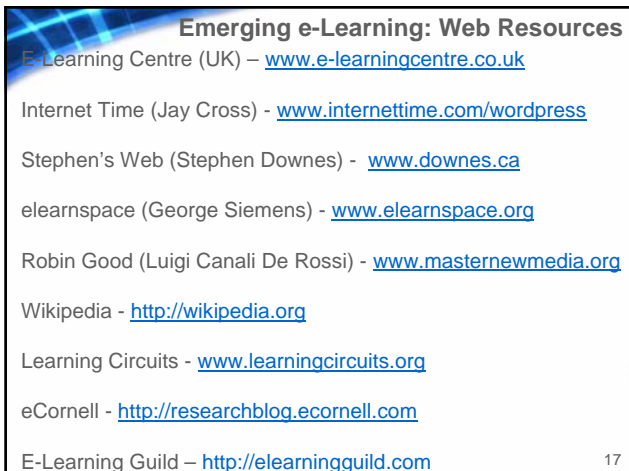
### Forecasting: An inexact science

- Read, read, read.
- Web tracking – blogs, newsletters, etc.
- Research reports
- Understand Knowledge Creation Cycle
- Conference presentations by academics and graduate students
- Understand Technology Innovation Cycle

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### Knowledge Creation Cycle: Learning Technologies Research



The screenshot shows the EdTLib website interface. At the top, it says 'EdTLib EDUCATION & INFORMATION TECHNOLOGY LIBRARY' and 'AACE'. Below that, there's a navigation menu with links like 'Home', 'About Us', 'Contact Us', 'Search', 'Home', 'About Us', 'Contact Us', 'Search'. The main content area has a search bar with 'Keywords:' and a 'Search' button. There are also links for 'Advanced Search' and 'Search/Info'. The page title is 'EdTLib Digital Library for Information Technology and Education'.

### Research Reports: Emerging e-Learning series

- Emerging e-learning content formats – 50+
- Emerging e-learning technologies – 60+ (available June 2006)
- Emerging e-learning services – 40+ (available October 2006)

[www.brandonhall.com](http://www.brandonhall.com)

### Emerging e-Learning Content Formats (50+)

Adapted Content - Advising & Counselling - Agent Based Content - Animations - Assessments - Audio - Blended Learning - Brain-based Learning - Business-based Learning - Collaborative Learning - Competency Based Learning - Conferences, Workshops and Webinars - Creative Activities - Cybercartography - Discussions Online - eBooks - eDrama and Role-Playing - ePortfolios - Exhibits - Experiential Learning - Games - Immersive Environments – Informal Learning - Inquiry Based Learning - Interactive Learning - Journals, Magazines & Newsletters - Laboratories - Language Learning – Learning Objects – Libraries Online – Live Presentations - Meta-cognitive Learning - Metaphorical Learning - Narrative Learning - Open Source Content - Podcasting - Polls & Surveys - Problem-based Learning - Project Based Learning - Remote Sensing - Resource Sites - Scenario-based Learning - Screencasting - Simulations – Situated Learning – Social Networking - Tours - Tutoring and Mentoring - Video Enhanced Learning - Visualization - Web Quests – Wiki Content - Workflow Learning

### Content for eLearning: general trends

- Move from a few “linear” online formats to a rich variety of “non-linear” teaching strategies
- Move from instructor led teaching to learner controlled learning – both formal and informal learning
- Move from receiving content to doing activities

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### Emerging e-Learning Technologies (60+)

Affective Computing - Agents - Animation Tools - Architectures - Artificial Intelligence - Assessment Tools - Audio Production - Authoring Tools - Avatars - Blogs - Browsers - Clickers - Collaboration Tools - Communication Systems - Competency Tracking - Content Management Systems - Data Mining - Decision Support Systems - Digital Ink, Paper and Whiteboards - Gaming Tools - Gesture and Facial Recognition Technologies - Graphics Tools - Haptics - Infrastructure - Knowledge Management Systems - Learning Management Systems and Virtual Learning Environments - Learning Objects and Repositories - Location-based Technologies - Mashups - Metadata, Ontologies and Taxonomies - Mobile Learning - Natural Language Processing - Peer to Peer - Performance Management Systems - Personal Learning Environments - Personalization - Portals - Presence Applications - Presentation Tools - Rapid e-Learning - RFID and Optical Tags - Robots - Search Technologies - Semantic Web - Simulation Tools - Social Networking Tools - Software Virtualization - Tagging - Television - Video Production - Virtual Reality - Visualization - Voice over Internet Protocols (VoIP) and Telephony - Wearable Computing - Web Conferencing - Web Feeds (RSS) - Web Office Software - Webcasting and Webinars - Wikis

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### Technologies for eLearning: general trends

- Move from client-server architectures to service oriented architectures
- Move from “push” technologies to “pull” technologies
- Move from e-learning to “complex multi-channel learning” with a different personalized mix for each learner

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### Emerging e-Learning Services (40+)

Accessibility Design - Analytics for learning - Archiving - Associations - Awards - Business Processes - Business Intelligence - Change Management - Collective Intelligence and Decision Support - Communities and Networks Development - Compliance with Regulations - Conferences - Consulting - Custom Content Development Services - Credentialing and Content Validation Services - Digital Rights Management - Education and Training (for eLearning industry) - Financial Supports - Graphic Design - Information Design and Flow Analysis - Instructional Design - Integration Services - Interactivity Design - Interface Design - Knowledge Markets - Learning Spaces Design - Learning Theory and Pedagogy for eLearning - Legal Services - Libraries - Marketing Services - Outsourcing, Offshoring, Nearshoring and Homesourcing - Project Management - Protection of Minors - Publishing and Distribution of Learning Materials - Quality Assurance - Requirements Analysis - Research Services Support - Security - Strategic Planning - Supply Chain Management (for eLearning) - Support Services - Surveillance and Privacy Tools - Translation Services - Tutoring - Web Site and Portal Development

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### Services for eLearning: general trends

- Driven by legislation for compliance to standards for accessibility, quality, privacy, and transparency (“scrutability”)
- Move from expert knowledge to mechanisms for sharing knowledge
- Globalization – “the world is flat”

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### Understanding the future through Technology Innovation Cycles

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### Technology Innovation Cycles

- Pioneering efforts to solve a problem
- Breakthrough developments
- Scepticism and new efforts by established companies
- Proliferation of many varieties of new technology by many small companies
- Development of a “dominant design”
- Consolidations, mergers, and closure of many small new companies
- Disappearance of many traditional companies hurt by new technology
- Incremental changes by the winners
- Beginning of a new cycle

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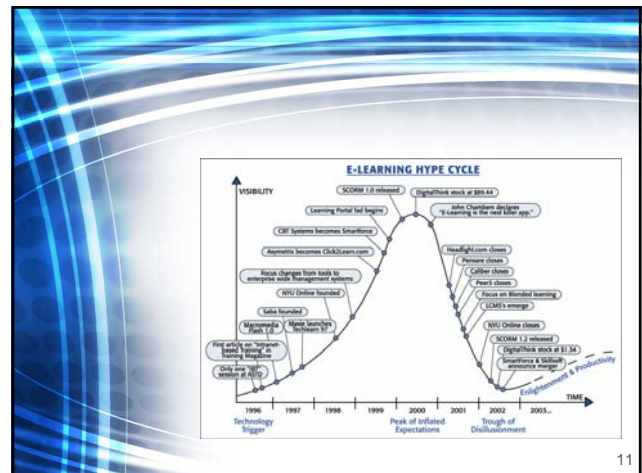
### Previous reactions to change

Western Union (1876) – “This telephone has too many shortcomings to be seriously considered as a means of communication.”

Thomas Watson, Chairman, IBM (1943) – “I think there is a world market for maybe five computers.”

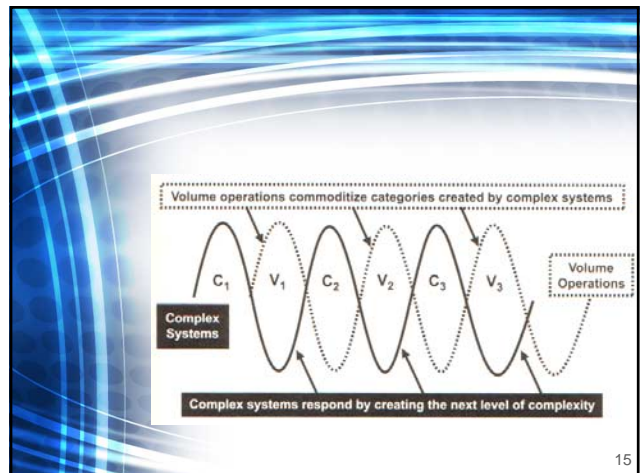
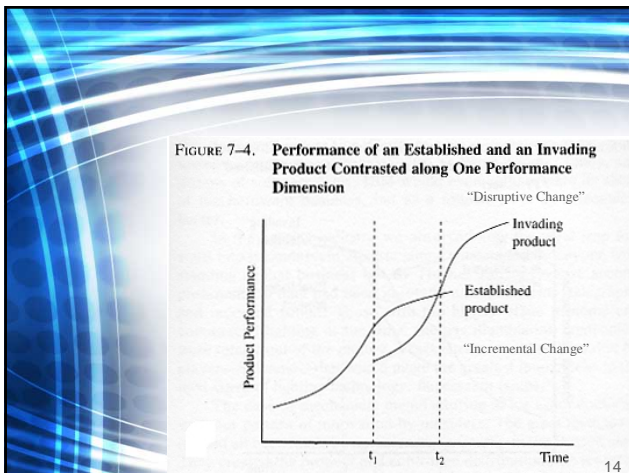
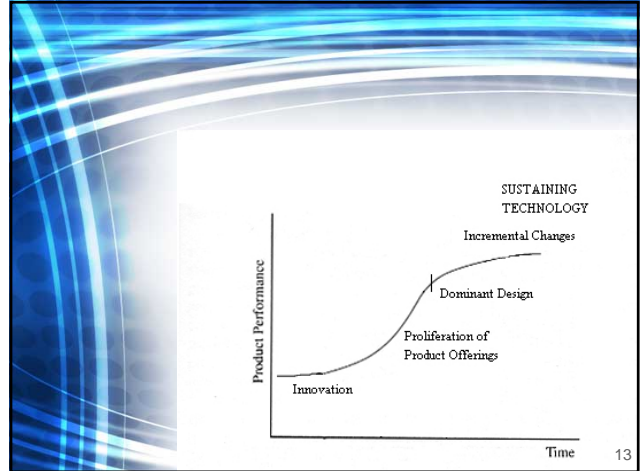
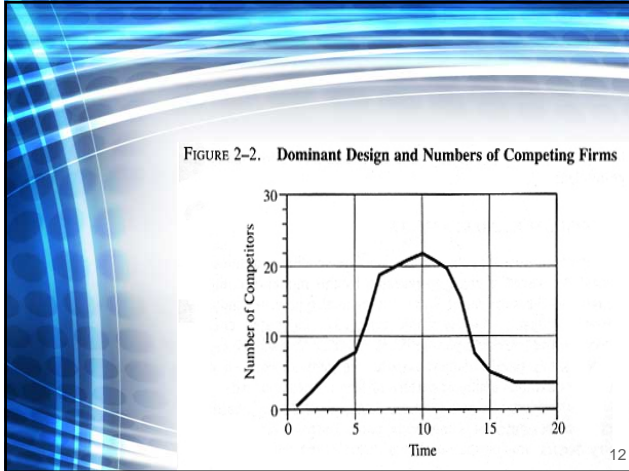
AT&T (1970) – “No commercial use for computer networking” – gave computer networking back to US Defense Department after a 6 month trial

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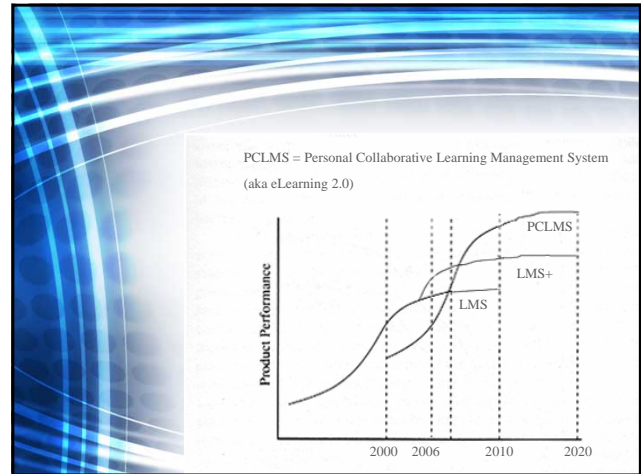
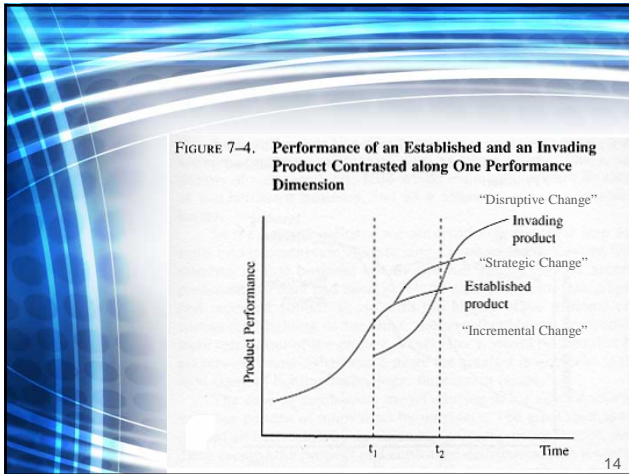
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- In the next five years, we will:**
- Redistribute knowledge and opportunity
  - Start to manage the complexity of teaching and assessment
  - Let learners manage and document their own learning
  - Realign the aims of education – e.g. start to solve environmental crisis
  - Jump to the next curve – Personal, Collaborative, Multi-channel Learning
  - Need a different "mashup" of online delivery and tracking systems
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**Your turn:  
Questions and Comments**

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