Beyond the Web: the Virtual Worlds

(The next step in the Internet revolution)
- The Web as an information system was only the first phase in the development of the new “information age”
- Other phases: communication & interaction
- The Virtual Worlds: the ultimate step.

Application of Virtual Worlds in Education
- Presentation (how to apply virtual worlds to education)
- Experiences (what has been done)
- Implication (technological, design & pedagogical implications)
- Perspectives (the future)
Virtual worlds: the next step in the Internet Revolution

- **First age**: Internet as an Information Space.
  - The Web as a document distribution system was the “new information age” killer application.

- **Now**: Internet as a Global Communication Space.
  - Many communication modes: one/many to one/many, synchronous/asynchronous, push/pull, etc.

- **Emerging**: Internet as an Interaction Space.
  - Transaction, services, e-commerce.

- **Tomorrow**: Internet as a set of Virtual World Worlds.
  - Virtual communities, virtual commerce centres, virtual universities, etc.
Information Space

(A Web of Information)
Communication Space

(many modes of communication)
- Teleconferencing
- Videoconferencing
- Conference Calls

- Electronic/Voice Mail
- Computer Conferencing
- Executive Information
  - System Management
  - Support Systems

- Electronic Meeting Rooms
- Decision Conferences

- Information Centers
- Team Rooms

Any Time
Any Place

Interaction Space

- Shopping area
- Virtual communities of interest
- Information services
- Relationship management
- Social collaboration
- Filtering
- Recommendation services
- Product profiles
- People profiles
- Shopping agents
- Contact & mediation services
- Customised news
- Support
- Directories

(social & function used to structure the space)
Virtual Worlds

Virtual World

Virtual Shopping Centre

Virtual University

Virtual Corporation

Virtual Club

(High level cognitive blocks structure Interaction)
The Development Phases of the “new Information Age”

First Phase: Information
- surf information space

Second Phase: Communication
- exchange information

Third Phase: Interaction
- have activities

Last Phase?
- live as netizens

Virtual Worlds Space
- Virtual Organisation
- Virtual Corporation
- Virtual marketplace
- Virtual business centre
- Virtual shopping centre
- Virtual University
- Virtual Leisure Centre
- Virtual clubs

Interaction Space
- groupwork
- e-shops
- shopping agents
- mediated services
- contact services
- virtual classroom
- multi-user games

Virtual Communities

Communication Space
- bulletin board
- videoconference
- forum
- chat
- information push
- email
- web++

Application focus

Information Space
- search engines

Understanding the impact of the new information & technology infrastructure

from Prof. Albert Angehrn, INSEAD
Implication in the Education Domain

This gene can also be transposed to the education world

"From the Electronic Textbook, to the Virtual University"

The different phases of the transition.
Building for Education

- **First age:** Education in the Information Space.
  - The electronic book, the multimedia stand-alone case, the electronic library.

- **Now:** Education in the Global Communication Space.
  - Groupware enhanced cases, distance learning.

- **Emerging:** Education in an Interaction Space.
  - the professors as guides, communities of students.

- **Tomorrow:** Education in a Virtual World Worlds.
  - Virtual laboratory, in situation learning.
Education in the Information Space

- **The electronic book**: the multimedia Encyclopedia.
  - Large amount of knowledge available in a richer form (sound, videos, etc.), and easily browsable (search engines).

- **The Hypermedia Case**: enhanced structuration, rich content.
  - Well structured pedagogical materials.

- **The Global Electronic library**: the Internet.
  - Direct access to a huge amount of up-to-date sources of information. (Laboratories, companies information, etc.).
The Electronic Textbook

(The hypermedia case)
Electronic Business Case: Already beyond the paper case.
Education in the Communication Space

- **distance learning**: remove the time/geographical barriers.
  - remote distribution of pedagogical materials, teleconferencing, etc.

- **people communication**: improve student / professor communication.
  - email, bulletin boards, etc.

- **The Electronic library**: Education in an Interaction Space.
  - Communities of students, the professors as guides.
The virtual classroom

- Course materials
- Surf
- Distribute pedagogical material
- Bulletin board
- Mailing lists
- Teleconference
- Chatroom
- Interact with the students

(rich level of communication)
Support the different facets communication
CIIA 1997 Programme - Sessions

Sunday, June 15th

FACULTY: Prof. Albert A. ANGEHRN & JULIE HERBERT
TIME: 17:00 - 19:30

TITLE: Welcome & Introduction of CIIA Knowledge & Learning Platform
The participants will be introduced to the physical (INSEAD) and to the "virtual" (CIIA) world. Videos of past events and self-introduction will be presented, digitised and on the Platform. Participants will have first "hands-on" experiences with Notes and the Web.

Monday, June 16th, MORNING SESSION

FACULTY: Prof. Albert A. ANGEHRN
TIME: 8:30 - 12:30

TITLE: Competing in the Information Age: An Overview
This session will provide an overview of all the subject discussed during the program, concrete examples of the impact of technologies such as Groupware and the Internet on "internal performance" and "external strategy" perspective. A particular focus will be given to stimulating innovation/funding/redesign in different sectors, and of different size.

The CIIA Knowledge Base

Repository of information useful for the course.

Index
- Electronic Commerce
- Electronic Commerce Examples
- Electronic Commerce Technologies
- CALIT Knowledge Base
  The Encyclopaedia
  Topics include: Education, Economy & Business, Health Care, Information Technologies, etc.

Electronic Commerce General

Starting Points
- Business & Entrepreneurship
- Commerce on the Net
- Internet Basics
- Discover Internet (a Business Guide) And find here a more advanced resources
  E-Commerce
  from: A Business researcher's interests (List)
CIIA: The Faculty & the staff

The Faculty

Pr. Albert A. ANGEHRN (Switzerland)
Programme Director
Associate Professor of Information Systems
PhD, Swiss Federal Institute of Technology

Professor Angehrn conducts research on computer-aided decision-making Information Technologies such as Multimedia and Computer-support international awards. He is on the Editorial Board of the Journal of Inf Systems and a member of the Institute of Management Science and th Collaborative Work.

CIIA: The Participants

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<th>Photo</th>
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<td>General Manager</td>
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<td>Senior Project Manager Info Technology</td>
<td>Nyman &amp; Schools</td>
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Education in the Interaction Space

- **virtual communities:** circulation of information among people sharing common interest.
  - communities of students (share experience), communities focused on specific domains (gathering researchers, students, professors, professionnals).

- **redefinition of roles:** new pedagogical models.
  - professor as a guide, students as explorators.

- **Knowledge dissemination:** Knowledge exchange networks.
  - The network becomes the main support of knowledge dissemination.
Interaction Space

Universities

Companies

(Knowledge Exchange Networks)
Education in Virtual Worlds

- **virtual laboratories**: microworlds & active knowledge
  - knowledge is now active (the “netizens” interact with objects that embed knowledge).

- **redefinition of roles**: new pedagogical models.
  - in situation learning.
  - Application of this model to management education: The Business Navigator (Prof. Albert Angehrn, INSEAD).

- **apparition of artificial guides**: as a complement the professor.
  - Knowbots may provide sophisticated guidance.
  - Technologies emerging: autonomous agents, CBR, “widzards” etc.

(microworlds)
The Virtual University
Redesigning Corporate Training, Management Development & Communication Spaces
“The adoption of the Vision”

- **Factors of adoption of Virtual Worlds**
  - technological factors (performance, complexity, etc.)
  - cultural & sociological factors (perception)
  - economical factors (creation & exploitation of worlds)

- **Case of Virtual Worlds in Education**
  - complexity (making the knowledge active, communicating social information, etc.).
  - reinventing the model of education, (guidance, symbols, etc.)
  - the value chain of education (school, universities, training companies)
Key Adoption Factors

• Performance (is the technology usable?)

• Cost of set-up and running (designing and maintaining pedagogical microworld, effort needed to run microworld sessions, etc.)

• Value really delivered (is 3D VW just a fancy interface?, is VW adapted to the delivery of all categories of knowledge? )

• Competitive solution. (comparison with traditional education methods, and with other electronic approach such as the web, teleconferencing, etc.)

• Resistance to change from the professors, the students, the governments, the parents&companies. What are the cultural barriers (less “litterature”-like approach), what are the incentive to switch to the new model ?
CALT: the Centre for Advanced Learning Technologies


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