C E L T I C system proposal

Collaborative Electronic Language
Translation for Information Control

CEREM / UFP
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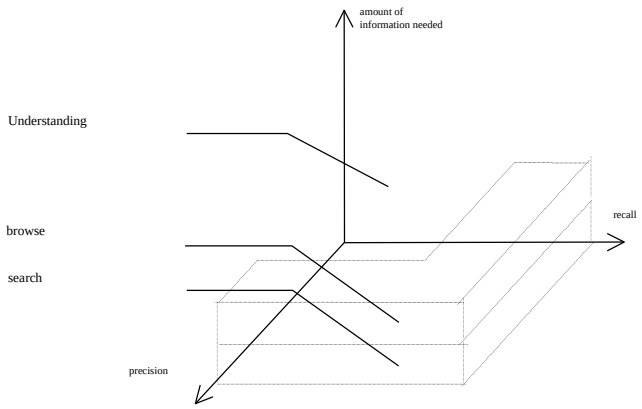
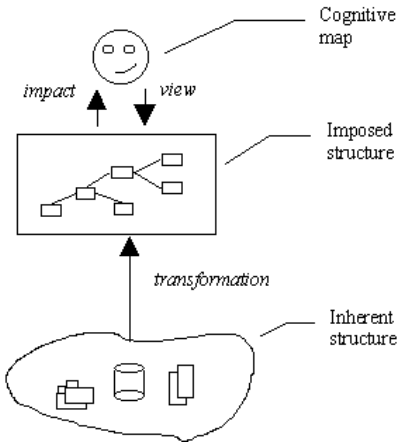
Search, browse and reading activities



Find the way into data

• Furnas presents *map building* as one of the navigational subtasks and describes it as constructing a representation with spatial structure to aid multiple route following and finding tasks (Jul et al., 1997)
• Apperley, Carl, Jul, Leventhal and Spence proposed a three level structure to the navigational design where the users cognitive map is based on the user's previous knowledge, experience and their views of the imposed structure



Shared visualisation and virtual environments for co-operative learning

The problem

• supporting the sharing of information between users

• supporting the learning process across distributed groups within a given organisation

• providing distribute access to knowledge from different types of machine

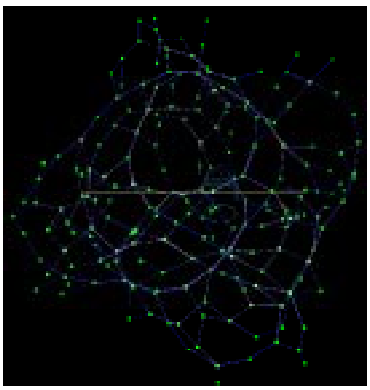
Areas of interest

- main areas of interest:
  - Collaborative Virtual Environments (C.V.E.),
  - Information Visualisation (I.V.), and
  - Educational Applications
    (using the above technologies)

Approach to the work

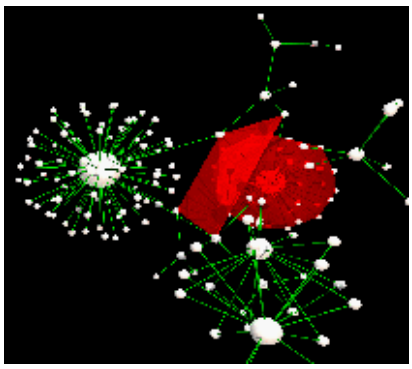
- Approach
  - representation of information and knowledge in 3D spaces (for potential use in a CVE system), which needs novel forms of doing
  - creation, sharing, and modification of information and knowledge visual representation on 3D worlds
  - productivity issues related to the systems use in an educational setting

Information Visualisation examples



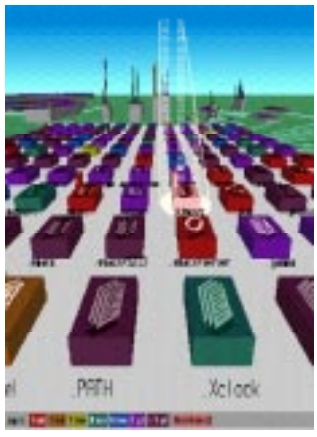
Example of a hyperstructure
Dave Snowdon, Nottimgham Univ.

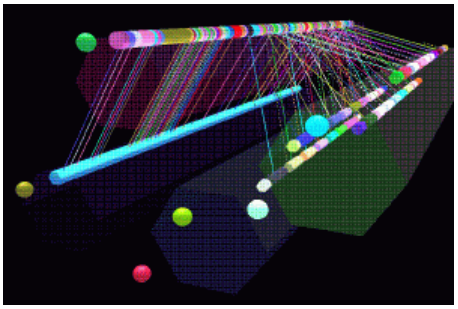
Narcissus hyperstructure
Birmingham University



Information Visualisation examples

FSN (fusion) file system navigator
Landscape metaphor, Silicon Graphics

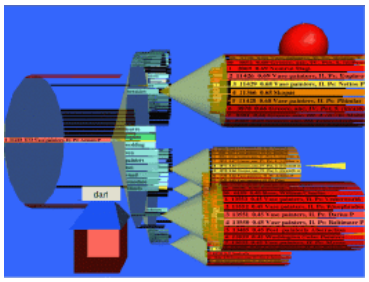


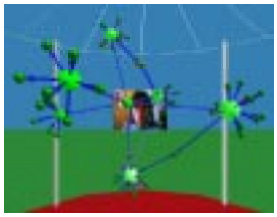


VisuaLinda (visualize the execution of parallel processes)
Koike Labs, University of Electro-communications, Tokyo

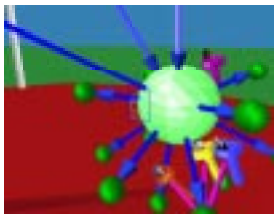
Information Visualisation examples

Internet Foyer (collaborative visualisations)
Brown, Benford, and Snowdon, Univ. of Nottingham





Overview of the Internet Foyer



A group of users around a web page

LyberWorld (navigation cones visualisation)
Matthias Hemmje, GMD, Germany

The question to study and research application

- concern: *"How far can 3D visual representations computer mediated be useful in helping the understanding and communication between individuals?"*

- research application: use of 3D facilities to improve information visualisation providing a useful way of sharing workable knowledge representations to be shared as collective cognitive maps constructs, based on the individuals own visualisation filters (for use in education settings).

Main research problems

- dealing with the problems put by the n-dimensionally; (which restrictions must apply to a 3D representation);
- model a workable set of parameters to represent useful knowledge representations, for an information visualisation, using 3D facilities;
- develop an usable set of 3D symbols to serve as demonstrators for augmented/adapted 3D concept maps
- use an enabling set of technologies to implement the 3D space for (i) individual control and (ii) for sharing by several users.

Celtic system proposal

C *Collaborative*
Provide a workplace to develop a sharable context view of an information space

E *Electronic*
Design to take advantage of the potential integration with available (digital) information resources

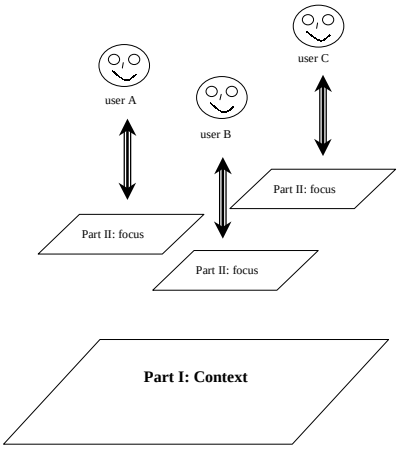
L *Language*

T *Translation for*
Offer means to translate into visual form the otherwise written material to support the context description of the information space

I *Information*

C *Control*
Provides a two step tool for dealing with information retrieval in form of search and browse proposals

Two part information visualisation design



Different for each user

The part of the information space that is under attention

Shared among users

The global picture of the available information space

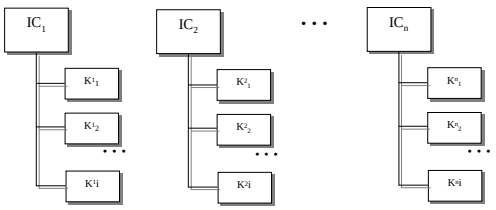
Definitions - information cluster & keywords relationship

Information Space

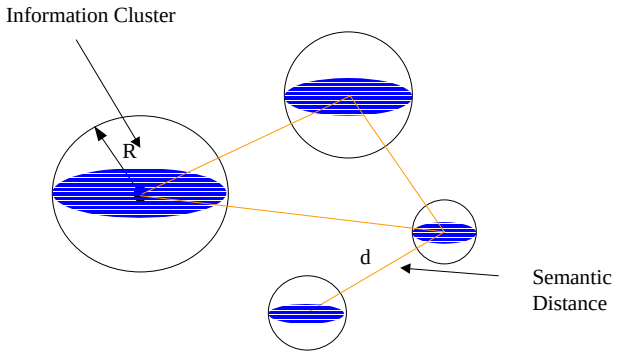
Set of *information clusters (IC)*, $n \geq 0$

Information Cluster

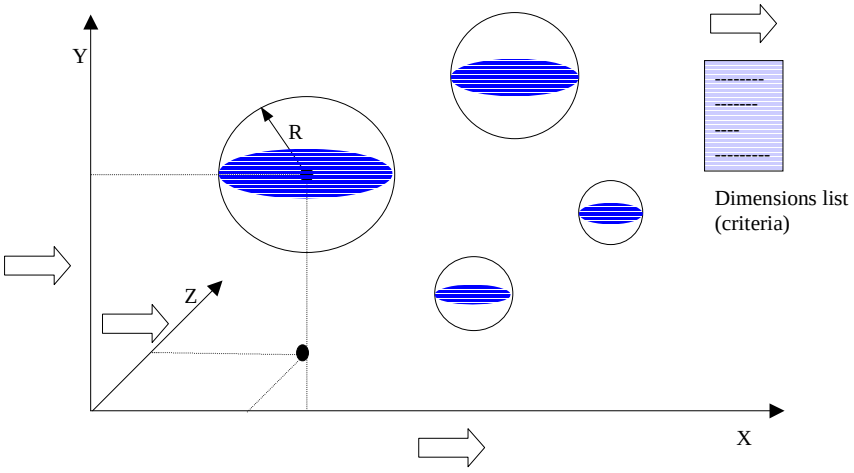
Set of *keywords (K)*, $i \geq 0$



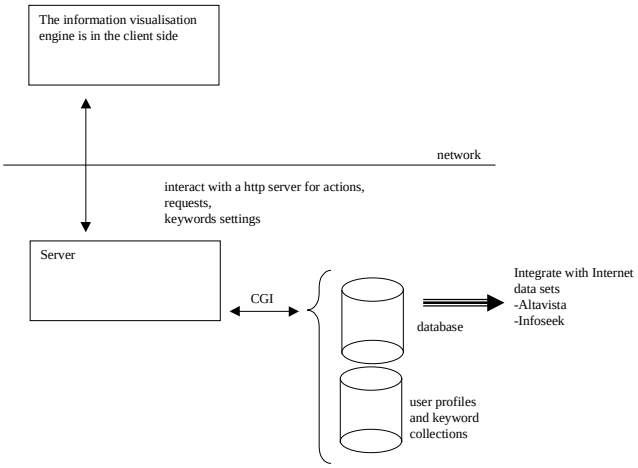
Part I: the creation and visualisation of interactive information spaces



Part II: creation and visualisation of interactive information spaces



The system architecture

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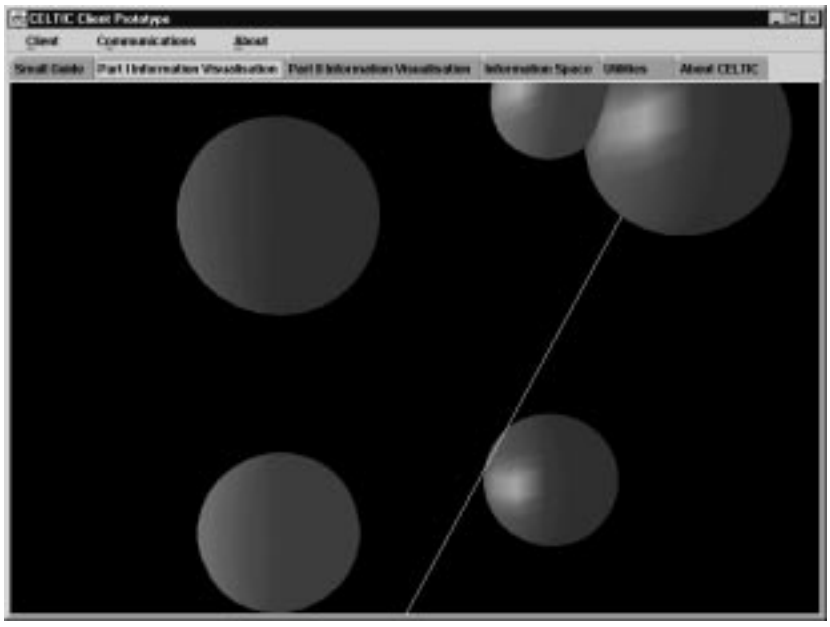
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Communications
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About CELTIC

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