



Diligent

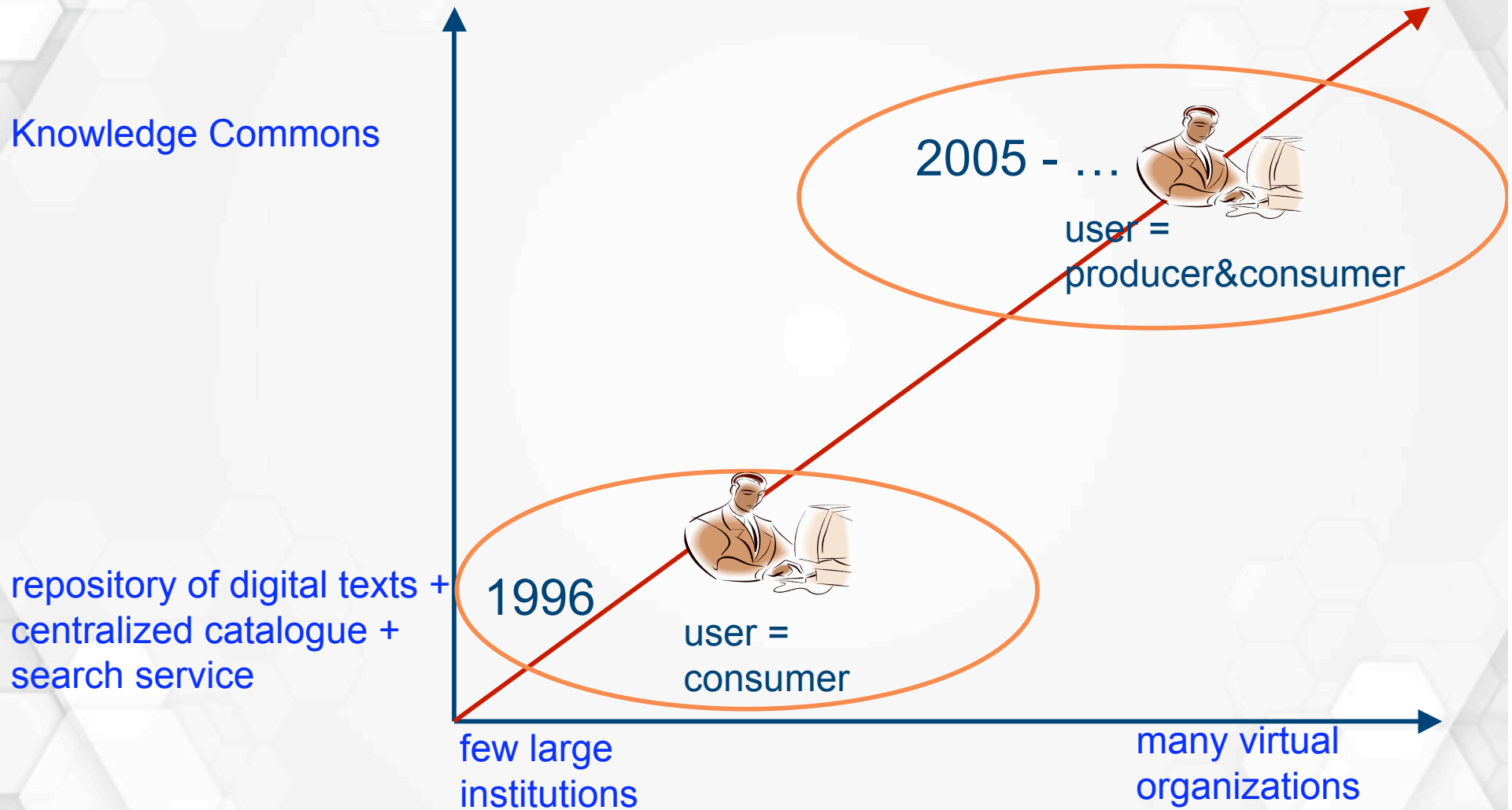
A **D**igital **L**ibrary **I**nfrastructure
on **G**rid **E**Nabled **T**echnology

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ISTI-CNR



Information Society
Technologies

Motivations - the DLs evolution



New information objects

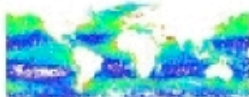
Live documents

- a fixed text
- a pollution map
- a table summarizing data from millions of observed satellite measures
- a graph reporting an analytical trend of certain information extracted from a great amount of observed data

**International Report on
Mediterranean Sea Chlorophyll Distribution during year 2003**

1. Scientific and Societal Concerns
Any scheme to monitor the ocean biota and their environment must strive to address the major scientific and societal concerns of the day pertaining to marine life. This section summarises some major concerns that emerged during discussions at the meeting. Many other concerns could have been included, but space precludes a complete listing of concerns.

1.1. Biodiversity and Conservation
Marine biodiversity is not easy to assess and is generally poorly known. There are many complicating factors, including a three-dimensional, fluid, mobile environment, its vastness, and its challenging depths. Away from shore, primary producers and primary grazers are usually small, drifting forms that undergo spatial variability and seasonal changes. The larger invertebrate grazers have a range of life history stages, often with planktonic and benthic phases. Many large animals are migratory. Ocean habitats can be linked by the dispersal of planktonic larvae, and in this way, the systems can be interconnected even at a distance.

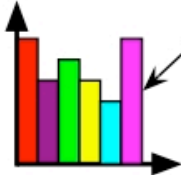


Jan - Apr 2003

Finally, the higher-order diversity of life is much greater in the oceans than in terrestrial systems—there are 13 unique phyla in the oceans and only one on land. Marine biodiversity is essentially the evolutionary history of life. In general, long-term environmental stability seems to increase biodiversity and, conversely, global climate change can be expected to decrease it.

	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y1	12	13	15	26	11	34	45	45	54
Y2	32	12	46	67	21	22	44	12	44
Y3	23	33	56	77	32	44	12	55	33
Y4	44	34	12	55	34	45	12	22	44

Measures of yy



Values of xxx

Automatically updated with the most recent data

Requirements of “new DLs”

- The creation and handling of these documents require
 - ◆ Access to many different, large, heterogeneous information sources
 - ◆ Use of specialized services
 - ◆ High computing power

Requirements for “new DLs” [cont]

- Small virtual dynamic organizations usually do not have the instruments for satisfying these requirements
- Controlled resources sharing is the only possible solution
 - ◆ information sources
 - ◆ services
 - ◆ computers and storage
 - ◆ (technical staff)

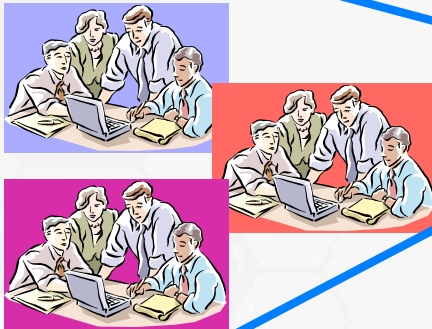
Which technology?

- The Grid technology
 - ◆ High computing and storage capabilities for managing and processing a wide variety of information objects
 - ◆ Controlled sharing of resources

DILIGENT objective

Create a test-bed Digital Library Infrastructure on Grid-Enabled Technology that allows members of dynamic virtual organizations to create on-demand transient virtual digital libraries based on shared computational, storage, multimedia, multi-type content and application resources

Consumers



DILIGENT DL infrastructure

Service A

Service B

Service C

DLCreation
service

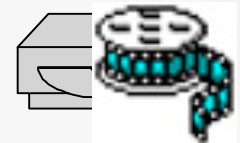
Service D

Service E

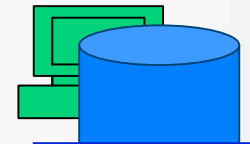
Producers



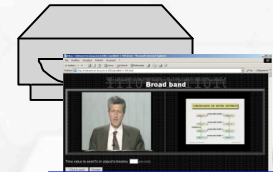
3D processing



simulation

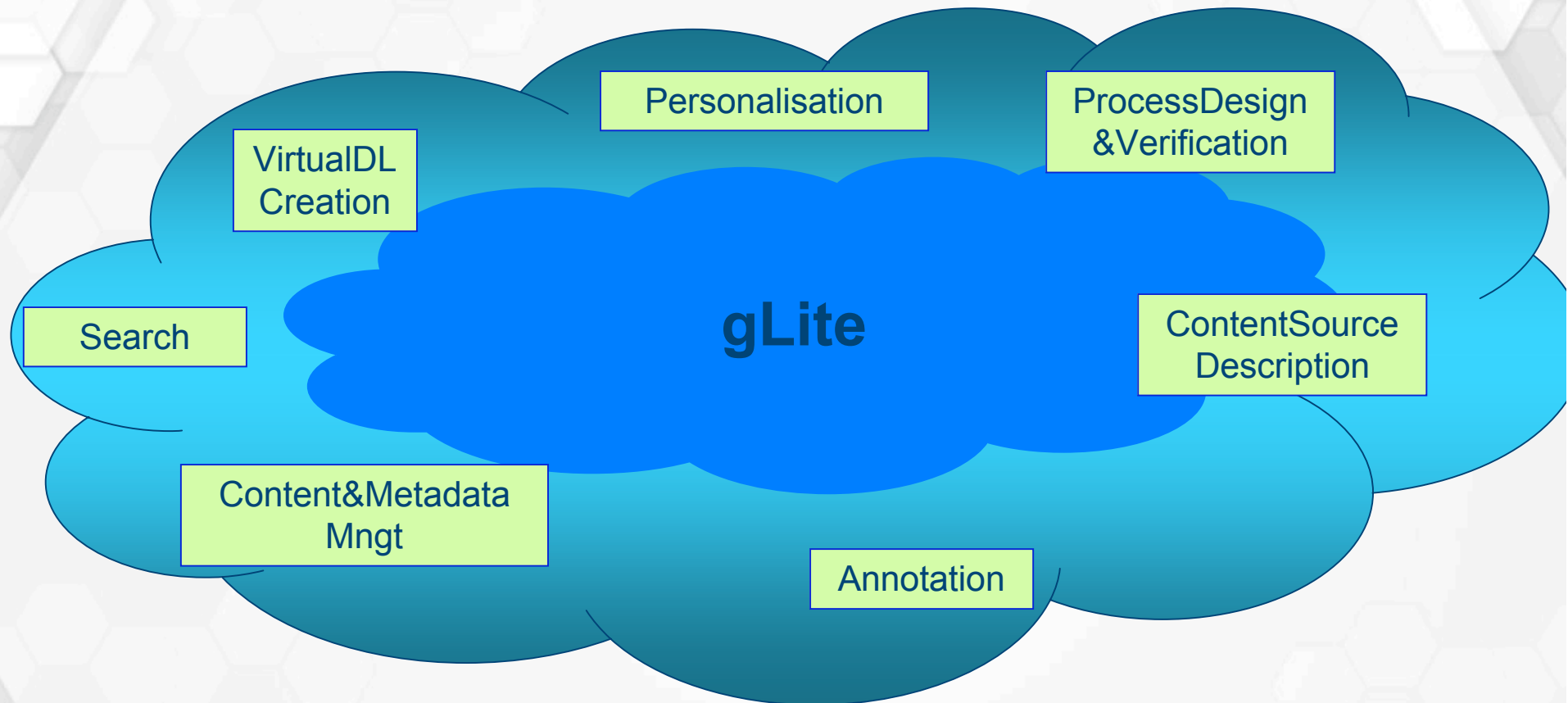


Feature
extraction



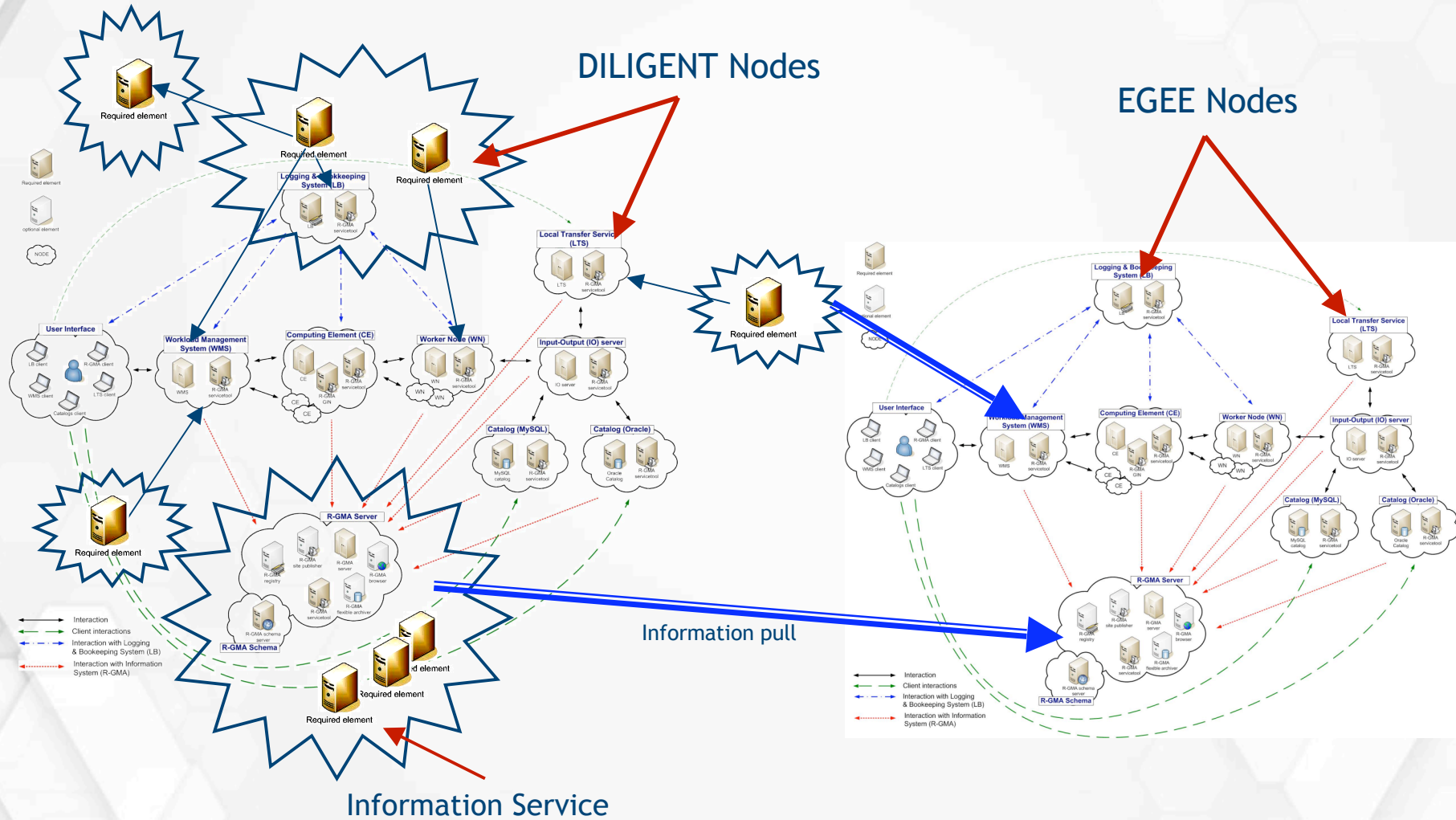
Speech
recognition

Technical solution



- The DILIGENT project will build-up on gLite and it will develop a set of services for supporting: i) the creation and maintenance of DLs; ii) the co-ordinated sharing of specific DL resources; and iii) the specific DL functionality

DILIGENT infrastructure



Concluding remarks

- Moving from DLs to KCs requires a huge technological effort
- There many technologies and solutions developed in other areas that can be used and integrated
- Are we ready to do it?