Towards a federated European virtual university

The Information Society will change working and living conditions quite substantially, increasing the demand for higher flexibility and mobility. The aim of the CUBER project is to build an adaptive high-precision information system for Information technology (IT) courses of European universities, broadening the access to learning resources and services for all. Special emphasis will be placed on distance learning courses and other methods of “just-in-time” and “just-in-place” learning.

The CUBER system will use standardised descriptions of courses based on a common metadata standard. However, it will not standardise the content and presentation of the courses that are distributed across a multitude of European universities and taught in a host of languages. In this way, CUBER will be able to preserve the identity of each and every university’s teaching and tutoring system, style of delivery and business model, but still provide a unified single-system view of the rich variety of course offerings.

Providing standardised information on higher education courses

CUBER will integrate information on the university course offers through a “broker middleware”, which will comprise three main technical components:

- An authoring interface that supports course providers in entering and maintaining their course metadata through provision of descriptors and checks for plausibility and completeness;
- A knowledge base of standardised course descriptions, learner profiles, and commonly used search patterns;
- A user-centred customisable search engine.

The knowledge base will be the central storage and management tool for all data, knowledge and information in the CUBER system such as course descriptions, thesauri and controlled vocabularies to generate the descriptions, user profiles and search strategies. It has to guarantee secure storage and ensure privacy of user data. It has to be able to handle large numbers of course descriptions and parallel searches. Finally, the storage and management system has to be adaptable to changes in the metadata scheme due to new developments. The metadata authoring interface and the search engine will be the tools to conveniently access the knowledge base, the former for course providers, the latter for users’ searching courses.
Matching vocational needs and learning patterns to courses

The broker will offer individualised and demand-oriented guidance in the search for courses and course packages according to the learners’ goals, prior knowledge, and restrictions in time and resources. Its interaction style will be based on the analysis of common course selections, learner profiles and search patterns described in behaviour models. These models will be used to provide recommendations and guidance for users with similar backgrounds and interests.

The project will include a study on the usability of the European Credit Transfer System (ECTS) to make courses from different universities exchangeable. This would allow students to build their own curriculum combining courses of various European universities. The CUBER system will support this combination of courses to coherent packages.

Increasing transparency in the education market

CUBER will serve European citizens and industries through:

- the easy choice among IT course modules;
- provision of a basis to compare and combine courses throughout Europe;
- custom curriculum building and career development through lifelong learning;
- synergy, competition and specialisation of education providers.

The project will achieve this by involving all actors with a stake in ICT-based higher education and lifelong learning, such as universities, students interested in distance learning programmes, industries looking for flexible education and training schemes, and citizens interested in continued education.

The CUBER system will open access to educational services across networks of universities and other education providers and support the retrieval of knowledge resources; in this way it will broaden the opportunities for citizens in virtual learning environments to achieve greater mobility through lifelong learning in a multinational context.

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Economic Sector: Education and Training
Action Line: The Flexible University
Full Title: Personalised Curriculum Builder in the Federated Virtual University of the Europe of Regions
Project Type: Education and Training Research
Start Date: 01/04/2000
End Date: 30/09/2002
Project Objectives:
To develop a broker service that provides access to the vast collection of courses from European distance universities and helps the citizens to find courses that match their vocational demands and individual learning conditions
Target Audience:
Individual citizens, companies searching for continuing education and vocational training, universities and other training and education providers
Keywords: Course broker, non-text based search engine, virtual university portal, educational marketplace
Technology:
Internet, database technology, information retrieval, metadata standards (LOM = Learning Object Metadata), user models

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