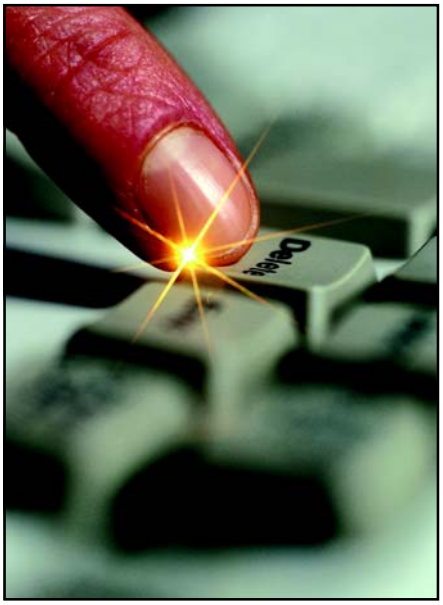
ELENA

ELENA - Creating a Smart Space for Learning

Overall ELENA aims to demonstrate the feasibility of smart learning spaces (defined as educational service mediators) which allow the consumption of heterogeneous learning services via assessment tools, learning management systems, educational (meta) repositories and live delivery systems, such as video conferencing systems.



Building interfaces for learning-related information systems

The central design element of the ELENA smart learning space is a dynamic learner profile, which includes a learning history, learner specific information and learning goals. The ELENA smart learning space directly interfaces with learning-related information systems. Smart learning spaces rely on an infrastructure of heterogeneous learning services with open interfaces and ELENA enables such an infrastructure by building interfaces for learning-related information systems and by a systematic analysis of available e-Learning services.

Currently IT-mediated learning is restricted to closed information system environments. Interconnecting learning services provided by heterogeneous information systems in a smart learning space empowers learners since it provides choice among a variety of knowledge sources, thus fulfilling personal development plans. By integrating learning-related information systems, educational institutions gain a new flexibility for re-engineering learning and teaching processes. Linking learning management systems with content brokerage systems can then create new educational service value chains with added value.

In comparison to learning management systems, instructors designing new courses have a much wider repository of educational material. Human Resource (HR) management systems interfacing with learning management systems are capable of providing accurate information on the skills obtained by the work force, which supports internal recruitment decisions.

Educational brokerage systems interfacing with knowledge repositories that store documents such as project evaluations and success stories of customer acquisitions are bridging the gap between knowledge management and e-Learning. Educational Brokerage systems listing courses provided by various learning management systems and videoconferencing tools become full service educational markets.

Using context information for organising the learning process

Various standardisation initiatives in industry have highlighted a number of instances where learning resources have been exchanged. The basic idea behind the vision is that knowledge constitutes a raw material that, when structured, indexed and exchanged, will give its stakeholders a sustainable competitive advantage.

However, early findings show that a complete framework that allows for the realisation of this vision goes beyond tagging learning resources with standard-compliant attributes. It requires access and query protocols to allow learning resource providers to selectively open their repositories and business models while considering the costs and benefits for the parties involved.

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Pioneering Research

Full Title:
ELENA - Creating a Smart Space for Learning

Project Type:
Education and Training Research

Start Date:
01/09/2002

End Date:
29/02/2005

Project Objectives:
To demonstrate the feasibility of smart learning spaces, defined as educational service mediators, which allow the consumption of heterogeneous learning services via assessment tools, learning management systems, educational (meta) repositories and live delivery systems such as video conferencing systems.

Target Audience:
Human Resource managers

Keywords:
Distance learning/education, re-useable learning resources, semantic Web technologies, standards and metadata

Technology:
Brokerage systems

Smart learning spaces integrate different types of artefacts delivered by learning services requiring different tags for describing artefacts and services. However, current standardisation initiatives, which are mainly focused on learning objects, do not provide the means for such a broad and high level of integration. To become integrated in a smart learning space, each one of these types of services requires a wide range of different metadata schemas describing the service itself as well as the artefacts being delivered.

Learning processes are heavily influenced by context such as personal background, learner type, goals, etc. Hence, contextual information is vital when organising learning processes. However, the information systems usually involved in learning processes do not provide interfaces that make contextual information such as curriculum data, accreditation, learner profiles, learning assessment data, and teaching evaluation data available for smart learning spaces.

Evaluation data gathered by an assessment service related to the instructor and/or content contributes to the selection process of courses by learners. When learner assessment data is reported back to an HR management system, it makes it easier to keep track of the skills acquired, so that companies have an up-to-date picture of the knowledge available by its work force.

A network of teaching and learning services

Interconnecting information systems related to teaching and learning based on flexible, semantically rich service interfaces are a new milestone in the use of information technology in the education and training industry. A network of teaching and learning services will create a new flexibility, which would allow institutions to acquire services on an ad-hoc basis in order to complement their learning offerings or to create new chains of interconnected services with additional user value.

ELENA will open up new opportunities for learners and industry, such as:

- The empowerment of the learner by providing single access points to heterogeneous learning services via the ELENA smart learning space, which considers learner profiles and personal development plans. Learner profile management will benefit from the new “contextualisation” of learning achieved by interconnecting learning services;
- The empowerment of instructors and managers through integrated services leading to more powerful systems for curriculum management, content creation, competency management, learning delivery and assessment;
- The ELENA smart learning space prepares the grounds for new, creative HR management concepts, which are able to match job descriptions with learner profiles and personal development plans;
- The increasingly competitive education industry will benefit from interconnected services providing new opportunities for delivering high quality education and training;
- ELENA aims to make significant contributions to standardisation initiatives in the context of teaching and learning.

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