Empowering Competence based Management to enhance Training Effectiveness

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Abstract: The challenge for the European Market in the domain of learning is to provide suitable training to European citizens to fulfils their lifelong learning needs, either to reduce their skill gap to reach new job opportunities or to improve their own personal development.

The Competency Manager is the perfect answer to this need due to the fact that its main purpose is to guide the citizen in his lifelong learning by assessing appropriate training to a learner with specific knowledge, needs and objectives.

The Competency Manager strength is to define a specific Learning Resource Catalogue as well as a complete Learners Database including all competencies. Thanks to this approach, the Training Consultant (which is the intelligent agent that prescribes and recommends learning assets depending on the learning citizen’s profile) is able to meet the learner objectives and to find the appropriate training contents corresponding to the learner profile.

1. Introduction

The new information and communication technologies are having a deep impact on the way citizens obtain information, communicate and undertake training. The challenges they present for education and training are many, and affect highly diverse sectors of society [1].

If information technologies are to be successfully incorporated into education and training, then relevant and good quality services and contents must be available. The European educational multimedia industry, besides being undercapitalised, lacks qualified manpower and needs to be strengthened. Closer links need to be established between this industry and the education and training systems. Moreover, the goal should be to develop and stimulate the European market for contents and services, which addresses the needs of the education and cultural communities and of European citizens.

Moreover, the capacity of the vocational guidance services should also be substantially strengthened so as to allow everyone to access information on initial and continuing training opportunities in the skills and qualifications required by the labour market and be able to plot or adjust their training and career pathways.

Since the Lisbon European meeting in March 2000, where the European Council invited the Educational Council to undertake a general reflection on the concrete future objectives of education systems, five main objective areas have been defined [2]. Three of these objectives have been targeted by the Competency Manager:

1. Making access to learning more widespread at all times of life, through an effort to make lifelong learning easier, by making it easier to move from one part of the education system to another.
2. Updating the definition of basic skills for the knowledge society, in particular by integrating ICT skills, by concentrating more on personal competences, and by looking at shortages in specific skills.
3. Making the best use of resources, by introducing quality assurance into schools and training institutions; by better matching resources to needs.
The Competency Manager is a project based on MetaCampus Marketplace (IST-2000-26314) and MetaCampus Real (eTEN 510834) that is addressing these urgent challenges by providing a user-friendly life-long learning portal to assist citizens in their selection and purchase of learning resources best fitting their needs, preferences and profile, either from a personal or from a professional focus.

2. The Competency-based Model

The Competency Manager methodology is based on competencies. The decision to include competencies as an item to cover, to be contemplated in the metadata models for the Competency Manager brokerage and marketplace is directly linked to the project’s goal of closing the triangle between learning citizens’ training and education needs, the availability of clearly identified resources to meet those needs, and the specific, standardized needs of the employment market in the knowledge economy.

Figure 1: “The Competency Manager model”

The Competency Manager highly personalised services and integrated software applications allow for relationships to be established between learning resources, learning objectives and/or competencies, professional career considerations and learning citizen’s personal training and education needs. The aim of establishing these relationships is to allow Competency Manager to facilitate the buying and selling of relevant education and training materials to meet individual learning citizens’ needs and goals. To meet these aims meant contemplating the intelligent usage and referencing of competencies in learning resources, learning citizen’s personal profiles and real world jobs.

Three main premises founded the development of the Competency Manager approach on competencies [3]:

1. The need to follow the many innovative and relevant undertakings regarding metadata standards, competency models and competency standards.

2. The need to create meaningful and practical software to meet the needs of learning citizens’ education and skills training and, in doing so, maximize added value to enterprises in the knowledge economy, in particular learning resources and content providers.

3. The scope of the project has not been to define competencies or create a taxonomy or vocabulary for identifying learning resources and learning objectives. As such, the focus has been on developing a prototype workable competency model. One that contemplates learning objectives (and competencies) and real resources, and also that can be replicable for other competencies and resources.

3. Technology Description

Unlike traditional educative portals, the services offered by the Competency Manager are no longer a mere directory of resources from one single content provider. Instead, it consists of a set of guidelines for the transparent interoperability of learning digital dynamic objects and the use of an intelligent training consultant that can guide and recommend the best content choosing from a plethora of resources from different providers.

The platform is based on mature technology that offers the following linked services:

1. The Learning Resources Catalogue manages the database that defines all the learning resources available in the marketplace. The catalogue is dynamically updated by the supply of the content providers who operate in the platform.
2. The Training Consultant is a key module with an intelligent agent that prescribes and recommends learning assets depending on the learning citizen’s profile. Its work is based on the knowledge of the learner (declared and inferred), on the Learning Resource Catalogue, on its own static expertise (the Training Consultant Expertise Database), and on a solution searching strategy (embedded inference engine).

3. The Learning Content Assembler is a tool that allows the tailoring of contents by selecting learning assets from different resources and the syndication to the learner/customer.

4. The Competency Manager Broker Service

During a search, the Training Consultant’s work will be in the following steps:

1. Informing user profile: The user can choose to enter information in the system about his/her diplomas, previous and current jobs, acquired competencies, etc. by him/herself or to be guided through a dialogue with the Training Consultant.

2. Expression of goals: The user informs the Training Consultant about the job position or the qualification s/he wants to reach. This will help the TC to compare the user’s current profile with the competences s/he has to acquire to reach his/her goal.

3. Definition of the Competence Gap: The Training Consultant can now calculate the gap between the competences the user has at the time given and the ones that s/he has to acquire in order to reach his/her professional objective. The graphical view of this matching is presented to the user so that s/he can realize the training update s/he needs.

4. Different Learning-Paths Proposal: on the basis of to the gap calculated and thanks to the fact that the Learning Resources are tagged with the same competencies data, the Training Consultant can propose a list of resources that best fit the learning needs of the user. Then, the user may select the most convenient one in terms of price, duration, favourite provider, number of courses, etc.

Moreover, when the real-time core has proposed its help (for the free browsing and the multi-criteria search), the user can ask why some resources are especially advised by the Training Consultant [3].

The following graph represents the steps detailed above:

![Figure 2: "The Training Consultant workflow"](image-url)
4. Market Validation

To validate the adequacy of Competency Manager service to the market, a market validation has been conducted in Catalonia. This pilot has focused on in-service learning by involving teachers that already have a working position, who want yet to improve their competences in order to change their way of teaching or with the aim to move to another education branch (i.e. a literature teacher who wants to use new technology in his class or wants to become a philosophy teacher).

5. Business Benefits

After the completion of the market validation, the final outcome of the project has been the business plan that has detailed the initial market deployment to be executed during the next two years. After conclusions from the first pilot validation, a final version of the business plan was issued in November 2005.

The Teachers from Catalonia were very interested by the concept of the Competency Manager as it is forecasted by the local authority (Generalitat of Catalonia) to allow them improving and upgrading their knowledge during their whole career. The authorities need to know what are exactly the skills teachers are supposed to have to perform their jobs; therefore the Competency Manager can help them to be informed about it and the trainings they should organize to improve them. The Competency Manager helped then Teachers to be more autonomous in their professional career development and management and to speed up the process of training management into the department of Education.

In the draft business plan produced at the end of the market validation study [4], the Competency Manager partners have identified the most appropriate and successful business models to implement Competency Manager solutions in the market. The segment formed by human resources management units is one of the most promising sectors to be exploited. The consortium offers a platform designed especially to boost and ease the management of training processes provided by human resources (HR) units of medium or large companies. By implementing the Competency Manager platform, HR staff will better manage their employee’s profiles and their professional development inside the company. The Competency Manager solution will provide them with the opportunity to optimise the identification of the employees’ gaps and to better adapt the training and the content of courses to their needs. The Competency Manager will foster the business opportunities of companies who want to optimise time and the cost of their training processes to effectively improve the professional skills of their employees.

To summarize, the Competency Manager platform offers to a companies human resources units the chance to:

1. Restructure their staff databases in an architecture contextualised by a standard competence map, having rapid access to their employee’s profiles organised by their personal and professional skills.

2. Reduce the time required to organise off-line or on-line courses, as the contents can be automatically searched and syndicated by the Competency Manager platform.

3. Provide their employees with the courses that best fit their needs (courses are usually pre-designed and do not satisfy each learners’/customers’ real needs).

4. Save time spent on structuring professional itineraries, thanks to the Training Consultant module.

For employees, Competency Manager is an opportunity to:

1. Learn exactly what their current competences are.

2. Know what skills they need to get in order to achieve their professional goals.

3. Get access to personalized training to improve their competences and get those skills.

4. Save time by learning exactly what they need at their workplace or at home, through on-line courses.
6. Conclusions

The development of an adequate supply of software, contents and services, which are suitable for the needs of European learning citizens is a major challenge for Europe. The European Union produces too little of the educational multimedia software, products and services available to serve training and education. The European educational multimedia industry is undercapitalised because of the high number of very small firms, while links between education and training systems and the industry are not strong enough to generate viable services which really cater for education and training requirements.

In the area of vocational training, there is a need for in-depth analysis of the competence models (qualifications and skills) required to give training to apprentices and workers in industry and services in the context of lifelong learning. The Competency Manager is already prepared for supporting the competence models that will assist and guide the citizen in his learning process, providing the connection for the basic skills which lifelong learning must provide and the skills peculiar to the new occupational profiles. The Competency Manager project can push initiatives from other projects in the domain of eLearning services focused on the customer care, by the fact that it shows that the real challenge in eLearning market today is not the development of learning management systems, as the market is already fully supplied with them, but the development of tools to help the citizen in its continuous apprenticeship and the provision of good ways of selecting the most appropriate training. The work that done in the competence domain and the introduction of an intelligent agent which translates the user needs into learning path thanks to the matching of the user profile, the job description and the courses is a good base for future work and the discovery of market opportunities in Europe in the eLearning domain.

References


