E-LEARNING SOLUTION INCLUDING AN OPTIMALIZATION OF BUSINESS PROCESSES, MANAGEMENT AND COMPETENCES

DYKS Małgorzata,   KLAUS Rafał

BCC, Consultant HR
Poznań, Poland

Institute of Computing Science
Poznań University of Technology
Poznań, Poland

Plan of presentation

- Introduction
- Effective and reuse high-tech e-learning solution compliance with SCORM model
- Technology
- Architecture and functionalities
- Conclusion

Introduction 1

- Competitiveness of every company largely depends on correct definition of aims and range of employees' responsibilities, and also on time integration of new employees and improvement of qualifications of the others.
- In what way might organizations efficiently and successfully transfer their knowledge to new and not only new employees?

Introduction 2

- Our main objective is to present an optimal e-learning solution, that is a solution, which is well-tailored to the needs of an average company.
- Firstly, we have taken into account aims and tasks of a company as an organization of people incorporating the most valuable resources.
- Secondly, we have analyzed how employees could continuously develop improving capability and competitiveness of the company on the market.

Human Resource Management

- In a big company section of Human Resource Management actively take part in a formation of company's values through a development of employees' capability.
- Issues like management by objectives (MBO), qualifications management, e-learning are fragments of a whole, that should create a comprehensive solution.

E-learning

- E-learning lets to train big and distracted groups in individualized time and rate.
- It increases effectiveness of exploitation of employees' time, and also produces a motivation to a self-progression and a self-education.
- E-learning eliminates expenses of training rooms' rental, transport or lodging.
- They give an easy and continuous access to all aggregated materials without needless restrictions.

Effective and reuse high-tech e-learning solution compliance with SCORM model

- A progressive community waits for an elaboration of the new education model, that is characterized by the following determinants:
  - self-education,
  - Lifelong Learning (L3) is necessary,
  - a training is more and more expensive, therefore managers look for methods to minimize training costs- Distance Education, Just of time Learning.
- The main aims of the new education's paradigm are: accessibility, adaptation, effectiveness, permanence, co-operation, reuse, completeness.

SCORM

- In order to achieve the goals, standards describing e-learning system's model have been worked out.
- Unfortunately, every standard has one's requirements and assumptions.
- The SCORM model can be a panacea, because it joins common features of the other projects into the one coherent e-learning model.

SCORM Aggregate Model format

- The SCORM model introduces a concept of the SCO resource as an e-learning object with an exactly definite structure, equipped with a mechanism of communication with an e-learning environment.
- The SCORM standard requires, so that every e-course consists of SCO objects.
- E-training, prepared in that way, is propagated in the form of Content Package (all course's resources are packed according to the SCORM Aggregate Model format) and can be rendered by any LMS system compatible with the SCORM standard

Technology

- We take advantage of the following software: Reload Editor and Reload SCORM Player (propagated on MIT Open Source license) to prepare e-course consistent with the SCORM standard.
  - The Reload Editor serves as packing didactic contents and as their description.
- In order to satisfy the requirements we use the following computer technologies and solutions:
  - database maintenance- SQL (Structured Query Language) and mySQL,
  - format of training's description- XML (Extensible Markup Language),
  - user interface- ASP.NET (Active Server Pages), AJAX (Asynchronous JavaScript and XML),
  - back-end system- C#.

Architecture and functionalities

- The present project ranges e-learning system and a prepared e-course.
- It consists of the following layers: presentation layer, business logic layer, data storage and data organization layer.
- A system's functionality depends on a kind of user, precisely on a function in a company.
  - The project supports managers in their everyday duties focusing on management of employees' groups and giving them better possibilities of making managerial decision.
  - On the other hand, an employee can quickly and simply look through his qualifications' card-index observing his development and need of additional education.

An efficient management of employees' qualifications

- Owing to integration with HR System e-learning platform has an access to a personal card-index of employees.
- It influences an efficient management of employees' qualifications, pointing of competences' deficiency and possibility of lacks supplementation.
- Taking advantage of HR data the e-education system presents a qualifications' profile of an employee and compares it with a required profile on a given position.
- Moreover, it suggests trainings (from available training base), after finishing of which an employee should acquire knowledge making it possible to take the charge.
- An employee has an access to a training proposal of his company from website level.

Modules of e-learning system

User type: EMPLOYEE	User type: MANAGER	User type: ADMINISTRATOR
MODULE for rendering courses: 1) generalization a course's structure, 2) course rendering, 3) final processing of course.	**MODULE for generalization organization structure:** 1) qualifications, 2) training's history, 3) approval's path for training proposal.	**MODULE for training management:** 1) creating of training groups, 2) creating of trainings, 3)training offering.
MODULE for training management: 1) training offering.	**MODULE for training management:** 1) training offering.	**MODULE for user management:** 1) personal data.

Conclusions

- A result of our work is a fully functional e-learning system, which includes an e-learning platform, designed database and e-course constructed according to the SCORM standard.
- During a creation of the e-education system we take the advantage of proven and universal computer technologies (XML, AJAX, ASP.NET).
- It emphasizes, how important is an integration of Human Resource Management System with Development of Employee's Competences System.
- In that way we present a progressive organization management, at the bottom of which lies implementation of systems like e-learning, management by objective or competences' development.

Session: engineering education

May 28, 2008, 08:30 - 10:00:
Session S8B: Engineering education
Red Saloon
Chairperson: KLAUS Rafał, POPESCU Elvira

Order	Authors	Title
1	DYKS Małgorzata, KLAUS Rafał	E-learning solution including an optimalization of business processes, management and competences
2	POPESCU Elvira, TRIGANO Philippe, BADICĂ Costin, BUTOI Bogdan, DUICĂ Marius	A course authoring tool for WELSA adaptive educational system
3	MÁRTON Lőrinc, KUTASI Nimród	Control technologies and real time control laboratory - Part I
4	KUTASI Nimród, MÁRTON Lőrinc	Control technologies and real time control laboratory - Part II

May 28, 2008, 08:30 - 10:00:
Session S5: Information systems
Yellow Saloon
Chairperson: FOJTÍK David, LUNGU Marin

Order	Authors	Title
1	FOJTÍK David, KULHÁNEK Jiří	Concept of user-specific ticket selling cashbox system
2	CERBULESCU Cătălin Constantin, CERBULESCU Claudia Monica	Checksums in WEB pages monitoring techniques
3	CERBULESCU Cătălin Constantin, CERBULESCU Claudia Monica	Google set in content analysis
4	IANCULESCU Marilena, PÂRVAN Monica, IORDACHE Bogdan	Health education informatics systems - An important tendency in the modern healthcare; implications in dermatology
5	LUNGU Marin, BARBULESCU Lucian, ANDREI Dan-Ovidiu	Organizing the IT infrastructure of an international scientific conference event as a service-oriented architecture