Introduction to Planning and Building of E-campus of Your Institution

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What is E-Campus?

► Complete integration of all information, learning and collaboration resources
  ► Content management system
  ► Student information system
  ► Learning management system
  ► E-Library
  ► E-Portfolio
  ► Other E-applications

► Technical requirement for quality of education
What is E-Campus not?

► Socially
  ► Replacement for teachers
  ► Solution for people that don’t have enough time to attend classes

► Technically
  ► Simple web application

► Strategically
  ► Current trend that will pass if I ignore it
Do I need E-Campus?

Is this what happens in your institution nowadays?

- Hard to inform and teach so many students
- Hard to keep track of their progress
- Hard to keep track of their questions, repeat the same answers
- Hard to test and grade them
- Learning materials are in different places, students are confused
- Teachers distribute materials using different channels: via numerous web sites, via e-mail, on CDs...
- Fast Internet is available, but students seem to use it for P2P instead of learning-centered activities

Maybe your institutional strategy might include... E-Campus!
E-campus @ FER
Content management system

- Our own “CARNetWeb2 CMS”
- Online editing
  - Content
  - News
  - File and link repository
  - Polls and advanced surveys
  - FAQs
  - Other communication-related modules: forum, chat…
- Central part of E-Campus
Power of CARNetWeb2 CMS

News

E-Learning management
Student information system (SIS)

► “ISVU” - Information System of Higher Education Institutions

► Provides E-campus with:
  ► Course information
  ► List of teaching staff
  ► List of students
  ► Enrolment details
Connecting to SIS

- Established format:
  - XML data
  - Data received from SIS is adapted for all other systems that may require it
  - CARNetWeb2 CMS notifies all other parts of E-campus about changes in status of:
    - Students
    - Teaching staff
    - Courses
Automated SIS synchronization

- CMS compares new data and:
  - Stores it into local database
  - Tracks changes
  - Notifies other systems

1. Analysing the data (Check: new, updated, deleted)
2. Executing appropriate action (new, updated, deleted)
3. Update local database information
4. Ensure local database consistency
5. Invoke remote action to provide consistency in all E-campus systems
6. Write all executed actions into appropriate system logs
7. Build summary mail
SIS → CMS → other systems notification

- SIS - ISVU
- Local server
  - CarnetWeb2 CMS
    - SSH2
    - Remote program
    - POST
    - GET
    - E-mail
    - E-mail
    - Bussines Web application
    - User
    - Execute
    - PHP function
    - Local program
      - Execute
      - Execute
      - Execute
      - SMS
      - User
      - User
      - Sync
      - Intranet
        (Authorized users)
      - Public Web
        - Business Web application
        - Autmatic operation
        - Login
        - Media
        - Data
        - Data
Learning management systems

- LMS provides integrated learning environment
- We are currently supporting integration with three advanced Learning management systems:
  - Moodle
  - AHyCo
  - WebCT
- Teaching staff can select most appropriate tool for their teaching style
Available functionalities of LMSs

Moodle

WebCT

► Since May 2005:
FERWeb team = developers
Joint effort with developers
CMS – LMS integration

► Implemented standard:
  ► IMS (http://www.imsproject.org/)
  ► XML based
► Direct login into course from CARNetWeb2 CMS
► Simple, yet powerful administration from CMS:
  ► Import of student-related data
  ► Administration of teaching staff
  ► Automated creation of new courses
► Data synchronization
  ► Quiz results and grades retrieval from LMS to CMS
Comparing administration tools

Moodle

WebCT
Administration of LMS
Providing support

Subject: [WebCT - FER] Otvoreno računarstvo
Course: Otvoreno racunarstvo
Title: dipl.inz.
Person: Kristijan Zimmer
Email: kristijan.zimmer@fer.hr
Status: Asistent (FER) / Asistent (WebCT)
Department: Centar za informacijsku podrsku
Phone: 160

Question
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How can I backup my course?

INFO
=====
FERWeb
Login: kzimmer
Person: Kristijan Zimmer
Name: Kristijan Zimmer
Course: http://www.fer.hr/predmet/347
Primary: Mario Zagar

WebCT
-----
Login: kzimmer.fer
WebCT ID: FER_KZ01
Course ID: FER_ZRS12A2
Term: Summer (2 - 1478980832)

Received e-mail

WebCT stranice kolegija: Otvoreno računarstvo

Ako imate bilo kakvih problema ili pitanja u vezi rada WebCT-a ispunite polje sa vašim pitanjem i odaberite "Pošalji pitanje". Pitanje će biti poslano tehničkoj podršci za WebCT. Odgovor na vaše pitanje dobit ćete putem e-maila na vašu mail adresu: kristijan.zimmer@fer.hr

How can I backup my course?

Pošalji pitanje

Napomena: Ne trebate upisivati vaše osobne podatke ili podatke o kolegiju jer će oni biti automatski ispunjeni.
A day in life of CMS – LMS integration

► How to open an LMS user account
  ► Check if user already exists
  ► Check type of user
  ► Choose correct username (AAI)

Start

User in local database
  NO

User in ISVU student database
  NO

User in ISVU teaching staff database
  YES

Does it have LMS account
  YES

Does it have LMS account
  NO

Is teaching staff
  NO

Is student
  NO

Returns: FALSE

username in form: $user['nick']'.fer'

DA

Username in form: $user['nick']'.fer'

NO

Is teaching staff
  YES

Is student
  YES

Returns: FALSE

Short username form
mm12345.fer
(first 5 digits)

Long username:
mm23438943.fer
(complete JMBAG)

Open LMS login

Returns: LMS login

Intranet (Authorized users)

Public Web

Login

Login

Media

Data

&

E-Application

E-Portfolio

SIS

Sync

LMS

Sync

Catalogue

RNetWeb2
Direct login from CMS to LMS

► Never sends password
  ► Checks digital signature instead
    ► MD5
  ► Digitally signs:
    ► User login
    ► Course ID
    ► Current time
    ► Additional information
  ► NTP synchronization

http://webct.carnet.hr/webct/public/autosignon?URL=courseid%3A%2F%2FFER_ZRS12A2&Time+Stamp=1130604853&IMS+id=FER_0036377354&MAC=A1838FACDE194360A0A52C4080BB7D91
E-library

- We are still testing and deciding
  - EPrints
  - School of Electronics and Computer Science, University of Southampton, UK
  - DSpace
    - Massachusetts Institute of Technology
    - Hewlett-Packard Company
- Open source based solution
E-portfolio

- Implemented as CARNetWeb2 CMS module
- Automatically generated upon user account creation
- User chooses what to present:
  - Contact information
  - Curriculum vitae
  - Published papers and books
  - Grades
    - Students
  - Courses
    - Students
    - Teaching staff
  - Awards
  - Membership
  - Interests
Media server

- Stores and delivers all streaming video and audio files relevant to course
- W3C SMIL (Synchronized multimedia integration language)
  - Audio
  - Video
  - Interactive elements (Flash)
  - Presentation slides
  - Subtitles
  - Notes
  - Important links
SMIL example

Example of course presented using SMIL

PC<>Pico (HW for internal FLASH and EEPROM programming)

all of the rest of it is just interface, so the real computer is very, very small.
Sharing the data securely

► E-campus is not an isolated place
Entering the world of E-campus

► E-campus enables users to use the same login and password on all integrated systems

► Once authenticated by the CARNetWeb2 CMS, user doesn’t need to re-authenticate on other systems

► CARNetWeb2 CMS enables other systems to use AAI infrastructure:
  ► SOAP
  ► XML-RPC
Time for E-campus questions!

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