Plone for European Research Projects

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Kplus
Kompetenzzentren-Programm

Introduction and motivation

- Over 2 years of planning and development of ICT-platforms within European research projects at the Telecommunications Research Center Vienna (ftw.)
- Europe is in need of better technological support for scientific knowledge exchange to approach the increasingly complex topics arising
- Motivation for master's thesis about this topic [1] - some of the results/concepts are presented here

[1] Davies, M: Towards a Knowledge Portal for European Research Projects, Vienna University of Technology, 2006 (available from: http://marcin.davies.at).

Problem domain

- European research situation
  - Characterized by a strong fragmentation of activities, which is a major handicap to Europe's competitiveness
  - Framework programmes (FPs) try to address these weakness by implementing large, international research projects:
  - Main actions of research projects include:
    - jointly executed research
    - integration activities
    - knowledge management and dissemination (externalized knowledge, i.e. files (content), but also internalized knowledge by fostering cooperations)
- Scientific collaboration
  - A multitude of complex requirements has to be met to enable scientific knowledge sharing
  - Especially factors stemming from scientific recognition, competition, and trust must be taken into consideration

Deficits of current approaches

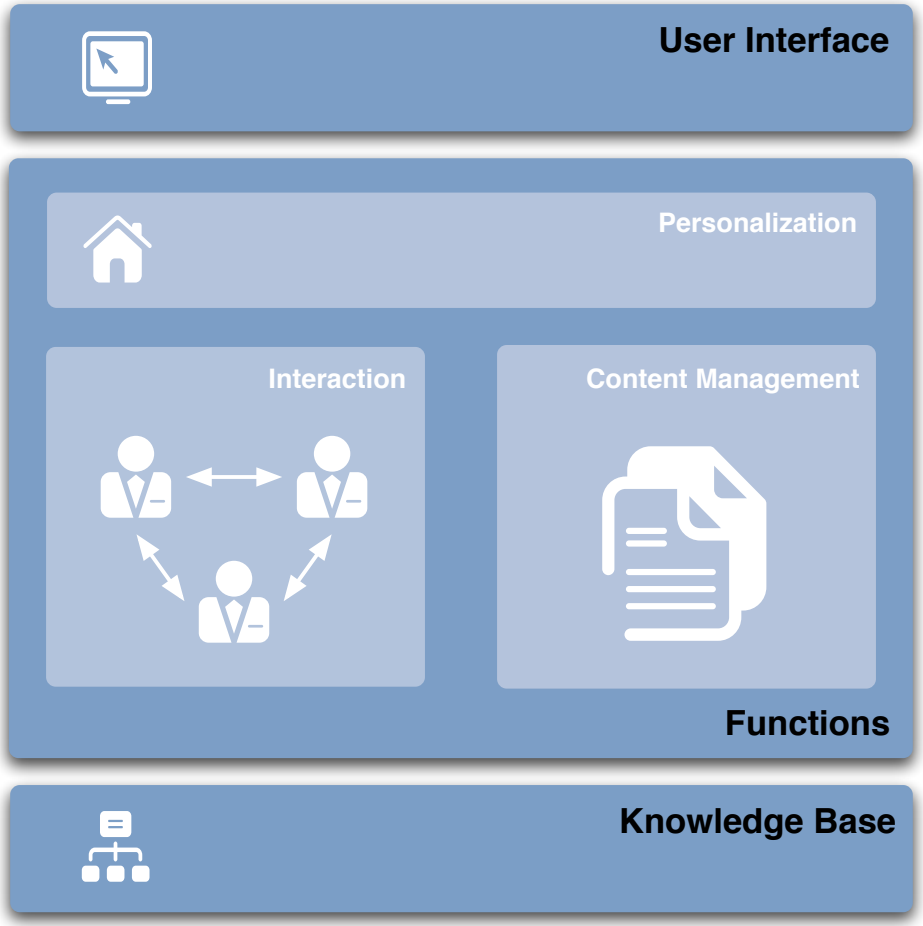
- Organizational problems:
  - No re-usable framework
  - Late start of building ICT-infrastructure
  - Separation of coherent ICT-activities
  - Lack of user involvement
  - Missing core competencies and experiences
  - Insufficient promotion activities
- Technical problems:
  - Scattered and isolated system components lead to a lack of user acceptance and high maintenance efforts
  - Functional deficits: especially missing possibilities for personalization and interaction

Requirements and goals

- Increasing possibilities for interaction
  - Contact search, messaging, ratings, comments, presence awareness, working environments
- Enhancing user experience and ease of use
  - Coherence, appealing and accessible design
  - Personalization: subscriptions, notifications
  - Performance, efficient access
- Reducing maintenance and administration costs
  - Central data source and tight integration of components
- Re-usability and flexibility
  - Open standards, no licensing costs
  - Solid technical foundation, scalability and extendability

The concept: knowledge portals

- Single point of access to relevant informations and services
- Main goal: dissemination of knowledge
- Collaborative functions and personalization are essential
- High level of integration and extendability
- Content management systems (CMS) are a suitable framework for building a portal



Architecture of a knowledge portal (cf. [2])

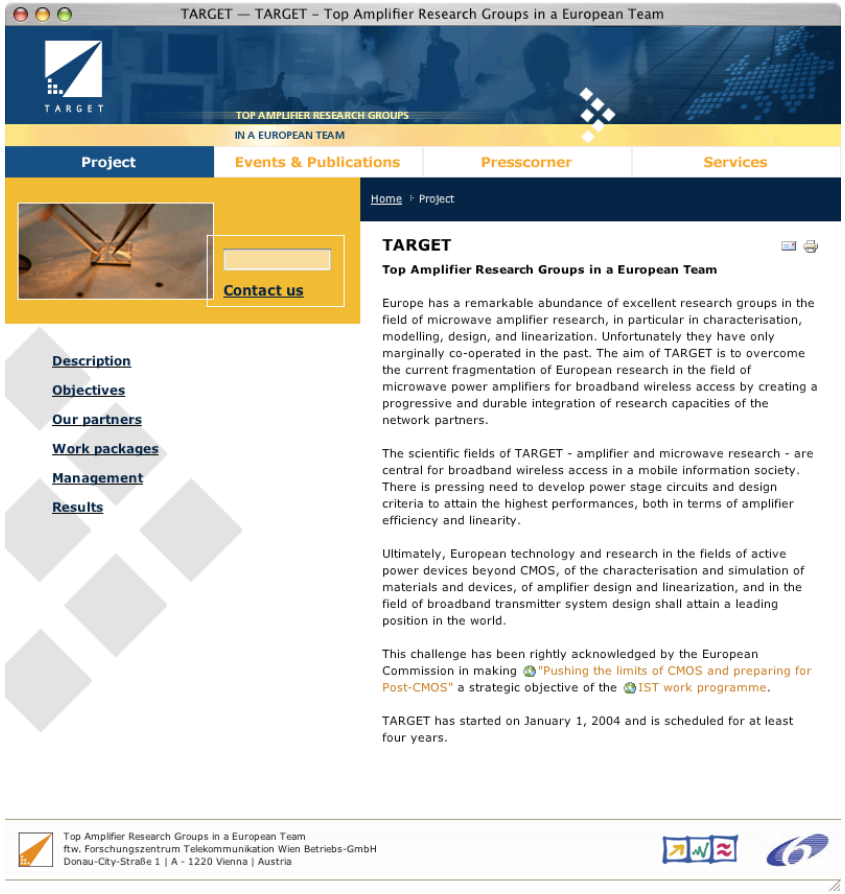
[2] Jansen et al.: Knowledge Portals: Using the Internet to Enable Business Transformation, 2000.

Plone for scientific knowledge portals

- Plone and Zope are fitting nicely:
  - Rich set of advanced functions out of the box (SmartFolders, WebDAV access, LiveSearch, etc.)
  - Rich user interface
  - Many add-on products available to implement functions of a scientific knowledge portal
    - Custom (scientific) content types: Archetypes, ArchGenXML
    - Version Control: CMFEditions
    - Ratings: ATRatings, Subscriptions: PloneSubscription
    - many more...
  - Highly customizable and extendable - integrates well into existing installations
  - Standards-based, technology-neutral
  - With Zope/ZEO: performance, flexibility, and scalability
  - Works well with other open-source components to build a robust infrastructure (Apache, OpenLDAP, etc.) - no licensing costs

Case study: TARGET (1/2)

- TARGET (Top Amplifier Research Groups in a European Team) is an international research project in the 6th framework programme of the EC.
- research in microwave amplifiers and semiconductors
- 47 core partner institutions all over Europe (universities, research centers)
- 23 associated members from all over the world (e.g. Infineon, Freescale, Motorola)



http://www.target-net.org

Case study: TARGET (2/2)

- Plone 2.1.3
- Complete extranet / intranet solution (2 different skins)
- User and groups management: customized CMFMember -> ATEUProOrganization
- Workspaces: customized TeamSpace
- Tool for exchange of researchers: based on PloneJobBoard
- Customized PloneSoftwareCenter for software dissemination
- Custom content types for publications
- Heavy use of workflows to manage permissions
- SSO with existing ASP/IIS application

Future Activities

- For TARGET:
  - better user management and integration with mailing lists (LDAP, Listen, MailBoxer?)
- Creating a re-usable, extendable framework for European research projects:
  - Wider assessment of currently used applications
  - Refinement of requirements based on more extensive end user participation
  - Develop a common set of research-specific products (user management, scientific content types, etc.) that can be easily customized by every project
  - Definition of evaluation parameters to measure the efficiency of a new, improved solution
  - Implementations in various research projects, cyclically enhanced by gathering user feedback

Thank you!