# First International Workshop on Adaptation and Evolution in Web Systems Engineering (AEWSE'06)

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# General Information

- Joined Organization:
  - Vrije Universiteit Brussel
  - Politecnico di Milano

- Presentations:
  - 20 minutes presentation
  - 10 minutes questions

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# General Information

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- Workshop Proceedings:
  - Pre:
    - On the CD in your conference bag!
  - Post:
    - Incorporate comments from today's discussions
    - To be available by ACM Digital Library ISBN 1-59593-435-9
    - Available end of August
    - July 20th: PDF and source of papers in ACM format
  - Today: signed ACM permission forms!!
- Thanks to
  - Overall Workshop Chairs: Nora and Luis
  - AEWSE´06 Organizers that were unable to attend
  - PC-Members
  - Authors of papers
  - The audience, for the fruitful discussions we will have ;)

# The Web Today

- Web sites → Web applications
- Web applications larger, complexer
- Static information/pages → highly volatile, dynamic information
- Universal access: device-dependency
- Globalization / internationalization
- Personalization
- Other issues: accessibility, localization, …

# Adaptation / Evolution !!

In this setting, changes to Web Applications are frequently required!

# Changes in Web Applications: why?

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- Changing/additional requirements
- Domain changes
- Changing Semantics
- Changing external sources
- Iteration / correction to the design
- Adoption of new technologies
- Adaptation / Personalization
- Update / change by the users (e.g. WIKI, blogs, …)

# Changes in Web Applications: who?

- Stake-holders:
  - New requirements
  - Better satisfy business goals
  - Refresh site
- Designers:
  - Correct flaws
  - New technology
- Users:
  - Content
  - Presentation
- Externals:
  - External references change
  - Domain change

# Changes in Web Applications: what?

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- Requirements:
  - new requirements may arise over time
- Domain:
  - domain changes should be reflected in the web application
- Content:
  - Dynamic content
  - Content updates (both by users or administrators)
- Semantics:
  - changes in semantics of the content
- Navigation:
  - reflect user browsing behavior
  - improve (navigation) structure
- Presentation:
  - refresh look & feel
  - adaptation (both by system or user)
- Implementation/Technologies

# Adaptation / Evolution

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Adaptation / evolution

is an intrinsic characteristic of a Web Application!

# Adaptation / Evolution

- Adaptation: the (automatic) change of the content, structure, presentation or implementation of a Web Application

- Evolution: the study of the change process (over a longer period of time) of a Web Application and its consequences

# Adaptation

- ## Optimization:
  - Adapting the Web Application for *all* users
  - Based on user access logs
  - Uses data mining techniques

- ## Customization:
  - Adapting the Web Application for *one particular* user
  - Based on a user model
  - Typical applications in e-learning

# Evolution

- Adaptation
  - Focus on automatic changes of Web Applications

- Evolution
  - Covers the whole change process of Web Applications
  - Adaptation could be considered to be part of the evolution process

# Evolution: Open Issues

- Possible issues
  - Consequences of changes
    - Changes may possibly break Web Applications
  - Repair solutions for broken systems
  - Understanding of changes
    - E.g., explaining adaptations to the user in a intuitive way
  - Analysis of Web Application evolution
    - E.g., detecting change patterns
  - …

# Peeking at other research areas

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- Adaptive Hypermedia
- User Modeling
- Active Databases
- Semantic Web
- Ontology Evolution
- Database Evolution
- Temporal Data
- Software Engineering
- Mobile Computing
- …

# Goal of the workshop

To facilitate the discussion of key issues, approaches, open problems, innovative applications, and trends in these research areas, for identifying methodologies and technologies to support adaptive access to and/or evolution in (the design of) Web Applications

# Let's go!

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- Web Engineering (9h30 – 10h30):
    - Florian Daniel, Maristella Matera, Giuseppe Pozzi:
      "Combining Conceptual Modeling and Active Rules for the Design of Adaptive Web Applications"
    - Irene Garrigós, Cristian Cruz, Jaime Gómez:
      "Using PRML to Specify Adaptive Websites in OO-H"

- Adaptive Hypermedia (11h00 – 12h00):
    - Petr Saloun, Zdenek Velart:
      "Adaptive Hypermedia as a mean for learning programming"
    - Molina-Ortiz, Nuria Medina-Medina, Lina García-Cabrera:
      "An Author Tool Based on SEM-HP for the Creation and Evolution of Adaptive Hypermedia Systems"

- Evolution (13h30 – 14h30)
    - Ioannis Anagnostopoulos, Photis Stavropoulos, Georgios Kouzas, Christos Anagnostopoulos, Dimitrios D. Vergados:
      "Estimating the evolution of categorized web page populations"
    - Michal Tury, Mária Bieliková:
      "An Approach to Detection Ontology Changes"

- Discussion (14h30 – end)