

INESCTEC
TECHNOLOGY & SCIENCE
| ASSOCIATE LABORATORY

COORDINATED BY
INESCPORTO
PORTUGAL

Multimedia Systems group

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Mission & Research Topics

To advance the state-of-the-art in multimedia applications by combining context-aware technology with creative skills and empowering social engagement.

- sensing context
- describing content
- understanding users' reactions and needs
- developing middleware for smart networked mm applications
- empowering people with the right data at the right time

- **Research Topics**

- Distribution and Management of Multimedia Resources
- Multimedia Metadata and Semantic Relationships
- User-centered Multimedia Access and Retrieval
- Content Recommendation and Adaptation
- Governed Distribution in Multiple Platforms
- Multi-View Personalized Spaces
- Second Screen Technologies and Applications
- Participatory and Collaborative Approaches for Media Management
- Digital Rights Management

Recent Projects

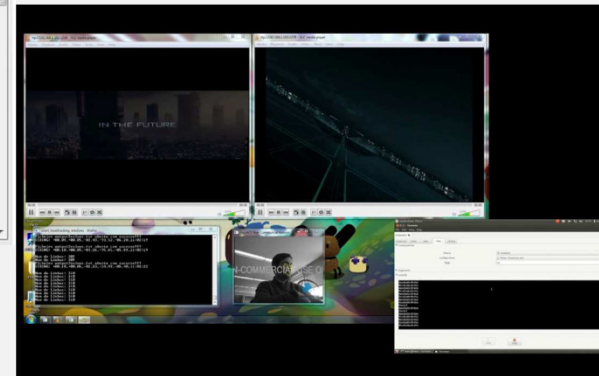
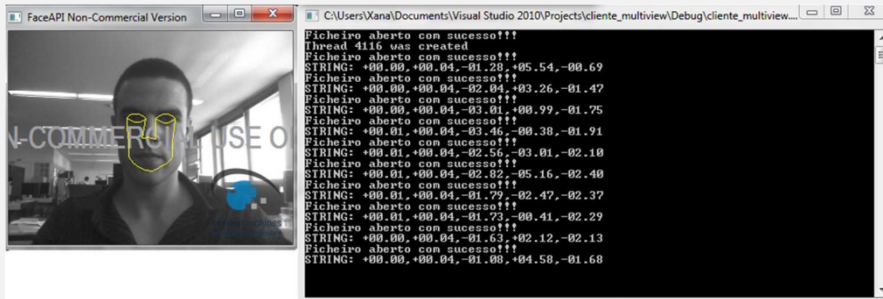
- **Convergence**
New paradigm for the Internet based on publish-subscribe approach, EU/IST, 2010-2012
- **Contextaware**
Context-based multimedia intelligent services, PTIN, 2010-2011
- **Hotel 3.0**
Web 3.0 platform for the hospitality market, QREN, 2010-2012
- **CNG**
Content for Next Generation Networks, QREN, 2011-2012
- **ImTV**
On demand Immersive-TV for communities of Media Producers and Consumers, FCT, 2010-2013
- **PINC**
Pólo de Indústrias Criativas do Parque de Ciência e Tecnologia da Universidade do Porto, QREN-ON2, 2010-2013
- **Creative Schools**
Creative Spaces for Creative Kids, QREN, 2011-2013

ImTV - *On Demand Immersive TV for Communities of Media Producers and Users*

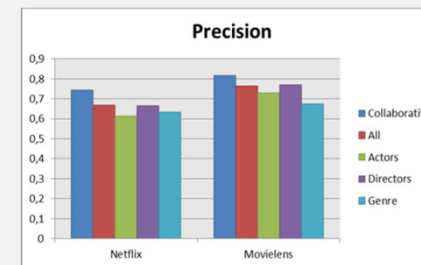
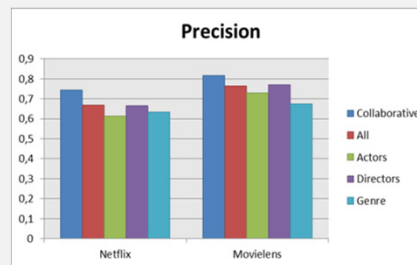
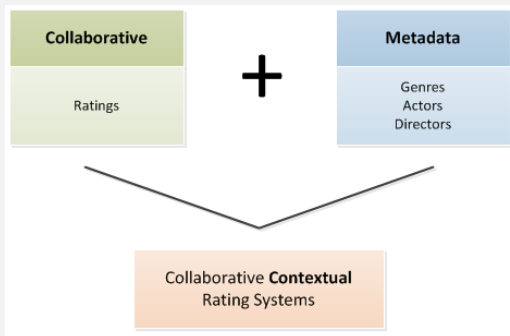
- **First goal: Understanding future trends**
 - How does the new generation of media producers work (professionals, independent, and amateurs)?
 - How do they use new distribution mechanisms to accommodate user interests?
 - How are viewing communities constructed and how do producers conceptualize users' engagement in this model?
- **Second goal: Shortening the production-to-distribution road**
 - Define a new media workflow using intelligent metadata and integrating new digital formats to enable media producers to reach the target market as quickly as possible
- **Third goal: Engaging Users**
 - Develop novel feedback mechanisms inferred from richer interactions with media and devices and among viewers.
 - Use alternative channels (SMS, Internet forums, live chats) to get a full spectrum of media consumption.
 - Exploit the advantages offered by the community and personalized aspects of Internet services to strengthen TV producers' and broadcasters' most valuable asset: the viewers' long-term loyalty.
 - Aggregate TV content and User Generated Content to produce new personalized TV channels.
 - Integrate different Metadata sources to enhance user experience.

ImTV - Results/Prototypes

- Multiview Server and Client with Head Tracking
 - multiple views of video sequences are encoded and stored at the server side
 - based on user head tracking, the better views are selected



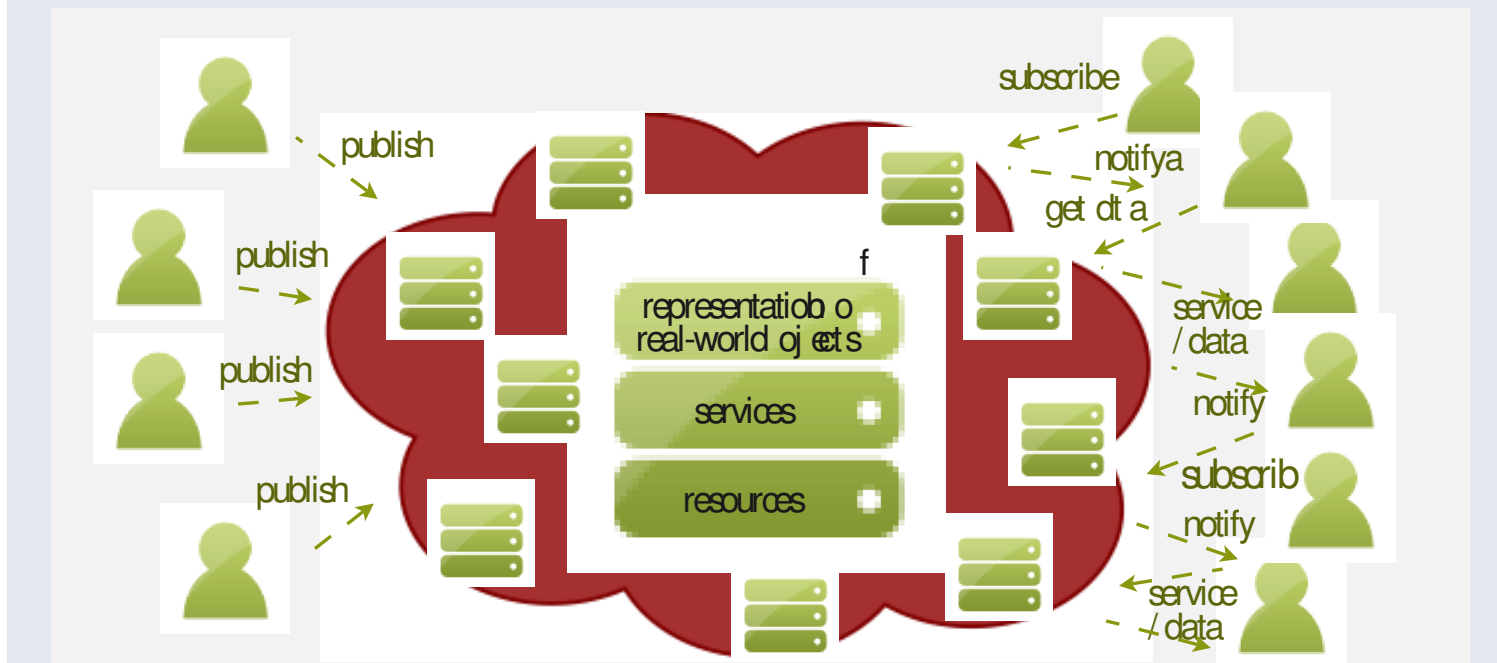
- Metadata based RS
 - How can “standard” metadata be used to positively influence RS?



Convergence

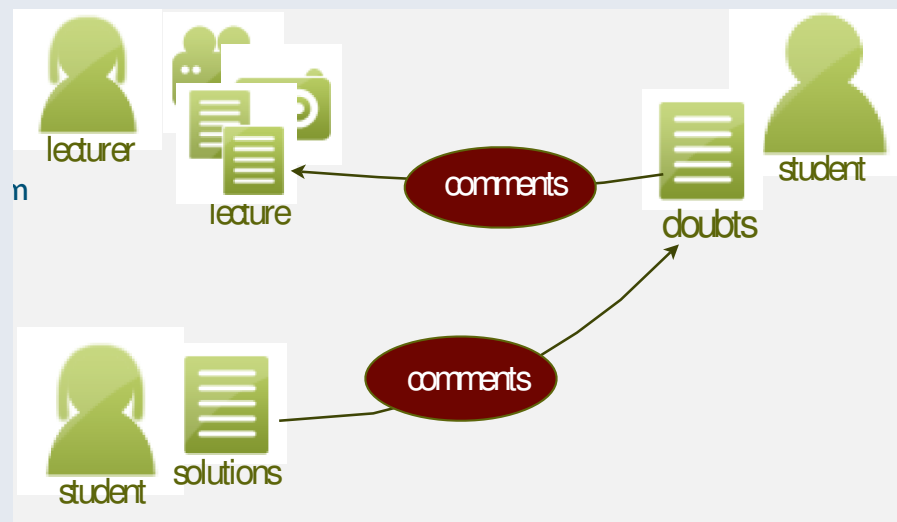
- Main Goal
 - To define a new content-centric/publish-subscribe service model for the Internet, able to represent digital data, people and Real Objects

The Internet of Things



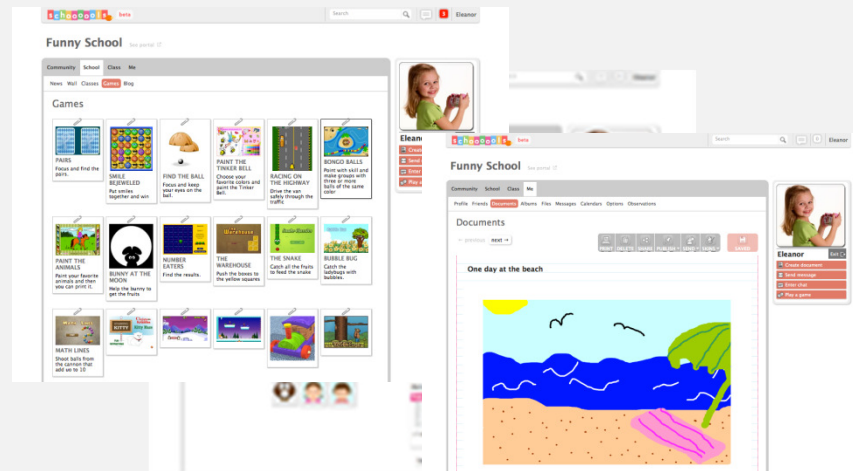
Convergence - Challenges Addressed

- Digital Forgetting
 - Mechanisms embedded in digital resources to enable automatic and assisted removal of resources
- Licensing scheme and use of Rights Expression Language
- Semantic Relationships across resources
 - RDF/OWL ontologies
 - Reasoning and inference to extract relationships
 - Search engines profiting from these relationships



Creative Schools

- Main Goal
 - To develop solution to enable the collaborative creation of new digital media content (within the private social platform schools.pt)
 - Radio, TV, Newspapers, games



- Challenges
 - Manage the ever growing nr of items and make them really available

If you have it but can't find it, you don't really have it!

Some Partners

- University of Lisbon
- New University of Lisbon
- University of Minho
- UPTEC
- RTP
- TVU
- Zon Multimedia
- MOG Technologies
- Nonius Software
- Portugal Telecom
- Tecla Colorida
- I.ZONE Interactive Media
- Wipro
- University of Texas at Austin
- University of Vienna
- UPC
- BBC
- Deutsche Telekom
- Optibase
- Intracom
- British Telecom
- TiLabs
- Fraunhofer
- Thales
- AIT

Workshop Presentations

- Helder Castro, "P2P Strategies for the Safe Distribution of Rich Media Content" (Convergence)
- Tiago Costa, "Personalized multiview spaces" (CNG+IMTV)
- José Pedro Pinto, "Collaborative approaches for Media Annotation" (Escolinhas+IMTV)
- Márcio Soares, "Metadata Based Approaches for RS" (Escolinhas+IMTV)
- Abayomi Otebolaku, "Context-Aware Multimedia Content Adaptation" (PhD Work)
- Soraia Ferreira: "Location Based Transmedia Storytelling: Enhancing the Tourism Experience" (PhD Work)
- Vânia Gonçalves: "Online Video in the Future Internet Age: Business and Policy Dynamics" (PhD Work)