Collaborative Working Environments in AMI@work

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1. The Mission of AMI@WORK

The Mission of AMI@WORK is to contribute to R&D and policy developments in new working environments designs and in organization of work in the networked knowledge-based economy.

It incorporates innovation to facilitate creativity and collaboration, to resource-use efficiency, value-creation and extended work opportunities for all. It fosters grid technologies in new working environments and organizations, targeting towards integrated applications and platforms.

Focus is on the areas of

- eProfessions and individually driven working,

- new workplace designs,

- knowledge management in media-rich working environments, including mobility and multimodality,

- collaborative work and organizations and

- ambient organizations and new organization of work.

1.1. The Objectives of AMI@WORK

To develop seamless next generation Enabling Technology Platforms, tools and applications for distributed, context sensitive, complex and virtualized collaborative working environments in the spirit of AMI. It will improve human abilities to work in collaboration increasing creativity which, in turn, will boost innovation. The technology platform should provide advanced services to enable the development of worker-centric, flexible, scalable and adaptable tools and applications to boost seamless and natural collaboration amongst a diversity of

artefacts (humans, machines, etc) within knowledge empowered environments and with any devices anywhere anytime.

1.2. Main Focus

- Enabling platforms providing sophisticated upper middleware services required for environment and person-aware distributed collaboration. It will be based on system integration of Web Services, Semantic Web, CSCW, utility-like computing and connectivity (grid or alike), sensor and wireless technologies (beyond 3G), advanced networks services (e.g. IPv6), knowledge and content management, and WfMS based on peer-to-peer design principles to enable radically new collaborative environments. It should reflect an open interoperable service oriented reference architecture built on top of lower layer middleware and offer sophisticated services such as discovery and allocation of resources(human, peers, content, knowledge, computing capacity and services); identity, security, privacy and trust; community management and sharing support; and environment awareness, including mobility.

- Concepts, methods and tools for collaborative work. They will provide the support and operations required for complex virtualised working environments. Works include development of tools for sharing resources, knowledge/resources discovery, service composition, CSCW tools (including multi-conferencing) to ensure stable, dependable collaborative applications.

- Development of challenging verification Applications, including content rich, mobile collaborative environments having dynamic connectivity and interaction. These applications will benefit from sharing and accessibility of knowledge gain from cross-domain fertilisation and, when appropriate, leveraging on the experience on collaborative games. In particular, it is expected applications in the areas of collaborative design and engineering (fast prototyping), virtual manufacturing, maintenance, media/content production, e-Professionals, e-Scientist, and knowledge workers and information workers in remote and rural settings.

1.3. Instruments

It is expected that work on enabling platforms and tools for collaboration would crystallize around Integrated Projects which will also demonstrate and validate those results on challenging application scenarios. These Integrated Projects are expected to create critical mass by covering: basic research (e.g.: methods, models, languages), component-based research (e.g. new generation tools) and system integration. Projects must stimulate systemic innovation in business and industrial systems by incorporating leading-edge users with visionary application

problems and also mid-term issues and SMEs to ensure a wider take-up. Iterative testbeds and large demonstration should also be part of the IPs.

Networks of Excellence are expected to complement the Integrated projects, in particular for enabling technology platform where a longer term horizon is needed for further structuring the ERA in the field of e-work. Specific Targeted Research Projects and Specific Support Actions are encourage to explore emerging alternatives or alternative approaches so as to pave the way for additional new technological advances in the field.

Work should, where appropriate, strengthen and complement research carried on under ESA, EUREKA and in national initiatives. Work should also build on international RTD and standardisation activities, including W3C and IETF when appropriate, in order to achieve potentially internationally agreed reference architecture for collaborative work.

1.4. "AMI@Work is a highly innovative way to look at how we can make work more interesting, creative and productive" (Erkki Liikanen)
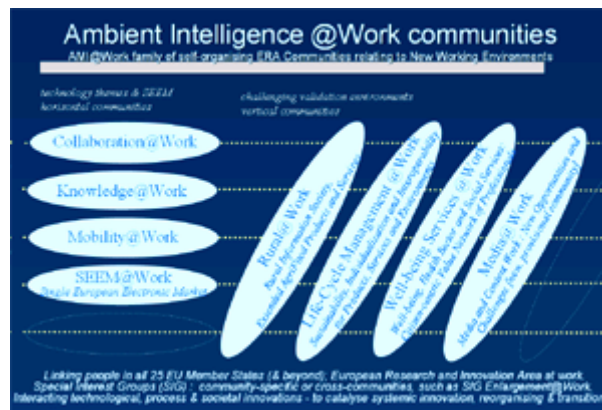
2. Rural@work Community Session

2.1. Minutes of the meeting and main conclusions

Participants:

John Nolan, EC, Belgium – facilitator

Nuria de Lama, Moviquity/MOSAIC, Spain – facilitator

Adam Turowiec, ITTI/MOSAIC, Poland – raporteur

Arturas Kaklauskas, Vilnius University, Lithuania

Tunde Kallai, Hungarica, Hungary

Sarah Skerratt, University of Newcastle, UK

Michel Icx, freelancer, Belgium

Leire Aginaro, Euskatel, Spain

Valentin Kotarta, Romania

Stephane Joiris, E-Y, Belgium

David Hopson, Duckdriver Ltd., UK

Jens Schumacher, Biba Plt., Germany

The development of this working session has been performed following the steps described below and resulting in a number of conclussions and action points to be taken from now on in order to continue with the activities initially envisaged for the Rural@work community. Main results are summarized within this report.

2.1.1. Self-presentation of participants

2.1.2. Introduction to the meeting and main problems foreseen for the Community

- First of all it is important to realize that the European Commission is working in other areas that somehow overlap among them. That is the case of the communities: **Collaboration@work, Mobility@work and Knowledge@work.** Those ones seem to be the starting point for discussing and roadmapping the implementation of technical challeges in the next Framework programme. Nevertheless, the specific research topics there included are often seen from a very technical point of view and using a context-based independent approach. As a result, **validation environments are necessary, and it is there where communities like the following ones reach the maximum benefit: Life-cycle@work, Well-being services@work and of course, the Rural@work community.**

- Previous steps so far performed within the rural areas environment cover initiatives such as the **Rural Wins project**, a roadmap from the V Framework programme for broadband technologies in rural and maritime areas. Some conclusions of this project to be taken as discussion base are briefly summarized here:

- o All IP paradigm, including Internet technologies as an important support for communications.

- o The anywhere/anytime approach by using mobile technologies.

- o Business models for Universal Broadband access will need to be based on:

  - *1.* Public/ Private partnership

  - *2.* New access technologies

- o Broadband ICTs in rural/ maritime areas need to address barriers of distance, economic interests, social and cultural issues...

- Once the current scenario for the rural@work community is described and some antecedents are reminded (previous points), all the participants proceed with the discussions aiming to define the vision, working agenda and challenges for this community.

2.1.3   Challenges for the next FP – main points of discussion:

- There exist two main phenomena related to rural regions: de-population (i.e. outflow of young people) and re-population (need for bringing people back from urban regions) -> de-population will not be stopped and re-population will not be stimulated if there is no ICT infrastructure.

- On the other hand, operators are not eager to invest in the infrastructure if they cannot see the business in it, and there will be no perspectives for the business if there is no infrastructure → closed circle??

- Stimulation of infrastructure development is not always a subject for IST and this Community, it is rather a problem to be solved with e.g. Structural Funds.

- Rural areas typically do not need state-of-the-art technologies, they need indications of applications that might allow to make use of (sometimes basic) infrastructure.

- Therefore, in the case of rural areas the innovation does not refer to technology itself, but rather to innovative ways of using the infrastructure (i.e. applications, best practices, training).

- However, there exist a need for certain technological research related to rural infrastructure. Some discussion points that were referenced during the session are:

  - o *PLC – **it might be a chance** for the rural areas (successful test-beds are being run in Spain: 50 thousand homes connected by the end of*

*2004, business models are being developed, **but** the infrastructure is expensive and feasible only for larger communities).*

o **Satellite** *? not feasible infrastructure now, and it must be accessible at cost comparable to terrestrial services.*

- The FP/IST research should additionally focus on social, human and user issues:

o *Human aspects are equally important as technology and they **have not been treated with sufficient attention** so far.*

o *A number of technology-driven initiatives (also within IST) failed when the original funding ended – they were not sustainable in economical terms since they were **not based on prior assessment of target users' needs** (e.g. tele-centres concept, Ennis Information Age Town, etc.)*

o **Traditional jobs might also profit from ICT** *– even if people do not know this fact and do not anticipate it; the problem is to find out what is really necessary in traditional sectors (do a woodcutter need a 2Mbps internet access?? ;-): not technology-driven developments, but a user-centric approach.*

o *Aspects related to **multimodal interfaces** are equally important: the rural community may in many cases have specific requirements (e.g. research showed that farmers tend to have larger palms when compared to the rest of the population)*

o *Very often, rural inhabitants lack the **very basic ICT skills, thus being training an additional need and specific challenge for this community and related areas of work.***

2.1.4. Focus and sense of having the rural@work Community

- **VISION FOR THE RURAL@WORK COMMUNITY**: "Include the Rural dimension within the Information Society". Objectives to accomplish this vision and providing sense to this community migth include:

- To make an insight into market- and business needs of ICT users in rural areas.

- To define different working agendas depending on specific regions (not all the rural environments can be approached in the same manner: classification of regions and needs has already been studied by previous projects that should be considered when going on with the rural strategy).

- Furthermore, not only differences between regions must be considered, but also differences according to a rich classification of working environments, user groups, typology of activities to be defined, synergies with other DGs,

national and european projects, etc. This shows that the implementation agenda should be based on a wide spectrum of working criteria in order to reach the main objectives of this community and to support the European Commission from a sustainable perspective.

- To identify main technical research challenges: not only associated to infraestructure (as it has been repeated), but technical challenges that greatly affect the implementation, deployment and sustainability of solutions. This vision covers dimensions such as regulation, standardization and interfacing/ integration with systems from third parties. Besides that, training, best practice and dissemination must be addressed in an appropiate way.

- To identify a number of feasible ICT applications (like e.g. e-tourism, monitoring, e-shop for agriculture tools).

- To promote the idea of "rural innovation" – not necessarily related to pure technologies, but rather to technology applicability (so far it has not been seen by the EC as "innovative").

- To stimulate initiatives that a) research the ICT needs in rural areas, b) enable best practice transfer and training – practical if possible, c) focus on human and social aspects of technology implementation.

- To stress the importance of rural areas, these problems do exist!

- To highlight the existing problems (and methods for solving them) not only to users/providers but also to policy makers – through the EC and national initiatives.

- To investigate a possibility for Europe to become a world-leading entity in the field of rural-specific R&D.

- To investigate a possibility of increasing rural attractiveness through ICT.

- To promote the strategic approach to building broadband infrastructure at rural areas (can results of previous roadmap projects, e.g. Rural Wins, be used for this purpose?)

- To focus on New Member and Candidate Countries.

2.1.4   Name of the rural@work Community

The participants agreed to the name. It does reflect the environment where new technologies for mobility, collaboration and knowledge exchange should be validated and furthermore, it clearly emphasizes that there is a specifc need of "working" in "rural aspects".

2.1.6   Next steps for the Community

2.2 To create specific clusters

2.3 To agree on a common Universe of Discourse for rural@work – Sarah Skerratt volunteered to sketch a draft map

2.4 To prepare for the meeting in Budapest (May) and to continue in Brussels (June). Also next event in Czech Republic is foreseen for this community.

2.5 For the time being, the Community will continue the discussion via e-mail and/or virtual discussion platform (when established by the EC)

2.6 To extend the Community towards further members, especially from the New Member and Candidate Countries

2.1.7 Summary

2.2 We firmly wish to continue co-operation

2.3 This Community is necessary as there exist significant problems of the rural areas that are not sufficiently catered for by the EC (and they are important from the EU point of view) and they will be disregarded if no specific support community is created for that purpose.

2.4 The rural@work issues could be also discussed with other Directorates such as DG REGIO and DG AGRI.

2.5 Candidate moderators: T. Kallai, S. Skerratt, D. Hopson, N. de Lama, A. Turowiec

2.6 The main conclusions from the discussion will be circulated among the participants to allow for corrections/completion.

Some additional points that migth attrack everybody to the Rural@Work community are higligthed below with the aim of providing a wider base of arguments that support the necessary work to be done within the rural environments and for which this community intends to be a catalyser:

RURAL@WORK: WHY?

- Rural areas are one of the most important environments that can **bring together all the different actors in the value chain: operators, IT providers, application developers, users, Administrations**. And that is because it is a complex working environment where there is no choice concerning the way of implementing measures to avoid the digital divide: it needs the help of all those agents to be successful.

    ➔ *Challenge of achieving COLLABORATION among technical and non technical agents.*

- **Rural development is one of the two pillars of the European CAP**. Out of a total population of 370M in 2000, 77M reside in rural areas. Of these only 16M are employed in the agricultural sector, which means that there is a wide spectrum of potential users that belong to very different typologies.

  → *Challenge of achieving REAL IMPACT in execution environments. Many economical interests are behind these sectors.*

- The new rural development policy has 3 main objectives:

  o To reinforce the farming and forestry sectors

  o To improve the competitiveness of rural areas and also quality of life

  o To safeguard Europe's environments landscape and rural heritage

  → *Challenge of achieving COLLABORATION among different European DGs: DG INFSO, DG AGRI...strengthening the European Research Area (ERA)*

- Avoid the digital divide as a rigth for people living and working in rural areas.

  → *Challenge of making rural and urban areas not so different "worlds" in order to not disregard the needs of any European citizen and also in order to generate new business opportunities.*

- A wide spectrum of research issues is still open to:

  o Improve, change traditional business activities

  o Create new opportunities (teleworking)

  o New ways to provide services (telemedicine, distance public services, distance learning...)

  → *Challenge of RESEARCHING ON SPECIFIC THEMATIC PRIORITIES, BUT ALSO challenge of INTEGRATING RESULTS FROM OTHER NATIONAL AND EUROPEAN PROJECTS and TO PROMOTE THE ADOPTION OF TECHNOLOGIES by means of PILOTS and DEMONSTRATION ACTIVITIES THAT FULLY ATTRACK PEOPLE thanks to more short term successful results.*

3. Create, collaborate, construct in communities

The AMI@Work community sessions for challenging validation environments - and for technology themes and SEEM - was at the Launch Event in Brussels on 7 June be titled as follows :

Collaboration@Work - Knowledge@Work - Mobility@Work - SEEM@Work - Rural@Work - Product Life-Cycle Management @Work - Well-being Services @Work - Media@Work (new community!)

Conclusion

Create and share valuable ideas together to reach for meaningful systemic innovation - for personal, business and societal value. Participate in cross-disciplinary professional 'dream teams'. Win-win.

References

www.amiatwork.com

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