

Submission to NEM: Community-Based Services Cluster

Cluster title : Community Based Services Cluster

Acronym : CBS

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Abstract

The objective of the CBS cluster is to address enabling technologies allowing for the creation of community-based services. The vision is that many if not the bulk of future applications will be community-based services, because they bring social value. Examples of such applications could be in sports, transport, e-inclusion, etc.... CBS enabling technologies must cope with challenges related to trends such as IPTV, user participation in providing content, and ubiquitous computing paradigms (virtual devices and virtual sources). Projects are needed to cover the following topics :

- Configuration, e.g. personalisation for individuals and group, autonomic computation and installation
- Interactions, i.e. how to create, explore, contribute to a community
- Clustering of contents and services, including virtual sources
- Clustering of devices, including virtual devices
- Quality of service, in terms of synchronisation of clustered content, accountability, privacy and data protection, ...

Such projects should involve the study of social criteria, the study of business models, and the development of a serie of application demonstrators.

Community-Based Services Cluster

Background and Scope

The availability of NEM infrastructure will pave the way to future multimedia applications. A growing number of such applications will rely on the possibility to cluster contents and devices, i.e. to take advantage from the existence of multiple sources of content. Community-based applications in particular will benefit from this possibility. Such applications are important not only because of the business potential behind, but mainly because of the social value they bring. They address the fact that people are becoming increasingly isolated and lack time to socialise. They address the fact that the proportion of senior citizens increases, finding themselves increasingly secluded in their houses, and in need of richer social and cultural contact.

While there are already a number of successful community-based applications (e.g. games), we believe that the possibility to cluster content will bring many more applications :

- Services dedicated to a sports supporters community (e.g. clustering video streams from Arsenal fans in a stadium)
- Personalised public transport (e.g. taxi sharing between persons from the same country abroad)
- Community based search engine
- E-inclusion services (e.g. specific adaptation of mainstream services for minorities)
- Community specific interactive TV channels
- ...

It is quite likely that many applications we cannot simply think of will be made available.. The vision of a truly connected society is not just connecting devices into clusters, but people into communities.

Challenges and Phasing

The existing NEM clusters address specific infrastructure challenges:

- NMCD address challenges are related to seamless multimedia content, e.g. transporting content over an heterogeneous environment
- SEC cluster addresses trust and security challenges
- MAN cluster addresses network management challenges for the future
- Future internet cluster address internet network future challenges

CBS addresses the challenge of clustering multiple content sources into a consistent result. It must take into account the following trends :

- user participation. Consumer equipment is getting cheaper and better, thus allowing user to provide content. However enabling technology to integrate user content is lacking (no service clustering capability, no metadata description, no interoperability, privacy and right issues)
- IPTV. IPTV is now widely deployed. It is however mostly based on the old interactivity model (broadcast). The challenge is to go for more interaction, integration with other services, with user-provided content
- ubiquitous computing paradigm, i.e. the user is moving in an ambient intelligent environment where he can interact with multiple devices.

This challenge is made even more difficult by the fact that CBS must take ensure that the technology viewpoint, the business viewpoint, and the user and societal viewpoint converge.

We suggest the following phasing :

Phase 1 : Proof of concept

- Define a vision and a roadmap
- Identify and evaluate a list of community based services, and related enabling technology
- Development of proofs of concepts

Phase 2 : Development of enabling technologies

- Address the technology issues, develop solutions
- Start a number of separate projects focusing on different configurations of community based application (e.g. User participation, large communities, context aware capability) as well as different applications area (e.g. e-Inclusion applications, entertainment applications, telematics applications, ...)
- Study integration into the infrastructure

Phase 3 : Integration of enabling technologies

- Transformation into a consistent set of enabling technologies
- Integration with other NEM cluster technologies in terms of multimedia content, security and trust, future internet infrastructure and associated network management
- Large scale applications

Projects within FP7

Projects are needed to cover the following topics :

- **Programming and descriptive capability** : service description capability, match-making and navigation capability, standards for user-generated metadata, support of ontologies, integration of folksonomies, APIs for the contribution and annotation of content
- **Configuration** : Personalisation for individuals and group, autonomic computation and installation, match-making capability to allow for the dynamic creation of cluster
- **Interactions** : new interaction models, user contribution, user navigation, enabling seamless cross-language contributions and conversations,
- **Clustering of contents and services** : dynamic service combination and adaptation. Dynamic configuration of channels
- **Clustering of devices** : service discovery, metadata into everyday consumer devices, extracting context aware meaning,
- **Quality of service** :synchronisation of clustered content, accountability, privacy and data protection, automatic authentication and verification of content, seamless right management technology
- **Societal issues** : right managements for user generated data, policy and regulatory aspects

Such projects should involve the study of social criteria, the study of business models (impact of the service provider ecosystem), and the development of a serie of application demonstrators.

Results

- New business models
- Research agenda roadmap
- New integrated technology
- Updated standards
- Experience reports for future applications
- Real-Applications