



NEM

Energy efficiency position paper

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- **NEM is not focused on energy management**
 - **But, several of the innovation could help into decreasing the energy consumption**
- A specific position paper has just been published**

The NEM community considers today four main axes to correctly assess the global significance of the energy challenge addressing both energy management and energy saving communication :

- Energy management at the end-user side using advanced ICT, i.e. both in private and professional areas, such as in corporate buildings and private dwellings.
- Smart grid and advanced metering for increased use of alternative energy resources and better coordination in consumption between the grid participants
- Advanced communication services, while merging communication and multimedia, for increased virtualization, i.e. ambient and virtual reality, for relieving the increasing traffic burden of conventional means of travel (car, train, plane, ...)
- Training in the efficient use of energy using multimedia means
- Content storage is more and more huge due to UGC and the digitalisation of any content

Energy management in home & buildings

- Home networking is part of the NEM agenda
- Huge energy savings could be done at home
- Today, most of the devices are or will be connected using specific connectivity means (hard and protocol) and some of them already address energy management such as central heating management, home automation, stand by mode management, energy dash board, energy production (solar, wind, ...), ...
- These applications need several actors and sensors which are quite difficult to install due mainly to compatibility issues between solutions/vendors. In order to get a full plug&play cheap solution there is still work to do mainly in the agreement on one standard solution
- NEM is pushing home network standardisation (see position paper on Home Network Delivery) which push for a unique standardisation body in charge of that field.
- Multimedia content is duplicated many times through social network and search engine cache, a need to rationalise and to make more energy efficient server farms

Smart Grid and advanced metering

- To fully realize the benefits of advanced meters and the smart grid, it must be possible to monitor, control and exchange data between disparate utility systems
- These systems often use a variety of data exchange formats and mechanisms that have historically prevented the systems from effectively communicating with each other.
- To address this, the Internet community has already developed Web services (SOAP/XML), a standards-based way for applications to integrate with each other
- Web services use ubiquitous protocols and the Web infrastructure that exists in every organization, so they require little, if any, additional technology or training investment
- The inherent interoperability that comes with using vendor-, platform-, and language-independent Web services technologies is vital in obtaining the maximum benefits from smart grids and advanced metering systems for the least amount of integration costs.

Rich advance communication services

- Today, people use phone calls, SMS/MMS and eventually videoconference services to communicate with remote people. These "basic" services are of course very useful but are not sufficient to avoid travelling (refer to collaborative project where we still need to meet physically regularly).
- Videoconference system are quite expensive, have bad quality and are difficult to setup.
- The NEM idea (approved by the Future Internet Assembly) is to build a tele-immersion service which allow people to communicate remotely as they are at the same location. It is also a mean to visit remote countries in 3D (even in a sphere) watching to cameras located every where in the world.
- Such a service will help people to travel less physically but to travel more virtually. That type of NEM application will contribute to energy savings.

Coaching using multimedia means

- In parallel to the technological means which help people to manage their power consumption, NEM is also pushing Energy dash board which could show people their real instant consumption.
- Based on the analysis of that consumption and compare with a optimum situation, specific application could help/coach people giving specific indication.
- Those coaching application could make it using advanced multimedia technologies merging real and virtual in order to be more attractive.

- People and industries are using online storage more and more usually and a single initial content is stored many times. This implies 2 difficulties :
 1. Impossibility to remove exhaustively a content from the internet
 2. Fast growing of server farms which are huge energy consumers
- Between 2009 and 2015 we expect the media and entertainment industry will see about a 10X increase in the required digital storage capacity and about a 12X growth in storage capacity shipments per year (from 4,094 PB to 47,291 PB). (source "2010 Digital Storage for Media and Entertainment Report")
- One of the scenarios that NEM is studying is a system able to avoid content duplication

- **To achieve that objective NEM members are supporting the following aspects :**
 - Enable advanced ICT for the devices and make their functionality available in an open and service oriented way.
 - Enable cooperation among devices and enable correlation to the user's tasks.
 - Enhance energy efficiency by enhancing user awareness and dynamically enable them to adjust their lifestyle requirements to optimise energy consumption
 - Provide solution able to withdraw duplication of content
- **With these targets in mind, the following positions should be encouraged:**
 - Promotion of the launching of services whose mission will be the provision of information to users about consumption in conjunction with other services developed under the framework of the digital home.
 - Encouraging the deployment of advanced metering and home network management services.

Conclusion

- **NEM position paper group on energy efficiency has finalised recently the document, more than 18 members had contributed**
- **5 ideas have been already identified but several others should be raised in the future, a Version 2 of the paper is foreseen.**
- **Paper available on NEM web site**
- **An opportunity at the next call to setup projects addressing those aspects as far as Green and Realistic human interaction and tele-presence are part of that next call.**

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future**

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