



NEM & the Digital Agenda for Europe

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The **Networked & Electronic Media (NEM) European Technology Platform** is leading a move towards a European Technology & Innovation Platform geared around the grand societal challenges. We are an industry initiative launched in 2004 and representing 800+ organisations that cover the whole innovation value-chain,. This includes large industries, academics and SME's, telecom operators, equipment manufacturers and software companies, and also content and service producers from all European countries. NEM delivers **sustainable European leadership in the convergence of media, information and communication technologies, by leveraging the innovation chain to deliver rich user/citizen experiences and services using NEM technologies to solve societal challenges.**

Out of the several NEM strategic activities, two are particularly relevant to the Digital Agenda: the Grand Societal Challenges and the Innovation Challenge. These complement NEM's focus on ultra fast internet and deployment of media applications on that network, and other activities including open standards, the strategic research agenda and our NEM position papers.

I- Grand Societal challenges

This first activity addresses the **societal challenges** faced by the global community. The European Knowledge Society must tackle these challenges through the application of the best analysis, most powerful actions and increased resources than can be brought to bear. The way that we address these challenges must create innovative and sustainable solutions in areas such as:

- **Global warming**
- **Tightening supplies of energy, water and food**
- **Ageing societies**
- **Public health, pandemics**
- **Security**

A Societal Challenge dimension would add a new objective to the public policy, whereby research and innovation are seen not as ends by themselves, but as contributors to a wider goal, defined as a societal benefit. The aim should be to foster those activities that have greatest impact on achieving the societal challenge, and not necessarily to increase research and improve innovation across the board.

ICT has a great role to play, and 6 main areas where ICT could contribute have been identified:

Smart energy grid: Energy grids will increasingly face risks of over-demand and blackout. Internet connectivity, computing power, digital sensors and remote control of the transmission and distribution system will help to make grids smarter, greener and more efficient; this should be complemented by smart metering which also makes energy consumption more efficient.

Smart environmental information systems: the use of sensor networks for collecting real or near real time environmental data is a growing field of application. It requires Internet connectivity for data management, dissemination and integration in complex information systems; it should be of benefit to services such as disaster management.

Smart systems for transport and mobility: Putting 'intelligence' into roads and cars with Intelligent Transport Systems (ITS) using sensor networks, radio frequency tags, and positioning systems for optimisation. The new cooperative system linked to the internet provides a solution to interconnect these diverse technologies and improve travel and

mobility through real time management of public and private transport resources, traveller information and decision-making tools.

Smart healthcare systems & Ambient assistant living: Current research experiments aim to develop technologies for 'ambient' environments capable of assisting patients and satisfying their information and communication needs. These technologies combine devices (sensors, actuators, special hardware and equipment), networks and service platforms to harness information about medical conditions, patient records, allergies and illnesses.

Smart culture and knowledge: European culture is very rich and European people are so creative that we will be soon overwhelmed by information and archives. Despite advances in search engine technology, there will be a need to help people manage their content, wherever it is stored.

Smart content for entertainment industry: Entertainment area is an essential driving force for innovation and user acceptance of smart technology allowing economic growth in the coming years. Smart content enhanced with metadata combined with intelligent access mechanisms are example of key technologies allowing the end-user to enjoy engaging and immersive experiences.

In several of those areas, the **Networked and Electronic Media community** would be enthusiastic to contribute to the common effort and bring in its expertise and technologies. Several position papers on such topics like energy efficiency, transport and education have already been published and are available on the NEM web site.

However, **Smart culture and knowledge** is the one with the greatest synergy with NEM's core research focus. In the last version of our Digital Agenda we have identified 30 research topics which have been ranked by the NEM community through a recent survey. The 6 most important topics are the following:

1. User satisfaction and quality of experience
2. Home and extended home networks
3. Network architecture
4. Intelligent delivery
5. Representation of content
6. Tools for content creation and manipulation

I-1. X-ETP Grand Societal Challenge working group

ICT is one of the most important contributors to support these societal challenges. For that reason, we are now working on the ICT vision regarding these societal challenges through a cross ETP work group. eMobility, ISI, EPOSS, Photonics21 and NEM are actively working on a common white paper that should be available at the beginning of 2011.

As a first step, the group will work on the already identified subjects described above and when the results of the ERA Experts Group think tank are available we will update our paper accordingly.

The methodology used by the working group will follow the above steps:

- 1/ Establish a formal liaison with the ERA Expert Group in order to get an up to date list and definition of the Grand Challenges
- 2/ Collect the existing material in each ETP

- 3/ Analyse the Grand Societal Challenges in order to identify fields related to X-ETP activities
- 4/ Brainstorm ideas where ICT ETPs could contribute
- 5/ Select from the X-ETP FI SRA the research topic addressing those fields
- 6/ Propose a white/position paper on potential view
- 7/ Identify possible gaps in our SRA for the next version
- 8/ Propose cross-ETP projects that could be submitted

Action 1 : Finalise the X-ETP white/position paper in order to contribute to the next work program (FP8) as well as to the Celtic purple book and also for national research programs.

I-2. Energy efficiency

NEM is also active in Energy efficiency since NEM covers Home Network services which could help people to decrease their electricity consumption. In addition, the NEM agenda is also addressing immersive communication which could help people to communicate in more realistic modes, hence avoiding travel. All these aspects have been described in a specific position paper available on the NEM web site. The conclusion of the position paper points out that climate change is one of the most important challenges the world will face in the near future. Effective actions are therefore required to prevent mankind to face a myriad of disasters and natural catastrophes. A general consensus was reached: ICTs, and hence NEM technologies, can significantly contribute to solve this problem. To achieve that objective NEM members are supporting the following activities:

- Enable advanced ICT for 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

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.

Action 2 : Establish stronger liaisons with EPOSS in order to map the Internet of Things and Networked media with the objective of enabling home network standardisation which is a key requirement to build a new class of home services able to save energy.

I-3. Intelligent Transport System

NEM has recently published a position paper pointing out that multimedia services should be part of this challenge since location services combined with multimedia information could help people in their transportation situation. On the one hand, the range of possible applications from the NEM sector should improve the information available to transport users and operators, to make them more aware of the implications of their use and

operation of the transport system, and thus to support transport policy objectives. This information will help travellers make more informed decisions about how, when, where and whether to travel. In this case, the ubiquitous and immersive use of audiovisual information is key for the satisfaction of the expectation of travellers regarding reliable ITS information.

Road traffic congestion and road fatalities have been identified as major challenges that Europe's transport system needs to overcome. Conventional approaches such as the development of new infrastructure have not provided the necessary results required by the magnitude of these challenges. Innovative solutions are therefore clearly needed.

NEM technologies can definitively contribute to foster implementation of ITS-based solutions, as they will gradually provide a range of new services to citizens and also enable improved real-time management of traffic movements. Additionally, there will be obvious benefits for transport operators and clients, since the new systems will provide public administrations with rapid and detailed information on infrastructure and maintenance needs. Furthermore, NEM technologies will provide new, more easily used and comfortable services to passengers, and increase safety and security.

Action 3 : Establish a liaison with the European Intelligent Transportation System Forum/platform in order to share our vision and define a set of common research topics

II- Innovation Challenge

The second activity addresses NEM's move towards a **Technology and Innovation Platform**, creating an **innovation partnership geared around two main targets: the European grand societal challenges and the NEM Industrial sector**. This includes the use of NEM technologies and research outputs, as well as design-driven and business model innovation, which will help fast-track solutions and deliver innovative products and services. We would like to play a proactive role in making Innovation Partnerships happen and assist the EC in delivering the Innovation Union and Digital Agenda. We propose the following key actions:

II-1. Innovation Partnership: from NEM Value-chain to NEM Innovation-chain

NEM members cover the whole value-chain from R&D, Education and Academia, Academic research, SMEs, corporations, industry and equipment manufacturers, content and service providers. In the online world smaller entities can innovate without large infrastructures and it is therefore even more important to support SMEs and create innovation policies that put SMEs into the driving seat of the European growth. Therefore, to evolve our value-chain into a powerful Innovation chain, we are in the process of involving and partnering with innovation catalysts including:

Education: business schools, to complement our high quality academic members and together help design curricula to improve entrepreneurial skills

Access to Finance: Venture Academies and Business Angel communities, to bridge funding gaps and come together with SMEs and other NEM innovative companies. A much wider exploitation of some of the current available European funds should be pursued; among others: Risk Sharing Financial capacity, Structural funds and cohesion funds.

Broader Innovation: Innovation forums, Executive Coaching Professionals and Associations, to help corporations and their executives think through and deliver business model innovation. The "open Innovation" concept, across research, technology development and implementation of technology results (overall new innovation concept

within the Innovation Union flagship programme) should be exploited to its maximum extent.

Large Scale User Trials: testbeds and living labs, to test innovations in larger scale experiments and reach a broader European citizen base for acceptance testing

Social Innovation: not-for-profit organisations that facilitate and support social innovation, social entrepreneurs and citizen organisations, to use NEM technologies for societal challenges

Design: both commercial and not-for-profit organisations working across art, design and technology, to facilitate product and service design and improve user acceptance

Action 4: *Building EU Innovation Partnerships through NEM and our Innovation catalysts*
We believe that NEM together with our innovation catalysts can greatly contribute to the overall Union’s efforts to set-up Innovation Partnerships and we are ready to act as a relevant party playing a proactive role in making Innovation Partnerships happen.

II-2. SME support and improved targets

Support for easier access to private funding, though important, needs to be balanced by easier access to public funding and research/innovation programmes, particularly for SMEs and start-ups. Our NEM SME group has identified four targets specific to SME Innovation, during early think-tank debates. These efforts and views are not isolated for NEM, but constitute a general contribution to the overall gap of European SMEs participation in the cooperative research and innovation programs.

The following help deliver faster innovation and better support innovative SMEs in Europe:

- 1) create research programmes suitable for SMEs and simplify participation rules and governance (faster, simpler research funding procedures and support at national/regional/EU levels)
- 2) stimulate and assist SMEs to participate in larger EU R&D cooperation initiatives such as European Technology Platforms and Public-Private Partnerships
- 3) take a wider view of SMEs, to identify cross-sector programmes and open innovation models across global value-chains and
- 4) share best practice between researching and non-researching SMEs.

NEM Community, as a whole, is ready to apply the concept “Think Small First”, supported by the European Institutions and recently called for by the Conclusions on Innovation Union for Europe of the Council of the European Union, November 26, 2010.

Action 5: *Improve access to public funding and research programmes for innovative SMEs*

We are committed to improve the above four targets and would like to bring the above recommendations to the EC and support its efforts to foster innovative SMEs and the conditions that allow better access to funding.

II-3. Proactively engaging with the EU to build Innovation Chain and Partnerships

We are in the process of creating a cross-ETP innovation workgroup, to combine best practices and facilitate Innovation Partnerships that use a systems approach to deliver cross-sector innovation.

We also believe that the cultural, art and design sectors are key catalysts in building innovative products and services and increasing user acceptance. We are pleased that the need for a European Design Leadership Board has been identified. We recommend

that this is extended to include actors such as artists working on NEM technologies and creative media industry players, and organisations that facilitate the interactions between art, design and technology.

NEM can help engage these communities with our members and together with key stakeholders from non-profit and social entrepreneurship sectors in an inspiring and results driven way.

Action 6: *Use ETPs to build a systems approach to cross-sector innovation*

We would like to bring these recommendations and approach to the Digital Agenda and we wish to play a leading role in connecting Technology Platforms into a powerful innovation partnership. We are ready to be an active party and work together with the European Commission to help create Innovation Partnerships that will speed up delivery of global solutions to Europe's societal challenges.

II-4.- Standardization

The NEM European Technology Platform would like to be instrumental to push, and when feasible, coordinate standardization efforts with the standards groups most relevant to NEM, as for example: Broadband Forum, CEN/CENELEC, DLNA, DVB, ETSI, IEEE, IETF, ITU, MPEG, Open IPTV Forum, SMPTE, etc.

Open standards should be developed to enable the easiest market access (market base and customer acceptance). NEM has already published a position paper on Standardization and Research and is willing to further contribute towards improving the standardisation system by:

- setting priorities in the standardization work programme,
- disseminating the use of standards and their applicability,
- promoting the testing and validation of existing standards and
- improving the exploitation of research results into the standardisation system, through more efficient mechanisms to develop standards and minimising the path from research to adoption of standards.

The standardisation and regulation landscape for network electronic media comprises the whole value network including content generation, content protection, content distribution and content rendering (incl. storage).

Action 7: *Encourage open standard development to allow easiest market access*