Next Generation Internet Workshop
Workshop Report
11 July 2017

Polo Tecnologico di Navacchio

Pisa – Italy

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Introduction

The NGI initiative is a broad and long-term initiative, mostly focusing on new technology areas like a better protection for private data, new internet architectures, decentralized data systems and new discovery and identification tools.

The NExtIN association in collaboration with the Polo Tecnologico di Navacchio, organised a Workshop in support of the European Commission's (EC) Next Generation Internet (NGI) initiative. This report summarises the views and ideas generated by the participants during the workshop.

Last autumn the European Commission launched the Next Generation Internet (NGI) initiative, aiming for a more human-centric Internet supporting European values of openness, cooperation across borders, decentralisation, inclusiveness, transparency and protection of privacy.

More information on the EC NGI initiative are available at:

- https://ec.europa.eu/digital-single-market/en/next-generation-internet-initiative

- https://ec.europa.eu/futurium/en/next-generation-internet

Event Agenda

The event was held on 11th July at Polo Tecnologico di Navacchio premises. The event took place in Italian to facilitate a more active interaction among participants. Presentations can be downloaded here:
http://www.next-in.eu/2017/06/15/next-generation-internet-workshop-11-july-2017-pisa-italy/

Programme

14:30 – Registration

15:00 – Welcome Addresses – Silvia Burzagli, Region of Tuscany

15:15 –The NGI Initiative, context, plans and actions of the European Commission – Valentina Scialpi, European Commission

15:30 – The research perspective: Trends and topics that NGI should embrace – Vincenzo Gervasi, University of Pisa

15:45 – NGI, a startup view – Daniele Mazzei, Zerynth

16:00 – Next Generation Internet for the Civil Society – Marco Conti, IIT-CNR

16:15 – The next generation internet for the PA – Sauro del Turco, Region of Tuscany

16:30 – Q&A

16:45 – World cafes in subgroups:

- University/Research – Moderator Stefano Giordano, University of Pisa
- Startup/SMEs – Moderator: Leonello Trivelli, University of Pisa
- Civil society – Moderator: Luca Tavani, Hyperborea

17:45 – Coffee break

18:00 – Wrap up and conclusions

18:30 – End of event

World cafés report

Startup/SMEs

A) Worries and problems related to the use of next generation internet

1. SMEs have hard time facing competition of big players that dominate the sector (i.e. Google, Amazon). **Standardization** is mainly dictated by the big players. This deprives SMEs from the possibility to operate in those "niche" markets where they are able to achieve excellent results, because of their capacity to provide customized products and services.
2. There's still a **scarce level of awareness** about the importance of data, in particular about their real value. Individuals normally do not care about the real value of data. As underlined by Neelie Kroes, "data is the new oil for the digital age", and it should be treated as so by EU citizens. The gap of information about the value and the potential of big data among EU citizens increases the risk that data leave EU towards big international corporations located elsewhere. Moreover, citizens are mostly unaware of their rights concerning data protection and ownership.
3. The new digital age requires **regulations** that favour fair treatment to everybody (both SMEs and large enterprises). Therefore, EU institutions and national governments must intervene to guarantee equality among all players. At the moment the market is unfair and unequal because big players have a dominant position in the marketplace.

B) Possible remedies

1. As often SMEs lack time and resources to deal with the challenges of the new digital era, **incentives** should be put in place in order to favour further aggregation. In concrete, there's a need to create a platform that will bring together SMEs to foster the exchange of ideas, create new products and services let alone to build new alliances.

Such a platform will increase the critical mass of SMEs and help them scale up in a market that is monopolized by big players.

2. Public authorities (EU, national governments) should give incentives – i.e. through the launch of open calls -, in order to help European SMEs (or groups of European SMEs) to scale up their business. This way, they'll have the possibility to get a higher share of the market and start competing at the same level of the big international players.

3. Public authorities should adopt regulations in order to protect SMEs and citizens against unfair competition and possible violations by big players (i.e. antitrust rules).

4. Public authorities should channel investments to initiatives aimed at sensitizing and informing citizens about all the aspects related to data usage (i.e. data protection and ownership, open data, etc.). Specific trainings and awareness campaigns should be envisaged from the very early age (i.e. digital trainings to favour end-user development), so as to give every citizen the tools to face the challenges of the new digital society. Citizens should be put in the position to decide what to do with their data. For example, they could decide to give their data in exchange for money.

5. New regulations in favour of open data, whether introduced, would make data available to everyone thus stimulating the birth of new innovative services.

C) Stakeholders to be involved into the NGI initiatives

- **SMEs and micro-enterprises** that face the abovementioned problems (A1).In particular, Fintech companies, ICT companies with a strong expertise in semantic web, web 3.0, big data (with an open data approach), blockchain technology.
- **Universities and research centers** can do research on consequences of the new digital technologies on the socio-economic environment and they can support policy-makers by designing new policies (i.e. standards, that shouldn't be decided by big players).

Research/University

A) What are the three priorities that the NGI initiative should focus on?

It has been highlighted that the NGI initiative should also contribute to covering aspects of innovation in the field of training in this specific area; In particular with the aim of filling the skill gap that is emerging in a worrying way in Europe concerning the development of Internet.
Participants also came to the conclusion that the initiative should provide new models of economic support for Small and Medium Enterprises and for university and research institutions.
Concerning the development of next-generation Internet initiatives, it has been also discussed the importance of supporting national and European federal experimental platforms (in turn related to infrastructures similarly sustained by governmental agencies such as the United States and Japan).

B) What are the expectations with respect to the NGI (both as an individual and as a representative of the specific sector)

Access to funding and research and development initiatives that will enable fruitful collaboration with enterprises, in particular innovative SMEs in the territory.

New tools to support young people's careers in the public research domain, in Italy typically limited to long periods of precariousness for a long time.

Allow new models of collaboration between companies and research entities that include high-level training and continuing training also in the business environment as one of the key aspects.

C) What are the main actors and / or projects to be involved to shape the initiative?

In addition to universities / research centers and enterprises (especially SMEs), it is important to involve in this development all the entities that can contribute to regulatory actions. Processes that can also represent an innovation on the regulations in force in the domain of Internet development are of crucial importance.

D) What NGI examples can you think of (companies, individuals, initiatives, projects)?

The Pisan territory has been one of the most active in the development of internet network (first Arpanet node in Italy, first website, first voicemail and multicast packet video experiments, etc.). The University of Pisa is equipped with a completely private fiber optic network that corresponds to 7000 Km of single-mode fiber. To think network are connected the other two schools of excellence (S. Anna School and Scuola Normale Superiore), CNR and INFN. New DATA CENTERS are being developed, in addition to those already in operation, in order to maintain the current network services in the various institutions.

The tradition of participation in EU funded projects in the specific direction of network development spans from aspects related to "social innovation", smart-cities, highly advanced technological aspects both on the subject of photonics and of the development of the next generation cellular mobile radio network or of other enabling technologies.

E) What are the main concerns in the Internet nowadays?

It has been highlighted problems causes by an often inappropriate regulatory framework and obstacles to the development of network infrastructure and services The modest number of infrastructures suitable for experimenting with new network components and services is underlined

F) What are the most visionary and high potential solutions/trends envisaged, at technology and policy levels?

At the discussion table, DIY (Do It Yourself) developments have been considered particularly interesting since the first developments in Wireless Mesh Networks are now extending to aspects such as the "Community Cloud" and the Internet of Things not necessarily dominated by large Players in the industry (for example, the developments in LORA technology have been cited here);

The discussion highlighted the importance of developments in open hardware and open-source software, but also in the autonomous management of services compared to traditional OTTs.

G) What (type of) actors will be key for the development of this vision?

There is a need for strong involvement of trade associations and control rooms that will not only share best practices, but also ways of participation by a wider audience of researchers and SMEs. In this sense, university associations (e.g. inter-university consortia such as CNIT and CINI) are particularly important because they could be a key element in the development of new cascade funding methods at national level.

H) How should they interact with each other to develop this transformation?

The discussion showed that there may be particularly interesting forms of funding mediated by national and international actors supporting large projects such as the FET Flagship Excellence funded by intermediate entities, which can facilitate the participation of SMEs and research organizations with "Open call" type approaches.

J) What are the main tools to mobilize them?

It has been highlighted how often network development initiatives are certainly infrastructural but also a "logical network of people" (thinking of Internet 2). In this sense, the importance of building a "community" in support of these developments has been discussed (supported, of course, by portals that make both the participation and best practices available).

K) How are citizens' needs and aspirations taken into account in this process?

It has been argued that one should avoid asking citizens to respond by considering the satisfaction related to a single service. On the contrary, it is hoped that the process will be stimulated so that it is possible to find alternatives – evaluating pros and cons - of different solutions (A / B testing).

L) What should be the role of the European Union in this process?

Supporting experimentation that really can give rise to economic growth of the territory and the actions of education, research and technology transfer of universities and research institutions up to and in synergy with what is happening globally in this strategic sector.

M) What should be the role of external actors in this process?

It is important that synergies between the different players can be expressed through complementary and original actions, avoiding a copy of the copy of what is already possible, as it happens in particular areas of European research and innovation funding (e.g. SME instruments or ERC program) . It is really necessary to be original in the cluster support models of enterprises and universities at European level that can help sustainability of certain experiments and impact globally.

A) General remarks

- Internet is not yet focussed on people. There is the need of an IoP – Internet of People.
- The future of Internet is not yet designed, for some categories Internet is something not accessible, it is not a reality.
- Internet services are not usable to all, they do not correspond to the users types
- There is a strong need of education and retraining to allow all people being able to use internet inclusively
- People have to be aware of their rights: the first of all, the right to be disconnected
- There is a need for a general EU policy concerning taxation in relation to internet, technology modernisation, etc.
- Training for conscious internet users is necessary
- Technology is neutral in theory, until it is kept apart from economic interests. Interests should be kept together with citizens
- Internet uses must be aware of the tool: everywhere there should be an appropriate training – at home, at school, etc.

B) Worries in relation to the use of Internet

- There are worries and dangers in the future evolution, e.g. for what concerns the use of blockchain in different sectors, such as the e-Health. With the blockchain technology there is the risk to loose the "right to be forgotten". Security of data vs *erasability*
- The big players will have full control over data and they are pushing and will push the ways technology is changing)
- Concerning technologies, users are told only about the potential and the positive aspects, while there is no attention to inform on those aspects that can impact negatively.
- Connectivity is not pervasive. It is brought only in those areas where there is a market. Areas with a low number of inhabitants are yet "isolated"
- Concerning the NGI stakeholders, the risk is that only those with an economic interest will raise their voice in the process, while the weakest in society won't participate in the debate.
- Internet is being designed for *users* and not for *human beings*
- People should master the technology and not being mastered by
- There is a big risk of an excessive polarization
- Ungoverned things go in the hands of those with much more power

C) What should be the role of Public Authorities in the process?

- A public authority should take care not only of the technological aspects but also of the social one
- All local authorities should make an important joint effort to intervene on infrastructures, improve the digital culture at all levels, simplify bureaucracy, design a bureaucracy in line with the easiness of technologies

- Google profiles its users to provide better services…what if a PA would do it? Will it be perceived the same by users?
- Policies should control territories so that enterprises behave ethically
- Policies should be fair more than equal in order to allow everybody being able to use technologies.
- Internet is related to society management, therefore is must be a priority in policies

D) How should it be the next generation internet in your dreams?

- Free from commercial or governmental controls
- A tool used consciously: it's a tool and a tool has to remain
- There are two perspectives: the *evolving* one – the evolution of what is available now – and the "*resetting*" one – to design a new Internet from scratch (this is unrealistic, though)

Participants list

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