The Next Generation Internet: resilient, reliable and ready for all Europeans

The European Vision for 2025

Georgios Tselentis E3 DG CONNECT
Georgios.Tselentis@ec.europa.eu
**Internet: the genie out of the bottle in less than 10000 days**

1974 TCP/IP

1981 IBM-PC

1989 www

1995 Netscape

1998 Google

---

IBM PC image by By Ruben de Rijcke - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=9561543
Next Generation Internet. Why?

Today’s Internet

• Concentration of power
• Security & privacy concerns

Future Internet

• Radically new functionalities
• An internet for the people

What will Europe do?
NGI - How it should be?

**Human-centric:**

- At the service of the people and the society
- Address present issues
- Make "Internet for the people" a design and development principle
Facets of the next generation internet

- Semantic crawlers
- Distributed architectures
- New search engines
- Artificial intelligence
- Immersive experience
- Haptic multisensory interfaces
- Human non-intrusive, smart & easy
- Business driven, right2disconnect
- Proliferation of devices, sustainability
- Internet for green & blue economy
- Resilient, secure & safe
- Cybercrime, regional disconnection
- Diversity, pluralism, right2choose
- Inclusive, open2all
- Democratic, participatory, transparent
- Open to new participatory economic models, multistakeholder
- Net neutrality, interop, end2end
- Privacy gap, monitoring, asymmetries, profiling
- Personal data spaces, decentralised (data) governance

Possible R&D topics

NGI Values, Visions

Citizen concerns
NGI should be resilient, transparent and sustainable for all Europeans

Human, Immersive, emotionally intelligent, easy to use: tailored to human perceptual and sensory human needs, supporting human activities constantly and pervasively, and which can take into account human goals, making it easier to interact and contribute;

Diversity, more pluralism and right to choose: respectful of ethics, giving minorities and individual opinions a chance to contribute to public opinion, and providing a range of choices suited to different needs, on top of or despite monopolies and exclusive rights of way;

Inclusive, open to change: an non-fragmented internet which reduces the digital divide and is non-discriminatory. An Internet which is not static but fast and open to change dynamically depending on evolving social needs;

Democratic, Participatory, Transparent: overcoming the current lack of privacy and unsolicited monitoring, and reducing the asymmetries in access to (and aggregation of ) knowledge. An Internet supporting democratic processes and providing equal rights to every citizen;

Level Playing Field, New Participatory models: an Internet providing equal opportunities for big and small players, and enabling new economic models based on participation, cooperation and commons in general;

Resilient, Secure and Safe: an Internet resistant to local disruption and intentional regional disconnection, as well as to malevolent attacks;

Green and Blue: an Internet which actively supports sustainability policies and human practices and lifestyles preserving the environment, and which minimises its own carbon footprint.
NGI Approach

*Human-centric Internet*

*Mobilise young talents and the civil society*

*Be inclusive and multidisciplinary*

→ *Research, Technology, Policy, Business, socioeconomic issues*
NGI Action Roadmap

Preparatory Activities:
- Open consultation
- Workshops
- NGI events

Engage

Consult

Tech Scouts

Study

NGI Initiative (WP2018-2020)

NGI flagship

NGI support actions
Study
(NLnet + Gartner)

*Develop a vision:*
- technology aspects
- service innovations
- socio-economic impacts
- users' perspective ...

*Ecosystem development:*
- technology trends
- building communities
- mapping relevant initiatives ...

CSAs
(ICT-41 + WP 2018-20)

*Strategy and policy:*
- stakeholder engagement
- roadmaps
- advisory role

*Technology harvest & transfer*
- coaching/mentoring/ follow-up
- knowledge transfer

*Outreach office:*
- communication strategy
- media presence and events
NGI "Agents"

EC NGI Initiative

NGI "Agent" for ENGAGEMENT
- Data mining
- Publications
- Startups, young researchers
- Virtual networks

NGI "Agent" for CONSULTATION
- Automatic data collection
- Crawling
- Dynamic spaces
- Civil society

NGI "Agent" for TECHNOLOGY SCOUTING
- Hackathons
- Challenges
- Social media
- Thought leaders
- Meet-ups
- Events, groups,..
NGI research nodes

EC NGI Initiative

Node I: Privacy Enhancing Technologies
1. Cascading Funds
2. Open calls
3. Pan-european activities

Node II: Decentralised Governance
1. Cascading Funds
2. Open calls
3. Pan-european activities

Node III: Discovery and Identification Technologies
1. Cascading Funds
2. Open calls
3. Pan-european activities

The Nodes:
- pan-European
- open to new stakeholders (startups, SMEs, young researchers, civil society,...)
- managing cascading funds
- providing training and support

... and several more nodes launched in 2019.
NGI new approach

- interactive / immersive
- multi-lingual / inclusion
- artificial intelligence
- internet of things
- cloud computing
- networks
- Future media

- dynamic / agile
- can address any Internet-related area
- young researchers / hi-tech startups
- funding individual teams / organisations
- short R&I cycles
- research that can move quickly to the market
- supporting human-centric vision
Think big!

First: Changing the course of the Internet evolution through research and innovation

Second: Adding to RTD&I the dimension of infrastructure

Third: Completing the technology and investment interventions with a policy dimension
Futurium: NGI communication platform

Next Generation Internet

Consultation on Next Generation Internet
The consultation is now closed!
Find the results here!

Next Generation Internet initiative
For Roberto Viola, Director General DG CONNECT 'The Internet today is integral to almost every part of our existence. It will be even more so in the future. But concerns on privacy or copyright are mounting and risks and limitation become more apparent. Private and public interests in the domain are huge, and may radically change the way Internet works in the future.'
Read more about the initiative

What's New

Policy Workshop Report Next Generation Internet - Centre for Science and Policy Cambridge Computer Laboratory
The Centre for Science and Policy (CSaP) in collaboration with the Cambridge Computer Laboratory, organised a Policy Workshop in support of the European Commission's (EC) Next Generation...
The NGI Interactive Map
The NGI online tool
https://nl.net.nl/NGI/
The key thing we ask you to help us with, is to understand the issues and possible approaches to solve them.

In short:

“what do you believe are the actionable issues we as the Internet’s stakeholders should collectively solve to be ready for the future?”
Join us in this exciting journey!

ec.europa.eu/futurium/en/next-generation-internet
https://twitter.com/NGI4EU or @NGI4eu
www.hub4ngi.eu/map/

E-mail: CNECT-Next-Generation-Internet@ec.europa.eu
NEXT
GENERATION
INTERNET