NEXT GENERATION INTERNET

NGI, FOR AN INTERNET OF HUMANS

For an online world - in line with shared values

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NGI.eu
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FOR AN ONLINE WORLD - IN LINE WITH SHARED VALUES

The Internet, once heralded as driving the third industrial revolution, is now so firmly sewn into the fabric of our daily lives that we usually take it for granted. Virtually everything we do from travelling, to shopping, to paying taxes, is in some way facilitated by online products and services.

Yet, as technological advances upgrade what the Internet can do – along with where and how quickly it does it – there is no matching increase in the trust people place in the Internet as a safe interaction space. On the contrary such trust, which is one of the pillars of technology acceptance, has eroded in recent years.

There are good reasons for it: online transactions remain subject to hacking and security flaws, the personal data of end-users are often used in inappropriate ways, and the risk remains of dominant, if not monopolistic, companies distorting the market or blithely ignoring the human and wider social implications of their products, services, and business models.

Also, one of the biggest strengths of the Internet, a free speech platform where virtually anyone can publish content, has now its downside: the spread of disinformation by accident or misinformation by design, which has, in extreme cases, impinged upon democracy and social cohesion with its potential to incite fear and hatred.

With half of humanity already accessing the Internet, and Europeans spending an average of seven hours a day online, it is a matter of urgency to invest time and resources into shaping a better Internet, for us and for future generations.

‘Smart’ for whom?

There are competing Internet origin stories, whether it be that of small groups of researchers and early geeks tinkering with communications infrastructure challenges, military strategists building decentralised communications options, or utopians building an egalitarian any-to-any network. Yet, whether its originators were in bunkers or on beanbags, it is doubtful that many of these pioneers foresaw the ubiquitous role this technology would play.

Nowadays, thanks to integration with Internet-based technologies, we talk about everything being ‘smart’. Technologies such as the
Internet of Things, Blockchain and especially Artificial Intelligence promise to revolutionise healthcare, public services, commerce, finance - to name just a few sectors.

We will live longer and healthier lives, there will be less casualties on roads, less pollution, medicine will be personalised, health systems will be more efficient and handicapped and elderly people will enjoy increased quality of life thanks to ambient assisted living. Who wouldn’t want to live in a hyper-connected world that senses our needs and responds accordingly, a world that holds the promise to increase our comfort and social reach, while reducing the mundane aspects of life and extending our lifespan?

Yet, as the history of technology demonstrates time and again, while the applications themselves may be neutral, what drives their use is often not. Who gets to decide what constitutes an ‘appropriate’ response to data gathering? Who gets to shape how we live, how we see others and ourselves?

The Next Generation Internet

Re-imagining and re-engineering the Internet to be fit for the future we want, while we continue using it to help run our societies and economies, has been referred to as: ‘the largest collaborative effort in the history of technology’¹.

This collaboration must meet the challenges of restoring trust, which entail to protect personal data, ensure privacy and security, combat disinformation online, guarantee access and freedom of choice, respect fundamental rights and enforce ethics and sustainability by design. The collaboration must also reflect the characteristics and values we want to achieve an internet that is resilient, trustworthy, inclusive, sustainable and decentralised.

With the success of the Digital Single Market, GDPR and large-scale funding programmes such as Horizon 2020, the European Union has demonstrated that it is uniquely qualified to undertake this challenge. So, in 2017 the EU launched the Next Generation Internet (NGI) initiative which, through tailored funding and adapted policy measures, aims to shape a vibrant human-centric Internet.

The Next Generation Internet comprises an ambitious research and innovation programme with an EC investment of more than €250m

¹ https://consultation.ngi.eu/survey
between 2018 and 2020. Focus is on advanced technology including privacy and trust, search and discovery, decentralised architectures, blockchain, IoT, social media, interactive technologies, as well as technologies supporting multilingualism and accessibility.

The Next Generation Internet (NGI) initiative aims to shape the development of the Internet of tomorrow into an Internet of humans that responds to people’s fundamental needs, including trust, security and inclusion, and reflects the values and the norms that we enjoy in Europe.

NGI is addressing Internet innovators as agents of change. It supports research and innovation for alternative solutions from individual talents who will develop technologies in line with our values and our vision, providing them with funding which can significantly shorten the research cycle and time to market. NGI also provides a nurturing environment with networking opportunities, business mentoring and researcher-in-residence opportunities.

One definition of success will be attracting individuals and groups who would previously not have sought EU support.

NGI responds to fundamental needs

1. Trust

Next generation social networks, media and platforms will define the way we communicate, exchange, do business, create, learn and share knowledge. A positive evolution of social media and collective intelligence will be the cornerstone of a human-centric Internet.

The NGI initiative aims to build the key technology blocks of a human-centric Internet with gives end-users full control of their personal data. Following on from GDPR legislation, where the EU became the first region in the world to grant citizens strict control over their personal data (with financial penalties for violation), NGI supports projects on privacy and trust enhancing technologies and decentralised data governance. Upcoming projects will explore user-controlled e-identities and data portability.

Citizens can be empowered through interactive technologies and immersive environments. Taking health as an example, at a time when the healthcare system is struggling to meet the needs of an
ageing population, NGI projects currently under development include those which encourage self-care through monitoring devices, alongside healthcare guidance personalised to the individual. Applications of user-generated data are being explored and developed for other sectors as well, such as public administration, energy and the environment.

2. Security

Through advanced technologies, new decentralised business and social models will ensure secure and trustworthy access for all. NGI will support initiatives to ensure that European citizens trust that their online environment is safeguarded against hacking and cyber-attacks, by funding projects on Internet architecture renovation to achieve better efficiency, scalability, security and resilience.

Blockchain and distributed ledger technologies can help reduce costs while increasing trust, traceability and security. They have huge potential for making social and economic transactions more secure by guarding against an attack and removing the need for middlemen.

3. Inclusion

The mission of NGI is to re-imagine and re-engineer the Internet to foster language equality and web accessibility. The information age should enable human potential, mobility and creativity in an inclusive way – while dealing responsibly with our natural resources.

The Next Generation Internet upholds and integrates fundamental EU values – such as linguistic diversity and accessibility for persons with disabilities – to allow everyone to take part in the digital economy and society. Advances in language technologies will help foster competitiveness and language diversity. NGI technologies will also help increase web accessibility through personalised assistive technology.

Technological research areas such as natural language processing and understanding, machine translation, automatic speech recognition, multilingual information retrieval, sign languages, assistive technologies and accessibility solutions addressing diverse types of disability will help improve human-machine interaction, increase productivity and help ensure no one gets left behind in the digital age.
The way ahead

With an investment plan for the next 10 years, the Next Generation Internet initiative will drive the evolution of the Internet in line with EU norms and values. It will be an essential driver for the long-term competitiveness of the European economy. For that, we need to create a vibrant community of researchers, innovators, civil society participants as well as major private and public stakeholders to join forces around a common goal: to build an Internet of humans.

If Europe acts according to its values of openness, innovation, cooperation and protection of fundamental rights, we have a major opportunity to play our part in building the Internet of tomorrow and make Europe a trusted digital hub at the global level.

Any citizen should feel part of the NGI initiative, because we are the Internet of humans!

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