

# NESSI Manifesto for Horizon 2020



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The Internet has grown up. Additional to the communication network, the network of **data and content**, the network of **things** and the network of **services** have emerged. All will **converge**.

Through this convergence we will enter a new era of digital societies and economies, based on ubiquitous and instantaneous access to **information**, and based on agile, adaptive and dynamic **collaboration** between organisations, communities and individuals. This will significantly **reshape** Europe and the world in 2020. Convergence will **transform** 21st century society and will have a **disruptive influence** on **social innovation**. It will transform established sectors including healthcare, transportation, manufacturing, energy, and telecommunications. It will fuel entrepreneurs and the creation of new businesses. **Software**, software-based **services and data** are the **key facilitators** for these changes.

The Networked European Software and Services Initiative (NESSI) brings together the stakeholders who will power these transformations. Software and software-based services will enable vibrant digital **ecosystems**. These ecosystems will **redefine the roles** of the whole industry, including software vendors, software-intensive high-tech companies, system integrators, service providers and consulting companies. New roles will emerge, including data vendors, brokers, integrators, and data scientists. Together these stakeholders will create new business models to enhance **wealth-creation**. The new ecosystems will be formidable engines for the creation of new jobs, based on the invention and elaboration of new economic and social opportunities.

The mission of NESSI is to

- **provide thought leadership** in Europe on the convergence of the networks of data, things and services and the transformation into a new digital society, on the technological and socio-economic implications, and on the consequent business opportunities;
- **drive convergence and transformation** by strengthening and advancing the software and service-based economies in Europe; and
- **stimulate the creation of ecosystems** around software, services, and data; and
- **provide visionary, comprehensive input** to the European Commission, thereby shaping the European research and innovation agenda.

Convergence and transformation will be driven by a generation of highly **agile enterprises** able to master the **design, development, delivery** and continuous **operation** of software-based services and applications. This requires:

- **agile collaboration** among companies of all sizes and cultures within digital ecosystems;
- sophisticated **value chains** which are based on **co-innovation** with very **fast innovation cycles**;
- **continuous adaptation** of software, services and applications in response to changing requirements, context and markets;
- extensive **reuse** of existing software-based services in Cloud infrastructures (IaaS), networks (software-defined networking), platforms (PaaS), and business objects and processes, resulting in secure and trustworthy advanced **industrialized software and service supply chains**;
- generating **value and impact** through continuous product and service adaptation and innovation, based on deep understanding of customer demand and usage;
- **data and information-as-a-service** based on the continuous, real-time aggregation of data streams from open data and from public and business sources, including the internet of things, social networks and crowd-sourcing; and
- **holistic life-cycle management** of software, services, applications and data value chains, and their operation 24x7.

To meet these requirements, investment is required to establish:

- **virtual digital ecosystems** in which the technology, engineering and business challenges raised by convergence and transformation can be identified, and in which new types of software, services and applications can be deployed and tested in realistic scenarios.
- **networks of people** with the motivation and skills to address the challenges raised by convergence and transformation, and to transfer the knowledge throughout the stakeholder community.

NESSI will:

- **facilitate the creation** of an agile European software, services and data ecosystem with co-innovation ethos and maximum potential for disruptive influence;
- **identify and promote research and innovation** with high impact and potential for **wealth creation**.

NESSI calls for action from all stakeholders to:

- **shape research agendas and innovation roadmaps** in topics related to software-based services and data value which will lead to convergence and transformation;
- **promote education and training** to significantly increase the number of researchers, technologists, engineers and entrepreneurs in the competencies needed for disruptive innovation in software, services and data, and their exploitation; and
- **influence policy makers** to tear down **barriers** inhibiting wealth creation in European digital markets.

The agenda set out in this Manifesto will yield technologies and capabilities to solve challenges in new and unprecedented ways, and enable wealth creation in Europe, to the benefit of the software and services sector, their customers, and our society.