"A TRANSFORMATIONAL AGENDA FOR THE DIGITAL AGE"

DIGITALEUROPE's
Vision 2020
Executive Summary

DIGITALEUROPE

"THE WORLD IS AT A TURNING POINT. SO IS EUROPE.
THESE ARE NO ORDINARY TIMES.
WHAT EUROPE NEEDS IS A TRANSFORMATIONAL AGENDA."

*José Manuel Barroso, President of the European Commission,
'A Vision for EU 2020' October 2009*

About DIGITALEUROPE

DIGITALEUROPE is the voice of the European digital economy including information and communication technologies and consumer electronics. DIGITALEUROPE is dedicated to improving the business environment for the European digital technology industry and to promoting our sector's contribution to economic growth and social progress in the European Union.

DIGITALEUROPE ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 60 global corporations and 40 national trade associations from across Europe. In total, 10,000 companies employing two million citizens and generating €1 trillion in revenues. Our website provides further information on our recent news and activities: http://www.digitaleurope.org

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ABOUT ▶▶ This White Paper

DIGITALEUROPE's purpose in producing this White Paper is to draw together a wide range of expert opinion. Bringing together research and analysis from many different sources DIGITALEUROPE provides a new and compelling action plan to ensure a successful and competitive future for Europe in the 'Digital Age'. Wherever possible, we have provided references for the assertions we make. As a research-based White Paper, DIGITALEUROPE aims to provide European policymakers with essential tools and information about Europe's digital future and what it requires to compete in a globalised world.

This White Paper proceeds in two parts.

Part I comprising Chapters 1, 2 and 3 shows why the realisation of President Barroso's EU Vision 2020 will depend first and foremost on harnessing the full transformational power of digital technologies.

Part II comprising Chapters 4 and the Recommendations sets out specific actions for a Digital Agenda to drive growth and economic prosperity in Europe.

(Please note that we refer repeatedly both to "digital technologies" and "ICT" in what follows. "ICT" derives from Information and Communications Technologies, and is the common acronym used as shorthand to identify the industry sectors based on these technologies, which are today almost exclusively digital technologies).

PREFACE ▶▶ A TRANSFORMATIONAL AGENDA
FOR THE 'DIGITAL AGE'

The member companies and associations of DIGITALEUROPE entirely share President Barroso's sense of urgency and agree with his call for a transformational agenda. The direction set and policies adopted over the next few years will largely determine Europe's place in the world for decades to come. Moreover, we support his assertion:

" We already have several of the ingredients in the different strategies and instruments the EU has developed in recent years. But each of these was developed separately: they do not offer a holistic view of the kind of society we want to build for the future. We need to revise the current Lisbon Strategy to fit the post 2010 period, turning it into a strategy for convergence and coordination to deliver on this integrated vision of EU 2020. "

President Barroso's call for contributions to the elaboration of this transformational agenda and integrated strategy must not and will not go unheeded. Many influential organisations and voices will no doubt bring welcome thinking and experience to this effort. Members of DIGITALEUROPE gladly accept our responsibility to respond to the President's initiative; the "turning point" he refers to embraces the foundational elements on which a fully inclusive European society, operating in a digitally driven age, must be built.

In this new age, digital technology has already become the defining transformational force. The "holistic view" that President Barroso calls for, starts with this understanding: we are living in a moment of time that is akin to the 15th century 'Gutenberg moment' which powered the Renaissance; the 18th century 'steam-power moment' that triggered the first Industrial Revolution; and the 19th century 'electric-power moment' that marked the start of our current Industrial Revolution. Like those transformational technologies, digital technologies have rapidly become the central new drivers of productivity growth, innovation and the diffusion of knowledge on a global scale.

We are only at the beginning. In the Digital Age, the development and broadening application of powerful digital technologies will accelerate the pace of economic and social transformation across Europe and around the world. Those who embrace digital technologies as the central transformational force of this new age will prosper. Those who do not will fade from relevance. Europe has fallen behind our own 'Lisbon Objectives' precisely because we have not yet given the digital revolution the central place it demands in our strategy. Provided we do so, Europe can, in the words of President Barroso, "exploit its full potential as the leading force for progress in a challenging world".

The Digital Age does not threaten Europe. On the contrary, it offers infinite opportunities to exploit and leverage our strengths in new and productive ways – and thereby maintain the economic foundation that supports our social model as our population ages.

Europe possesses enormous creative energy and talent as well as deep commitment to human rights, individual dignity, the rule of law and democratic government. We have world-leading industries, companies and technologies throughout our industrial fabric. We have made great strides in creating a home market on a continental scale. European enterprises and civil societies are deeply engaged in emerging economies and societies around the world.

We are ready to lead the world in the transformation to a low-emission, resource-efficient economy largely enabled by digital technologies. Being the largest global trading block and the world's number-one exporter, it is in Europe's vital interest to advance international trade talks in order to achieve free, balanced, open and fair trade as a driver of productivity, innovation, improved competitiveness and job creation, especially in the area of ICT and other technologies with energy-saving potential.

As part of his 2020 Vision, President Barroso confirms: "The next (sīc) European Commission will develop a European Digital Agenda (accompanied by a targeted legislative programme) to tackle the main obstacles to a genuine Digital Single Market, promote investment in high-speed Internet and avert an unacceptable digital divide."

The members of DIGITALEUROPE applaud President Barroso's point of digital departure. This White Paper joins him in his announced purpose, and expands on his key tenets. The Digital Agenda is about strengthening all of Europe's industry through the application of digital technologies. It is first and foremost about the pervasive uptake and innovative use of our products and services throughout the economy and society – coupled with the pervasive spread of digital skills. Though our own growth and innovation are indispensable for Europe's future, DIGITALEUROPE members stand ready to partner with European policymakers to build our digital future.

EXECUTIVE SUMMARY ▸▸ chapter one

"THE TRANSFORMATIONAL POWER OF DIGITAL TECHNOLOGIES"

The Europe 2020 strategy is rightly focused on competitiveness as the essential condition for economic growth and job-creation in the global 21st century economy.

Competitiveness depends on permanent productivity growth and permanent innovation in products, services, business processes and business models. The priority of any Europe 2020 policy objective should therefore reflect its contribution to both.

Europe must urgently close its current productivity gap with major competitors, notably the US and Japan but also now India and China. Due to our ageing population, we have no choice. As the European Commission stresses in its *2009 Ageing Report:* "Within a decade, labour productivity will become the main determinant of [Europe's] future economic growth."

As this report shows, a wide range of evidence demonstrates beyond doubt that the application of digital technologies has already become the primary 'up-stream' transformational power driving both productivity growth, innovation and job creation in every market and social service sector of the European (and global) economy. This is just the beginning, as the transformational power of digital technologies is itself expanding rapidly.

The building blocks necessary to deliver the transformational, productivity-enhancing power of digital technologies must therefore lie at the heart of the Europe 2020 strategy. Digitally driven economic and social transformation is in turn vital for the preservation of Europe's social model and leveraging our potential for climate change leadership.

Important demographic shifts are under way inspite of a stable total population forecast to 2060. The reduction from four to two working-age people (15-64 years) for every senior citizen (over 65 years) must be accomodated. To sustain our social model, Europe must raise employment rates and productivity, reform pension, health and long-term care systems. Only digitally driven transformation can deliver these outcomes. Exploiting the 'silver economy' as Europe ages will also increasingly rely on the enabling power of digital technologies.

Digital technologies are changing the very nature of the climate-change challenge – helping scientists understand the problems, supporting sector-specific innovations, creating new industries and business opportunities in the fast-growing green economy, empowering organisations and individuals to reduce their carbon footprints and developing awareness and encourage debate that will establish and maitain Europe's leadership position through to 2020 and beyond.

"THE TRANSFORMATIONAL POWER OF DIGITAL TECHNOLOGIES"
– SECTOR EXAMPLES

Digital technologies will increasingly drive productivity, sustainable growth, innovation and employment throughout the European economy in a myriad of ways. These are best demonstrated at the disaggregated levels of industry sectors, individual organisations and individual empowerment. European trends, case examples and success factors from six sectors help to create a wider vision of productive, innovative digital Europe by 2020:

- **Energy:** Europe's three long-term energy policy objectives – greater energy independence, reduced greenhouse-gas emissions and a competitive, continental scale Single Market – are squarely predicated on the power of digital technologies to transform, starting with our grid infrastructures and extending to consumer control over consumption.

- **Manufacturing / Automotive:** The transformation in all manufacturing sectors to customer-driven innovation based on the sustainable use of resources and integrated manufacturing cycles will depend on the pervasive penetration and use of digital technologies.

- **Transportation and logistics (T&L):** Transport and logistics companies are evolving from forwarding and warehouse-managing companies to highly industrialised, ICT-driven supply-chain providers. Services based on a mobile 'Internet of things' hold particular strategic important for the sector, as do digital solutions for traffic congestion, emissions reduction and intermodal transport.

- **Small- and medium-sized enterprises:** Entrepreneurial activity represents 99% of an estimated 23 million enterprises in Europe, providing two thirds of private sector jobs (75 million), and more importantly around 80% of new jobs created over the past five years. Enterprises need access to digital tools on-demand, which will help eliminate distance, assist in delivery of services on-demand, virtual organisations and enhance networked innovation.

- **Healthcare:** The traditional healthcare delivery model, built around dealing with acute episodes, will no longer be sustainable as European society ages. Harnessing the transformational power of digital technologies is the key for moving to a "continuum of care", while improving quality and productivity, as the practice and delivery of care continues to evolve.

- **Individual empowerment:** Democratic societies will embrace and respond to the collective and individual voices of their people as they express themselves via digital platforms. Individual empowerment is at the core of the transformational power of digital technologies throughout our economy and society. As the power of digital technologies grows, so will individual empowerment.

"THE FUTURE OF THE ICT SECTOR IN EUROPE"

Europe must be both host and home to a dynamic ICT sector that is tightly interwoven with the manufacturing, environmental, cultural, and political fabric. Home-grown ICT is indispensable and nothing less than central to this newborn Digital Age.

No region of the world can maintain its economic strength solely on the basis of imported digital competencies, products and services. Indigenous skills, innovation, products and services are essential for growth and prosperity. No region of the world will be able to maintain the ICT sector needed if that sector is not a leading source of jobs and growth and a leader in global markets.

ICT is today a large growing sector of Europe's industrial, technological and employment base. Comparison with other leading regions shows that we must and can do much better. In particular, we have to focus on enhancing our performance and establishing leadership in these high-growth sectors. This means Europe's relative weakness in ICT hardware manufacturing need not prove fatal, provided we maintain our strengths and performance in the higher-value roles in the high-growth sectors – these three sectors are where our future lies:

Next Generation Networks & Mobile Broadband: A vast global market for Mobile Broadband lies ahead, an area in which existing European leadership must be carefully nurtured and exploited as we face the fierce competition set to arrive from low-cost new entrants, particularly Asia.

Software: The innovation necessary to create economic growth, drive societal change and address environmental challenges relies on ICT, at the heart of which is software. But software is undergoing major changes as it moves from being used and perceived as a product to a service. This paradigm shift challenges all current market players and offers huge opportunities for Europe's software industry. This is a new world, with new rules, and Europe must compete.

Future Internet: Many, if not most of these software-driven opportunities will arise from the continuous development of the Internet as the primary communications infrastructure of the Digital Age. Key in this respect will be the 'Internet of Things' and the 'Internet of Services'. Exploiting the limitless opportunities created by the 'Future Internet of Things and Services' will become the central growth engine in all knowledge-based societies.

"A vast global market for
Mobile Broadband lies ahead..."
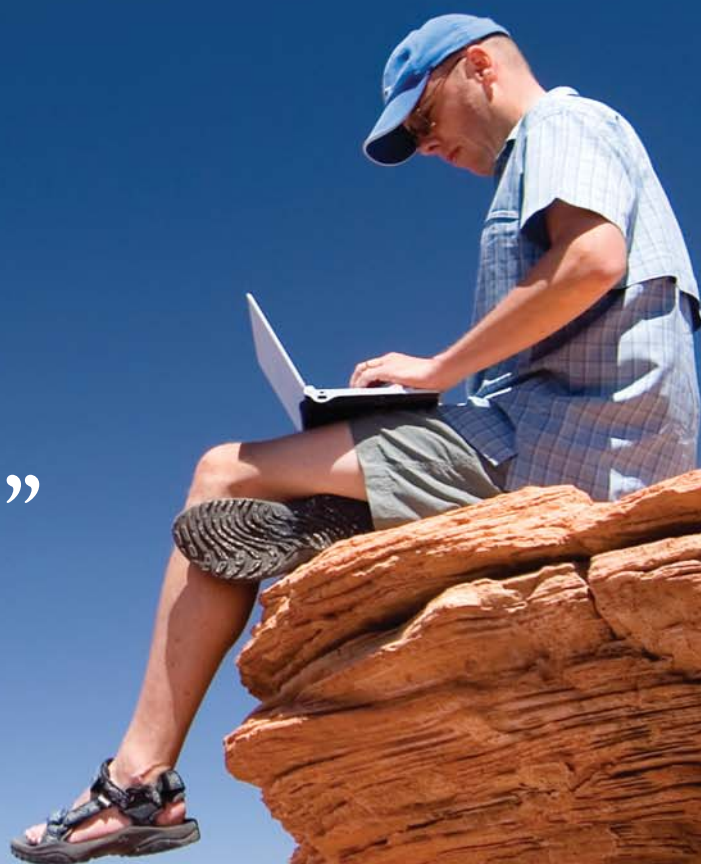
"BUILDING BLOCKS
FOR THE FUTURE"

Achieving the digital vision for Europe set out in the previous chapters demands a concerted effort, starting now, to put in place seven essential building blocks:

- **Digital Infrastructure/Next-Generation Networks**
- **Future Internet/Next-Generation Services**
- **Digital Single Market**
- **ICT Research & Development**
- **e-Skills**
- **Online Trust & Security**
- **Trade Policy**

- **Digital Infrastructure/Next Generation Networks:** The winners in the digital world of tomorrow will be those with access everywhere which will allow 1) huge volumes of data transmitted at very high speeds in both directions 2) through wired, wireless or satellite connection. These capabilities will trigger an explosion of new and exciting network-based interactive digital services – sometimes referred to as 'The Cloud'. Europe is strongly positioned for digital infrastructure, but we must stay at the leading-edge of technology development and implementation to provide 'ubiquitous participation'.

- **Future Internet/Next-Generation Services:** 'The Future Internet' will drive innovation in almost all industries and will shape the future of the service-based economy. The emerging web-based industries will provide tremendous opportunities for growth and job creation. The US is currently leading the development of next-generation internet services, while other regions and countries such as Korea and China are catching up quickly. Europe must ensure that it joins the leaders for both the development and uptake of next generation Internet services. The disruptive technologies of the 'Internet of Things and Services' represent a vast opportunity for Europe provided we take the lead.

- **Digital Single Market:** Now is the time to make the creation of a Digital Single Market a central priority of Europe's Digital Agenda & Vision 2020. Europe has successfully dismantled cross-border barriers to trade in most physical goods and many services. But online channels for internal trade in the very same goods and services may run into severe internal market fragmentation due to diverse national regulation of on-line activity.

  Barriers/issues include: diverging copyright licensing; copyright levy systems unfit for the digital age; differing data protection rules; different consumer-protection regimes; contrasting interpretations of intermediary liability; technology neutral standards; lack of radio-spectrum harmonisation; lack of effective payment systems to facilitate cross-border transactions and a lack of Europe-wide organised recycling schemes to support large-scale operations.

- **ICT Research & Development:** A renewed and concerted effort across Europe is needed to secure productive, leading edge ICT research and development, competitive at the global level.

- **e-Skills:** We need to both grow our ICT sector and drive the development of individuals with the necessary understanding and skills at all levels of the value chain. At present the outlook is alarming. To exploit the opportunities of the Digital Age, we must change the trend.

- **Online Trust & Security:** A trusted and safe online environment is a prerequisite for the further development of Europe's digital economy and Digital Single Market. As reliance on the Internet grows, so do concerns about its security and safety for all categories of users – private individuals (including children), business and governments. The foreseeable explosion in digital services will reinforce demand for robust and secure networks, including a framework for secure online payments.

- **Trade Policy:** To be successful and competitive on the global stage, the European digital technology industry needs to take advantage of the opportunities offered by international trade. ICT products often comprise hundreds of components that come from a variety of countries and suppliers. Those products can and should be sold to customers world-wide. To ensure international access to innovation, the highest quality, the lowest prices and the largest market, there is a need for a liberal trade environment.

DIGITALEUROPE's Vision 2020 White Paper, 'A Transformational Agenda for the Digital Age,' outlines the actions needed for Europe's digital transformation. This revolution represents the foundation of a sustainable and competitive economy and lies at the heart of a successful Digital Agenda for Europe.

Paving the way for the ICT sector to fulfil this role requires incorporating ICT into EU and national policies regarding growth, employment and SMEs support.

DIGITALEUROPE's recommendations for achieving a successful and competitive Europe of the future cover the following key policy areas:

1. Foster ICT Infrastructure

Europe's objective must be to establish global leadership in ICT infrastructure by 2015 by delivering close to 100% broadband coverage, giving at least 2Mbps service to the user, including at least 30% fibre-based infrastructure.

2. A Digital Single Market

Leveraging Europe's digital strengths into global competitiveness, economic wealth and sustainable jobs requires the creation of a European Digital Single Market where business can be conducted online as easily as through traditional channels. The Digital Single Market will require greater harmonisation across policy areas to eliminate existing obstacles to the provision of pan-European online commerce and services. DIGITALEUROPE therefore urges a horizontal approach to policymaking to eliminate multiple barriers.

3. Foster ICT R&D

Europe must become the most attractive region for ICT Research and Innovation through a combination of increased funding at EU and national levels, and the introduction of regulatory reforms to eliminate fragmentation. At the very least, Europe should achieve its objective of R&D expenditure of no less than 3% of European GDP by 2015 at the latest. While this condition is necessary, it is not sufficient. More attention should be paid to the transition of R&D into commercial products and services. Europe must establish a leadership role in next generation Internet applications and services. Regulatory reforms must include improved Intellectual Property protection with regard to patents, copyright and the promotion of IPR in green technology.

4. Promote e-Skills as Skills for the 21st Century

With an 85% correlation between e-Skills and competitiveness, Europe must move rapidly to improve the skills of its children, teachers, administrations and elderly. Europe must set ambitious goals for 2015 including halving the digital literacy and competence gaps and guaranteeing that all primary and secondary schools have high speed internet connections. By 2012 the EU should ensure all primary and secondary school students receive training about the risks and safe use of the Internet. All adults of working age should have access to e-Skills training.

5. Reinforce Trust & Security on the Net

The EU and Member State should launch awareness campaigns - run by public/private partnerships - to highlight the importance of privacy and security in the broader context of digital literacy. Privacy and Data Protection rules, which are often diverse at national levels, should be harmonised, administrative procedures streamlined and geared towards an ex post assessment as opposed to ex ante control. This will improve predictability and strengthen the Digital Single Market.

Data protection rules generally need to take the technology neutral character of the EU Data Protection Directive into account. Enforcement needs to become more effective and harm based, focusing primarily on adverse effects to the privacy or the fundamental rights of European citizens. Improved co-operation at an international level is needed to create a favourable and consistent regulatory environment. Rules governing international transfers of personal data should be streamlined into one European system, in a global context to reflect the global nature of the Internet.

Network security should be improved by establishing a European public-private partnership for the resilience of critical information infrastructures. ENISA should be transformed into a permanent European Commission agency and should facilitate the establishment and operation of the public-private partnership in the area of security and trust in general. Public-private cooperation to combat cyber crime should be fostered.

6. eHealth

eHealth is the fastest growing segment, worth an estimated €20 billion, equal to 2% of all health expenditure in the EU.[1] As such it was recognised as a pillar for European prosperity in the 2006 report, "Creating an Innovative Europe."[2] There is an urgent need to enable global standardisation and interoperability for technical, security and semantic aspects. The application of ICT will enable the introduction of mobility to healthcare, which will in turn facilitate the sharing of best practices and improve patent treatments. Funding of projects that support the introduction of real-time access to information in the area of healthcare will enable the provision of eHealth services to remote areas, both in country and cross-border.

Seamless cross-border cooperation for emergency response capabilities are essential. A prerequisite in this field is an effective and pre-arranged utilisation of terrestrial radio frequency spectrum.

7. Energy

Europe is aiming for a 20% increase in energy efficiency by 2020. ICT-based innovations provide one of the most cost-effective means to reach this target. Europe's three long-term energy policy objectives - greater energy independence, reduced greenhouse gas emissions, and a competitive, continental scale Single Market - are squarely predicated on the power of digital technologies to transform, starting with our grid infrastructures and extending to consumer control over consumption.

8. Transport & Logistics

By 2015 Europe should achieve a 10% reduction in CO_2 emissions in Transport and Logistics through the effective use of ICT. In addition, Europe should aim to establish an integrated, IT-enabled transportation network that has multimodality capacity, transparency and cost savings.

9. eGovernment

The effective usage of ICT can significantly reduce costs and enhance the quality of public services. The EU should strive to establish global leadership in eGovernment by 2015. Targets could include all public services available online across the EU, the uptake increased by 50% of online public services by business and citizen, and the EU should have a fully functioning Internal Market for eGovernment services.

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1 A presentation on the EU eHealth Agenda, Illias Iakovidis, ICT for Health Unit, DG INFSO to the health Conference, "Overcoming the challenges to eHealth," 17 June 2009 organised by Linklaters. | 2 Report by the Independent Expert Group on R&D and Innovation chaired by Esko Aho, http://www.eua.be/eua/jsp/en/upload/060119Aho_report_final.1151581421179.pdf

10. Trade Policy

Europe needs to be more active and take a leadership role in order to convince its trading partners to conclude the Doha Round. World Trade Organization (WTO) Non-Agricultural Market Access (NAMA) negotiations should also be advanced and concluded regarding both tariff and non-tariff barriers (NTBs) in the ICT/electronics sector.

The WTO Information Technology Agreement (ITA) should continue to be implemented and expanded in terms of product and geographic scope. A 'smart and quick' update mechanism providing for the removal and prevention of non-tariff barriers is required. This will enable all citizens to continue to have access to the best digital technology products at the lowest possible costs.

11. Governance

Europe's Digital Agenda needs to be driven through a governance structure established and managed by the European Commission. This structure should consist of a horizontal approach within the European Commission, spanning the full breadth of the Digital Agenda. Member States must take ownership of the goals of the Digital Agenda via individual targets that collectively meet European ones. Furthermore, a new and comprehensive set of targeted Key Performance Indicators (KPIs) needs to be introduced to measure progress. An annual European Digital Agenda Summit should be organised. This event should bring together political decision-makers from the European Institutions and Member States with executives from industry and civil society; and serve as the focal point and reporting venue for the governance system.

To receive the complete version of DIGITALEUROPE's White Paper, please email info@digitaleurope.org