Introduction

Differences in economic performance between industrialized countries are largely explained by the level of investment and research in, and use of, information and communication technologies (ICT), and by the competitiveness of the information society and media industries. ICT services, skills, media and content are a growing part of the economy and society. Indeed, the implementation of the Europe 2020 strategy, intended to modernize the European economy and to build a knowledge-based economy, is strictly linked to an ‘information society for all’, in other words a widespread use of ICT in public services, SMEs and households.

Progress in e-inclusion, however, is still slow. Social differences in ICT use persist and in some cases are even widening. Most of the Riga targets will be difficult to achieve if current trends continue. Therefore much more should be done to achieve e-inclusion, and EU intervention is justified to guarantee equal access and effective participation in the information society, internal market coherence and e-inclusion co-ordination actions.

At the end of the 1990s, when the European Council began to deliberate upon and formulate plans of action with regard to the role of ICT within the European economy, the theme of ICT diffusion slowly began to attract the attention of policy makers and researchers. To achieve this main goal, over the years many intervention plans have been prepared and implemented. In this perspective a path articulated on two tracks has been followed: the first devoted to finding and describing the modalities and the pace of ICT diffusion – early defined in the much quoted and well known expression ‘digital divide’ – the other one focusing on policies and interventions able to reduce the digital gap and favour a more balanced technological diffusion. In the initial phase, attention and efforts were all concentrated towards reinforcement and expansion of networks and electronic services; that is, on the enlargement of the size of the user population. Faced with such needs – preliminary and essential to the construction of an ‘information society for all’ – the issue of social impact of digital inclusion/exclusion inevitably remained in the background.

It came to the fore in the subsequent plan, ‘eEurope 2005: An information society for all’ (CEC, 2002), presented at the European Council in Seville in June 2002. In the light of the progress made within the ambit
of eEurope 2002, the new plan concentrated on two categories of action: ‘on the one hand, it was intended to stimulate services, applications and content both for public online services and e-business; on the other, it refers to the basic broadband infrastructure and issues linked to security’ (p. 3). The new attention given to the spread and availability of broadband and multi-platform access implies a different approach to the services offered and the role of the user. Two years after the formulation of the eEurope 2005 plan, the Commission set forth the ‘eEurope 2005 Action Plan: an update’ (CEC, 2004), which dedicated greater attention to the issue of e-inclusion and the need ‘to understand in more detail the various facets of this complex issue’ (p. 3).

The new strategic plan ‘i2010 – A European information society for growth and employment’ (CEC, 2005), presented in 2005, follows this route even more clearly. The issue of the inclusion of citizens in the information society thus becomes one of the Commission’s priorities. The aim of a European society based upon the inclusion of its members is linked to the spread of broadband access and, more generally, to the achievement of digital convergence, the improvement of the services on offer in terms of both accessibility and costs, the spread of basic digital awareness and the improvement of citizens’ health made possible by the new e-health services. Attention is extremely clearly directed towards the social impact of ICT and the need to guarantee the advantages of their use to an ever-greater number of citizens. Reference to various dimensions of access (both material and skill access), as well as the implementation of public services, indicates a distinctly richer and more structured interpretation of the themes of e-inclusion than in the past.

In 2006 this approach and the objectives for an EU e-inclusion policy were agreed in the Riga ‘Ministerial Declaration on an Inclusive Information Society’ (June 2006) which set concrete targets for Internet usage and availability, digital literacy, and accessibility of ICT by 2010. It also identified a number of priority areas for action: namely ICT and ageing, geographical digital divides, e-accessibility (that is, the usability of ICT for people with disabilities), digital literacy and competences, ICT for cultural diversity, and inclusive e-government. As a follow-up, in November 2007 the Commission adopted a ‘Communication on a European e-inclusion initiative’ (CEC, 2007a) which considers failure to access or use ICT to be a major form of social and economic exclusion, affecting cohesion and prosperity in Europe.

Furthermore in the final part of the ‘e-Inclusion’ Ministerial Conference held in Wien (2 December 2008), the Presidency of the European Union emphasizes that: (i) measures to improve digital inclusion constitute an investment in the future and have to be at the centre of public policies
addressing the information society; (ii) a strong political commitment, targeted at vulnerable social groups, is necessary in order to improve digital inclusion; and (iii) broadband is becoming an ‘essential commodity’ like water and electricity. It is today an indispensable service for the effective participation in global trade, economy, education, culture, politics and society.

Therefore, the key issue becomes the ‘difference’ made by ICT in the everyday life of people and in the whole society. This contribution is not restricted to the economic dimension alone. It involves the social dimension as well. Thus the issue of e-inclusion becomes something that is worth achieving (CEC, 2007b) if we want to build ‘a growing and sustainable well being for all society’ (p. 8). In order to build one Europe, including digitally, it is necessary to create an ‘Internet ecosystem’ which has its foundations in a social system that promotes the economic development and social welfare of its citizens by reducing inequality in all its various aspects. This appears to be the objective of ‘Europe 2020’ (CEC, 2010a), the new strategy for Europe, as it poses as its priority the ‘development of an economy based on knowledge and innovation’ and places among the seven flagship initiatives ‘a digital agenda for Europe’.

Despite all these valuable initiatives, as the CEC’s ‘impact assessment’ (2007b) recognizes, much more must be done to achieve e-inclusion and EU intervention is justified to guarantee equal access to and effective participation in the information society, internal market coherence and e-inclusion co-ordination actions. In this regard, the ‘European e-inclusion initiative’ (CEC, 2007a) clearly recognized that e-inclusion should not be seen as a problem only but also as an economic opportunity. On economic grounds an inclusive information society brings large market opportunities for the ICT sector, contributes to productivity growth and reduces the cost of social and economic exclusion. In other words, bridging broadband and accessibility gaps, or improving digital competences, translates into new jobs and services.

These economic benefits, however, are difficult to estimate. On the macroeconomic quantification of the inclusive potentials of ICT and its impact on economic performance (productivity, consumer welfare, employability and economic growth) there are very few contributions in the current socioeconomic literature.

The purpose of this study is to start to fill this gap and strengthen the evidence on the economic benefits (and costs) deriving from investment in inclusive information society technology and services. The study will gather data, propose indicators and composite indexes of digital development and e-inclusion (and its flip-side, e-exclusion), and use econometric models to assess the relationship between inclusive ICT and wider economic and social performance.
Despite a growing literature on digital inequality and e-inclusion, the quantitative and qualitative understanding of ICT and e-services usage remains extremely poor and uncoordinated: it is not yet possible to find fully consolidated and reliable datasets and indicators to provide a broad quantitative perspective and facilitate benchmarking for monitoring the process of e-inclusion. Facing these difficulties, and in order to define and measure e-inclusion, we moved beyond the distinction between ‘haves’ and ‘have-nots’ in terms of access only, and instead propose a multi-focal approach to this complex concept in continual evolution (see Chapter 1).

More specifically, in Chapters 2–4 we adopt a multi-perspective and multi-dimensional approach (infrastructure, usage, impact on quality of life) so as to provide a quantitative evaluation, indicators and a dataset to monitor e-inclusion for all 27 EU Member States and explain their main determinants.

On the operational front our goal is to produce the European Digital Development Index (EDDI), in order to monitor and capture the level of advancement of digital inclusion in the EU27 and in all member countries and compare progress made between 2004 and 2009. The composite and longitudinal nature of the EDDI – based on the indexes measuring the subdimensions of infrastructure, usage and impact from 2004 to 2009 – will contribute to individuate the main obstacles to ending the digital exclusion and to monitor progress that has been made in terms of the Riga targets. Its main objective is to provide policy makers with a useful tool to benchmark and assess the e-inclusion processes.

Another key goal of this research is to strengthen the quantitative evidence on e-inclusion and the understanding of the relationship between indicators of e-inclusion and wider economic and social performance. In this perspective, in Chapter 5 we review and compare the existing analyses and models, focusing on the relationship between inclusive ICT and European performance in terms of growth, job creation, and social inclusion.

To select the most suitable model and econometric tools we focus on a set of reference parameters related to: (a) methodological approach; (b) structural specification; and (c) performance variables (Chapters 6 and 7). The selected econometric tools and International Futures (IFs) model meet the following requirements: (i) they are internationally used; and (ii) they are able to assess e-inclusion policy initiatives in multiple dimensions (economic and social) and geographically within Europe, across Europe and in a global context. More specifically they incorporate the properties of ICT in a satisfactory way. ICT is general purpose technology (GPT), whose impact on the economy cannot be understood in the framework of the simple production function and must be assessed taking into account,
among other aspects, its interaction with the regulatory framework, the structure of the economy, and the evolution of skills and organization (Guerrieri and Padoan, 2007).

We use and improve the selected IFs model and assess the impact of ICT on inclusion and economic growth generated by digital inclusion in the EU27. We focus also on the most relevant and measurable factors emerging from the literature and the statistical data at micro level. We provide quantified estimates of impacts of various credible forward-looking policy scenarios and run policy simulations using different assumptions with regard to digital inclusion policies.

These policy simulations help us to provide conclusions and identify policy recommendations that are relevant for the post-i2010 strategic framework, keeping in mind the peculiar characteristics of ICT as general purpose technology (which requires that ICT be activated together with other enabling strategies) (Chapter 8). This final part develops an encompassing EU policy framework for pursuing e-inclusion. It attempts to come to grips with what e-inclusion can be understood to comprise (following the EDDI approach) in an EU perspective, and how it relates to traditional and new ICT policies at EU and national levels.