

The Future of the Information
Society in Europe:
Contributions to the Debate
(Executive Summary)



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SUMMARY

In March 2000, the heads of state and governments of the European Union (EU) agreed on the goal of making the EU the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. This overall goal has been widely accepted by European stakeholders. Recent analyses, however, have pointed out that the implementation of the Lisbon vision has been only partially successful. The Lisbon strategy needs fresh impetus and the pace of reform needs to be accelerated. Chapter 1 details some of the policy problems the EU has to face in this respect. Where will the EU go in the next decade and how will information and communication technologies (ICTs) contribute? How can information society technologies and knowledge (in the broader sense including education, science and research, innovation) contribute to growth and hence to welfare? ICTs are systemic technologies, enabling change at all levels of society and business: they are everywhere, in every job, every business, in all aspects of our lives and organisation of society. To address the challenges and to realise the full potential of a knowledge-based Europe in a global context, ICTs are therefore essential.

However, knowledge society policies need to be holistic, i.e. encompassing technical, economic and social issues. Only as part of a broader strategy based on knowledge, sustainability and participation does it make sense. Europe needs to identify the key focus areas for the future to construct its “dream world”, building upon and going beyond the pillars of the industrial society. New actions would have to go beyond conventional wisdom, taking into account Europe’s future role in a globalised society and the socio-economic drivers for better quality of life in Europe. In order to shed light on possible new actions, FISTERA asked a number of prominent economists and experts to indicate their personal opinion, they include, Mrs. Carlota Pérez,² Mr. Luc Soete,³ Mr. John Zysman,⁴ Mr. Tobias Schulze-Cleven,⁵ Mr. Emilio Fontela,⁶ Mr. Erik Reinert,⁷ Mr. Jeremy Millard,⁸ and Mr. Ilkka Tuomi.⁹

History suggests that there is a parallel between the techno-economic paradigm led by ICTs in a global context and that of the previous industrial revolutions. Past revolutions are therefore worth studying to understand how ICTs are reshaping the economy and society. In Chapter 2, Pérez sees the current globalization process as the inevitable consequence of the power of ICTs and their techno-economic paradigm. But, she adds, in order to avoid further polarisation or serious backlashes from job losses, a set of adequate policies need to be put in place to guarantee that the full potential benefits are reaped and that social well being is maximised in all the countries involved.

According to Tuomi (Chapter 8), the emerging meaning-processing paradigm would be more appropriate than the current techno-economic paradigm (following Pérez’s terminology) in that it explicitly recognises that human beings create information and knowledge based on

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different interpretations of reality, which depend on cultural, social and even biological factors and contexts. The new emerging paradigm would be, in Tuomi's view, more adapted to tackle the challenges of the information society because meaning and semantics are increasingly located at the core of computing, communication and knowledge.

The nature of the ICT revolution entails profound changes and has direct policy implications for the EU. The role of technology in economic growth can be analysed following the 'supply-pushed' model, where new technologies and related innovations emerge from science and are available to entrepreneurs in a pool of technological opportunities. Technological revolutions can also be considered through the demand-pulled model, where technological improvements emerge from the activity of profit-oriented entrepreneurs looking for temporary monopolistic positions. A crucial issue, according to Fontela (Chapter 5), is to know when and where the technological clusters are most likely to be located in the future.

Europe has recognized the emergence of the new paradigm for economy and society and consequently focused its policy actions on research and innovation, but has not yet developed an integrated policy approach. As a consequence, Soete argues in Chapter 3 that Europe does not use all the leverages for supporting growth and for stimulating innovation. Additionally, and more importantly, European policy-makers do not pay enough attention to institutional constraints/barriers which limit the full deployment of knowledge and innovation potential for growth. Europe should reinforce its investment in quality and quantity of knowledge, by implementing macroeconomic and fiscal policies supporting knowledge and innovation. Such an adjustment would encourage innovative and risk-taking attitudes, which then might contribute to growth. Finally, he concludes that the only input factor that could bring about long-term sustainable growth is knowledge accumulation. Knowledge cannot be fully appropriated, but ICT increases the codification and transferability of knowledge world-wide. In ICT-based innovation systems, knowledge has to be considered as a capital good, because it can be employed for producing other goods, for producing additional knowledge, it can be accumulated, and it is globally accessible.

ICTs also change the nature of labour and employment by increasing their content in knowledge, so that education becomes the main factor of production. Education is in fact at the heart of the growth process, given its link to innovative capability and R&D activities. Millard's analysis, in Chapter 7, suggests that ICTs can lead simultaneously to de-skilling and re-skilling, depending on the initial skills and market conditions. De-skilling occurs when activities can be automated, while re-skilling concerns the acquisition of tacit knowledge, which is very resistant to automation and grows rapidly due to the ICT-induced speed of change.

Soete points at one particular area in need of fundamental rethinking: the European social security system, which is still deeply rooted in the requirements of the former industrial society. Europe should actively consider revising the current social security system and adapting it to new ways of working, increasingly rooted in a new balance between labour and pleasure at work. A knowledge-based Europe needs to fully mobilise its available labour, by creating flexible working environments and realistic life-long learning schemes. ICTs will be a key enabler here. Technical and societal innovation should therefore become an intrinsic part of our culture and the European value system. It should be encouraged at all levels in order to augment the economic and social value which can come from it. Social policies in Europe need, according to Zysman and Schulze-Cleven (Chapter 4), to encourage "social flexibility", but not necessarily by means of a reduction of social security. On the contrary,

the provision of the right kind of social security will not only allow people to feel more secure, but also enable them – and production systems in general - to be more adaptable. In this context, one must distinguish the question of “how much” social security costs, as measured in financial transfers, from the “how”, i.e. the mechanism of providing social security.

New players, such as China and India, have turned the market upside down. The challenge for Europe is how to stay “wealthy” in a rapidly evolving and ever more competitive global economy. Zysman and Cleven-Schulze argue that, in this new digital era, the key to success is “experimentation”. Globalisation, pushed by the cross-national productions networks, requires a constant change of production systems, business models and strategic decisions.

Turning to the question of what consequences these evolutions have for policy-making, there is a need for a systemic approach to the economic institutions (labour market, product market), resulting in a full set of structural reforms. All these should be implemented as a systemic policy for better political governance. In order to encourage growth, Europe should increase its efforts to identify growth sectors, and re-allocate resources to growing firms and sectors with more growth potential. The knowledge society will rely upon a different weighting of factors (i.e. innovation, growth, and learning amongst others). As the composition of these factors changes, priority setting gets difficult. Thus, for Europe to be successful in innovation, growth, productivity and learning, trade-offs need to be made more explicit, so that informed choices can be made and a feasible path set.

Policy-makers and the public sphere have an important role to play in the new growth paradigm. Fontela identifies four important dimensions to improving the design of public interventions. These involve:

- taking into account the specific socio-economic contexts in which ICT-related policies are implemented,
- promoting research (both basic and market-oriented) at all levels,
- promoting cooperative processes in particular through the intertwining between competition and cooperation, and
- improving measurement of economic performance in the knowledge society in particular by taking into account the changing nature of the economic, social and environment accounting framework.

How can governments intervene in a globalised world? Pérez singles out three areas for intervention. The first is the regulation of globalised finance to favour long-term investment rather than short-term financial gain through –for instance- rapid movements of capital. Second, a shared vision accompanied by consensus policies should be promoted. This would guide market action towards a win-win process of regional re-specialisation so that full employment –or earning-generating activity– can once more become a reality in the advanced world and an attainable goal in developing countries. Finally, the social safety net, previously provided by the welfare state, should be “reinvented” in a manner consistent with the current globalising paradigm. It should be capable of reopening the ample upward mobility routes that until recently gave strong cohesion to more developed societies.

On a more conceptual level, Reinert argues in Chapter 6 that a long-term solution for Europe will have to be based on an understanding of why economic development is such an uneven process. The selection of good policy options should be based on much more profound and

differentiated analyses of technology and innovations and their economic consequences on both wages and employment at company, national and community levels. Reinert believes that new models should be developed which better describe phenomena such as economic differences (beyond the framework of equilibrium theory).

Moreover, though Europe has accepted the importance of the ICT techno-revolution for the economy and society, an integrated policy approach, employing all economic and social levers to stimulate innovation and maximise its benefits, is still missing. So far, policy makers have picked up the most obvious challenges of the knowledge economy, but, arguably, they have not yet grasped the whole range of implications. As the knowledge society will bring profound change in our economies and societies, these implications must be well understood and placed at the core of EU policy making in the coming years.

If digital technology affects the whole of society, then all of society's existing norms and laws should be re-assessed to check whether they are adapted to the new reality or not. Rather than trying to adapt the application of existing rules to the knowledge society, one should investigate how far the rules themselves need to be adapted for all sectors. One example with policy implications is how the shift towards more knowledge-based activities will affect the future social security system.¹⁰ Changes in type of work, blurring of borders between work and leisure, and the increasing variety of jobs (from hard physical labour to intellectual activities) should be taken into account when redesigning the foundations of national social security systems.

The implications of Europe's ageing population are a related challenge. When today's forty-year-olds (the 'baby-boom' generation) reach retirement age, the dependency ratio¹¹ will drastically increase and current social security systems will be in danger of becoming unaffordable. ICTs can make a contribution towards maintaining social welfare in an ageing society by increasing productivity, stabilizing costs and keeping older citizens socially and economically active. For this to happen, effective ICT implementation will first imply profound changes in processes, in organizations and in the ways all actors operate in our society, whether private businesses or public institutions. In addition, if Europe wants to have a world-class ICT industry despite a shrinking workforce and a high dependency rate, policy makers need to make every effort to put the right framework conditions in place before the baby-boom generation reaches retirement age.

¹⁰ "Knowledge workers" –as opposed to those dealing with physical labour- will be predominant and drive the economy.

¹¹ Ratio between contributors to non-contributors to the pension system.