



DIGITAL ECONOMY: POLICIES EXCHANGE AND DEVELOPMENT FOR SMEs

**POLICIES FOR THE SMEs IN THE DIGITAL ECONOMY:
FROM POLICY ASSESSMENT TO POLICY INNOVATION
INPUTS TO THE 2ND POLICY GROUP MEETING
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1. Summary

Multiple policy-making sources, programmes, and actions are populating the scene in the field of small businesses oriented policy and to the digital economy in Europe. The policy maker's community and the policy analysts have the reasonable need to map and assess what's going on. Why? Because of the systemic implication of policy actions, either at local or national levels, and because of the policy integration process underway at the European level. We are living in an open economy, whose efficient policy dimension – in between the local and the global context- is European, but the optimal balance between local diversity and sovra-national governance is being sought day by day, case by case.

In order to fulfil such an 'orienting' need, various methodologies are needed, ranging from classification to benchmarking to evaluation. The policy mapping exercise cannot be but a preliminary step along the path of policy making, which has to look ahead, at the core objectives of the policy making itself, whose rationale lays upon a comprehensive intelligence and vision, incorporating but exceeding the experience or the collection of experiences.

In transitional periods, as appears to be the present one, uncertainty tends to prevail over stability. When change affects simultaneously and pervasively the components of the social environment (economic, technological and policy components) a defensive attitude is likely to take over, devoting resources to those issues and questions which can be addressed with the language we are used to use.

- A lot of effort is devoted to understand why and where the change took off, how to track and forecast the impact, relying either on established interpretative models, or on perceptions and expectations. E.g. the emphasis on the disruptive power of the ICTs may have diverted the attention from the non-technology, economic, institutional components which have an essential role in inducing the uptake of innovative processes. The expectations that the ICT infrastructure, on its own, may generate structural and sustainable changes in the industry and in the market, which matured over the second half of the '90s, has been all at once disappointed from 2000, and policies investing on technology 'alignment' and new business models, more than addressing organisational sustainability and investment profitability have failed to generate, so far, a critical mass of electronic commerce applications in the market.
- The attitude to classify change within 'the models we know', or to simply fix an opportunistic theoretical mark out of a conjunctural combination of components, implies the risk to predict misleading scenarios, and to direct policy making towards ineffective or inefficient directions. E.g. the expectations about the consumers' or enterprises' changing behaviour induced by the Internet applications have overestimated – no matter whether unwillingly or deliberately - the uptake of electronic commerce. That has probably been consistent with the marketing strategy of the ICT industry, including the need to mobilise financial investment in the global market. However, in the short run, the greater the bubble, the greater the flop. On the other hand, speculative behaviours have delayed the correct understanding of the truly disruptive nature of the ongoing change, namely the implications of the digital revolution in terms of knowledge creation and trading.
- The power of hype, the pressure of competition in the market, and the perception of a radical but hard to measure socio-economic impact of digital technologies, may lead to an uncertainty-driven self-referential policy activism, where the

followers' strategy prevails over innovators' strategy. That may generate policies which actually deepen the 'divide', e.g. giving incentives for the diffusion of low-profile Internet-based services which only apparently favour the access to the digital economy; instead of tackling the core of development potential, which resides in the digital relationship between information and knowledge owners, traders, and consumers.

- In an overcrowded EU policy environment, where production capacity of policy actions exceeds the evaluation of their impact against macro policy objectives, policy benchmarking is currently the favourite resource, because it looks at 'practices in progress'. To let the practices dialogue, policy benchmarking requires the selection of measurable indicators, common to the policies under the spot. That may lead to select quantitative but not significant indicators, compelling the perspective to policy assessment, while the practice-oriented exercise within the policy makers community may be easily downgraded from a learning-from-comparing opportunity to a copying tool.
- When many or most of the components are moving in the socio-economic environment, the policy action has to hold steady the course, instead of being deviated. Uncertainty needs stronger, not weaker tools to be confronted. That means to go back to the policy rationale, which is to counterbalance the market or government or policy framework failures. Such a rationale – the policy rationale – cannot be escaped by applying the market logic to the policy making itself. Policy innovation has to take over the policy 'appeasement', which is driven by uncertainty and limited knowledge, and take the responsibility of intuition and long-term vision. That may require the resetting of notions such as access, digital economy, electronic commerce and SME. Policies for the access of small businesses to the digital economy has to get out the stalemate in-between new visions and old models, and be innovative. Change has to be coped with change.

2. What is at Stake?

The economy of the Western developed world is marked by markets' globalisation, networks' reconfiguration processes, associated with technological and organisational innovation. It is a knowledge-driven economy¹, as knowledge is to be considered a production factor as critical as capital and labour. Therefore, knowledge is a critical component in all industries, whatever the technological profile.

Digital technologies exert a relevant impact on the processes of knowledge creation and re-creation either because - through digitisation - they allow for the divisibility, transportability and integration of knowledge (making transparent the knowledge content of any transaction), and because - through their connectivity power - they influence the setting and re-setting of the networks where the knowledge flows and transactions are implemented.

The implications of the digitisation give the market a dominant role in the digital economy, either because of the creation of the market for knowledge, and because the market increasingly interferes with the dynamics affecting the inclusion/exclusion in/from the networks.

In the digital economy opposite network dynamics are taking place: on one hand, networks become more open, loose-coupled, and unstable. That can lead networks

¹ Merit, 2000, *Innovation Policy in a Knowledge-based Economy*, study commissioned by the European Commission Directorate General Enterprise, in www.cordis.lu/innovation-smes/src/policy.htm

either to collapse, or to become more compact - by increasing selection to access, raising barriers to the knowledge transfer and creation. On the other hand, the power of connectivity allows for new networks be created, leading to increasing pluralism, and new knowledge creation and accumulation.

The current dominant approach to electronic commerce is mostly oriented to costs-reduction, to be achieved within networks whose membership tends to be selected by the market. That apparently leads the strongest player to become stronger, while the risks of exclusion are likely to overcome the benefits of increased connectivity for the small businesses.

Although the role of the market in the digital economy is increasing and positive, in that it enhances economic dynamism, competition, and pluralism, the transition to the digital economy claims for strong policy support, to avoid the gaps in terms of access turn into irreversible loss of knowledge and socio-economic fragmentation and divides.

The centralisation of knowledge resources and the pervasiveness of the ICTs in the global economy are blurring the borders of the enterprise, enhancing its internal and external network dimension. Any enterprise – whatever its size – is confronted with the need to develop and control the internal knowledge accumulation process. Today, that increasingly means gaining access to the knowledge produced by others (institutions and enterprises). The ICT infrastructure provides the gateway, so the most extensive access has to be ensured, but also access to the content has to be supported, because it may represent the production factor to be processed and integrated within the enterprise. The policies addressing this second – core – layer of access cannot interfere with content production and management processes that are driven by the market, as for any kind of product. However, market may fail, either when the supply of information is below the demand (overflow of no-value information, high search and access cost to value-information) or when access is limited by extra costs (knowledge codification costs, costs of intermediary services, costs of acquisition of the information and procedures to get into the knowledge network). Moreover, the technology in the market sometimes is not the best technology, especially when it addresses ideal business models – rather than actual business needs.

SMEs represent a highly differentiated world, whose variety is constrained by the employees or turnover size classification criteria. To be small does not necessarily mean to be weak, but in the European Union the enterprise population – where the SME are 99% of the total and the micro businesses are absolutely prevalent – about half of the small businesses have no employees at all². That gives a picture of a quite underdeveloped European enterprise system, which is unable to play in the global market and still reluctant to consider the European market as the ‘domestic’ one, and is unable to cope, without policy support, with the technical progress magnified by the ICT revolution.

The most striking feature of the digital technologies is the power to translate information into algorithms and the miniaturisation of the devices operating universal languages that make possible low cost and high-speed exchanges and trading of codified knowledge all over the globe. The interaction of tacit and explicit knowledge, as well as the transformation of information into knowledge offers great opportunities

² C. Ghilardi and L. Scarola, ICT and SMEs in Germany, Greece and UK. Background Report, in www.deeds-ist.org

to individuals and to business. However, although the power of ICTs to enable such an interaction and transformation is content-independent, it is not market-independent.

- as they make cheaper the circulation of information, the ICT networks tend to be overloaded with no value information, the cost of access to value information raises, increasing the costs of transforming information into knowledge;
- by imposing codification models and codified processes, the integration between explicit and tacit knowledge may be reduced or even prevented, to the extent the barrier in-between is made ticker;
- by introducing new selection mechanisms to the access to knowledge-intensive cluster (to counterbalance the information-intensive global interactivity), the market reinforces asymmetry and barriers to the access to knowledge creation processes

Therefore, policies for access of small businesses to the digital economy cannot stop at the gateway of access to the digital infrastructure, but have to get into the information and knowledge market to ensure that market dynamics and technological applications do not prevent pluralism, creativity and competition.

The knowledge-driven economy requires a European space to be developed, to support the participation of individuals and businesses in the process of circulation and generation of knowledge. The achievement of the European Single Market, the setting of a stable and effective European policy and regulatory system, and the enlargement are the major drivers to the development, are preconditions ensuring to Europeans and to European businesses the adequate spatial, economic and policy interface to the global competition.

The information society and the digital economy have a global nature, but are performed by local players who need an intermediate institutional system between individuals or individual businesses and the global market. The penetration of ICTs in the European small or large businesses has to have a return on the development of the knowledge-driven economy in Europe, to strengthen the knowledge accumulation process. The development of the entrepreneurial dynamism and the upgrading of the enterprise system in Europe requires not only user-friendly information technologies, but also an user-friendly institutional environment, whose dimension, in Europe, cannot be but European.

Interoperability is not an exclusive ICT issue: it is a policy issue as well. The uptake of electronic commerce as a way to reduce costs of procurement, stock management, ordering and delivery, improve customer response management, facilitate cross-collaboration over company's business processes and over companies' networks, cannot be expected to blossom out of a weak enterprise setting in fragmented sub-European markets. Barriers to electronic commerce are not exclusively the Internet-related technical barriers such as interoperability or security, but are a fragmented tax, financial, administrative, and legal setting that are acting anyway as barrier to the non e-businesses as well across Europe until harmonisation is achieved.

ICTs can support the path to the integration of the European market, as algorithms have the power to impose transparent procedures making invisible the political decision making process behind. The investment in e-Government should give priority and be instrumental to the achievement of harmonisation within the European space, more than fostering e-administration practices branded locally or nationally.

ICT policy should start shifting the top priority focus from the support to disperse micro applications and related issues (awareness and readiness to e-commerce, incentives and awards to take-ups, dissemination of best practices) to the support of macro objectives (harmonisation and enlargement of the EU market, information quality and content management, technology research, standardisation, competition).

Policy priority should be re-oriented from the focus on individual consumers or businesses, to the network of individuals and businesses, addressing in the mean time local and supra-local systems and markets, to ensure the institutional European environment the sufficient critical mass allowing citizens and businesses to perform not in isolation in the global market.

3. Policy Making in the EU

3.1 EU Policy Objectives

After the Lisbon summit on March 2000, the language of the European Commission speaks loudly about the strategic objective of becoming the most competitive and dynamic knowledge-based economy in the world within the next ten years. That is in line with the strategic objectives of the new European Commission concerning the economic and social agenda, stating that 'Europe must become a globally competitive economy built on knowledge and innovation and on a strategy of sustainable economic development. ... The transition to an information society should be given the same political energy and attention as that devoted to the launch of the single market and the single currency³.

There is a lively policy activism within the EU targeted to the transition to the information society and to the access to the digital economy. Policies at Member State level are in focus in the Deeds project, but policy making in this field involves also sub-national policy players at regional and at local level.

Looking at the EU, after the launch of the Electronic Commerce Initiative (April 1997) the European Commission has incorporated the e-commerce and information society related issues in most of the policy documentation and in the organisational structure of many of the Directorates General as well.

The policy issue of SME have been smoothly coupled to the new policy issues, as it happened with the innovation, enterprise, regional and research policies. The following table comes out of a quick survey of the directories of the European Commission Directorates. It has to be noted that although the new European Commission has introduced a significant rationalisation, still there is much fragmentation and overlapping. However, the move of DG INFOSO and DG ENTERPRISE together under the Commissioner responsible for Enterprise & Information Society has enhanced synergies, and given boost to programmes – such as the Innovation programme – which produces services (e.g. Trendchart) useful to both the Directorates.

³ CEC, 2000, Strategic Objectives 2000-2005 'Shaping the New Europe', COM(2000) 154 final

Tav. 1 SME and Ecommerce in the EC Directorates

INFOSO	INFOSO 1	Analysis, Policy Planning, eEurope
	Directorate R	Horizontal Questions
		R1 Evaluation of Policies and Programmes
	Directorate A	Communication Services: Policy and Regulatory Framework
		A1 Regional and Societal Aspects
	Directorate C	New Methods of Work & Electronic Commerce
Directorate F	Information Society Technologies	
	F2 International Aspects: Innovation and SMEs	
ENTERPRISE	Directorate B	Promotion of Entrepreneurship and SMEs
	Directorate C	Innovation
		SME Programme (Innovation Scoreboard, Trend Chart, ...)
	Directorate D	Services, commerce, tourism & IDA
D4 eBusiness; ICT industry and services		
RESEARCH	Directorate A	Coordination of Community Actions
		A4 Research & SMEs
INTERNAL MARKET	Directorate E	Services, Electronic commerce, intellectual and industrial property and the media
DG TRADE	Directorate D	D2 Services (including e-commerce)
	Directorate F	F4 New technologies, intellectual property, public procurement
REGIONAL POLICY	Directorate B	Community initiatives and innovation action eris@ (joint DG REGIO & DG INFOSO)
EMPLOYMENT	Directorate F	F4 IT & Workflow

The eEurope initiative, whose Action Plan⁴ was adopted by the Feira European Council in June 2000, to meet the objectives in 2002, was launched by the European Commission in December 1999 to bring Europe on-line. The actions are clustered around three main objectives:

1. A cheaper, faster, secure Internet
 - a) cheaper and faster Internet access
 - b) faster Internet for researchers and students

⁴ http://europa.eu.int/comm/information_society/eeurope/actionplan/index_en.htm.

- c) secure networks and smart cards
- 2. Investing in people and skills
 - d) European youth into the digital age
 - e) Working in the knowledge-based economy
 - f) Participation for all in the knowledge-based economy
- 3. Stimulate the use of the Internet
 - g) accelerating e-commerce
 - h) government on-line
 - i) health online
 - j) European digital content for global networks
 - k) intelligent transport systems

The eEurope initiative is a policy concept, aiming at driving current policy programmes and actions initiated at the European and Member States level into the three eEurope tracks. There is no budget to eEurope; the expertise and funding available under the Structural Funds and Programmes such as IST, TEN-Telecom, Promise should be re-oriented or re-prioritised in compliance with the eEurope objectives. The same policy concept of eEurope has been promoted also in the accession countries, candidates to the EU enlargement, where it has been called the eEurope+ initiative.

The assessment of the achievements of the eEurope Action Plan is problematic, because it applies to a large number of policy initiatives and actions which are consistent with the eEurope objectives but have been designed and are running independent from the eEurope initiative. It is an attempt to give - ex post – overall policy guidelines to a wide set of policy programmes and measures promoted and managed by policy making institutions in the Member States and by the European Commission itself.

Such an asynchronous mix of bottom-up independent self-funded local policies and top-down collective no-budgeted European action plan mirrors the soft governance method of the European Union in between the national sovereignties and the Community ruling, which has been denominated in the Lisbon European Council as the *open method of co-ordination and benchmarking*.

This method of assessing convergence ex post, rather than setting convergent objectives ex ante is the way out from the stalemate where the so called common policies have led so far the European Union, and addresses the difficult objective to combine coherence and diversity.

The open method of co-ordination ... which is designed to help Member States to progressively develop their own policies, involves:

- Fixing guidelines – timetables for achieving short-medium long term goals
- Establishing – where appropriate – quantitative and qualitative indicators
- Translate these European guidelines into national and regional policies

- Periodic monitoring, evaluation and peer review organised as mutual learning processes⁵

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The objectives of the eEurope benchmarking (are) to:

- enable Member States to compare their performance
- identify best practices
- provide insight into the factors of importance for widespread diffusion of digital technologies
- enable remedial action to be taken⁶

The eEurope benchmarking consists of a combination of quantitative benchmarks (indicators), and qualitative benchmarks (best practices). The indicators used for the quantitative benchmarking (from 1 to 4 per each of the 11 sub-objectives listed above) are measures based on sample surveys of Eurobarometer or Member States carried out once or twice per year. As far as electronic commerce is concerned, the indicator is the percentage of Internet private users shopping online, included in a multi-answer question to the sample (interviewed on February 2001) asking: "for which purpose do you use the Internet for your private needs?"

The eEurope 2002 Action Plan's objective 3 'Stimulate the use of the Internet' includes an action to encourage SMEs to 'go digital', which has been endorsed by the European Commission as the *GoDigital*⁷ initiative, whose implementation plan is build upon MAP-Multi-Annual Programme (DG Enterprise), IST (DG Information Society), and the Structural Funds, and linked to national and regional programmes and initiatives with similar aims. The GoDigital Plan sets 3 priorities (Action Lines) and 11 Actions to be implemented in 2001-2002.

AL 1 Favourable environment for electronic business and entrepreneurship

Action 1: Benchmarking of national and regional strategies in support of e-business

Action 2: Measuring of take-up of ICT and e-business

Action 3: Improve access to information and collect feedback for policy-making purposes in the area of electronic commerce legislation

Action 4: Electronic Business Interoperability

AL 2 Take-up of electronic business

Action 5: Promoting the awareness for going digital

Action 6: Electronic commerce take-up

Action 7: Provision of a loan guarantee facility for SMEs

⁵ N. Kastrinos, **European Commission, Socio-economic Research, Summary of the Conference on *The Contribution of Socio-economic Research to the Benchmarking of RTD Policies in Europe***, March 15-16, 2001, in www.cordis.lu/improving/socio-economic/conf_bench.htm

⁶ The eEurope Update, prepared by the European Commission for the European Council in Nice, 7-8 December 2000

⁷ <http://europa.eu.int/ISPO/ecommerce/godigital>

Action 8: Promoting better use of Structural Funds

AL 3 ICT skills

Action 9: Supporting industry-led initiatives for new ICT curricula

Action 10: Creating an ICT Skills Monitoring Group with Member States

Action 11: Launching a SMEs trainee programme

The focus for 2001 is on promoting take-up of e-business (through Euro Info Centres) and policy benchmarking of national policies in support of ICT and e-business. An e-Business Policy Group has been established for the policy benchmarking with members nominated by the Member States. The qualitative benchmarking, aiming at surveying the Member states policies against the policy priorities of the GoDigital initiative, has been recently coupled with the *e-BizWF - ICT and e-Business market Watch Function*, which is going to be launched to provide more disaggregated data on the uptake of e-commerce among EU enterprises in different sectors, in particular SMEs⁸, in order to improve the data and indicators set to quantitative benchmarking.

The above-mentioned initiatives, focused on the small businesses in the digital economy, are mainly targeted to wide Internet penetration and to the uptake of electronic commerce. The definition of electronic commerce – when provided – refers to the online transactions, with a bias to consumer e-commerce.

That shows either a tendency to identify e-business with e-commerce buying/selling transactions, neglecting the potential of Internet-enabled information and knowledge sharing as a source of knowledge (production factor) inputs to production of research, services, and goods; and a persistent expectation about the profitability of e-commerce.

The disappointing figures about the value generated via consumer e-commerce (estimated by analysts and operators around 1% of the consumer spending in Europe) are ascribed to a lack of awareness by the SMEs of the benefits of e-commerce and to technical barriers – such as e-commerce skills, security, legal uncertainty, etc. The policy measures, which are promoted and benchmarked, are targeted to the overcoming of these barriers.

The vision of the digital economy turns to be a vision of e-commerce from within, while it would be necessary to get a vision from outside, in other words a vision from the European enterprise side – having in mind structural weaknesses, market and institutional constraints – and a vision from the technological research and supply side – having in mind that the market driven research and the supply-driven ICT market may lead to market failures in that not always they perfectly match the demand of the mass component of the European business world.

3.2 Tools for Policy Assessment: Benchmarking

There is an increasing attention - and expectation - on benchmarking within the European Commission and the Member States, as benchmarking currently represents the more useful methodology to measure the change along with the transition from one environment to another - be it the business or the policy environment.

However, although benchmarking is in principle an ideal tool, it is a very difficult exercise to be carried out in the absence of the ideal conditions to apply it. The ideal conditions are perfectly similar circumstances to be compared by means of

⁸ <http://europa.eu.int/ISPO/ecommerce/godigital/ebusiness.html>

quantitative indicators referring to the same variables. More, the quantitative indicators must be significant, must address a set of critical factors common to the practices in comparison, and accurate checks, measuring and ranking techniques are needed to deliver good benchmarks.

Quantitative benchmarking based upon these clear conditions allows comparing the incremental improvement (or failure) of variables as the practices of a number of players are in progress. Benchmarking was conceived as a tool to 'compare to improve' activities and performances among businesses competing in the same industry and market sector.

Benchmarking therefore is different from the evaluation of results, which is carried out ex post, matching the outcomes against the objectives of the individual activity or project. The evaluation can be followed by the comparison and rating of results of activities or projects having the same objectives and resources. There is the possibility to carry on qualitative evaluation, and also in progress evaluation, but, again, that is a different methodology compared to qualitative benchmarking.

Qualitative benchmarking does not differ substantially from quantitative benchmarking, as, instead of quantitative indicators, the reference is to qualitative indicators, in order to establish better or worse practices in a dynamic context. The labelling 'best practice' could be misleading, as it is not an absolute value, but a relative value (relative over time and relative over the group of practices).

The benchmarking terminology seems to be abused, sometimes, to the disadvantage of the methodology. In particular, that occurs when it is adopted to support comparisons based on very poor (as for number, significance, check procedures) set of quantitative indicators, so that it is hard to distinguish the benchmarking exercise from a typical statistical survey of status, rather than dynamics. E.g., the benchmarking of eEurope is closer to an annual collection of data from interviewed samples on – a very limited – set of indicators than to a proper benchmarking exercise. In particular, it is hard to get intelligence about the e-commerce adoption in the EU, when the only 'benchmark' is the individuals' use of the Internet for e-shopping.

Qualitative benchmarking is claimed also as methodology for policy assessment in the field of e-Business. This absolutely complex task is actually escaped, by turning it into a survey of the Member States policies for pushing the European business online. This kind of surveys are necessary and useful to better understand whom is doing what in the EU countries, but do not add much value to understand who is doing better and why.

That is further limited by the fact that no evaluation of the results of the policies undertaken is yet carried out or available, on the one hand, and that the objectives of the Members' policies for the access to the digital economy are different, the economic and institutional contexts are different, the meaning assigned to e-business itself is different.

A rich and interesting study using benchmarking methodology is the ICT-O project⁹, assessing policy mechanisms targeted at SMEs and aiming at improving managerial skills. Definitions and methodology are clear and the policy benchmarking exercise provides interesting and reliable outcomes out of a long and accurate analysis.

⁹ recently completed project, initiated by the Industry Council of the EU in 1999, managed by the Finnish Ministry of Trade and Industry, participated by Finland, Sweden, Ireland, Spain and Italy.

Benchmarking requires a lot of analytical effort and resources, takes time, and is likely to be overcome by the expiration of the policies under exam and by the starting of new ones before it is completed.

There is “naive and intelligent benchmarking¹⁰”. Intelligence of context, policy decision, selection of objectives, feasibility check, evaluation of results cannot be substituted by importing ‘best practices’ developed under specific circumstances in different contexts. In the report of the Conference on *The Contribution of Socio-economic Research to the Benchmarking of RTD Policies in Europe*¹¹, it is stressed the need to ‘replace magic numbers with intelligent numbers’, to rely on theory driven and empirical research to get intelligence of the phenomena, to take the responsibility of policy decision making and intuition when information is characterised by uncertainty.

4. Policy Making in-between New Visions and Old Models

Policy making is carried out as things happen, and is much constrained by limited information, political pressures, budget and accountancy constraints and need for visibility in the short-term. Analytical and systemic research is sometimes taken over by the communication power of the media, which tend to transform content into messages. That is accentuated in transitional periods, when nobody is sure about the direction of the change, and the established models do not provide the comprehensive answer.

Moreover, there is a normal delay between the process of consolidation of policy content and that of research content, so when change takes speed, it is likely to be read as exogenous to the socio-economic setting, whose stability is given actually only by the stability of the models where the socio-economic setting had been circumscribed in the previous stage. In the case of the change introduced by the breakthrough of the digital technologies, the early reaction was to run ahead along with the expectations about their impact on the economy (that suddenly became ‘new’) and to try policies to adapt the small business to it, as the small businesses world was standing still.

As a matter of fact, the new economy that had been celebrated is not that new, electronic commerce is not the perfect synthesis of the new economy, the core change brought about by the digital technologies (on the role of knowledge) has been underestimated, the small businesses need support to access the digital technologies and ICT infrastructure, but need support also to have access to the opportunities of knowledge management, sharing and creation enabled by the ICTs, besides the support to enter the e-transaction of goods and services over the global market. The small businesses need to get advantage from the digital container (ICT) and from the digital content.

¹⁰ M. Tomlinson and A.B.Lundvall, 2001, Policy learning through benchmarking national systems of competence building and innovation – learning by comparing, Report for the ‘Advanced Benchmarking Concepts – ABC – project, in www.cordis.lu/improving/socio-economic/publications.htm

¹¹ N. Kastrinos, see note 5

4.1 Digital Economy

Indicators on the ICT market (goods & services) and infrastructure are measurable. The measurement of impact on growth (total factor productivity, employment, new businesses, stock market, etc) is still critical. So, what is the ratio behind the policy pressure to increase the value of ICT indicators?

Wider faster cheaper connectivity, interoperability, scalability, etc address the social objectives of pluralism and participation (precondition to social stability, innovation, and competition) but we cannot say that they are the entry to the digital economy, or we cannot say what digital economy.

To make the economy 'digital' it is necessary but not sufficient to spread the use and control of technology and devices; there must be more, that is additional added value produced and distributed over the digital channels that would be missed without the digital technologies. Electronic commerce (trading on line) generates the opportunity to create additional value only in the case the front-end e-transaction is associated to back-end integrated organisational processes which alter the way of producing and the producing itself, by making it more knowledge intensive.

"... the recent 'new economy ' history of US growth is less one of an ICT-led bubble than one of the fusion of technology and financial markets leading to faster innovation and higher levels of risk taking. For Europe it is important to broaden the debate on the e-economy beyond the technology and skills aspects and include also the functioning of financial markets and in particular venture capital markets, while at the same time not defining the e-economy solely in terms of information technology¹²"

Although the change brought about by the digital technologies into the economy is still under the lenses of the analysts, it is observed that they have an impact on the business models and business processes organisation, which much depends on the industry sector and on the network relationships among businesses.

The size of the enterprise on its own does not raise barriers to the uptake of e-business practices, rather, in some cases small sized enterprises can take advantage from the ICT-related applications faster than the large ones, and often the knowledge-intensive companies producing innovative services and using ICT solutions are small or medium.

The real barriers are not strictly technological, but mostly financial and managerial, so that the access to venture capital and the mastering of entrepreneurial and technical skills play the most critical in the successful uptake of e-businesses.

It is the coupling of markets' globalisation and digitisation that enhances the challenges to those business players used to operate in local or domestic markets, within small and relatively stable networks of suppliers / customers. Most of those business players are micro or small and sometimes medium enterprises, which, on the one hand, are confronting an increasing competition in the market – included the local market – and, on the other hand, are challenged by the potential of information and communication technologies whose access and control could enable them to enter the global market.

¹² *The e-Economy in Europe: its potential impact on EU enterprises and policies*, Report of the e-Economy conference, Brussels 1-2 March 2001

Such a double challenge reinforces market selection, the reconfiguration of supply networks, but also gives room to innovative firms, whose survival or development depends however more and more on the capital market, on the managerial skills, on the market intelligence, on the partnership in the relevant networks: in other words on the access to information and knowledge.

ICTs amplify the challenges because they make the potential achievements visible and virtually at hands, and amplify the risks as well, because they provide nothing but the first step to a complex path, that could lead to success - if other consistent steps upstream and downstream are entered, or nowhere – if the connectivity does not impact at all on the business, or to failure – if the ICT investment is unbalanced, ill-mastered, and the change brought about either in the organisation and in the market turns out of control.

The effectiveness and efficiency of the ICT applications are therefore tightly correlated to company's objectives, resources and strategy, to the business model, to the industry sector: in other words to the processes of knowledge accumulation in the enterprise.

To summarise, many non-digital elements concur to the achievement of a sustainable digital economy, to make it the knowledge-driven economy. They basically are:

- organisational innovation
- knowledge mobility
- financial investment in innovative enterprises
- research

4.2 SME

SME policy has been generated out of the acknowledgement of the economic and social role of the small businesses in Europe, developed either in the academia and in the political environment, particularly in Italy and in other Southern European countries.

Emphasis on the SMEs' contribution to wealth and stability, through flexibility and informal business organisation, has been raised in the transition phase from mass production and hierarchical large enterprise model to quality production and flat business organisations.

Although the small size businesses are often behind in adopting new systemic technologies, the reasons to this backwardness do not have an exclusive technological nature. Rather, they mostly have a financial and managerial nature that cannot be automatically offset by new software and hardware applications.

On the opposite, these may simply represent an additional cost, and the resistance to such an investment is understandable, when there is insufficient awareness, wish (and skills) of the business improvement that could be achieved by exploiting the technological potential. Not all the small businesses wish to grow, to get more formal, to enter new markets, to access more knowledge.

In these cases the policy priority is to support the development of the business culture, the acquisition of entrepreneurial and management skills, the confidence in the knowledge in control and in the accessibility of the knowledge generated outside.

The access to ICTs that are affordable, tailored upon the users' requirements and to the achievements of feasible goals, allowing a gradual acquisition of the technical

competence, is the consequent policy priority, targeting either the small traditional businesses and the technology suppliers and providers.

The investment in the wide adoption of Internet technologies by the small businesses as a catalyst to the uptake of e-business is probably based on unrealistic expectations either on the power of the ICT application to drive to the global market, and on the economic profitability of the electronic commerce.

Different expectations should drive, instead, the policies aiming at the extensive adoption of the Internet technologies, which have to be pursued in any case, to ensure socio-economic pluralism, opportunities to circulation and creation of knowledge, competition.

Policies for the SMEs have not to be protective, rather they have to maximise the opportunities. "Policies are sometimes the problem, rather than the solution"¹³

First, policies for SMEs have to be conceived as instrumental to the modernisation of the vast majority of the businesses in Europe, which are made of micro-small sized enterprises operating mostly in the low-knowledge intensive service sectors or as subcontractors in the supply chains of mature manufacturing and service sectors. In most cases, these companies have to learn to produce a business plan, or to adopt formal procedures to operational management, in order to preserve the knowledge generated internally, to regenerate it without the extra costs due to lack of structured information and of co-ordination, and not to be excluded from the information and business networks the company is linked to. ICTs can give a substantial support, but it is not true the reverse, and – more – the ICT applications or services have to be adequate to the task, not a supplementary barrier.

Therefore, a priority issue to the policy for extensive adoption refers to the supply side of the ICT market, in order to stimulate the design and marketing of low cost, easy-to-use, interoperable applications, as well as the development and the distribution over the territory of affordable, interactive, efficient application services, addressing the user's requirements following a problem-solving approach. These are not trivial objectives, as they require investment in research, because 'simple' solutions are sometimes more difficult to be designed than the very complex ones.

The extensive adoption of the Internet-based technologies and applications by the micro-small firms in the traditional manufacturing and services is more likely to be achieved if the technology adapts to these small businesses contexts, rather than the opposite way. In these cases, access to the digital economy needs to be gradual, otherwise the risk of divergence between demand and supply, as well as the risk of exclusion from the market, are likely to increase.

Small business is however a large field, populated also by firms which are completely different, except for the size, from those that have been mentioned above¹⁴. In the knowledge economy, which is increasingly based on services, a key role is played by

¹³ T.Andersson, OECD-DSTI, 2000, *Policy Design, Implementation and Evaluation – Rationale, Efficiency and Systemic Concerns*, contribution to the Forum on Public Policies for SMEs in Europe, Lisbon 13-14 April 2000, in www.oecd.org/dsti/sti/industry/smes/prod/Andersson_speech.pdf

¹⁴ G.L.Baldoni, *Networks of SMEs and Electronic Commerce*, in www.deeds-ist.org

C. Ghilardi and L. Scarola, ICT and SMEs in Germany, Greece and UK. Background Report, in www.deeds-ist.org

the knowledge-intensive business services (KIBS). Hipp defines KIBS as “characterised by the ability to receive information from outside the company and to transform this information together with firm-specific knowledge into useful services for their customers¹⁵”. Knowledge integration (either of the company and of the customer knowledge) and knowledge creation are the processes behind the generation of new services.

Technologies, and particularly ICTs, play a crucial role in KIBS, as they provide fast and global channels to information, tools for knowledge management – integration – regeneration. According to a study surveying 3,845 German service companies¹⁶ “compared to firms with 50-249 employees, small and big companies have a higher tendency to be KIBS¹⁷”

Policies to support these kinds of businesses are included by default in the category of the SME policies, but since their objectives have to do with information, knowledge, science they easily fall under the competence of the research and innovation policies. The policy focus on the size of the enterprise may lead to a double misunderstanding, as it implicitly addresses the non-knowledge-intensive, low innovative, non-managerial small firms as the Internet connectivity could enable them to jump directly into the digital economy by the means of e-commerce; and addresses the KIBS, highly innovative, managerial small companies as they were containers of R&D more than enterprises, and eligible beneficiaries of R&D funding.

Tackling the small business complex issue from these two horns, as extreme examples, is a simple exercise, but helps to realise that a misled policy approach to small business may delay the development of a European knowledge-driven economy, diverting the attention from the core production factor – knowledge – which is the content flowing and changing over the digital channels, to the container – the digital technologies and applications.

¹⁵ C. Hipp, 2000, *Information Flows and Knowledge Creation in Knowledge-Intensive Business services: Scheme for a Conceptualization*, in S.Metcalf and I. Miles (eds), 2000, *Innovation Systems in the Service Economy*, Kluwer, pg. 154

¹⁶ The survey has been conducted by the Centre for European Economic Research (ZEW), the Fraunhofer Institute for Systems and Innovation Research (FhG-ISI) and INFAS.

¹⁷ C. Hipp, *ibidem*, pg.164

5. DEEDS Taxonomy Policy Mapping

In the DEEDS kick off meeting (October 2000) the need to 'take stock' of the policies for the access of the small businesses to the digital economy was raised up as a common requirement by the DEEDS Policy Group. Over the last five years a number of initiatives, actions, and programmes have been set and launched at national, local and European level, to cope or to catch up with the uptake of electronic commerce and of the digital economy. Now, the discussion about the best policies to face the change knocking at the door cannot be separated from an assessment of what is already on the ground.

There are two ways to approach policy assessment.

One is to approach it horizontally, producing a compilation of policy actions and programmes. There is much to be listed; the list is to be a long list. Policy making is working in 'real time' and in the short run, as well as analysts, because the history of the digital economy and of the policies for the access to the digital economy is very short. That lifts activism, on the one hand, but does not favour ex-post assessment, on the other.

The other way is to approach it vertically, trying to get some intelligence by an assessment 'in progress'. That requires a methodological framework be set up, taking upon the risk of selecting the analytical criteria ex ante. In this way the policy criteria and the analytical criteria, which do usually walk parallel, are going to mutually support each other. The aim is to read the state-of-the-art in order to get the necessary understanding to support further, effective, consistent policy actions.

At the time of the G7 project *A Global Marketplace for SME (1995-99)*¹⁸, which initiated the practice of policy exchange within the G7 Policy Group, the approach was horizontal, probably the only feasible one within a very wide, flexible, intercontinental policy group at the very beginning of the debate about electronic commerce.

At this time, as the focus is shifting from generic policy awareness of the (systemic) e-commerce-related issues to a more targeted set of policies all over the European countries, DEEDS wants to support a constructive policy exchange by introducing a vertical approach to policy assessment.

DEEDS provides the setting to an exercise as informal as advanced, because its technical limitations (in terms of space/time extension of the survey, of sources' homogeneity, and 'from-insider' selection of the relevant documentation) allow to escape the technical boundaries of a wide-reach, standard policy assessment, and to try experimental analysis.

In almost all the cases, the policy documentation sources are the national Ministries of Economics. The documentation addressing the policies for the SMEs in the digital economy covers a wide spectrum, including not only strictly SME-targeted policies, but also collateral policies, such as e-government, which have an obvious impact on the way SME go digital.

In the early stage of the project, the DEEDS research staff has started developing a methodology for policy assessment to support qualitative comparison, more than for quantitative rating.

Qualitative methodologies are often criticised as meta-instruments unable to work out the uncertain nature and outcomes of new phenomena or practices, as quantitative

¹⁸ www.ispo.cec.be/eccommerce/G8

methodologies aim at. In the case of policy making it is either a too ambitious claim the composition of the variety and complexity of players and contexts into self-sustainable, replicable models; and a too reductive procedure the survey of quantitative indicators, such as the Internet penetration rate, the percentage of companies with marketing Web sites, or the number of secure servers.

The gap between the time-cycle of the socio-economic dynamics and the life cycle of policy actions is and will inevitably be persistent. Therefore, policy assessment cannot but be driven itself by clear policy options, whatever be their motivations and inspirations. Deeds is trying to pull out from the 'analysis' inputs to effective and sustainable 'policy'.

The policies for the access of small businesses to the digital economy have to address different markets, business models, firms' behaviours, entrepreneurial skills, organisational settings, aptitudes to innovation, knowledge processing routines, as well as different technological products and applications, standards and regulations.

The change brought about by the knowledge-driven economy associated with the pervasive diffusion of ICTs goes far beyond the visible effects of the increased connectivity generated by the digital technologies. Wide fast cheap connectivity and interoperability are basic objectives to be achieved and ensured to all the social and business communities, to prevent social exclusion and discrimination from business networks.

The access to the information and communication technologies and infrastructure has to provide, however, the gateway to a further layer, that is to the networks where the information and the knowledge flow. The digital interface is necessary to provide the connection, as an intermediary step to access more information and more knowledge from sources which were not at reach to non-specialists, dispersed and separated in the more segmented, pre-digital environment. But not sufficient.

On the other side of the screen information has to be available, usable, and has to contain value. If so, it can provide additional inputs to knowledge creation, which is a process including acquisition, processing, de-packaging, integration, re-packaging, implies interaction, transactions, and creativity. The digital economy is a knowledge-driven economy that the digital technologies turn into an economy of the access.

The access to the digital economy should be seen from three angles:

- Access to the digital infrastructure
- Access to networks
- Access to knowledge

Policy for the access of small businesses to the digital economy have to be oriented to overcome all the three kinds of access, with the purpose of contributing to the generation of additional value/knowledge.

To assess policies for the access to the digital economy, a taxonomy has been developed, coupling the 3 dimensions of the 'access' mentioned above with the six components of the economic environment where the SMEs do operate, which usually fall within the scope of targeted policies

- Human Resources
- ICT & TLC infrastructure
- Research & Development
- Clusters & Networks

- Regulation & eGovernment
- Fiscal and Financial Incentives

Using this taxonomy, a policy mapping exercise can be carried out¹⁹. The purpose of this exercise is to circulate policy information within the Deeds Policy Group – which is available but dispersed over the Web - not in an horizontal way and not according the policy categorisation addressing the so called ‘inhibitors’ to electronic commerce, in order to stimulate the discussion about the challenges and the policy priorities to policy making for improving the access of the small businesses to the digital economy. The scope is broader, and includes obviously the policy measures to promote the uptake of e-commerce by the small businesses, but looks at the relevance and consistence of the underway policies with the three dimensions of ‘access’ identified by the Deeds project.

6. Policy Priorities for Tomorrow: Inputs to Discussion

There is a demand for orienteering tools in the policy environment, to take stock of the ‘work done’ (policy assessment), but there is also a perspective to be drawn up, which may require a re-assessment of the notions of access, electronic commerce, digital economy, and SMEs.

In the transition to the digital economy, policy needs to anticipate – more than to follow – the socio-economic trends, resetting a strong link between general objectives - such as development, innovation, competition - and policy actions. In other words, policy priorities for the ‘work to be done’ have to be identified (policy innovation). That may require that policy goes beyond the established definitions, frameworks and models, and develops its innovative potential.

Besides the policy mapping exercise, an exercise aiming at identifying the policy priorities suitable to develop the potential of the digital economy and to address the small businesses differentiated requirements is initiated.

The three dimensions of ‘access’ (the objective) can be matched with policy priority, policy focus, and with policy measures associated with critical success factors either for small businesses or for technologies. That helps to better understand where the current policy priorities of the underway policy making are located, and what priorities are to be addressed in the next stage. The tentative tables here following aim provide inputs to discussion within the Deeds Policy Group, contributing to policy innovation and to further developments in the next phases of the Deeds project.

¹⁹ see O. Bojc, *Mapping SMEs Policies in the Digital Economy: Germany, Greece, UK, Readers Guide* in www.deeds-ist.org

OBJECTIVE	POLICY PRIORITY	POLICY FOCUS	CSF - SMALL BUSINESS	POLICY MEASURES	CSF - TECHNOLOGY	POLICY MEASURES
ACCESS TO DIGITAL TECHNOLOGIES & ICT INFRASTRUCTURE	ICT penetration	Capillary connectivity	Connectivity costs Price transparency	Guide to the ICT network	Global & Open infrastructure	Liberalisation Competition Research Technology and Market Watch
	ICT usage	Basic HW-SW	Basic Equipment Easy to use	ICT literacy (incl. English)	User friendly technologies	
		Advanced HW-SW	Learning why – who - how to use	Training: <ul style="list-style-type: none"> • how to use technology • application to business mngmt • over business processes 	Technological convergence Multimedia technology Technologies for business: all models	R&D R&D Dissemination
			ICT Supply & Service Provision	Guide to the ICT market (off & online): <ul style="list-style-type: none"> • issues • products 	Quality	Quality Assessment of ICT products & services
		Information systems' integration	IS management IS upgrading IS renewal Skills	Business & Information Systems Advice Service Vocational & Training Training the Trainers	Interoperability Reusability Dependability	R&D

POLICIES FOR THE SMEs IN THE DIGITAL ECONOMY: FROM POLICY ASSESSMENT TO POLICY INNOVATION

OBJECTIVE	POLICY PRIORITY	POLICY FOCUS	CSF – SMALL BUSINESS	POLICY MEASURES	CSF - TECHNOLOGY	POLICY MEASURES
ACCESS TO NETWORKS	Enterprise	From Business to Enterprise	Informal Organisation	For the acquisition of: <ul style="list-style-type: none"> • Management skills • Business Processes Organisation • Market intelligence • Quality standards 	ICT applications for business	Basic Research RTD projects Dissemination of results Technology Culture
			Internal Knowledge	Codification and communication of company knowledge	Content management and Web technologies	
			Business Networks	Know your network Know other networks'	Web technologies	
			Institutional Environment	Access to: <ul style="list-style-type: none"> • Law & regulation • Business • Innovation • Research • Finance • Policy 	Web technologies	

OBJECTIVE	POLICY PRIORITY	POLICY FOCUS	CSF - SMALL BUSINESS	POLICY MEASURES	CSF - TECHNOLOGY	POLICY MEASURES
ACCESS TO NETWORKS	Enterprise	Enterprise in Mature Manufacturing & Services	Business Processes Integration	Dissemination & Test of New Business Models	Technologies for Integrated Processes Management	Basic Research RTD projects Dissemination of results Technology Culture
		Knowledge Intensive Business Services	Supply Chain Integration			
			CRM			
		Market	Market intelligence Marketing	Web Technologies		
		Internal Knowledge	Codification and communication of company knowledge	Content management and Web technologies		
		Business Networks	Know your network Know other networks'	Web Technologies		
		Institutional Network	Access to: <ul style="list-style-type: none"> • Law & • regulation • Business • Innovation • Research • Finance • Policy 	Web technologies		
		Electronic Commerce	Uptake support Confidence Security Privacy Payments Taxation Single Market	Electronic Commerce Technologies		

OBJECTIVE	POLICY PRIORITY	POLICY FOCUS	CSF - SMALL BUSINESS	POLICY MEASURES	CSF TECHNOLOGY	POLICY MEASURES
ACCESS TO KNOWLEDGE	Knowledge	Knowledge Creation & Management	Internal Knowledge: Codification & communication	Archives Portals Marketplaces	Content Management, Multimedia, Web techs	Basic Research RTD projects Dissemination of results Technology Culture
		Knowledge Exchange & Processing	External Knowledge Electronic Commerce	Communication Platforms Quality Standards to Knowledge Packaging & Transmission Uptake support Confidence Security Privacy Payments Taxation	Bandwidth Search & Content Integration technologies Security Privacy	
		Knowledge Sharing	Internal External Knowledge Electronic Commerce	Cluster support Uptake support Confidence Security Privacy Payments Taxation	Interoperability Peer-to-Peer Collaborative commerce Security Privacy	
		Knowledge Ownership & Integrity	Proprietary Knowledge	IPR protection	Privacy Data Protection Security	
	Skills	Skills	Knowledge Workers	Develop Knowledge-intensive skills		
	Organisation	Virtual Organisation	Knowledge Network	Network Building Network Brokering	Network technologies	
		New Firms & Products	Innovation	Enterprise creation Start-up support		
	Research	Research Community	R&D	Publicity of Results Research & Business Interaction		
	Policy & Administration	Policy & Administrative Institutions	Governance & Regulation Electronic Commerce	Communication of Regulations and Standards Transparency & Simplification Public e-procurement Confidence Security Privacy Payments Taxation	Electronic Commerce Technologies	