Background Paper (BP5)

For the National Strategies of Transition to a Knowledge Economy in the European Union

Maria João Rodrigues
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1. Knowledge economy and knowledge policies

1.1. On the transition to the knowledge-intensive economy

We are going through a great transformation which can be called a transition to knowledge-intensive economies. We can say that we are entering a new mode of knowledge creation, diffusion and use due to three main factors: their acceleration by information and communication technologies; the increasingly sophisticated procedures to codify, to learn and to manage knowledge; and the social perception of knowledge as a strategic asset of companies, nations and people.

These three factors are gradually transforming:
— the knowledge creation by professional groups such as researchers, artists, engineers as well as by the different social communities, developing different forms of life in working life, family life, leisure, public space;
— the knowledge diffusion by telecommunications networks, content industries, media, education and training;
— the knowledge use by companies, public services, local authorities, the different actors of civil society and people at large.

This broad transformation involves new patterns of behaviour, values, social relationships and institutional forms. The financial markets were the first markets to be transformed by the new opportunities opened by cyberspace. With just-in-time interaction becoming possible, the global interdependency of these markets and the mobility of capital has increased dramatically. The same does not happen with their regulation, which still has many shortcomings - hence the greater risks of systemic crisis.

More recently, we have been witnessing a new dimension of the process of globalisation (Soete in Archibugi and Lundvall, 2001) with the rise of the intangible transactions at international level encompassing not only services, but also transfers of technology, information and knowledge connected with manufacturing. Just-in-time interaction and co-ordination at global level is also becoming possible for manufacturing. The production chains are being re-organized at global level. Multinational corporations are focusing the most value added-production based on trademarks and building wide networks of out-sourcing and delocalisation. With the diffusion of e-commerce, more particularly with business-to-business, new e-market places are emerging speeding up global transactions which can involve not only big but also small and medium companies that are discovering completely new opportunities.

Within companies, it is not only the production process which is becoming more intensive in information and knowledge. It is also the content of the products

and the services themselves, as we can understand by driving a car, using a TV set, a washing machine or looking for a personal banking, health or entertainment service (Tapscott, 1995). Hence knowledge management is becoming a key factor of competitiveness, leading to a fundamental reconsideration of the principles of strategic management (Wikström and Norman, 1994). The goal of knowledge management is to build and exploit intellectual capital effectively and gainfully (Wiig in Despres and Chauvel, 2000).

Against this background, there are companies reshaping their organisation towards a learning organisation, with multitasking, more flexible arrangements, more open communication, more scope for initiative and creativity and more opportunities for lifelong learning. More sophisticated procedures are introduced in human resources management based on competence assessment. (Le Boterf, 1998). New types of workers are spreading, called knowledge workers by Robert Reich (1991), categorized by Manuel Castells (1996) in different occupational profiles such as innovators, connectors and captains.

In the meantime, new risks of social downgrading or social exclusion – a digital divide – involve the workers who cannot keep up with this pace of change. Labour markets tend to new forms of segmentation between workers with voluntary mobility based on up-dated skills and workers with involuntary mobility due to out-dated skills. New types of labour contracts and collective agreements are being experimented in order to take into account the time and the financial resources invested in lifelong learning by the companies, the workers and the public authorities. New forms of security regarding training or social protection are being defined in order to facilitate the occupational mobility of workers and their choices between working, learning and family life throughout the life cycle.

The institutional framework of labour markets are being reshaped in order to combine competence building, employability and adaptability with basic conditions of security and citizenship (e.g. Esping-Anderson, 1996, Fitoussi and Rosanvallon, 1996). Labour market services are being more focused on active employment policies, social protection systems on activating social policies, industrial relations on negotiating new trade-offs between flexibility, security and competence building. Finally, education and training systems are facing the challenge of developing a learning society, improving their access to knowledge to the different kinds of users taking advantage of the different kinds of media.

These are trends still in conflict with other trends coming from the past, the previous mode of development, but they might be fostered by a new generation of policies, which can be called knowledge policies.

1.2. Knowledge policies

Knowledge is becoming the main source of wealth of nations, companies and people, but it can also become the main factor of inequality. Therefore, public policies should be more concerned in facilitating the access to knowledge and enhancing learning capacities (Lundvall, 2001). This is why we can also speak about knowledge policies.

Knowledge policies can be defined as the policies aiming at fostering and shaping this transition to a knowledge-based society.

Regarding knowledge creation, these policies support basic research, applied research as well as culture industries, encouraging dialogue among different cultures, social groups and generations;

Regarding knowledge diffusion, these policies develop broadband networks, spread the access to Internet, promote content industries and their dissemination by different media, reform education and training towards what we can call a learning society.

Regarding knowledge utilisation, these policies foster innovation in products and processes, knowledge management and learning organisations in companies and social services, as well as local and international partnerships for innovation.

Against this background, we can highlight a more far-reaching role for the policies concerning notably research, culture, media, innovation, information society, education and training, and their implications for other issues such as employment, social inclusion and regional development. Moreover, some implications should also be drawn for macroeconomic policies and their impact on structural change. Budgetary policies should give a stronger priority to knowledge policies and even tax policies should encourage new patterns of behaviour in line with these policies.

All this was at stake, when a strategy for the transition to the knowledge economy was defined in the European Union.

2. A European strategy for the transition to the knowledge economy

2.1. In search of a European way

In the preparations for the Lisbon Summit (23-24 March 2000), we faced the following main question: is it possible to update Europe's development strategy so that we can rise to the new challenges resulting from globalisation, technological change and population ageing, while preserving European values? In the new emerging paradigm, knowledge and innovation are the main source of both wealth and divergence between nations, companies and individuals. Europe is losing ground to the United States, but this does not mean we have to copy them.

The purpose was to define a European way to evolve to the new innovation- and knowledge-based economy, using distinctive attributes ranging from the preservation of social cohesion and cultural diversity to the very technological options. A critical step would be to set up a competitive platform that can sustain the European social model, which should also be renewed.

Answering this question requires institutional innovations, if we want to tap into the potential of this new paradigm while avoiding risks of social divide. Innovation, for example, of norms regulating international trade and competition, of social models, or of education systems. Moreover, in each and every Member State of the European Union, institutional innovation has to internalise the level of integration accomplished through the single market and the single currency. This means that some level of European co-ordination is required to carry out institutional reforms, while respecting national specificity. A multilevel governance system is needed that enables its various levels (*i.e.* European, national and local) to interact.

In order to find an answer to the initial question, we had to commit to an extensive intellectual and political undertaking of reviewing Europe's political agenda and the main Community policy documents in the light of the latest updates of social sciences. European intellectuals with a broad experience in these fields were involved in this task (Rodrigues, 2002). Our purpose was to ascertain which institutional reforms could change the way in which European societies are currently regulated, so as to pave the way for a new development trajectory towards a knowledge-intensive economy.

2.2. The Lisbon Strategy

A new strategic goal and an overall strategy was defined by Lisbon European Council on 23-24 March 2000. Quoting its own Conclusions:

'to become 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. Achieving this goal requires an **overall strategy** *aimed at:*

- *preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market;*
- *modernising the European social model, investing in people and combating social exclusion;*
- *sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix.'*

This quotation is important to clarify that, contrary to some vulgarisations, the strategic goal defined in Lisbon is not "to become the most competitive" but to achieve this particular combination of strong competitiveness with the other features. This should make the specificity of the European way.

Table 1 – The main political orientations of the Lisbon Strategy

The Lisbon Strategy set the following main political orientations:

a/ a policy for the information society aimed at improving the citizens' standards of living, with concrete applications in the fields of education, public services, electronic commerce, health and urban management; a new impetus to spread information technologies in companies, namely e-commerce and knowledge management tools; an ambition to deploy advanced telecommunications networks and democratise the access to the Internet, on the one hand, and produce contents that add value to Europe's cultural and scientific heritage, on the other;

b/ an R&D policy whereby the existing community programme and the national policies converge into a European area of research by networking R&D programmes and institutions. A strong priority for innovation policies and the creation of a Community patent;

c/ an enterprise policy going beyond the existing community programme, combining it with a coordination of national policies in order to create better conditions for entrepreneurship – namely administrative simplification, access to venture capital or manager training;

d/ economic reforms that target the creation of growth and innovation potential, improve financial markets to support new investments, and complete Europe's internal market by liberalising the basic sectors while respecting the public service inherent to the European model;

e/ macro-economic policies which, in addition to keeping the existing macro-economic stability, vitalise growth, employment and structural change, using budgetary and tax policies to foster education, training, research and innovation;

f/ a renewed European social model relying on three key drivers, *i.e.* making more investment in people, activating social policies and strengthening action against old and new forms of social exclusion;

g/ new priorities defined for national education policies, *i.e.* turning schools into open learning centres, providing support to each and every population group, using the Internet and multimedia; in addition, Europe should adopt a framework of new basic skills and create a European diploma to embattle computer illiteracy;

h/ active employment policies intensified wit the aim of making lifelong training generally available and expanding employment in services as a significant source of job creation, improvement of the standards of living and promotion of equal opportunities for women and men. Raising Europe's employment rate was adopted as a key target in order to reduce the unemployment rate and to consolidate the sustainability of the social protection systems;

i/ an organised process of cooperation between the Member States to modernise social protection, identifying reforms to answer to common problems such as matching pension systems with population ageing;

j/ national plans to take action against social exclusion in each and every dimension of the problem (including education, health, housing) and meeting the requirements of target groups specific to each national situation;

k/ improved social dialogue in managing change and setting up of various forms of partnership with civil society, including the dissemination of best practices of companies with higher social responsibility.

2.3. Strategy and governance

The actual implementation of any strategy requires a political engine, *i.e.* a governance centre at the European level with the power to coordinate policies and adapt them to each national context. The Lisbon decisions made this governance centre stronger, in three ways:

- − firstly, the European Council would play a stronger role as co-ordinator of the economic and social policies, henceforth devoting its Spring Council to the monitoring of this strategy, based on a synthesis report presented by the European Commission;

- − secondly, the broad economic policy guidelines would improve the synergy between macroeconomic policies, structural policies and employment policy;

- − thirdly, in order to complement the legislative instruments, the Union adopted an open method for inter-Member State co-ordination, which began being applied to various policy fields, stepping up the translation of European priorities into national policies.

The open method of coordination was elaborated after a reflexion on governance aiming at defining methods for developing European dimension. The political construction of Europe is a unique experience. Its success has been dependent on the ability to combine coherence with respect for diversity and efficiency with democratic legitimacy. This entails using different modes of governance depending on the problems to be solved and involving specific instruments and institutions. For good reasons, various methods have been worked out which are placed somewhere between pure integration and straightforward co-operation (see Table 2).

Table 2 - Policies, Modes of Governance and Instruments

Modes of Governance	Instruments	Monetary policy	Trade policy	Single market policy	Fiscal policy	Employment Labour Policies	Research Policy	Social Protection and Social Inclusion Policies	Education and training policies	Enterprise and innovation policies	Environment
Single policy	Delegation in European bodies, laws	X	X	X							
Harmonisation of national policies	Framework laws			X		X		X			X
Coordination of national policies	Framework laws, decisions				X		X				
Open coordination of national policies	Decision on recommendations with monitoring and opinions					X	X	X	X	X	X
Cooperation of national policies	Recommendations						X	X	X	X	X
Supporting national policies	Community programs					X	X	X	X	X	X

2.4. The open method of coordination

Three years after the its first implementation by the Luxembourg process on employment, the definition of the open method of coordination was expressly undertaken during the preparation of Lisbon European Council in order to develop the European dimension in new policy fields, namely information society, research, innovation, enterprise policy, education and fighting social exclusion. After in depth discussions led by the Presidency with governments, the European Commission, the European Parliament and social partners, this Summit formally adopted this method in the following terms (Presidency Conclusions, 2000):

"Implementing a new open method of coordination

1. *Implementation of the strategic goal will be facilitated by applying a new open method of coordination as the means of spreading best practices and achieving greater convergence towards the main EU goals. This method, which is designed to help Member States to progressively developing their own policies, involves:*

   — *fixing guidelines for the Union combined with specific timetables for achieving the goals which they set in the short, medium and long terms;*

   — *establishing, where appropriate, quantitative and qualitative indicators and benchmarks against the best in the world and tailored to the needs of different Member States and sectors as a means of comparing best practices;*

   — *translating these European guidelines into national and regional policies by setting specific targets and adopting measures, taking into account national and regional differences;*

   — *periodic monitoring, evaluation and peer review organised as mutual learning processes.*

2. *A fully decentralised approach will be applied in line with the principle of subsidiarity in which the Union, the Member States, the regional and local levels, as well as the social partners and civil society, will be actively involved, using varied forms of partnership. A method of benchmarking best practices on managing change will be devised by the European Commission networking with different providers and users, namely the social partners, companies and NGOs."*

A last issue should be addressed. How could the implementation of the open method of coordination in the different policy fields be coordinated? The European Council should regularly guide and monitor the outcomes achieved by the open method of coordination in its different fields, based on regular initiatives taken by

the European Commission. This requires two different capacities from the Members of the European Council:

— to define general orientations for the different policy fields in order to organise the work of the different formations of the Council upstream and downstream;

— to ensure their implementation at European and national level.

The open method of coordination has already been subject to many discussions at political level and it is also raising some first contributions coming from social sciences researchers. This emerging debate leads me to contribute with some *ex-post* elaboration and clarification. These remarks also take into account recent theoretical developments in political science, economics and management sciences.

Some general remarks seem necessary in order to clarify the method itself:

a/ the purpose of the open method of coordination is not to define a general ranking of Member States in each policy, but rather to organise a learning process at European level in order to stimulate exchange and the emulation of best practices and in order to help Member States improve their own national policies.

b/ the open method of coordination uses benchmarking as a technique, but it is more than benchmarking. It creates a European dimension and makes political choices by defining European guidelines and it encourages management by objectives by adapting these European guidelines to national diversity.

c/ the open method of coordination is a concrete way of developing modern governance renewing the principle of subsidiarity.

d/ the open method of coordination can foster convergence on common interest and on some agreed common priorities while respecting national and regional diversities. It is an inclusive method for deepening European construction.

e/ the open method of coordination is to be combined with the other available methods, depending on the problem to be addressed. These methods can range from harmonisation to co-operation. The open method of coordination itself takes an intermediate position in this range of different methods. It goes beyond inter-governmental cooperation and it is an instrument of integration to be added to a more general set of instruments.

f/ The European Commission can play a crucial role as a catalyst in the different stages of the open method of coordination namely by: presenting proposals on European guidelines, organising the exchange of

best practices, presenting proposals on indicators, supporting monitoring and peer review.

g/ The open method of coordination can also become an important tool to improve transparency and democratic participation.

Finally the open method of coordination is called "open" for several reasons:

a/ because European guidelines and their relative priority can be adapted to the national level; because best practices should be assessed and adapted in their national context;

b/ because there is a clear distinction between reference indicators to be adopted at European level and concrete targets to be set by each Member State for each indicator, taking into account their starting point. For example, the common indicators can be the ratio between investment in R&D and the GDP, or the women participation rate, but the target should be different for each Member State. It means that monitoring and evaluation should mainly focus on progressions or relative achievements;

c/ because monitoring and evaluation should take the national context into account in a systemic approach;

d/ last, but not least, because the development of this method in its different stages should be open to the participation of the various actors of civil society.

3. Where are we now?

3.1. The phases of the implementation

The implementation of the Lisbon strategy should be envisaged in different phases with the horizon of 2010. A 1st phase of the implementation of the Lisbon Strategy is now almost completed. This phase was focused on:

a/ specifying the Lisbon Summit Conclusions into policy instruments of the European Union (directives, community programmes, action plans, recommendations, see Table 3)

b/ adding the environmental dimension and building the approach on sustainable development

c/ preliminary implementation in the Member States (still very imbalanced among areas and Member States)

d/ introducing the basic mechanisms for implementation (Spring European Council, reorganization of the Council formations and schedules, involvement of the European Parliament and the other European

institutions, the social partners and the organized civil society at European level, development of the open method of coordination tools)

e/ introducing stronger mechanisms in the upcoming European Constitution (e.g. the General Affairs Council, the coordination between economic and social policies, the instrument mix in each policy, the basic tools of the open method of coordination)

A 2nd phase is now beginning, putting the focus on the implementation at national level, including the new Member States. This new focus will require a stronger interface between the European and the national levels of governance, with implications for the behavior of the main actors, notably:

a/ the Governments should be invited to increase the coherence and the consistency between the instruments they adopt at European level with the instruments they implement at national level. In this implementation they should enhance the involvement of the relevant stakeholders of the civil society at national level;

b/ the European Commission should consider new ways of improving its internal coordination and its direct work with each Member State (a more comprehensive and holistic approach to each national case is now needed);

c/ the European Parliament should consider new ways to develop the interface with the National Parliaments, by more actively providing the relevant information on the European agenda as well as opportunities for joint discussion on their implications for the national policies;

d/ in the organized civil society (social partners, NGOs, other bodies), the European organizations should be invited to develop a joint work of information, debate, a implementation and monitoring with its counterparts at national level.

3.2. Assessing and improving the governance instruments

The implementation of the Lisbon strategy is being based on a **wide range of policy instruments**: directives, community programmes and action plans using the open method of coordination (see Table 3).

Table 3 - The instrument mix of the various policies

Policies	Types of Instruments		
	Directives	Open Method of Coordination	Community Programmes
Information Society	- Directive on a common regulatory framework for electronic communications networks and services - Directive on privacy and electronic communications - Universal Service Directive - Authorisation Directive - Access Directive - Directive on electronic commerce' - Directive on a Community framework for electronic signatures	eEurope Action Plan	- Programme to encourage the development, distribution and promotion of European audiovisual works (MEDIA Plus) (2001-2005) - Multiannual programme to promote the linguistic diversity of the Community in the information society
Enterprise Policy	Technical harmonization directives	European Charter for Small Enterprises	Multiannual Programme for Enterprise and Entrepreneurship
Innovation Policy		Framework of Common Objectives	
Research Policy		European Research Area Towards 3% of GDP Action Plan for Research	6th Framework Programme
Single Market	Harmonization directives	- Financial Services Action Plan - Risk-Capital Action Plan	
Education	Directive establishing a mechanism for the recognition of qualifications in respect of the professional activities covered by the Directives on liberalisation and transitional measures and supplementing the general systems for the recognition of qualifications	- eLearning - Common objectives and targets - Bologna Process for High Level Education - Copenhagen Declaration for lifelong learning - Action Plan for skills and mobility	Community Programmes "Socrates" and "Leonardo"

Employment	- Directive on the abolition of restrictions on movement and residence within the Community for nationals of Member States with regard to establishment and the provision of services - Directive on the introduction of measures to encourage improvements in the safety and health of workers at work - Directive on the organisation of the working time of persons performing mobile road transport activities - Directive concerning the framework agreement on fixed-term work concluded by ETUC, UNICE and CEEP - Directive concerning certain aspects of the organization of working time - Directive supplementing the measures to encourage improvements in the safety and health at work of workers with a fixed- duration employment relationship or a temporary employment relationship - Directive on the approximation of the laws of the Member States relating to the application of the principle of equal pay for men and women	European Employment Strategy: Joint Employment Report, Employment guidelines and Recommendations for Members States' employment policies	Community Programme "Equal"
Social Protection	Directive on the implementation of the principle of equal treatment for men and women in occupational social security schemes	- Common objectives for pension provision - Integrated approach for safe and sustainable pensions	
Social Inclusion		- Common objectives - Framework strategy on gender equality	Programme of Community action to encourage cooperation between Member States to combat social exclusion
Environment	Directives on the protection and improvement of the environment Directive on the assessment of the effects of certain public and private projects on the environment	- EU strategy for sustainable development - Community Eco-label working plan - Council Resolution on Corporate Social Responsibility	6th Community Action Programme for Environment

Nevertheless the mix of policy instruments is different according to each policy field: the single market policy is more based on directives, whereas the research policy on a Community Programme and the social protection policy on the open method of coordination. Now, when most of the instruments are already defined, the priority should go to improve the consistency and synergy of the instrument mix in each policy field. For instance, the Community programmes should support the common objectives already defined to develop the open coordination in the education field.

The open method of coordination has been introduced in 11 policy fields. In spite of some peculiarities concerning its use in each of them, some general improvements should be introduced:

   a/ the discussion on the common guidelines and indicators or on the monitoring should be based not only on the institutional meetings, but also on more informal working meetings involving experts and other stakeholders. This leads to a richer exchange of experience and reduces the bureaucratic bias. The European Commission could play a more active role in fostering this process;

   b/ the adoption of the national plans should be based not only on reports summing up the national progress but in real plans engaging all the relevant stakeholders. This is a main responsibility of the Governments.

It is also important to improve the coordination of the policies included in the Lisbon strategy at both European and national levels. One of the main problems of the present situation is that most of the Member States remain unable to have an overview of the implementation of the Lisbon agenda at national level and to define its own strategy for this purpose. What seems to be at stake now is to turn the European Lisbon agenda into national agendas.

Hence, the coordination of this process should be improved according to the following lines:

   – to invite each Member State to prepare its own national programme for the implementation of the Lisbon Strategy;

   – to invite the European Commission to prepare the Strategic Report buiding on the national programmes. It might include Lisbon scoreboard assessing both the relative performances and the progress and a Lisbon roadmap with concrete priorities;

   – to keep the Spring European Council in March as the main focal point, but to reorganize the working methods in order to have a discussion on political assessments and choices, based on the Strategic Report and the national programmes.

Finally, it seems important to create a framework of positive incentives to foster the implementation of the Lisbon Agenda. For that purpose, a specific connection should be set between this implementation and:

- the assessment of the national programmes of stability and growth in the framework of the Stability Pact;
- the assessment of the Community Support Frameworks, regarding the structural funds;
- the selection of the applications to the Community programmes.

Let us focus now on two critical policies for the preparation of the Lisbon national programmes, if these are designed as national strategies to step up the transition to a knowledge economy: lifelong learning and innovation policies.

4. On the European policies for lifelong learning

Lifelong learning plays a central role in order to explore the full potential of a knowledge intensive economy for competitiveness, growth and jobs creation with social inclusion. The analysis of the present situation in EU shows very important bottle-necks, in spite of an increasing public awareness of this issue. Following recent policy developments at European level, all Member States are about to define their national strategies to develop lifelong learning.
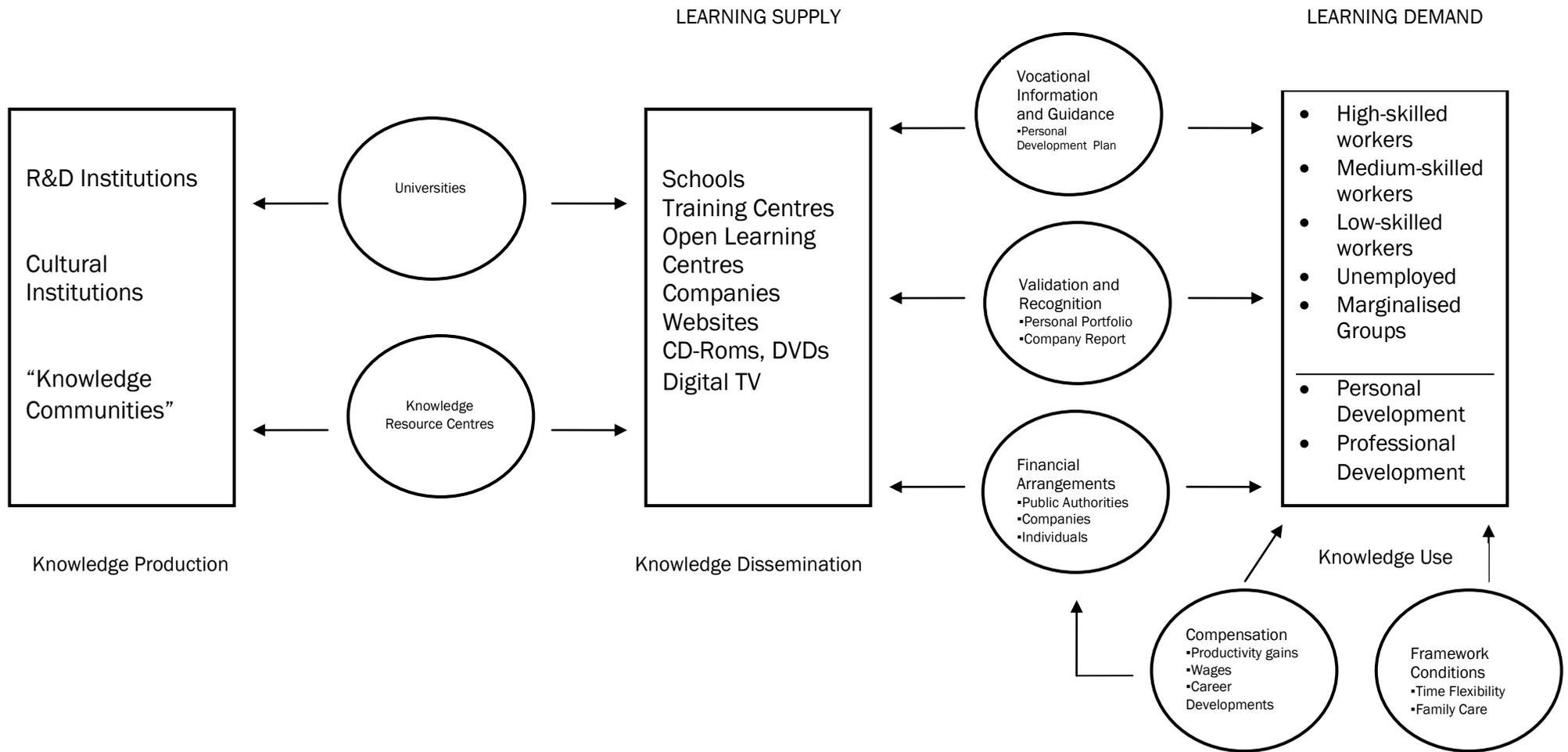
Some elements of this broader strategy seem to be emerging everywhere such as: lifelong learning as an issue concerning the population as a whole, the importance of basic competences, the role of multiple stakeholders, new funding instruments, the development of multiple pathways and the need to remove obstacles, the potential of e-learning, the need to improve guidance and recognition. By contrast, others topics still seem underdeveloped: the critical role of early childhood learning, the potential of work organisation, the role of collective bargaining, the budgetary implications of the targets for investment in lifelong learning.

4.1. From the learning system to the strategy for lifelong learning

There is a clear gap between the European ambition to become a dynamic, competitive and inclusive knowledge based economy and the present scope of the learning activities involving both public and private initiatives. In order to overcome this gap we need a more systematic approach on the development of a *learning system,* which should build on the following principles (see Figure 1):

a/ this approach should take into account the general context of a knowledge-based society;

b/ lifelong learning is a central activity in a knowledge society because it disseminates the knowledge which is produced to those who might use it. Therefore lifelong learning plays a central role in the chain of knowledge production, dissemination and utilisation;

c/ in order to analyse the outcome of the autonomous initiatives of the actors of the knowledge dissemination versus the actors of the knowledge utilisation, it useful to speak about the *supply of learning services* versus the *demand for learning services*. As matter of fact we are considering a specific sector of services which is expanding and becoming more complex and sophisticated;

d/ the supply of learning services is evolving according to the types, places and instruments of learning: schools and training centres might evolve to open learning centres; companies can create more sophisticated learning organisations; e-learning is developing by using websites, CD-ROMS, DVDs and data basis; digital TV can play an increasing role;

e/ the demand of learning services is very heterogeneous according to the various target groups, from high skilled staff to skilled craftsmen or to marginalised groups and according to their concrete economic, social and cultural activities;

f/ the demand of learning services depends on some framework conditions, such as the working time flexibility and the family care facilities. This demand also depends on the prospects to get incentives in terms of productivity gains and of personal or professional development, or in terms of salary or promotion to be defined by the labour contract or the collective agreement;

g/ the interaction between the supply and the demand of the learning services depends on the forecasting and guidance procedures, on the validation and recognition of the learning activities and on the funding mechanisms; in simpler words, well known of economists, the interactions between supply and demand depend on information, value and money;

h/ finally, all the interactions in this chain can be more strongly developed on the basis of a more powerful infrastructure of telecommunications (broadband) and logistics.

FIGURE 1 – The system of lifelong learning

LEARNING SUPPLY

LEARNING DEMAND

R&D Institutions

Cultural Institutions

"Knowledge Communities"

Universities

Knowledge Resource Centres

Schools
Training Centres
Open Learning Centres
Companies
Websites
CD-Roms, DVDs
Digital TV

Vocational Information and Guidance
▪Personal Development Plan

Validation and Recognition
▪Personal Portfolio
▪Company Report

Financial Arrangements
▪Public Authorities
▪Companies
▪Individuals

- High-skilled workers
- Medium-skilled workers
- Low-skilled workers
- Unemployed
- Marginalised Groups

- Personal Development
- Professional Development

Knowledge Production

Knowledge Dissemination

Knowledge Use

Compensation
▪Productivity gains
▪Wages
▪Career Developments

Framework Conditions
▪Time Flexibility
▪Family Care

These seem to be the main components of what we can call a *learning system,* which will have concrete specificities in each national case. A national strategy for lifelong learning should therefore aim at dynamising this system in order to develop lifelong learning taking into account these national specificities. Nevertheless, beyond these specificities it is possible to identify some general strategic priorities to be taken into account in each national case:

a/ to define the goals for lifelong learning in terms of not only educational levels but also new jobs profiles and competences;

b/ to develop a new infrastructure for lifelong learning;

c/ to create a diversified supply of learning opportunities able to provide more customised solutions:

- to develop the new instruments of e-learning and to explore the potential of the digital TV;
- to turn schools and training centres into open learning centres;
- to encourage companies to adopt learning organisations;
- to shape the appropriate learning mode for each target group;
- to spread new learning solutions for the low skilled workers.

d/ to foster the various demands for learning and to create a demand-led system:

- to improve the framework conditions for lifelong learning;
- to develop a dynamic guidance system over the life course;
- to renew the validation and recognition system;
- to create compensations for the investment in learning.

e/ to spread new financial arrangements in order to share the costs of lifelong learning;

f/ to improve governance for lifelong learning, involving all the relevant public departments and stakeholders of civil society.

4.2. To define the goals for lifelong learning

The goals of lifelong learning should be defined first of all in terms of education levels and educational attainments. The European Union has recently adopted a short list of common targets, assuming that the upper secondary level seems nowadays the minimal level to provide a solid foundation for lifelong learning. These targets (see Table 4) aim at focusing the investment in education and training in areas with clear value added, in terms of economic growth and employability. This additional effort should combine targeted public investments and higher private contributions (Com (2002) 779).

Table 4 – Education targets in the European Union

1	By 2010, an EU average rat of no more than 10% of early school leavers should be achieved;
2	The total number of graduates in mathematics, science, technology in the EU should increase by at least 15% by 2010, while at the same time the gender imbalance should decrease;
3	By 2010 at least 85% of 22 years old in the EU should have completed upper secondary education;
4	By 2010, the percentage of low-achieving 15 years old in reading, mathematical and scientific literacy will be at least halved;
5	By 2010, EU average participation in lifelong learning should be at least 12,5% of the adult working population (25 to 64 age group).

Moreover, according to the above presented analysis, two other targets should be added:
- a specific target concerning the education and training of the adult population who only has basic education;
- a general target concerning the pre-schooling education for all children, as it is proved it can play a crucial role in their cognitive development and their subsequent educational and professional performance; this target might be connected with the other already adopted, dealing with the generalisation of child care services.

In the meantime, the EU also agreed on a short list of basic skills which, in addition to literacy and numeracy, should include ICT skills, foreign language, entrepreneurship and social skills.

Lifelong learning activities are very often hindered by a lack of relevant information and awareness about skills needs. Companies complain about education institutions not being able to cope with their needs and education institutions argue they should not be completely subordinated to short term economic needs. Nevertheless, behind the success cases of European regions and clusters we will find new patterns of interaction between skills demand and supply (Stahl, 2001).

Drawing some lessons from this experience, the goals of lifelong learning should also be defined in terms of occupational profiles and their specific competences. The purpose is not coming back to the traditional models of

forecasting, setting a mechanical and unidirectional relationship between the industrial pattern of growth on the one hand and the skills needs on the other. On the contrary, the purpose should be to develop a permanent interaction between skills and the growth pattern at European, national, sectoral and local levels, involving the relevant actors and taking into account both long and short term needs. The recently created *Skillsnet* should be enhanced in order to provide basic references for this process at European level, building on the already very diversified work across Member States, which combines very different techniques: enterprise and labour force surveys, case studies, expert inquiries, analyses of jobs advertisements, forecasting and scenarios, observatories on skills developments (Descy and Tessaring, 2001).

In a knowledge-based society, lifelong learning can play a central role in paving the way to new areas of jobs creation. Jobs creation is increasingly intertwined with innovation in all its dimensions: innovations not only in process but in products and services, not only in technologies but in organisation, marketing and design. At the core of innovation there is the capacity to turn knowledge into more added value, and this requires skilled people with specific occupational profiles such as designers, engineers, different specialists of marketing, management, logistics, telecommunications.

5. On the European policy for innovation

Turning knowledge into added value is a central process in the transition to a knowledge-intensive economy. This is the role of innovation in its various forms, technological or organisational, in products or in services. The innovation policies aim at fostering this process within companies, by developing the innovation system and the interactions between the knowledge production, diffusion and utilisation. Hence, innovation policies should be considered as a major catalyst of a strategy of transition to a knowledge economy.

Therefore, in the context of the Lisbon agenda, it is important to improve the national policies for innovation, taking advantage and respecting the differences across Member States, but it is also important to enhance the European dimension by defining common objectives or guidelines at European level, by developing networks, partnerships and joint initiatives at European level

Nevertheless, the innovation policy seems to have a very important specificity regarding the other policies, working with their interfaces. It seems to be a kind of "meta-policy" which purpose is twofold:

- to improve the coordination among different policies, regarding namely enterprise, competition, research, information society, education and training, financial markets, labour markets and social policy
- to improve the focus of each of these policies on supporting innovation

The contribution of these various policies for innovation is already being improved by their political reorientation defined by the Lisbon strategy, but some steps forward seem possible using the open method of coordination and the coordination cycle defined by the Spring European Council, notably:

- To define a framework of specific common objectives or guidelines at European level for the innovation policy, using the open method of coordination;
- To translate these common objectives or guidelines into the national policies for innovation itself, respecting the specificities of each Member State, and involving the governments and the civil society;
- The Council of Ministers for Competitiveness might be reinforced as central platform to improve the coordination between different policies with impact on innovation;
- A group of senior officials representing the Member States can provide a regular follow-up of these developments, using others elements already available such as the Trend Chart and the scoreboard for innovation;
- The European Council might make a general follow up of the innovation policy, due to its very horizontal nature and its central role towards the Lisbon strategic goal;
- The 7th FP for RTD, the Community Programme for Competitiveness and Innovation, the instruments of the regional policy and the European Investment Bank might give a stronger priority to build European networks for innovation.

If we take into account a list of activities which are relevant for innovation (Edquist, 2004:188), as well as the common objectives which were already agreed at European level for other policies, the following guidelines might be identified to be adapted at national level:

a/ Provision of R&D: increasing the public investment in R&D; creating conditions to foster the private investment in R&D; reduce the cost of patenting;

b/ Competence building: training resources for R&D; spreading skills for innovation; developing national strategies for lifelong learning;

c/ Financial innovation: access to venture capital; reorientation of public investment to R&D and innovation; tax incentives with the same purpose; new priorities for structural funds;

d/ Provision of consultancy services: developing the support services for innovation and diffusion;

e/ Improving quality and paving the way to new products and services: competition policy; dissemination of quality standards; improving the criteria of public procurement; targeting sophisticated markets;

f/ Changing organizations: national programmes for organizational development in companies; reforming universities management; modernizing public services;

g/ Incubating activities: developing incubators; supporting high-tech start-ups;

h/ Networking: promoting clusters and partnerships for innovation; extending access to broadband; developing e-business.

This range of guidelines should be supported by some important initiatives at European level such as:

a/ the Framework Programme for RTD and the development of the European Research Area;

b/ the reform of the Stability and Growth Pact, the new Financial Perspectives and the reduction and reorientation of the State aids more in line with the Lisbon Agenda;

c/ the integration of the European financial markets and the development of new venture capital schemes;

d/ the Community Programme for Competitiveness and Innovation and the development of European networks for innovation;

e/ opening new sectors to the competition of the European single market;

f/ opening to new markets in the framework of WTO negotiations and other trade agreements.

As pointed out in Table 5, some of these activities are not yet adopted as concrete measures in this building process of the European innovation policies.

Table 5 – Building the European innovation policy

INNOVATION POLICY COMPONENTS	EUROPEAN LEVEL	NATIONAL LEVEL
Provision of R&D	FP6/7 for RTD Networks of excellence Era-nets European Research Council* Technology Platforms Community Patent*	Actions Plans "Investing in Research" Developing public research Creating conditions for private research Fast track visa for Researchers* Reduce the cost of patenting*
Competence building	Marie Curie Research Fellowships Common objectives for education and training European framework for lifelong learning	Developing human resources for research Developing skills for innovation* National strategies for lifelong learning*
Financial innovation	Integration of financial markets European framework for venture capital European framework of State Aid Reform of Stability and Growth Pact – Quality of public finances* EIB and EIF initiatives New financial perspectives more in line with Lisbon* Reform of Structural Funds	Venture capital New priorities for public expenditure Tax incentives for Research and Innovation National strategic frameworks for structural funds
Provision of consultancy services	Business Innovation Support Scheme*	Enhancing the support services for innovation and diffusion
Improving quality	Developing competition in the single European Market New agreements WTO negotiations	Competition policy Diffusion of quality standards Targeting sophisticated markets Improving public procurement*
Formation of new products and services	Developing competition in the single European Market WTO negotiations Identifying new markets trends	Competition policy Diffusion of quality standards Targeting sophisticated markets Improving public procurement
Changing organisations	European network for organisational development*	National programmes for organisational development* Reforming universities management* Modernising public services
Incubating activities	European network of BIC (Business Innovation Centres)	Developing incubators Supporting high-tech startups
Networking	Developing European networks for innovation* Supporting Innovation Regions Interoperability of standards of ICT	Promoting clusters and partnerships for innovation Extending access to broad band Developing e-business
Governance of the innovation systems	Council of Ministers for Competitiveness	Council of Ministers for Innovation* Innovation Board* Mr./Ms. Lisbon*

Measures still not adopted in formal terms.

6. The diversity of the national strategies of transition to a knowledge intensive economies

The national programmes to implement the Lisbon strategy can offer a unique opportunity to define national strategies of transition to knowledge-intensive economies. As mentioned above, this European agenda introduces new priorities in the research policy, the education and training policy, the information society policy and the innovation policy, which are crucial to develop a more systematic and creative process of knowledge production, diffusion and utilisation. The key question for each Member State is how to develop this process, adapting the European agenda and, more precisely the guidelines already adopted at European level, to its specificities. Some of these specificities should be particularly underlined to explain and to justify the diversity of national strategies to a knowledge intensive economy:

- the industrial specialisation patterns, the relationship with the global economy and the position in the international division of labour;
- the institutional framework regarding, in particular, the corporate organisation, the education and training system, the research system, the financial system and the labour markets regulations;
- the quality of the infrastructures;
- the educational levels and the specific skills of the labour force;
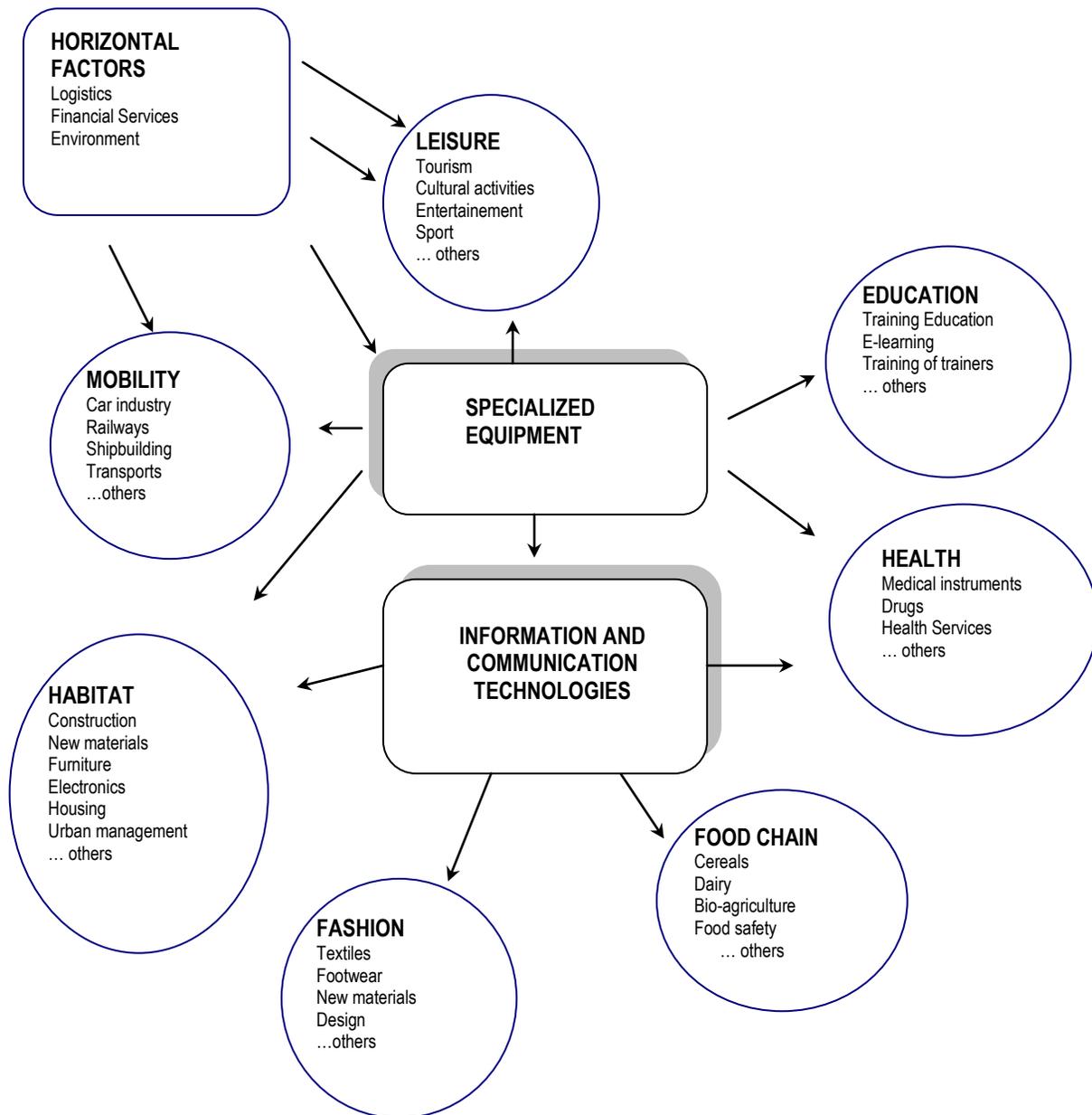- the organisation of the civil society and the instruments to manage change.

Apart from improving the general conditions, the national strategy of transition to a knowledge intensive economy should be itself adapted to specific circumstances of each concrete region or cluster within the country. For example, the approach based on clusters should aim at developing partnerships for innovation, jobs creation and competence building, involving all the relevant actors: companies, research institutions, education and training institutions, financial bodies. A critical path can be discovered by asking how is it possible to add more value building on the already existent competence. For instance, if we take the general human needs as a broad reference for associating clusters of economic activity (see Figure 2):

- competences in tourism should be combined with the competence in cultural activities, sport and environment in order to develop the area of *leisure*;
- competences in construction, furniture, electronics, urban management should be combined in order to develop the area of *habitat;*
- competences in clothing, footwear, new materials and design should be combined in order to develop the *fashion* area;

− competences in car industry, transports and logistics should be combined, in order to develop the area of *mobility.*

In the meantime, other horizontal competences are required to develop all the clusters of activities, such as electro-mechanic equipment, information and communication activities and biotechnologies.

Figure 2 - Innovation and competence-building

Finally, let us conclude with a thesis to be tested by cross-country empirical research. Recent experiences suggest there is a critical path to develop an innovation policy as a catalyst to the transition to a knowledge intensive economy:

1/   to use the European agenda as a leverage to introduce this strategic goal in the national agenda;

2/   to spread a richer concept of innovation, taking into account its different dimensions: technological and organisational, in process or in products and services, based on science or in learning-by-doing, using or interacting;

3/   highlighting the implications of the innovation system approach for the coordination of policies;

4/   to define the priority areas of an innovation policy and prepare a tool box of operational measures;

5/   to open the access to this tool box in order to support innovating projects and companies whatever the sector;

6/   to focus on some clusters in order to illustrate the advantages of developing partnerships for innovation, as a good practice which can be followed by other clusters;

7/   to dynamise the national innovation system, by focusing the missions and the interactions among its bodies;

8/   to reform public services with implications for innovation;

9/   to spread skills for innovation and to train innovation managers;

10/   to improve governance for innovation, by improving the internal coordination of the government and the relevant public departments, by creating public awareness and by developing specific consultation and participation mechanisms with the civil society.

There is no open method of coordination which can help to solve this problem of finding the critical path. This will be "history in the making" in each of the EU Member States.

References

Archibugi, Daniele and Bengt-Åke Lundvall (eds) (2001), *The Globalizing Learning Economy*, Oxford: Oxford University Press.

Asheim, Bjørn T. and Meric S. Gertler (2005), "The geography of innovation – Regional innovation systems", in Fagerberg, Jan, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, New York:: Oxford University Press.

Castells, Manuel (1996), *The information age: economy, society and culture*, reprinted 1999, Oxford: Blackwell Publishers.

CEDEFOP (2002), *Consultation Process on the European Commission's Memorandum on Lifelong Learning – Analysis of National Reports,* Luxembourg: Office for Official Publications of the European Communities.

CEDEFOP (2004), *Getting to Work on LifeLong Learning – Policy, Practice & Partnership,* Luxembourg: Office for Publications of the European Communities.

CEDEFOP (2004), *Learning for Employment – Second Report on Vocational Education and Training Policy in Europe,* Luxembourg: Office for Publications of the European Communities.

CEDEFOP, *Skillsnet: about the network*, 2004, in http://www.trainingvillage.gr

Chisholm, Lyne (2003), *Lifelong Learning: Citizens' Views*, CEDEFOP Luxembourg: Office for Official Publications of the European Communities.

Council of the European Union (2000), *Conclusions of the Lisbon European Council*, Council of the European Union SN 100/00, 23-24 March 2000.

Council of the European Union (2001), *Conclusions of the Stockholm European Council*, Council of the European Union SN 100/01, 23-24 March 2001.

Council of the European Union (2002), *Council Resolution – Education and Lifelong Learning*, Ref. 8944/02, 30.05.2002.

Council of the European Union (2003), *Conclusions of the Brussels European Council*, Council of the European Union SN 100/03, 20-21 March 2003

Council of the European Union (2004), *Draft Council Resolution on Guidance throughout life in Europe*, Ref. 8448/04, 16.04.2004.

Descy, Pascaline and Manfred Tessaring (2001), *Training and Learning for competence*, Luxembourg: Office for Official Publications of the European Communities and Cedefop.

Despres, Charles and Daniele Chauvel (2000), *Knowledge Horizons – The Present and the Promise of Knowledge Management*, Oxford: Butterworth-Heinemann.

Edquist, Charles (2005), "Systems of Innovation – Perspectives and Challenges", in Fagerberg, Jan, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, New York: Oxford University Press.

Esping-Andersen, Gøsta (ed.) (1996), *Welfare States in Transition – National Adaptations in Global Economics*, reprinted 1998, London: Sage.

European Commission – Directorate-General for Education and Culture (2003), *Implementing lifelong learning strategies in Europe: Progress report on the follow-up to the Council resolution of 2002 – EU and EFTA/EEA countries*, 17.12.2003.

European Commission (2000), *Communication: Innovation in a Knowledge-driven economy,* COM (2000) 567, 20.09.2000.

European Commission (2001), *Communication from the Commission - Making a European area of lifelong learning a reality*, COM (2001) 678 final, 21.11.2001.

European Commission (2001), *Communication from the Commission: Realising the European Union's potential: consolidating and extending the Lisbon Strategy,* COM (2001) 79, 08.02.2001.

European Commission (2001), *Report on the future objectives of education systems*, COM (2001) 59 final, 31.01.2001.

European Commission (2002), *Communication from the Commission – European Benchmarks in Education and Training: Follow-up to the Lisbon European Council*, COM (2002) 629 final, 20.11.2002.

European Commission (2002), *Contribution to the Spring European Council in Barcelona: The Lisbon Strategy - Making Change happen*, COM (2002) 14 final, 15.01.2002.

European Commission (2002), *Investing in Human Capital: The efficiency of public expenditure and other policies,* COM (2002), ECFIN/634/02, 17.12.02.

European Commission (2003), *"Education & Training 2010" -The success of the Lisbon strategy hinges on urgent reforms*, (Draft joint interim report on the implementation of the detailed work programme on the follow-up of the objectives of education and training systems in Europe), COM(2003) 685 final, 11.11.2003.

European Commission (2003), *Communication de la Commission – Investir efficacement dans l'éducation et la formation: un impératif pour l'Europe*, COM (2002), 779 final, 10.01.2002.

European Commission (2003), *Communication from the Commission – The role of the universities in the Europe of knowledge*, COM (2003) 58 final, 05.02.2003.

European Commission (2003*), Communication: Choosing to grow: Knowledge, Innovation and Jobs in a Cohesive Society – Report to the Spring European Council, 21 March 2003 on the Lisbon strategy of economic, social and environmental renewal*, COM (2003) 5 final, 14.01.2003

European Commission (2003), *Communication from the Commission Innovation Policy: Updating the Union's Approach in the Context of the Lisbon Strategy*, COM (2003) 112 final, 11.03.2003.

European Commission, (2004) *Jobs, Jobs, Jobs – Creating more Employment in Europe,* Report of the Employment Taskforce, Luxembourg: Office for Official Publications of the European Communities.

European Commission (2005), *Working together for growth and jobs - A new start for the Lisbon Strategy*, COM (2005), 24 final, 02.02.2005.

European Commission (2005), Companion document to the Communication to the Spring European Council 2005 {COM (2005) 24}"Working together for growth and jobs", SEC (2005) 192, 03.02.2005.

European Commission (2005), *Delivering on growth and jobs: a new and integrated economic and employment co-ordination cycle in the EU,* Companion document to the Communication to the Spring European Council 2005 {COM (2005) 24}, *Working together for growth and jobs - A new start for the Lisbon Strategy*, SEC (2005) 193, 03.02.2005.

European Commission (2005), *Commission Staff Working Document in support of the report from the Commission to the Spring European Council, 22-23 March 2005, on the Lisbon Strategy of economic, social and environmental renewal*, SEC (2005) 160, 28.01.2005.

Fagerberg, Jan and Manuel M. Godinho (2005), « Innovation and catching-up », in Fagerberg, Jan, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, New York:: Oxford University Press.

Fitoussi, Jean-Paul and Pierre Rosanvallon (1996), *Le nouvel âge des inégalités*, Paris: Seuil.

Foray, Dominique (2004), *The Economics of Knowledge*, Cambridge : The MIT Press.

Griffiths, Toni and David Guile (2004), *Learning through work experience for the knowledge economy – Issues for educational research and policy*, Luxembourg: Office for Official Publications of the European Communities and Cedefop.

Le Boterf, Guy (1998), *L'Ingénierie des compétences,* Paris, Éditions d'Organisation.

Lundvall, Bengt-Åke and Susana Borrás (2005), "Science, Technology and Innovation Policy", in Fagerberg, Jan, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, New York:: Oxford University Press.

Méhaut, Philippe and Jacques Delcourt (1995), *The Role of the Company in Generating Skills: The Learning Effects of Work Organisation – Synthesis Report,* Luxembourg: Office for Official Publications of the European Communities and CEDEFOP.

Presidency of the European Union (1999), *International Hearing for the Portuguese Presidency of the European Union - "Employment, Economic Reforms and Social Cohesion – Towards a Europe based on innovation and knowledge"*, Lisbon, 3-4 December 1999.

Presidency of the European Union (2000), *Document from the Presidency - "Employment, Economic Reforms and Social Cohesion – Towards a Europe based on innovation and knowledge"*, Council of the European Union 5256/00, 12.01.2000.

Reich, Robert B. (1991), *The work of nations,* Vintage Books.

Rodrigues, Maria João (coord.) with the collaboration of Robert Boyer, Manuel Castells, Gøsta Esping-Andersen, Robert Lindley, Bengt-Åke Lundvall, Luc Soete and Mario Telò (2002), *The New Knowledge Economy in Europe – a strategy for international competitiveness and social cohesion*, Cheltenham: Edward Elgar.

Rodrigues, Maria João (2003), *European Policies for a Knowledge Economy,* in, Cheltenham: Edward Elgar.

Rodrigues, Maria João (2003), "Innovating and investing to raise Europe's growth potential" in Presidency of the European Union, *Economic policy and new sources of growth: Challenges and perspectives*, Athens.

Sapir, André (coord) (2004), *An Agenda for a Growing Europe – The Sapir Report*, New York: Oxford University Press.

Sellin, Burkart (2002), *Scenarios and Strategies for Vocational Education and Lifelong Learning in Europe – Summary of Findings and Conclusions of the Joint Cedefop/ETF Project (1998-2002),* Luxembourg Office for Official Publications of the European Communities and CEDEFOP.

Stahl, Thomas (2001), "The Learning Region and its potential Roles in Lifelong Learning", in Colardyn, Danielle (ed.) (2001), *Lifelong Learning: Which Ways Forward?*, Bruges: College of Europe.

Sultana, Ronald G. (2004), *Guidance Policies in the Knowledge Society – Trends, Challenges and Responses Across Europe – A Cedefop Synthesis Report,* Luxembourg: Office for Official Publications of the European Communities and CEDEFOP.

Tapscott, Don (1995), *The digital economy: promise and peril in the age of networked intelligence*, New York: McGraw-Hill.

Verspagen, Bart (2005), "Innovation and economic growth", in Fagerberg, Jan, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, New York: Oxford University Press.

Wikström, Solveig and Richard Normann (eds.) (1994); Barbro Anell, Göran Ekvall, Jan Forslin, Per-Hugo Skärvad, *Knowledge and value,* London: Routledge.

E-Links

http://www.europa.eu.int
http://europa.eu.int/growthandjobs/index_en.htm
http://www.europa.eu.int/eur-lex/en/index.html
http://www.notre-europe.asso.fr
http://www.theepc.be
http://www.cer.org.uk