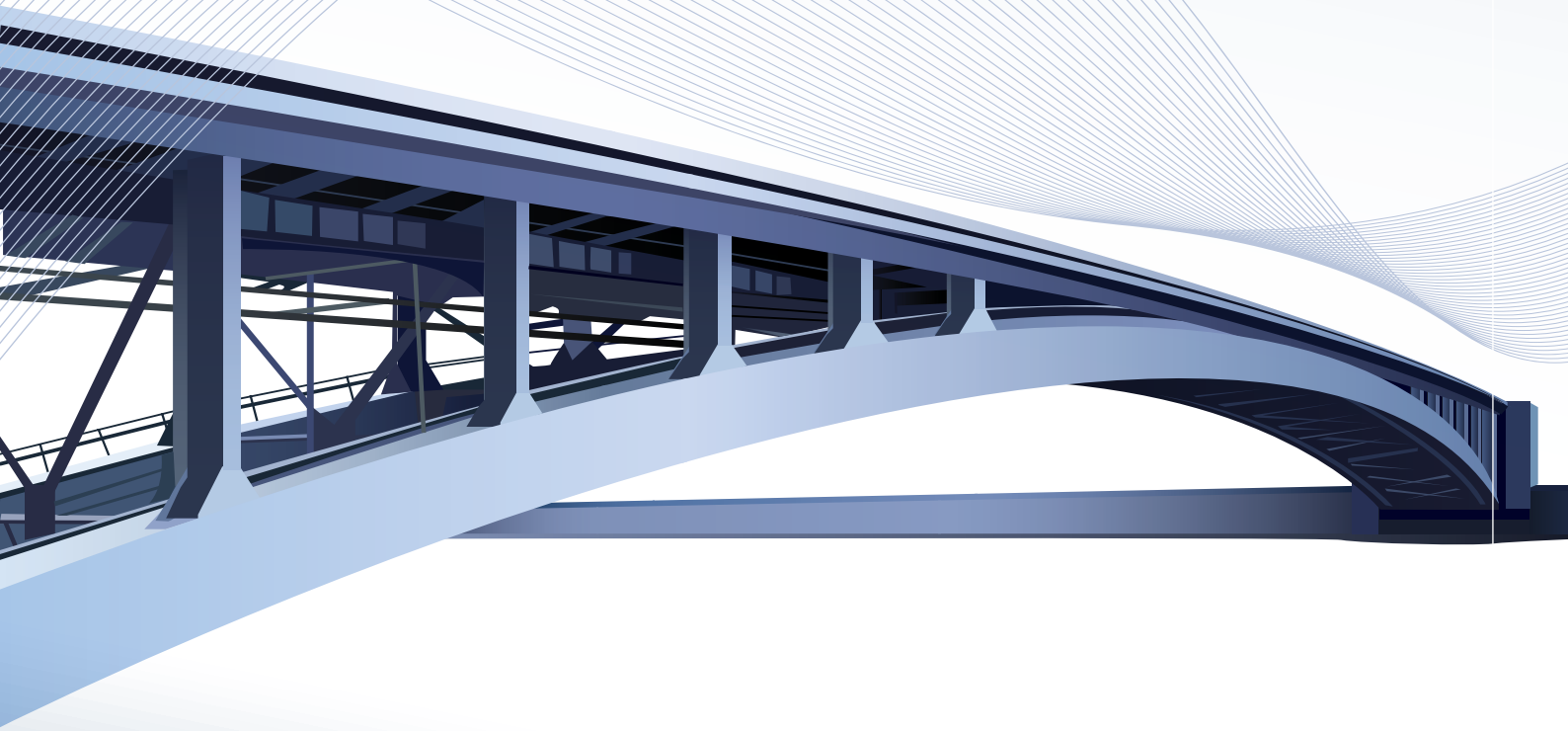
Social Europe

Transferability of Skills across Economic Sectors



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Transferability of Skills across Economic Sectors:
Role and Importance for Employment at European Level

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The appendices of this publication (EU survey; good practice examples; EU workshops; knowledge and skills' transferability in 2020; definitions of basic terms; importance of human capital stock during economic recession; methodological background of skills transferability analysis; outputs of skills transferability analysis; extended information on players and tools; extended information on recommendations) can be found only online under the following link: http://ec.europa.eu/social/main.jsp?catId=784&langId=en.

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Executive summary

A. Key points, aims and objectives of the project

The project analysed the role and importance of transferable skills with regard to the employability, adaptability and occupational mobility of people on the labour market. This analysis is based in the first instance on existing experience and available information, including the findings of 18 sector studies (see European Commission 2009a) to identify future skills.

The matter of transferable skills is not in itself a new subject. The analysis, therefore, draws on existing work in the Member States but also in other OECD countries, particularly USA and Canada, and on studies conducted by other international organisations. To support the analysis, a European-level survey was carried out in the business sector, the world of education and vocational training, and in political circles in order to arrive at a detailed analysis of these skills, methods and tools for their identification and development, protagonists involved and the role they play. The project produced this report which includes the following main parts:

- the first part on the role played by transferable skills in individual occupational pathways in general and in the light of the economic crisis and its adverse effects in terms of company restructuring;
- the second part identifying generic and specific transferable skills by sectors and by occupations, in the current context and the years to come (looking as far ahead as 2020);
- the third part focusing on the role of the players involved in the acquisition of transferable skills, and how they operate and cooperate;
- the fourth part designed to identify the tools and methods used in business and administration (universities and vocational training establishments, public employment services and public authorities at various levels) in order to facilitate occupational pathways and worker mobility by developing transferable skills;
- the final part which describes the recommended tools and methods related to transferability of skills.

B. Background of the project

All economic sectors are currently in the throes of restructuring, which itself needs to be seen against a background of endeavours to shore up and improve the EU's competitiveness and to re-direct the European economy towards fresh activities with a higher added value and capable of generating new and better jobs. The success of these endeavours hinges on more strategic management of human resources, with more dynamic and forward-looking interaction between labour supply and demand.

Bearing in mind the Commission's initiative "New skills for new jobs", the changes underway mean that people's skills will have to be improved and updated, and that strategies to develop skills better tailored to the present and future needs of the labour market will have to be put in place. In addition, in the Commission's initiative "An updated strategic framework for European cooperation in education and training", one of the priorities of the Member States and of the Commission for the period 2009-2010 is full integration of transferable key competences into school curricula, assessment and qualifications. Flexibility and adaptability are key to developing a labour market capable of anticipating and absorbing economic and social changes.

In addition to economic sector-specific skills, employees need to possess a set of transferable skills, which will equip companies with a more flexible, adapTable and mobile workforce, while at the same time facilitating worker mobility occupationally and geographically and making it easier for workers to develop their occupational pathways. Today, workers can no longer or can seldom remain in the same job, in the same company or in the same sector throughout their working lives. Changes are therefore unavoidable on the work front, making it necessary for people to continually adapt and acquire a broad range of generic and specific transferable skills.

In the interests of a more flexible labour market, to encourage continuing training and to make mobility easier, everyone, irrespective of age, gender and socio-economic circumstances, needs to build up, update and develop generic transferable skills (team working, problem solving, decision-making, "learning to learn", oral and written communication, information and communication technologies etc.) throughout their lives. These skills are mentioned inter alia in the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. These generic skills must nevertheless be rounded off by more specific skills which need to be transferable between closely-related sectors.

Besides this general context, the study was carried out in a situation where the concept of transferable skills is rather vague and no accepted taxonomy for description of skills, competencies and occupations exists on a European or even global level. It has been the aim of the project to analyse the situation, to overcome the barrier of missing standardised taxonomy, to develop and test an appropriate methodology for identification and analysis of skill transferability, to make a relevant survey in 20 EU Member States plus Switzerland and to come up with recommendations for relevant actors with regard to transferability of skills.

C. Who is the project targeted at?

The project is addressed especially to actors (workers, employers, sectors, regions, public sector, education institutions) that are hit or at risk of being hit by structural changes or by restructuring with a special focus on issues of skills transferability related to occupational mobility and adaptability.

In times of restructuring **workers** face the risk of losing their job and they must be prepared for professional transition either within or outside their current employment. The study provides a description of skills related to 219 occupations, presents an analysis of transferability of these skills among occupations and sectors and offers examples for use of this information to identify jobs which are more or less closely linked in terms of similarity of skills needed for their performance. In addition, the study identifies a complex portfolio of transversal skills which can be developed at any time as they support general employability and adaptability of workers. This is complemented by analysis of the skills expected to be in the highest demand in future. A specific module is proposed to support career counselling and occupational mobility of workers within a modular system of tools focused on skills development and transferability.

Employers´ opinions on the role of skills and various aspects of skill transferability were collected during the field survey and then analysed and used by the project team to make recommendations. 219 occupational skills profiles and a methodology for their creation are available for employers in the report. An employers´ module is proposed for creating skills profiles for occupations and can also be used in all human resource development processes.

Twenty clusters of sectors were created on the basis of similarities of their employment structure by occupation. The presence of the same or very similar occupations in each cluster of sectors enables the identification of highly transferable skills which can ensure higher occupational mobility. This can be used to support professional transition within these clusters of sectors in times of restructuring in order to reduce waste of sector specific skills due to redundancy of skilled workers in some companies belonging to the sector. A specific structure for skill profiles is designed with regard to skills transferability within sectors and between sectors and a skills profiling on-line tool is proposed for further research and development.

Key stakeholders in **regions** are addressed as they are important actors within their respective labour markets. Geographical mobility of workers in the European Union is low which means that regional and local employment initiatives play an important role in facing the challenges of globalisation and constant labour market changes. The study recommends wider use of labour market intelligence, skills strategies and partnership cooperation in the form of territorial employment pacts or similar forms of local employment initiatives to anticipate changes and substantially influence adaptability and occupational mobility of inhabitants.

Public sector actors´ roles are highlighted in many areas related to restructuring and skills, such as preventive actions through development of appropriate skills in initial and continuous education systems, validation of skills acquired in non-formal and informal learning, career guidance and job matching systems, among others. Specific tools and methods supporting skills development and transferability are proposed in a modular system available for further research and implementation. Better anticipation of future skills needs is proposed through linking and integration of existing systems and methods, including those which were developed in the study. Additionally, the project taxonomy of skills and methodology for their description can be used as an input to the ESCO initiative.

Actors from the world of education are addressed by results of the survey which confirmed dissatisfaction of employers, public sector and educational organisations with the quality of skills development, as regards both job-specific hard skills and transversal skills, mainly within initial education. Several recommendations are proposed by the study, including a design of a competency model of transversal skills and its application from primary schools to adult learning.

D. Key findings of the project and implications for relevant stakeholders

The key findings of the transferable skills study are presented in the form of conclusions related to relevant parts of the project:

1. An introductory analysis of the role of transferable skills in occupational pathways and the fluidity of the labour market

Transferable skills do not correspond to any objectively given and qualitatively different category of skills. They are skills applicable to different tasks and jobs for which the level of applicability varies according to economic, legislative, geographic and other contexts. The more general the skill is, the more transferable it is and vice versa. Since there are no purely transferable or purely non-transferable skills, i.e. transferability is not a discrete, but a continuous variable, it makes sense to discuss skills' **transferability level** instead of distinguishing transferable and/or non-transferable skills as such.

Employers distinguish between **hard skills** such as job-specific skills which are closely **connected with knowedge** and easily observed, measured and trained and **soft skills** such as non-job specific skills **closely connected with attitudes,** which are intangible, and difficult to quantify and develop. Other actors, mainly policy-makers and educational institutions, usually distinguish between **general** (or generic) and **specific** skills.

There is a lack of consistent theory for defining and classifying various skills, and there is no generally accepted skills taxonomy. The project team thus decided to distinguish **three categories of skills** on the basis of previous analysis:

- soft skills;
- generic hard skills;
- specific hard skills.

Specific hard skills are characterised by their lower level of transferability, whereas soft skills and generic hard skills are skills with high transferability across sectors and occupations and can be identified as **transversal skills**.

There is a link between skills transferability and the risk of losing a job or failing to find another one. Employability of individuals **is based on specific skills, but transversal skills support it**. Individuals possessing a higher stock of skills have faced a lower risk of unemployment during the economic crisis.

Easy outsourcing in the globalising world increases the dynamics of the labour market, and **employees should invest in their skills development** to enhance their chances of keeping their job or finding a new one easily. Neither the private nor the public sectors can be fully responsible for an individual's employability.

Personal responsibility and self-development are important. **It is an advantage to be multi-skilled** as this facilitates a worker's movement within their current organisation, or away from it to other occupations and sectors if necessary. What employers look for is an employee able to do the job and do it well. In this respect, **transversal skills that range from problem solving to interpersonal skills are considered important**. Having these skills, which can be transferred from one context to another, is a good basis for accumulation of specific skills required by a given job.

Companies' awareness of the importance of transferable skills development was not significantly influenced by the global economic crisis, as an expert survey suggests (see Appendix 1, Question 3). It is possible to identify two major reasons. Firstly, companies using advanced systems for human resources development pay continuous attention to this topic. Secondly, the crisis and subsequent high unemployment created a surplus of available human resources with adequate levels of specific as well as transversal skills. On the other hand, in times of crisis and large-scale restructuring the **public sector often subsidises skills development (including transversal skills)** of employees (usually in combination with short time work measures implemented by employers) in order to maintain employment (ICT ILO 2010).

2. A detailed analysis of skills transferable across economic sectors in Europe in the current context and in the coming years (looking as far ahead as 2020)

The following outcomes of this Chapter are the most valuable contributions to the further development of a skills-based HR system at European level.

Classification and description of skills, especially transversal skills, i.e. soft skills and generic hard skills. A general understanding of the proposed classification of skills, including their description, has been confirmed by the EU survey respondents.

Before transferability of skills was examined (see Chapter 2) the skills were sorted into groups, i.e. Soft skills, Generic hard skills and Specific hard skills. Systematic classification required not only identification of skills in these separate groups but also their specification.

Soft skills, i.e. non-job specific skills that are related to individual ability to operate effectively in the workplace, are usually described as perfectly transferable. The list of soft skills, their descriptions and specification of separate sub-skills are contained in Appendix 7.1 together with the description of generic hard skills and clusters of specific hard skills. The following 22 soft skills in 5 clusters have been used in the project:

- Personal effectiveness skills: **Self-control and stress resistance; Self-confidence; Flexibility; Creativity; Lifelong learning.** These skills reflect some aspects of an individual's maturity in relation to himself/herself, to others and to work. They are related to performance of an individual when dealing with environmental pressures and difficulties.
- Relationship and service skills: **Interpersonal understanding; Customer orientation; Cooperation with others; Communication.** These skills enable people to understand the needs of others and to cooperate with them. Communication skills are linked to all clusters and they are included in this one because of their important role in relationship building and communication with others.
- Impact and influence skills: **Impact/Influence; Organisational awareness; Leadership; Development of others.** Skills in this cluster reflect an individual's influence on others. Managerial competencies are a special subset of this cluster.
- Achievement skills: **Achievement orientation, efficiency; Concern for order, quality, accuracy; Initiative, proactive approach; Problem solving; Planning and organisation; Information exploring and managing; Autonomy.** The essence of this cluster is a tendency towards action, directed more at task accomplishments than impact on other people.
- Cognitive skills: **Analytical thinking; Conceptual thinking.** These two skills reflect an individual's cognitive processes - how a person thinks, analyses, reasons, plans, thinks critically, identifies problems and situations and formulates explanations, hypotheses or concepts.

Generic hard skills, i.e. technical and job-specific abilities, which can be applied effectively in almost all jobs in a majority of companies, occupations and sectors and in personal life and which are thus perceived as highly transferable. The list of generic hard skills and their description is presented in Appendix 7.1 of the Report. The following **6 generic hard skills** have been used in the project: **Legislative and regulatory awareness; Economic awareness; Basic skills in science and technology; Environmental awareness; ICT skills/E-skills; Communication in foreign languages**.

Specific hard skills are technical and job-specific abilities that are applicable in a small number of companies, occupations and sectors. They describe special attributes for performing an occupation in practice. The analysis of their transferability requires the creation of a specific classification for this type of skill because employer's requirements were too particular to be comparable for analysis. As a solution the project team aggregated these specific hard skills into clusters by grouping specific hard skills that appeared to be very similar in terms of knowledge base or task performance. Clustering of specific hard skills resulted in **264 specific hard skills clusters**.

Skills profiles for 219 occupations developed in conformity with a **"T-shape" style** ([1]), recommended by the New Skills for New Jobs group of experts, **which combine transversal skills** and **job-specific skills**. Occupational skills profiles describe skills required for job performance of chosen occupations according to the classification of skills described above. Skills profiles for all 219 occupations can be found in Appendix 8.1. of the Report. An example of the skills profile for one selected occupation from the group sector "Civil engineering and construction" is described in the following Table.

([1]) i.e. developing the right mix of skills: *individuals should combine transversal core skills (the horizontal bar) with the specific skills needed for a job (the vertical bar)* (Expert Group New Skills for New Jobs, 2010).

Table: Sample of occupational skills profiles

Civil engineering and construction sector	
Plumber	**Generic hard skills:** Basic competencies in science and technology. **Specific hard skills:** Orientation in technical documentation; Appraisal and control of quality of raw materials, semiproducts and products; Technical drawing; Waste disposal; Handling of machines for metal processing; Control measurements in operational and manufacturing processes; Maintenance of buildings; Elaborating of project documents; Installation, operation, maintenance and optimizing of energy equipment; Mounting, compounding and installation of piping. **Soft skills:** Co-operation with others; Communication; Achievement orientation, efficiency; Concern for order, quality and accuracy; Problem solving; Autonomy; Analytical thinking.

A methodology for identification of skills transferability between occupations and sectors, which was tested on a selected sample of 219 occupations and 20 groups of sectors, proved to be useful for analysis of skills transferability despite its limitations due to the size of the sample. The results demonstrate **levels of skills transferability within and across sectors**, relationships between **individual occupations,** and several other relationships important for occupational mobility. **Potential for further use in several practical applications** has been revealed such as for further development of tools supporting transfer of skills and labour force mobility.

Skills which are transferable between occupations can be considered as the **most interesting output with regard to transferability of skills and occupational mobility.** Future extension of the selected sample to more occupations and an interactive approach, namely a web or database application, would enable exploitation of the potential of this methodology as it is recommended in the Report.

Identification of skills which are transferable between occupations (see Appendix 8.2) enables the quantification of the **transferability index**, i.e. the share of skills transferable between occupations as a percentage of the total number of skills, for each sector. This analysis shows that in some sectors, for those with a higher skills transferability index **it is easier to switch from one job to another**, while in other sectors it is much more difficult; this has some impact on sector labour market mobility. **Education, ICT and Media are sectors with the highest values of transferability index**. At the other end of the scale, household and other personal service activities, manufacture of food products, beverages and tobacco and manufacture of wood and furniture are sectors with the lowest transferability index. It should be emphasised that these results indicate potential mobility between occupations inside different sectors, whereas the specific context has to be taken into consideration to assess real occupational mobility in a given sector.

Further analysis of the **skills transferability between economic sectors** enabled the identification of pairs of sectors with the highest and lowest skills similarity. These are the groups of **sectors with the highest number of common skills, where similarity is based to a greater extent on specific hard skills**:

- manufacture of food products, beverages and tobacco and manufacture of paper, rubber and plastics products, other manufacturing;
- retail trade and wholesale, warehousing and rental;
- manufacture of paper, rubber and plastics products, other manufacturing and wholesale, warehousing and rental;
- wholesale, warehousing and rental and specialised, postal and librarian services;
- accommodation, food and beverage service activities and retail trade;
- manufacture of food products, beverages and tobacco and manufacture of wood and furniture.

Below are **the sectors with the lowest number of common skills**:

- civil engineering and construction and ICT;
- health and social care activities and agriculture, forestry and fishing;
- manufacture of textile and leather and ICT;
- manufacture of metals, electronic equipment and transport vehicles and education;
- civil engineering and construction and education.

Detailed information on similarity of sectors based on skills can be found in Appendix 8.5.

The occupational skills profiles (see Appendix 8.1) enabled the identification **skills that are important and transferable across different occupations within economic sectors**; they also show differences in requirements of individual sectors. Detailed information on the transferability of all skills, i.e. soft skills, generic hard skills and specific hard skills, based on the level of transferability in different sectors and the economy as a whole (all sectors together) can be found in Appendix 8.6.

Skills which are transferable across the economy, i.e. skills applicable to different occupations in different sectors, can be classified most accurately under the "**transversal skills**" heading. An evaluation of transferability of soft skills, generic hard skills and specific hard skills across the whole economy is contained in Table 2.5.

Besides the analysis done by the project team the skills with high and moderate transferability across the whole economy and inside individual sectors were identified on the basis of the **responses of 185 experts from companies**, who were asked to mark skills considered as easily transferable between different occupations. The results are presented in the report, see Box 2.12.

As was emphasised by respondents, it is very difficult and sometimes even of dubious worth to look for skills transferability in general, i.e. across the whole economy, since there are significant differences between sectors and/or occupations.

3. A detailed analysis of the role, importance and involvement of the players concerned

Enterprises are among the most important **players** in the field of skills and transversal skills development, although they focus mainly on skills applicable to and transferable within the company. In general, the opportunity for employees to develop their transversal skills as well as opportunities for internal mobility and transferability of job-specific hard skills **depend on the size of the employer**. This means that employees of small companies and micro-companies are disadvantaged in their access to relevant training and personal development, which can make redundancies especially troublesome for them. **Recognition and assessment of transversal skills in new hires** is more difficult for small companies, whereas large and medium-sized companies carry out such assessments for high level positions. Companies would welcome certification of individual levels of transversal skills.

HR consultants and training organisations play a crucial role as **innovators** and **service providers**. Human resources and management consultants are leaders of innovation in the development and application of new tools aimed at improving companies' competitiveness.

Public Employment Services are the most important actors for the assessment and acquisition of skills and support of their transferability for the target groups of unemployed people. The most vulnerable are **older people** (up skilling of obsolete skills and reskilling for new jobs), **first jobseekers** (skills needed to enter the labour market) and **migrants** (language skills, intercultural skills and job-specific skills). They use a "traditional" portfolio of tools and methods such as individual assessment of skills, career guidance, training of skills and assistance in job search. Nonetheless, introduction of new tools and nationwide support systems are limited.

Initial education is the weakest point in the development of both transversal and job-specific skills. This is widely accepted among all actors, not only enterprises but, surprisingly, also public sector and education representatives. The weak relationship between the prevailing focus on theoretical knowledge and practical skills, an insufficient link between educational curricula and employers' requirements, and insufficient development of soft skills are the most significant weaknesses of initial education.

Regional and local players, along with enterprises, are **probably the second most important actors** in labour market initiatives including those relevant to transferability of skills. The main reason for this is the prevailing **regional and local mobility** of the workforce in the EU and, next to this, the regional and local **competences in the area of partnership development** among key players to deal with complex issues in the labour market. There are many examples of best practices at this level. On the other hand **not all regions and their key stakeholders are aware of their role** and/or play an active role in development and implementation of regional or local skills strategies.

Trade unions play an active role in the development of national qualificational and occupational standards, but are more rarely involved in their direct implementation. At company level they can **influence the training policy of the management** including as regards the important issue of transversal skills and skills transferability. If restructuring and redundancies are expected, this role of trade unions tends to grow since they represent individual interests of employees and seek to improve their future prospects. This role is **lacking in small companies and micro-companies** whose employees face more difficult access to development of transversal skills and skills transferability.

There are **substantial differences in approaches to skills development and implementation of systems for transferable skills** at national level in EU Member States. Measures at EU level in this field have led to positive, but rather slow changes. Smart strategies are scarcely or slowly put into practice.

4. Analysis of the identification of the tools and methods used to enhance mobility on the labour market through transferable skills

Employers are nearly exclusively interested in **internal mobility** of employees supported by transferable skills development. A lot of large and medium-sized companies possess **sophisticated and well-developed competence and talent-based HR systems**, whereas **small and micro-companies** develop skills usually as part of their business processes, i.e. through **learning-by-doing**. Even so, it is possible to mention quite specific methods that are used for recognition, development and assessment of skills by employers: periodical employee appraisal, feedback, and 360-degree assessment; balanced scorecard, competency-based performance review or behavioural event interview, quality control circle, benchmarking, assessment and development centres.

Employers, usually the bigger ones, also use specific tools for **anticipation of** their **skills needs**. They use various kinds of analyses, e.g. SWOT analysis, analysis of company needs, analysis of market demand and customers' needs (surveys of market needs), scenario analysis, global analysis, technical analysis of future projects or trend forecasting, and keeping track of industry developments. The time horizon for making forecasts differs according to company size, stability of market position, respective market trends and dynamics, technological changes, etc. Large companies are usually more able to predict their skills needs in the longer-term perspective (5 years or more), whereas small companies' horizons tend to be much shorter (months or a couple of years). **Anticipation of future skills needs** is promoted and sometimes organised by public sector organisations. They mainly use **labour market analyses and long- or medium-term prognostic studies**, like the prognoses of occupational or skills trends, observatories of the labour market, and analyses of new trends in technology.

The public sector also ensures **the transformation from traditional knowledge-based to competence-based educational systems** that have been launched in many countries, as well as implementation of national qualification and occupational standards. Providing a basic framework supporting transferability of skills is the main task of the public sector with respect to occupational mobility. The next step, facilitated by the above-described processes, is the development of **systems for accreditation/recognition of skills acquired in prior learning** that are necessary for further support of occupational mobility. The **accreditation/recognition systems largely appear to have a nationwide character**, but a few countries have regionally-based systems. It is quite common that the accreditation/recognition system is controlled and **organised by the state** (government) but **delivered through private companies**. The need for these systems is underlined also by the **importance of formal diplomas and certificates** which serve as signals for employers.

Public employment services use several tools supporting employability and occupational mobility of jobseekers that are directly connected with skills transferability. **Job-search skills training** and individual **career counselling** (including career plans) are among the most important tools.

Education sector and HR consultants develop and apply the following methods and tools related to transferability of skills: self-awareness development, career counselling, assessment and development centre, coaching, mentoring, ICT applications and extra-curricular activities. Learning-by-doing is a crucial method of skills development which can be supported by other relevant tools such as workshops, seminars, conferences, coaching, distance learning, blended learning, e-learning, consulting, observation and review of work by expert or peer, sharing of experiences, skills and knowledge, certified training courses, team discussions, etc. Besides many examples of good practice from the "bottom", **there is a wide gap and strong demand for change in approach and delivery methods** with regard to skills development, both specific hard skills and transversal soft skills**, especially in initial education.**

E. Recommendations

The key recommendations are presented in relation to relevant parts of the project:

1. An introductory analysis on the role of transferable skills in occupational pathways and the fluidity of the labour market

Transversal rather than transferable skills should be used as a higher category term which designates and groups together soft skills and generic hard skills which are, by nature, transferable across all sectors and occupations and have an important impact on success in life.

Internal and external transferability should be distinguished. Internal transferability within one organisation and external transferability to other organisations, sectors and occupations are two interlinked but still different "worlds" with regard to motivation of the key players, tools and methods used to support skills development (or validation of skills acquired in previous learning).

All skills are more or less transferable based on the specific context. **Real transfer of skills** (as a process connected with occupational mobility) **should be supported by specific systems, methods and tools**. As an example the regional labour market can be mentioned, with its high level of cooperation between employers, the education sector, public authorities and other local actors, who define their skills strategy with support from labour market intelligence and various tools such as career guidance centres, employment agencies, etc. This specific context supports easier professional transition of workers including transfer of their skills. Another context can be illustrated by the local labour market in a remote area which offers a very limited space for application of some job-specific hard skills. Extending this local labour market by improving transport infrastructure and making commuting to nearby cities easier can increase the number of employers demanding the job specific skills of the commuting workers. Changing the context, i.e. extending the labour market from a village to the labour market of neighbouring cities, makes the job-specific skills more general, because the number of companies where these skills are valuable increases.

Lack of resources for human capital development in the private sector due to the crisis should be compensated for by public sources, which often reduces the cost of education for employers or even promotes replacing a part of the non-used working time by relevant training. **Supporting the acquisition of skills on the part of both employed and unemployed people helps to preserve employment and reduce unemployment**.

Preventive measures should be taken by policy makers with regard to skills transferability development. In times of economic recovery, employers are or can be more motivated to invest in training, including transversal skills, than during economic recession. Relevant tax **incentives** on the employers' side and "**employability rights**" on the employees' side should promote pro-active behaviour of these key actors and smooth fluctuation of investments on education during the business cycle (and so as to minimise the need for public interventions during an economic downturn).

2. A detailed analysis of skills transferable across economic sectors in Europe in the current context and in the coming years (looking as far ahead as 2020)

The methodology and tools should be **further tested in around 3 or 4 sectors** where they would be applied throughout the whole range, i.e. all occupations would be described, profiling methodology applied in combination with tasks to be performed, implications for education sectors further specified, as well as tools for career counselling and job matching. Also the views of jobseekers should be analysed and taken into consideration in this further research in order to develop easy-to-use and comprehensible tools.

Skills profiling tools can be used for description of all occupations in all sectors in the future using the transversal skills as a common base and the job-specific skills description as a guide for their further development. The tool can be **transferred into an interactive on-line platform** in order to enable both easy updating of general **T-shaped occupational skills profiles** and their easy **customisation** according to users' needs (to reflect the specifics of regions, sectors, companies). Occupational skills profiles have to be designed with **respect to different levels** of skills required in individual occupations.

The methodology enables the creation of **generic occupational profiles** (defined at EU level) that **should be made available for customisation in different contexts** (national/regional/sector specifications) through the **development of a flexible and dynamic tool which reflects changing situations in the labour market**. **Synchronisation with existing systems and initiatives** at EU level is needed, namely EQF and ESCO. EU systems should not be imposed on all actors. **Improved HR management in SMEs could be promoted** by the cost-efficient use of generic occupational profiles adapTable to their conditions.

The methodology can be used as a **basis for a career-counselling tool** if it is designed for a maximum number of both high-skilled and low-skilled occupations in all sectors, transferred to an interactive on-line platform and linked to a system of job demand predictions.

Skills identified as highly transferable across the economy or within sectors should be developed at corresponding levels of educational systems. There also exists great potential for utilisation of the methodology and tools presented in their application to processes of **recognition and validation of prior formal and informal learning**. This application may require further research in corresponding fields.

Sources of information on future development and the possibility of combining them to obtain relevant information on future skills needs should be investigated.

O*NET and CareerOneStop systems (USA) are recommended **as a benchmark** for future initiatives by EU or other actors at national level with regard to systems supporting occupational mobility, skills transferability and future skills forecasting which offers an interactive and interlinked set of easy-to-use application tools for all interested users.

3. A detailed analysis of the role, importance and involvement of the players concerned

It is recommended **to start the development of transversal skills at a very early age**, i.e. at nursery or primary school, and to continue throughout the educational cycle. **The basic level should be a target as a learning outcome from initial education for all the pupils and students.** It is necessary to make sure that teachers have the relevant know-how and can handle their task, i.e. provide a "toolkit" and training of teachers supporting competence-based learning in order to develop their abilities to use new teaching methods and reflect labour market demands in teaching practice. **A Competency Model of Transversal Skills at European level** is recommended and proposed in the study for this purpose.

Implementation of **regional and local labour market observatories**, to complement the national labour market observatory, is recommended. Based on the fact that a major part of the workforce in the EU is closely connected to their environment and geographical mobility is relatively low, the regional and local players can use such a tool for a detailed mapping of current skills needs and future demand forecasting. Relevant information can be collected in close co-operation with companies, and targeted surveys and analyses would add value to them. As a result the potential skills shortages can be identified and related skills strategies can be developed. Transversal skills should be a part of each skills strategy. In times of crisis and large-scale restructuring it is difficult to identify occupations and related job-specific hard skills needed for professional transition of redundant workers and the unemployed because of a reduced number of job vacancies and uncertainties concerning future prospects of shrinking sectors whereas transversal skills are always in demand. As an example of such an approach at regional level, the Competence model of the Moravian-Silesian region (Czech Republic) is presented as a good practice in the study.

Territorial Employment Pacts, used as communication and action platforms for stakeholders, make it possible to deal with some of the complex challenges of the labour market that cannot be solved by individual organisations themselves. These partnerships can identify and deal with skills shortages and transfer of skills (employees) in the event of mass redundancies to respond to future skills demand more efficiently. It is recommended to **promote and support this form of partnership at local, regional, national, and EU levels**.

Development and implementation of competence-based **national qualification and occupational standards**, prepared in close co-operation with sector councils, namely employers, and systems for **accreditation of prior learning** should be used **in all EU Member States** to support acquisition, development, accreditation and transfer of skills relevant for the labour market.

In order to bridge the gap between the world of work and education **the targeted promotion campaigns should** increase awareness of the importance of skills transferability among labour market actors. Chambers of commerce and other branch organisations should be used and supported as multipliers towards small and medium sized firms. These campaigns should be **related to dissemination and mainstreaming of relevant tools** and methods supporting skills transferability which have been validated as best practice instruments.

4. Analysis of the identification of the tools and methods used to enhance mobility on the labour market through transferable skills

Application of a competence-based approach in employers' HR processes is recommended. A general **competency model for the company** (description of competencies, usually transversal, within the organisation, which should be common for each employee) and **competency models for occupations** (competency-based description of requirements of all or at least key, professions in the company) can serve as the **basis for all HR processes** including recruitment, personal development, training, performance assessment and coaching. Costs to employers of competency model creation can be significantly reduced through **a publicly funded on-line system offering generic competency models for sectors and occupations,** enabling **easy to use customisation** by the users.

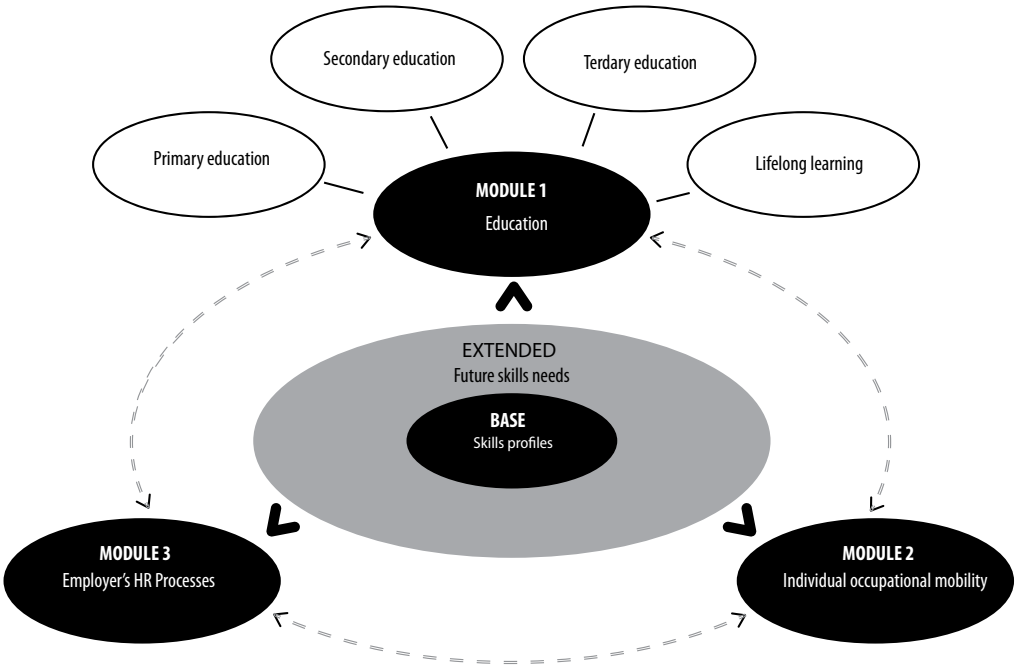
Certification systems for soft skills should be introduced as they are rather difficult, time-consuming, and costly to assess. It could help jobseekers to better present themselves and employers to gain better information about candidates and new hires.

Talents/skills/competences audits and subsequent **skills/career development** plans **should be introduced as a standard measure** for jobseeker support.

5. Recommendation of tools and methods related to skills transferability

Recommendations presented in previous Chapters are closely linked to the relevant conclusions. However, they are but **a starting point for further development** of systematic tools supporting occupational mobility through skills transferability. The project team designed **a modular structure of the system** which enables implementation of different modules independently of all others, although the perceived synergy of all modules significantly boosts the system's impact on occupational mobility. The structure of the proposed system is demonstrates in the following figures and described in Chapter 5.

Figure 1: Modular system of tools supporting skills development and transferability



The system consists of **two core modules** (BASE module and EXTENDED module) and **three user modules**.

BASE MODULE: Skills profiles

The **core of the whole system should be formed by skills profile descriptions**, which provide **data inputs for other modules** and so enable them to function. Skills profiles should be composed of transversal skills and job-specific hard skills.

EXTENDED MODULE: Future skills needs

The BASE module enables all user modules to function (MODULEs 1 - 3), but all outputs of the system will be related to the present labour market situation regardless of future changes. The **time dimension of the system** can be added through implementation of the EXTENDED module, which will contain the demand forecast for skills in different occupations and sectors.

MODULE 1: Education

The possibility of seeing the requirements of employers for employees (graduates) in specific occupations is one of the important functions of this module, which can be **useful for defining graduate profiles and subsequently the focus of education**. The module can also be used for **identification of transversal skills** applicable in nearly all occupations regardless of sectors.

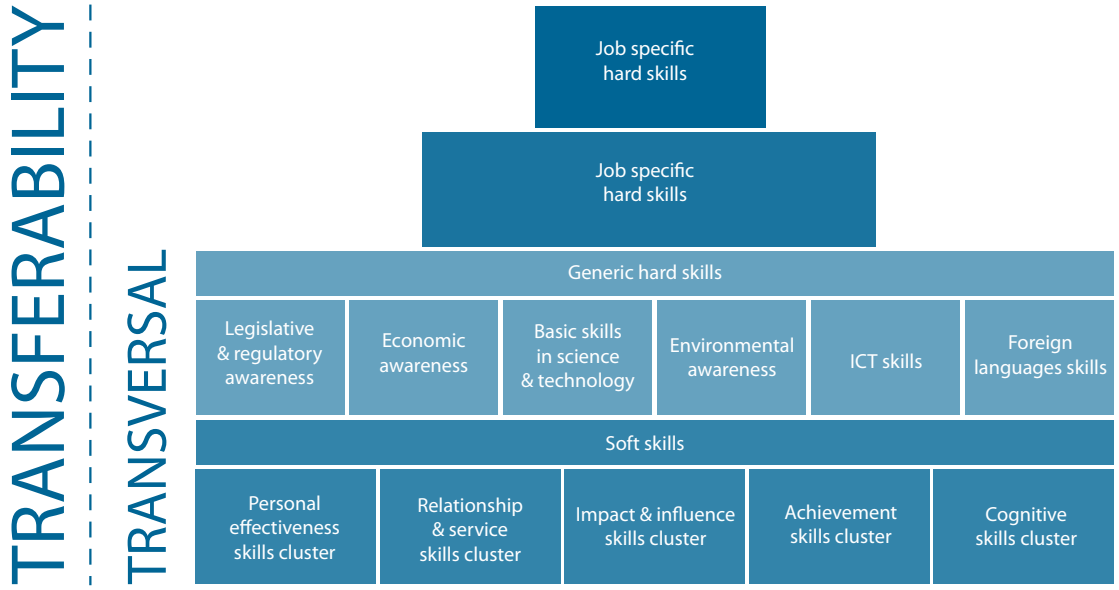
MODULE 2: Occupational mobility

Skills profiles defined in the BASE module could also serve as **a platform for career counselling**. An on-line application, which could be used by both individuals and career counsellors, will focus on identification of occupations that are most suiTable for a given person. The EXTENDED module would also enable identification of perspectives within suiTable occupations.

MODULE 3: Employers' HR processes

The content of this module is designed according to the needs arising from application of the competency model approach in HR processes. **An on-line tool would support interested employers in customisation of generic skills profiles** already described in the BASE module.

Figure 2: Structure of skills profiles (designed with regard to skills transferability)



Application of the modular system

The proposed modular system for supporting development of skills by individuals leading to improved transferability within and across sectors and occupations, general employability and occupational mobility would have positive effects on the European labour market if it were further developed, transferred into free on-line applications, tested, validated and offered to the EU Member States as an open model to be implemented by those countries, regions or sectors that would consider it worthwhile in their national environments.

Each of the modules and the whole modular system can support occupational mobility of the labour force through targeted development of skills and support for their transferability. The impact of the proposed system can be seen in higher availability of a properly skilled labour force and significant improvements to labour market efficiency evidenced by better placement of **the right people in the right jobs at the right time**. These effects would be even more important in times of economic downturn or restructuring.

Introduction

The importance of developing people's skills which are transferable between different occupations and sectors and their contribution to both work quality at microeconomic level and the effective functioning of the labour market at macroeconomic level has been stressed by the business sector, employers' and workers' representatives, academic institutions, policy-makers and other key players on several occasions. This was reiterated in the European Commission's communication "A shared commitment for employment" (Europa 2009) and in the communication "New skills for new jobs" (Expert Group 2010).

The aim of the project "Transferable skills across economic sectors: Role and importance for employment at European level" is to **identify transferable skills and their role and importance with regard to employability, adaptability and occupational mobility of people in the labour market**.

The project seeks to define transferable skills, identify skills which are transferable within different sectors, or more precisely among groups of sectors and occupations, both now and leading up to the year 2020, to identify tools and methods for increasing occupational mobility among workers through developing transferable skills, and to describe the roles of the main protagonists in this area.

The analysis is based in the first instance on existing experience and available information, including the findings of 18 sector studies aimed at identifying future skills. The question of transferable skills is not in itself a new subject. The analysis, therefore, draws on existing work in the Member States but also in other OECD countries, particularly USA and Canada, and on studies conducted by other international organisations (ILO, OECD, etc.). To support the analysis, a **European-level survey of the business sector and the world of education and vocational training, and in political circles** was carried out in order to arrive at a detailed analysis of these skills, methods and tools for their identification and development, protagonists involved and the role they play.

In **Chapter One** of the study, there is **a theoretical framework** providing **a context for transferable skills** based on the theory of human capital and the concept of competencies. It is based on extensive desk research of various approaches around the world. It is necessary to highlight that there is no global or EU consensus in this area. Therefore, our proposal should be taken as an input for discussion among expert groups on different levels in this area.

In **Chapter Two,** there is **a core of new information based on the empirical work of the project experts in defining and identifying generic and specific transferable skills** by group of sectors and by occupation, in the current context and the years to come (looking as far ahead as 2020). In the main body of the text, there are key findings, examples and explanations; more in-depth information is presented in the appendices.

Chapter Three focuses on the **role of actors** involved in the acquisition of transferable skills, and **Chapter Four** on **identifying the tools and methods** related to skills and their transferability. These are mainly **based on findings from the EU-wide survey**, i.e. questionnaire and in-depth interviews.

Chapter Five presents **recommendations** for specific tools and methods prepared by the project team experts and based on the findings outlined in previous Chapters. These recommendations reflect the results of an expert workshop held in Brussels on November 18, 2010.

Conclusions and key findings from the EU-wide survey are integrated in the main body of the text with a detailed description of EU survey results in Appendix 1, and 34 examples of good practices in Appendix 2.

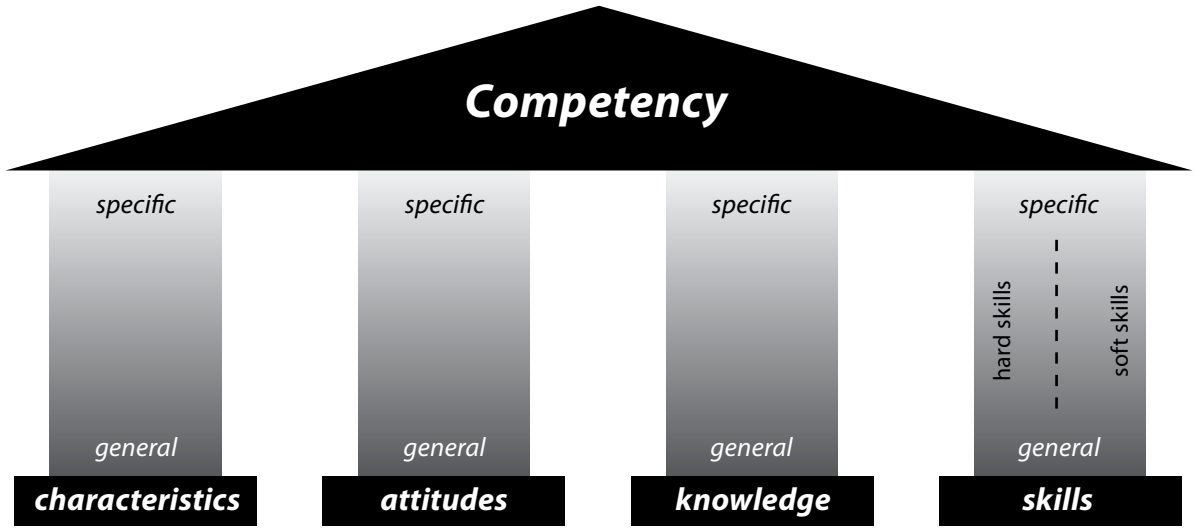
1. An introductory analysis of the role of transferable skills in occupational pathways and fluidity of the labour market

1.1. Definitions of the different types of skills

Human capital, accumulated through education, on-the-job training, information gathering, investing in health, investments in personal virtues, etc. (Becker 1993, Schultz 1961), represents human potential as economic input. The extent and structure of human capital differ between individuals and predetermine them for a specific group of economic activities or jobs. The predetermination level of individuals for a specific group of jobs is given by matching an individual's human capital with the requirements of employers pertinent to these jobs. Only an individual who meets these specific requirements is able to act adequately (Belz, Siegrist 2001) and to perform the work to a satisfactory level. This competence for performing specific work can be described by referring to a large number of more specific competencies needed to perform particular tasks. It should be stressed that individuals dispose of a whole range of competencies across various fields of human activities, which facilitates their occupational mobility.

For the purpose of this study, **competencies** are defined as **a set of inborn or acquired personal characteristics, attitudes, knowledge and skills leading to high-quality performance.** (individual parts of the competencies are listed and described in Box 1.1.)

Figure 1.1: Model of competency



Note: It should be emphasised that each of the components of human capital affects the others; thus, skills are built on the basis of an individual's characteristics, attitude and knowledge. It is not possible to build them without any of the mentioned components of human capital.

The definition corresponds to the one used by the European Framework for Key Competencies for Lifelong Learning (European Commission 2007); it is complemented by inborn or acquired personal characteristics (talent, mental and physical features, etc.) that constitute main differences in competency levels between individuals. These primal differences can be strengthened or weakened by further accumulation (or change) of knowledge, skills and attitudes. (For an overview of other definitions of competences, see Appendix 5.1.)

Box 1.1: Specification of the competency model

Characteristic, as generally understood, is a typical or noticeable quality of an individual (Cambridge Dictionaries Online).

Attitude is a sTable, long-lasting, learnt predisposition to respond to certain things in a certain way, and attitudes are formed on the basis of beliefs (cognitive aspect), feelings (affective aspect) and intentions (conative aspect) (Statt 1998: 10).

Knowledge is the set of information peculiar to an individual, group of individuals or culture (Reber, Reber 2001: 380), which can be acquired by learning or experience. Knowledge can be divided into declarative knowledge (knowing facts), procedural knowledge (knowing how to do something) and knowledge of concrete persons, things and places, which is derived from sensation (Matsumoto 2009: 274).

Skill is the ability to act in accordance with well-managed models of behaviour, which enables the achievement of a certain purpose or aim (Reber, Reber 2001: 683). Skills can be both cognitive, involving the use of logical, intuitive and creative thinking, and practical, involving manual dexterity and the use of methods, materials, tools and instruments (European Commission 2008: 13)

With regard to **competency in the learning process, skill** can be seen as the **practical learning outcome, knowledge** as **the learning input into skills development, attitude** as **an acquired mode of behaviour influenced by internal and external motivation and characteristics** as **a disposition related to innate talent**.

Although competency is a very complex entity, this **study is focused only on skills** as one of its pillars. The following paragraphs are, therefore, devoted to the description of different types of skills and their characteristics, which provides the theoretical background of the study.

The academic sector usually distinguishes between general skills and specific skills, based on the number of companies where they are applicable. **General skills are those that increase the value of a person across the labour market**, i.e. in companies, sectors and occupations. On the other hand, **specific skills increase the value of a person only within the company where he/she has acquired it**; leaving the company leads to devaluation of all the specific skills since they do not apply in other companies, sectors and occupations (Becker 1993). The **existence of purely general or purely specific forms of skills**, i.e. their extreme forms as described above, are **very rare** in real life**.** Moreover, drawing the line between general and specific skills is made difficult by its **depending on institutional and structural** conditions of the market, i.e. on its extent or type of competition, as Box 1.2 illustrates. The distinction between general and specific skills depends on the **context**.

Differentiation of skills as general and specific based on their applicability to the labour market affects the willingness of various economic subjects, be they individuals or companies, to invest in their acquisition. The more general skills are, the more likely employees are to invest in acquiring them in order to increase their employability in other companies, occupations and sectors. The more specific the skills, the less likely employees are to invest in acquiring them due to their narrow application; should they leave the specific employer, these skills could become useless. For employers, the opposite applies: general skills increase the risk of losing the employee, whilst investing in acquisition of specific skills ties the employee ever more closely with the company (Becker 1993).

Box 1.2: Importance of context for applicability (transferability) of skills; an example.

Charles is a 34-year old IT engineer living in a small village. Programming in Java language is one of his most valuable skills. The local labour market, with only a few employers, offers a very limited space for the application of this skill. Within this context the "programming in Java" skill is specific, because it can be applicable (is valuable) only in one company. Leaving this company would lead to total devaluation of this skill, because there is no other employer in the local labour market to whom this skill is applicable (valuable).

Extending Charles' labour market by commuting to the big cities nearby will increase the number of employers demanding the "programming in Java language" skill, because there are more companies focused on the creation of web applications, games and mobile phone applications there. Changing the context, i.e. extending the labour market from a village to that of neighbouring cities, makes the "programming in Java language" skill more general, because the number of companies where it is applicable (valuable) increases.

Business sector employers, on the other hand, distinguish between hard skills and soft skills. This division of skills is not based on the context, because individual employers are not so interested in external transferability of skills between different employers, but on the **content of skills**. The traditional meaning of the word "skills" as a whole **range of technical, job-specific abilities that require training and instruction for a worker to become proficient or skilled within a particular job reference** corresponds to the present understanding of "**hard skills**". Hard skills are described as skills which are **easily observed and/or measured, easily trained** and **closely connected with knowledge;** e.g., specific technical knowledge, ICT skills, knowledge of laws, rules and regulations. Rapid changes in the structure of economies, apparent mainly as part of service sector expansion, together with organisational changes of work and technological progress, have boosted the demand for certain **non-job specific skills related to the ability to operate effectively in the workplace either alone or with others**. These skills are usually referred to as behavioural or **soft skills** (Garg, Lather, Vikas 2008), and can be described as **intangible skill which are hardly measurable and are closely connected with attitudes;** e.g., communication, creativity, team work, conflict management, time management, making presentations and negotiating and leadership. (For an overview of general perception of hard skills and soft skills, see Appendix 5.2.) Distinctions between skills according to their content (i.e. hard skills and soft skills) and according to their context (i.e. general skills and specific skills) are complementary. It is possible to distinguish 4 types of skills according to their characteristics, as Table 1.1 shows.

Table 1.1: Typology of skills

	Hard skills Technical, job-specific skills that are usually easily observed, measured, trained, and closely connected with knowledge	**Soft skills** Non-job specific skills, which are usually intangible, hard to measure, and closely connected with attitudes
General skills Skills applicable in most companies, occupations and sectors.	**generic hard skills**	**(generic) soft skills**
Specific skills Skills applicable in a small number of companies, occupations and sectors.	**specific hard skills**	**(specific) soft skills**

Note: Soft skills, although they can theoretically be both generic and specific, are always described as perfectly generic in relevant literature.

This typology of skills according to their characteristics represents an important tool for systematic classification of existing skills.

It is also possible to find in relevant literature many different terms concerning general skills (core skills, key skills, common skills, essential skills, key competencies, employability skills, generic skills, basic skills, necessary skills, workplace know-how, critical enabling skills, transferable skills, key qualifications, trans-disciplinary goals, process independent qualifications, etc.), representing various clusters of skills rather than an important contribution to their typology. The definition and description of general skills can be found in Table 1.2. (For detailed information on these clusters of skills, see Appendices 5.3 to 5.9.)

Table 1.2: Overview of general skills

Name	Country	Definition and description	List of skills
Basic skills (Skills for Life)	UK	Basic skills are defined as "the ability to read, write and speak in the respective language and to use mathematics at a level necessary to function at work and in society in general".	Adult literacy Numeracy Language (English for speakers of other languages) Information and communication technology (ICT)
Generic skills	Australia	Generic skills are those that apply across a variety of jobs and in life.	Basic/fundamental skills People-related skills Conceptual/thinking skills Learning-to-learn skills, thinking innovatively and creatively, systems thinking Personal skills and attributes Self-esteem Skills related to the business world Skills related to the community
Key skills Key competencies Key qualifications	Germany Australia UK EU OECD	Key competencies are not directly relevant to a certain job or profession, but have the ability to be used flexibly in different situations. Key competencies are competencies essential for effective participation in the emerging patterns of work and organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key competencies are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. Key competencies involve the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context. Key competencies are those of particular value that have multiple areas of use and are needed by everyone.	Australia: Communicating ideas and information Using mathematical ideas and techniques Working with others and in teams Solving problems Planning and organising activities Collecting, analysing and organising information Using technology UK: Communication Numeracy or the application of numbers Use of information technology Working with others Improving own learning and performance Problem solving EU: Communication in the mother tongue Communication in foreign languages Mathematical competence and basic competencies in science and technology Digital competence Learning to learn Social and civic competencies Sense of initiative and entrepreneurship Cultural awareness and expression OECD - DeSeCo project: Relate well to others, cooperate, work in teams Manage and resolve conflicts Act within the big picture Form and conduct life plans and personal projects Defend and assert rights, interests, limits and needs Use language, symbols and texts interactively Use knowledge and information interactively Use technology interactively

Name	Country	Definition and description	List of skills
Employability skills	Australia Canada UK	Employability skills are critical skills you need in the workplace, whether you are self-employed or working for others. Employability skills come as academic skills, personal management skills, and team work skills.	Communication Team work Problem-solving Initiative/enterprise Planning and organisation Self-management Learning Technology
Essential skills	Canada New Zealand	Essential skills are the skills needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.	Reading text Document use Writing Numeracy Oral communication Thinking skills (problem solving, decision making, critical thinking, job task planning and organizing, significant use of memory, finding information) Working with others Computer use Continuous learning
Core skills	Scotland	Core skills are skills which employers need their staff to have been able to perform, such as the ability to work with other people, and to take responsibility for their behaviour at work.	Communication (written and oral) Numeracy (using graphical information, using number) Problem solving (critical thinking, planning, organising, reviewing, evaluating) Information technology (using IT) Working with others
Critical enabling skills	Singapore	Critical enabling skills are the generic proficiencies that enable the workforce to constantly learn, think and apply new knowledge and skills at the workplace. Critical enabling skills are significant to produce dynamic, innovative and professional workers.	Learning-to-learn Literacy (reading, writing and computing) Listening and oral communication Problem-solving and creativity Personal effectiveness Group effectiveness organisational effectiveness and leadership

Source: Australian National Training Authority 2003; European Commission 2007; Salganik, Rychen 2003; Human Resources and Skills Development Canada; Basic Skills for Work, National Literacy Trust, Learning and teaching Scotland; Australian Government.

Note: Competence at Work - Models for Superior Performance, a book that summarises several hundred research studies of entrepreneurial, technical and professional, sales, human service and managerial jobs from industry, government, military, health care, education and religious organisations conducted in more than 20 countries (mostly in U.S.) over 20 years, defines six clusters of general, i.e. highly transferable competencies as follows: Achievement and action cluster, Helping and human services cluster, Impact and influence cluster, Managerial cluster, Cognitive cluster, and Personal effectiveness cluster (Spencer, Spencer 2008).

Nowadays, a lot of attention is devoted to these types of skills due to their usability **and transferability** across occupations, sectors, and in some cases even across the whole economy. The high interest, on the other hand, has led to a fragmentation of the concept, resulting in **many different approaches** to general skills that differ in name and partly in content, as becomes obvious from Table 1.2. As in the past, the present situation in the field of general skills is conducive to the creation of sophisticated ad-hoc solutions. It means that **there is no international agreement on a conceptual basis for the identification and classification of individual general skills**.

The situation with specific skills is simpler because they are perceived as skills related to specific occupations or sectors with no or very limited possibility of their transfer elsewhere. This characteristic restricts the attention paid to them mainly to the creation of occupational profiles and filling actual skills gaps in the labour market.

The heterogeneous and disparate approaches to skills, whether skills in general or some specific parts of skills, often accompanied by the perception of "competencies" and "skills" as synonymous have given rise to criticism. This is based on the current lack of a consistent theoretical approach to competence as such. Inefficient training programmes for competence development further contribute to this criticism (see Box 1.3).

Box 1.3: Critiques of competence approach

The Gallup Institute describes frustration with bad competency development programmes; many of them force employees to waste time on areas for which they have the *least* talent. Moreover, very few of these programmes are truly performance-based.

A Gallup Institute expert says: "I am not against them, but I do think 90% are misguided. Over the last ten years, I have seen great competency programmes, and they work. But they are rare. Defining the right competencies is everything. If you use your intuition alone, the programmes will fail. But if you ground competencies in sound science, the programmes will pave the road for growth."

If you want your competency programmes to produce results as quickly as possible, the key is to start by identifying each person's unique talents, because talents provide a strong foundation for growth. The key is to leverage talent as the multiplier. Organisations with great competency programmes not only allow each person to find his or her own route to reaching a desired competency - they encourage employees to start with their natural talents. This makes the journey more enjoyable for the individual and opens the door for exponential progress. (Rath 2004)

The lack of a consistent theory in defining and classifying various skills prevents the formulation of a generally accepTable approach that could be used in this study. Thus it was necessary to choose an approach that would comply with the currently applied approaches, while also being theoretically consistent.

Box 1.4: Transference, good practice (No 10)

The lack of common language and understanding of skills and competencies has led to many activities and projects which try to overcome this deficiency. The **Transference** project, carried out in France, is one of them. Within this project, 83 transferable competencies have been identified and combined with public job descriptions codified in the ROME system produced by the French public employment agency. The resulting system covers 1 120 different jobs, each of them described by core skills, secondary skills and conditions of access. It can be used either in order to explore jobs related to a cluster of personal skills or in order to translate skills gained in past working experience into potential new jobs. It is the standard matrix which combines jobs with non-specific competencies. Each year it is used by some 3 000 organizations and 400 000 people.

Note: For detailed information on examples of good practice, see Appendix 2.

The study of current approaches to skills (see above) reveals a concentration of interest in general skills and also the **necessity of distinguishing between hard skills and soft skills**, since these two kinds of skills, which differ significantly by their characteristics, **are often mixed**. Having analysed various definitions and descriptions of general skills (Australian National Training Authority 2003; European Commission 2007; Salganik, Rychen 2003; Human Resources and Skills Development Canada, Basic Skills for Work, National Literacy Trust, Learning and Teaching in Scotland, Australian Government) and based on practical experience (Spencer, Spencer 2008, O*Net On-line), the research team have created a classification of skills. This classification is based on existing sources, i.e. prevailing perception of skills embodied in the typology of skills created (see Table 1.1) and corresponds to the competency models theory.

This study, on the basis of previous analysis, **distinguishes**:

- **soft skills;**
- **generic hard skills;**
- **specific hard skills.**

Although theoretically they can be both generic and specific, soft skills are always described as perfectly generic. The study follows this assumption, which will be tested in Chapter 2. The list of soft skills used in this study is contained in Box 1.5.

Box 1.5: Soft skills

- self-control and stress resistance;
- self-confidence;
- flexibility;
- creativity;
- lifelong learning;
- interpersonal understanding;
- customer orientation;
- cooperation with others;
- communication;
- impact/influence;
- organisation awareness;
- leadership;
- developing others;
- achievement orientation;
- concern for order, quality and accuracy;
- initiative-active approach;
- problem solving;
- planning and organizing;
- information exploring;
- autonomy;
- analytical thinking;
- conceptual thinking.

Generic hard skills were identified on the basis of existing clusters of general skills contained in Table 1.2. Box 1.6 lists the generic hard skills used in this study.

Box 1.6: Generic hard skills

- legislative/regulatory awareness;
- economic awareness;
- basic competencies in science and technology;
- environmental awareness;
- ict skills;
- communication in foreign languages.

Specific hard skills could not be specified on the basis of previous analysis; they can be defined negatively as hard skills not belonging to generic ones. For illustration, some skills belonging to this category can be mentioned: waste disposal, technical drawing, hand sewing and needlework, etc.

1.2. The specific role of transferable skills in relation to other types of skills

The **understanding of the term "transferable skills"** as a key concept of this study **is crucial** for reaching the study's aim, i.e. identification of transferable skills, their role and importance for employability, adaptability and occupational mobility of individuals in the labour market.

Transferable skills, as they are understood by subjects in the field of human resources, can be defined as a **set of skills that can be applied to any job or task, regardless of where they were first acquired**. (For an overview of definitions of transferable skills, see Appendix 5.10.)

The definitions reveal that **transferable skills correspond to general skills**, i.e. skills **whose accumulation increases the value of a person across the labour market** (Becker 1993), and so **they do not represent**, in comparison with groups of skills defined above, **a qualitatively different group of skills**.

This conclusion is supported by synonyms used for transferable skills, e.g. personal transferable skills, generic skills, general & transferable skills, key skills, skills for life & work, employability skills, graduate skills, work based skills & learning, soft skills (Alexandria University, High Institute of Public Health), by high correlation between lists defining transferable skills (see Appendix 5.10) and general skills (see Table 1.2), and by the results of the EU-wide survey (see Box 1.7).

Transferability of skills is determined by their generality. **The more general a skill is, the more transferable it is,** and vice versa. Since there are no purely general or purely specific skills (see Chapter 1.1), there are no purely transferable or purely non-transferable skills. Therefore, transferability is not a discrete but continuous variable. Following this logic, **the level of transferability should be discussed instead of discussing transferable and/or non-transferable skills** as such.

Under the conditions of a large market and perfect geographical mobility, all skills are fully transferable between relevant jobs and tasks. The absence of these conditions leads to the need to distinguish between skills in terms of transferability, which can range from high to low level of transferability, while the evaluation of skill transferability is relevant for concrete conditions in the market.

Box 1.7: EU survey on perception of "transferable skills" (Question No 1)

It should be mentioned that respondents often refer to the **inconsistency of existing definitions and approaches** in the field of transferable skills. **Companies perceive nearly all skills as transferable**, i.e. applicable to various occupations and contexts, whereas **they distinguish skills with high and low transferability very clearly**. Respondents defined skills with high transferability by examples such as language skills, mathematical skills, information society skills, communication skills, interpersonal skills, team working skills and others, whereas skills with low transferability were defined as skills closely related to specific jobs. Transferability of particular skills depends on the context, e.g. individuals working in a team doing construction work can to an extent perform the work of others due to having similar skills (transferable), but cannot perform the work of a marketing specialist in the same company (not transferable) because of the lack of necessary specific skills.

The importance of contextualisation of skills' transferability was also mentioned by respondents from the **public sector**. Based on their experience with failures of several national projects on development of occupational mobility, they consider the **specific context as extremely important for real transferability of skills** and occupational mobility.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The above has led us to the conclusion that **all skills are transferable but to a different extent** and so the term "transferable skills" does not correspond to any objectively given and qualitatively different category of skills. (Current approaches to transferable skills are usually based on ad-hoc clustering of separate skills, as Appendix 5.10 shows.) The present perception of **"transferable skills" corresponds to "skills whose level of transferability is relatively high in concrete market conditions"**, which conforms to the terms "general skills" or "generic skills" and so represents the characteristic of skills in a given context rather than some universal group of skills existing independently of context. There are skills whose transferability is assumed to be high in many different contexts; i.e. **soft skills and generic hard skills.** The research team suggests using "**transversal skills**"[2] as a common term for them. This would overcome the discrepancy between current perception of "transferable skills" as soft skills by many people and the high rate of transferability among generic hard skills (i.e. skills that are not soft skills).

[2] This suggestion conforms to the approach of the ESCO initiative which defines "transversal skills" as a synonym for soft skills (see ESCO Newsletter Issue 1/2010). In order to apply consistent logic to the transversal skills concept, the project team suggests that this term be used as a common category not only for soft skills but also for generic hard skills, whose applicability to various occupations and sectors is as high as that of soft skills (e.g. use of internet, e-mail, word processing, etc.)

Box 1.8: EU survey on approach of employers to develop transferable skills of employees (Question 2)

Employers generally agree that they play an active role in **developing employees' transferable skills**, but their understanding of it **varies**. It was widely acknowledged that **employers must invest in skills development that would increase the ability of workers to perform multiple jobs within the company (internal transferability of skills)**.

Some employers mention career paths as a major tool for identifying and developing transferable skills. However, large companies can usually invest in sophisticated systems of skill development, while SMEs would rely mostly on public support for this. There are examples of employers who link the development of transferable skills with their concept of jobs for life, i.e. lifelong employment with the company. However, this can only work in a particular kind of company - usually large, with strong, historical ties to the region where they operate. Such companies can invest much more in development of skills that can be transferable and utilised (internally) in a wide range of jobs.

Another aspect driving the development of transferable skills in companies is the **flattening of organisational structures**, i.e. limited chances of climbing the career ladder, resulting in the so-called **"horizontal career"**, i.e. switching from, say, a tool engineer or technologist to a buyer, logistician or marketing specialist, which leads to **increasing requirements for new skills development and their transferability**.

On the other hand, **supporting external transferability of skills** (from company to company) is, in general, **not attractive for employers**, because it increases the risk of losing an employee to competition. (External skills transferability is usually supported by companies indirectly as a by-product of companies' education and training focused on strengthening the applicability of employees' skills within the company.) Nevertheless, many employers recognise external transferability as **an important task for education and public administration sectors**, because it enhances labour market mobility and flexibility while reducing the risk of unemployment.

Many **public sector** representatives are aware of the importance of employers to further training and transferable skills development within the labour force; they also realise they have to motivate them (e.g., financially) to provide training in areas that can help people to enhance their long-term employability. Due to globalisation, companies no longer rely on local labour force provisions or internal resources. This is both a threat and an opportunity for the labour market. Easy outsourcing increases the dynamics of the labour market and **employees must invest in their (transferable) skills development to increase their chances of finding a job** (they are responsible for their own skills development). Neither the private nor the public sectors can be fully responsible for an individual's employability.

The opinion of the **education sector** is, in this case, closer to the employers' view. A majority of respondents think companies can take on responsibility for employees' transferable skills development only to an extent (and only if it complies with the company's needs). **It is mainly an individual and public concern to develop skills that can be transferable** and increase one's employability. **The task of the public sector is to find a win-win strategy,** i.e. to support employers so they can train their staff in areas of interest to the company (specific skills which are transferable within the company) and to support the employee in the long-term in the labour market (by imparting skills which are transferable between different companies).

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

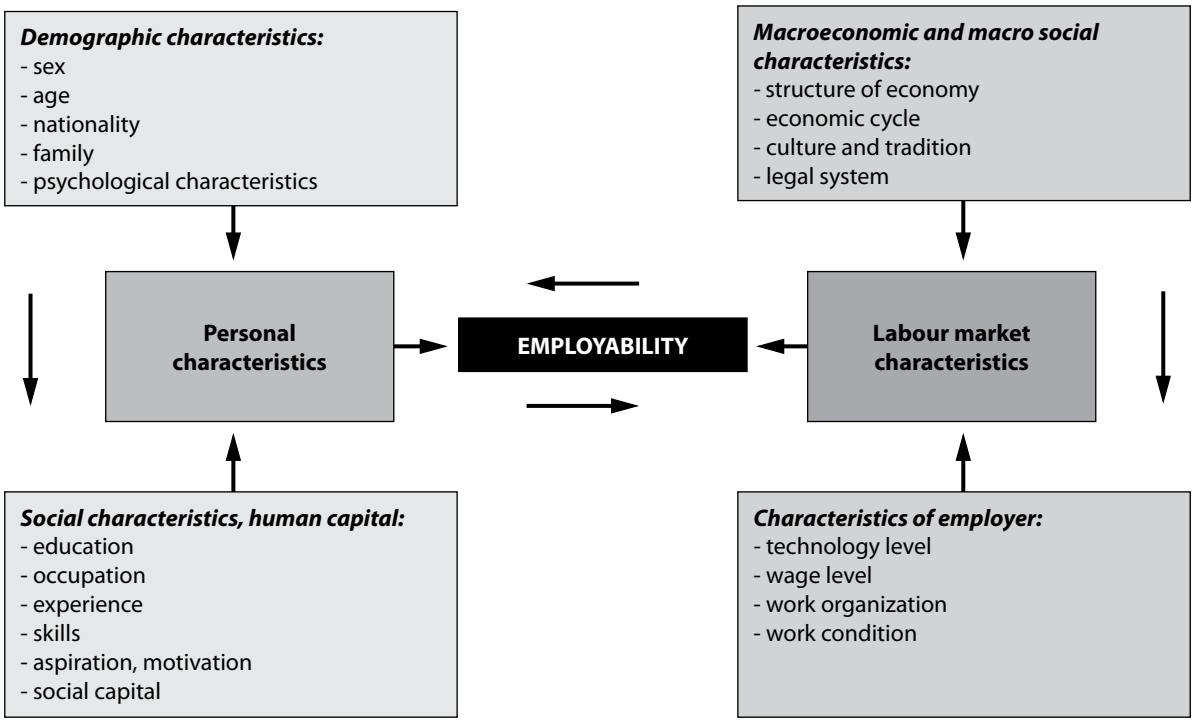
As described in Chapter 1.1, the study works with three types of skills: soft skills, generic hard skills, and specific hard skills. Based on information provided in this Chapter and Appendix 5.10, it is possible to assume that **soft skills and generic hard skills are skills with high transferability, while specific hard skills are skills with low transferability.** This conclusion, which conforms to opinions prevailing in the field of human resources management, is tested in Chapter 2 where transferability of different skills is examined.

1.3. Link between transferability of skills and the risk of losing one's job and failing to find another

The link between the lack of skills with high transferability, i.e. transferable skills, and the risk of losing one's job and failing to find another can be operationalised as the **link between transferable skills and the individual's employability**. There are many concepts and definitions of employability (e.g. Gazier 2001), but in general, it is possible to define employability as the ability to obtain and hold a paid job.

There are many factors affecting employability; they can be sorted into four main groups (Kuchař 2007): demographic characteristics; macroeconomic and macro-social characteristics; social characteristics and human capital, and characteristics of the employer. Two of them relate to the jobseeker, the other two to the characteristic and structure of the labour market.

Figure 1.2: Factors of employability



Source: Kuchař, 2007; amended by authors.

In the upper part of the figure are factors which cannot be changed and/or changed only with great difficulty in the short- or mid-term: age, nationality, family background or psychological makeup in the case of demographic characteristics; structure of the economy, economic cycle and culture and traditions in the case of macroeconomic characteristics. In the lower part of the figure are factors that may be changed. As for the jobseeker, their characteristics mainly concern human capital (skills, experience, social capital) and motivation. Through these factors the jobseeker can adapt to labour market requirements. On the other hand, the employer can change the wage level, work organisation or working conditions.

This theoretical background facilitates description of the impact of highly transferable skills on the jobseeker's employability. As figures above show, labour market characteristics and demographic and psychological characteristics can hardly be changed by the jobseeker. Therefore, the change of human capital stock and social characteristics are the only way for the jobseeker to enhance his/her employability. Human capital can be divided into general and specific; specific human capital is the main determinant of "the level of excellence" while **general human capital supports occupational mobility in the labour market**. The accumulation of human capital, especially general, contributes significantly to smooth economy restructuring and changes in various sectors (Lamo, Messina, Wasmer 2006) regardless of any underlying changes.

The **positive effect of education and work experience**, i.e. the most important parts of human capital, **on individual occupational mobility** (greater probability of finding or changing a job and the smaller probability of losing a job or leaving the labour market altogether) is confirmed by many empirical studies (e.g. Orazem, Vodopivec 1997). Experts of the New Skills for New Jobs initiative also support this conclusion by saying that "*the employment rate for those with high skill levels across the EU as a whole is 83.9 %, that for medium skill levels is 70.6 % and that for low skill levels is 48.1 %*" (Expert Group 2010:10). They conclude that the **continuing process of skills development enables individuals to keep up with the pace of change and move from one job to another easily**.

Box 1.9: EU survey on the role of transferable skills for finding and keeping a job (Questions 1; 4; 6; 8)

Companies always look for workers fitting the job requirements perfectly. Only under unfavourable conditions in the labour market causing shortages of such candidates will they hire and develop less suiTable ones. Generally, it can be said that **qualification has a decisive role**, mainly in professions with strict requirements on qualifications (various specialists such as doctors, nurses, nuclear physicists, etc.). Also in the case of occupations without strict requirements on qualifications, where the potential for mobility from different occupations and sectors is much higher, **specific hard skills represent primary conditions** for hiring, whereas **generic hard skills and soft skills represent advantages** for hiring. To summarise, **employability of individuals is based on specific skills, but transversal skills support it.**

Companies generally keep those employees who can generate profits. Assessing individuals in practice can be very difficult, especially in some jobs. **The main criterion is the individual's qualification**. The more it fits in with the company needs, the more likely he/she is to keep the job. This shows the decisive role of specific skills for employment, just as the theory of human capital (Becker 1993) maintains. **Generic skills (both soft and hard) represent the "second-level criterion"** for identification of workers who should stay in their positions, i.e. it is applied as an additional criterion if there are many individuals with similar qualifications. Respondents believe the following generic skills are the most important for maintaining a job: ICT and language skills, positive attitude to work, loyalty to the company and respect for its values, flexibility and adaptability, independence, responsibility, efficiency in performing work tasks, co-operation, communication, and customer orientation.

Educators have emphasised the difficulty of identifying skills supporting adaptability to change and occupational mobility. They argue that these skills differ from one occupation to the next, so there is no meaningful, "mechanical" way to acquire skills of this kind. Despite that, they have tried to enumerate some skills which would be closest to the idea of generally usable ones. The first, which forms the basis for acquiring the others, is the capacity to learn. ICT skills, language skills and communication were skills quoted most often.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

Qualifications (specific skills) have a decisive role in the process of finding and holding a job, whereas the role of transversal skills (generic skills), i.e. skills with a high level of transferability, is supportive, as Box 1.9 shows. In spite of the role of transversal skills as a "second-level criterion" for hiring and keeping a worker, employers perceive them as very important for an individual's work performance. This is obvious from studies concerning the requirements that employers have for job applicants and employees (e.g., Gavenda, 2006; Gottvald et al, 2008; Havlena, 2004; RPIC-ViP et al, 2003).

The importance of soft skills and generic hard skills for work performance and for getting and keeping a job can also be illustrated in the occupational skills profiles (competency models) that this study provides for 219 occupations. These skills profiles were created on the basis of the Integrated System of Typal Positions (Ministry of Labour and Social Affairs of the Czech Republic, on-line) and the O*Net system (O*Net On-line, on-line). For more information on the methodology for describing occupational skills profiles, see Appendix 7. There are 292 different skills which were used to describe 219 occupation skill profiles; the profiles contain 3,948 requirements on skills in total. Analysis of these skill requirements shows that 20 of the most frequent skills (from the list of 292 skills) constitute 56 per cent of all skill requirements. These skills, which are presented in skill profiles of more than 50 occupations (from 219 occupations), are predominantly soft skills and generic hard skills.

The next Chapter provides more relevant information concerning the relation between transferable/ transversal skills and employability, adding weight to the importance of transferability of skills during the current economic crisis.

1.4. Role of transferability of skills in the current situation of the labour market

Skills, and mainly those applicable across various segments of the labour market (transversal skills), play an important role in smoothing the business cycle during an economic downturn, and notably during the economic recovery that follows since they enhance adaptability and occupational mobility of individuals. Without these skills within the workforce, the hysteresis effect may occur, when both low employment and high unemployment persist despite the economic recovery.

Box 1.10: Multi-skilling for transferable skills in Thrifty, good practice (No 15)

An example of "**Multi-skilling for transferable skills in Thrifty**" in Ireland shows the importance of skill transferability during the economic downturn and restructuring. The Thrifty Car and Van Rental company launched their multi-skilling programme focused on rotated their staff between different departments. It allowed the employees to be trained on the job in skills not required for their particular working role. The nationwide programme resulted in up-skilling of employees in such areas as communication, team work, generic sales skills and ICT skills. Furthermore, the programme facilitated better understanding across the firm. More than 50 per cent of employees took part in this programme. **The benefit was experienced first-hand by the company and its employees during a major restructuring in the past two years**. Many multi-skilled people were re-employed by the company in different capacities.

Note: For detailed information on examples of good practice see Appendix 2.

Generally, the effects of skills on the probability of employment and/or unemployment are crucial. Available data shows that the more skills and knowledge an individual acquires, the higher his chance of employment and the lower his chance of unemployment. Even more important is the impact of this stock of skills and knowledge on the change in employment and unemployment rates during the current economic recession. **Individuals possessing a higher stock of skills have experienced both a smaller drop in employment levels** and a smaller increase in unemployment levels between 4Q 2007 and 4Q 2009, which suggests more favourable conditions for them in the labour market even during the recession. These conclusions are relevant not only at individual level, but also at national economic level as Appendix 6 shows.

Adducing any **evidence of the importance of transferable skills during the current economic crisis is subject** to several limitations. The most important one is the **non-availability of relevant statistics**, i.e. data describing the stock of skills at individual or at least at more aggregate levels, which would form the starting-point for analysing their impact on relevant labour market values. ([3]) The absence of this data necessitated using conclusions from the EU-wide survey as an important source of information on the role of transversal skills during the current economic downturn, see Box 1.11.

Box 1.11: EU survey on awareness of the role of transferable skills during economic crisis (Question 3)

Companies' awareness of the importance of transferable skills was not significantly influenced by the global economic crisis. Only a few respondents mentioned an increased emphasis on highly transferable skills (meaning soft skills) in their personnel policy: they used them as an additional criterion for hiring / laying off employees if the primary criterion, i.e. qualification in the form of specific skills, did not allow for a clear-cut decision. Generally, **the importance of specific skills** which are the necessary condition of work performance **was emphasised** by companies, whereas **the role of transferable skills was mentioned as supportive**. The lack of an increase in interest of companies in transferable skills can be, according to respondents, explained by two different factors: Firstly, companies use advanced systems for human resources development; they pay attention to this topic continuously. All the measures resulting from the crisis, such as reorganisation and subsequent internal mobility or outplacement of laid-off employees, are carried out using sophisticated HR management platforms. Secondly, the crisis and subsequent high unemployment created a surplus of available human resources with adequate, i.e. required, levels of specific skills as well as soft skills. This surplus of suiTable human resources in the labour market does not create any incentives for companies to invest in the development of skills.

The public sector supports the development of transferable (meaning transversal) **skills in general**. The support has **increased because of negative effects of the economic crisis on the labour market**. Respondents feel the responsibility of the public sector to participate in finding solutions to the existing problems in the labour market. An example is the Slovenian programmes for redundant workers in the textile industry, "Prekmurje Intervention Act". Further education and training are seen as appropriate tools for facilitating re-employment of redundant workers. Nevertheless, none of the respondents specified the contents of those educational programmes. It is possible that the programmes focus on the development of specific skills required for the performance of a particular job at a particular place, and so respondents comment on the importance of development of skills (understood as a general term) instead of transferable skills.

Educators are conscious of the importance of both specific and generic skills for further development of businesses, as well as the gradual growth in their importance. Opinions on the importance of specific skills vs. generic ones, i.e. what is more important for getting and keeping a job, differ among respondents. One group of respondents considers job-specific hard skills more important for employability of an individual whereas the other group prefers soft skills.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

([3]) The need for statistical data describing adult population skills has led to the launch of programmes for the International Assessment of Adult Competencies (PIAAC), which will be realised in OECD and partner countries in 2011 and focused on assessing the literacy skills, numeracy skills and ability to solve problems in technology-rich environments by individuals aged 16 - 65 (OECD, on-line).

High sensitivity of educational and training activities to the business cycle, namely the **availability of financial resources** is also very important. In the times of recession, companies are forced to reduce their costs, and employee education is often cut first. **Lack of resources for human capital development in the private sector should be compensated for by public sources**, which often reduces the cost of education (Education International 2009) and training. In these circumstances, a paradox occurs: whilst supporting the acquisition of skills on the part of both employed and unemployed people would help preserve employment and minimise unemployment, funding is being reduced.

Box 1.12: Transitional Professional Contract, good practice (No 11)

The public sector can play a leading role in adaptation to restructuring processes, as the "**CTP - Transitional Professional Contract**" example shows. Transitional Professional Contract was tested in 7 French regions, then extended to other parts of France in 2009 and 2010. There are several tools, i.e. financial, educational and other kinds of assistance, used in the programme including adaptive measures to improve skills needed for a transfer to another job. The evaluations concluded that it was a successful measure, with more than 50 per cent of participants finding a new job.

Note: For detailed information on examples of good practice see Appendix 2.

1.5. Measures and actions already taken, in progress or envisaged at European level in connection with transferability of skills

Established in 1997, the **European Employment Strategy** (EES) enables Member States and the European Commission to set common objectives regarding employment policies, monitor progress and exchange best practices in order to support the creation of more and better jobs in every Member State. At the core of the EES is a commitment to expand and improve investment in workers' skills.

The EU Member States and the Commission have worked together in this area under the **Education & Training 2010 work programmes** since 2001. The open method of coordination stimulates reforms and development of advanced skills through better education and training systems. In November 2007, the Education, Youth and Culture Council adopted a resolution on "**New Skills for New Jobs**" (European Commission 2010b) which stressed the need to identify new types of jobs and skills in Europe and develop regular anticipation exercises based on existing structures at European level. The "New Skills for New Jobs" initiative sets the agenda for one of the core future priorities of the EU: how to better anticipate the skills that European citizens and companies will need, reform our education and training systems accordingly so that they can properly prepare people for the jobs of tomorrow, and better coordinate employment and education policies. Drawing on existing budgets and EU programmes, anticipating and matching of skills are organised under four strands, as follows (European Commission 2009b):

- addressing mismatches;
- strengthening the capacity for forecasting and anticipation;
- deepening international co-operation;
- mobilising Community instruments.

A group of experts was set up in March 2009 with the mandate to provide independent advice on developing the New Skills for New Jobs initiative further in the context of the EU's future 2020 strategy for growth and jobs through a series of key recommendations. In January 2010, the results were presented to the Commission and in February, to the public during a conference held in Brussels. The following **4 priorities** have been proposed:

- **massive and smart investment in skills** - right incentives for employers and individuals;
- bring **the worlds of education and work closer together** - more skills-based qualifications and lifelong learning for all;
- develop **the right mix of skills** - **job-related competencies underpinned by transversal competencies**;
- **better anticipation of future skills needs** - improved labour market information.

The third priority in particular, i.e. "develop the right mix of skills", is directly linked to the theme of this study. First, the **"T-shaped" individual skills profiles** are proposed with the **job and subject specific hard skills underpinned by transversal soft and generic hard skills**. No comprehensive identification and definition of these transversal skills is given. Instead, some of them are highlighted, like the ability to work quickly, analyse and organise complex information, take responsibility, handle crises, manage risk, take decisive action, entrepreneurship or creativity (in the category of

soft skills) and digital skills, e-skills, media literacy or environmental awareness (in the category of generic hard skills). Generally, this proposal by NSNJ experts confirms the need to develop a widely accepTable taxonomy of skills to be used for identification of the transversal skills which are most in demand and their integration into relevant future actions. Secondly, in addition to the recommendations of T-shaped skills profiles, the NSNJ experts focus prominently on the **learning environment and delivery methods for assessment and development of transversal skills** from the early school years through to lifelong learning, with a special focus on teachers and trainers as the major actors in this area.

The European Centre for the Development of Vocational Training (**Cedefop**) has begun developing **medium- to long-term skills forecasts at EU level**, and it is possible to disaggregate them by individual EU countries. The forecasts deliver a comprehensive, consistent and detailed view of future skills needs and vacancies across Europe in the lead up to 2020 (European Commission 2009b).

Recommendations of the European Parliament and the Council from December 2006 on key competencies for lifelong learning enabled the setting up of the **European Framework for Key Competencies for Lifelong Learning** (European Commission 2007). The framework identifies and defines, for the first time at European level, the key competencies that citizens require for their personal fulfilment, social inclusion, active citizenship and employability in our knowledge-based society. The reference framework sets out **8 key competencies**. These competences can be considered as **too general** to be used in the world of work without further specification, description and identification of appropriate levels for specific occupations.

European Qualification Framework (**EQF**) links countries' qualification systems together, acting as a translation device to make qualifications more readable and understandable across different countries and systems in Europe. It has two principal aims: to promote citizens' mobility between countries, and to facilitate their lifelong learning. The development of the European Qualifications Framework started in 2004, in response to requests for a common reference to increase the transparency of qualifications. The Commission, with the support of an EQF Expert Group, proposed an **8-level framework based on learning outcomes** aiming to facilitate the transparency and transferability of qualifications and to support lifelong learning. The EQF was **formally adopted in February 2008**. It recommends 2010 as the target year for countries to link their national qualifications systems to the EQF, and 2012 for countries to ensure that individual qualification certificates bear a reference to the appropriate EQF level. The EQF emphasises the results of learning rather than focusing on inputs such as length of study. **Learning outcomes are specified in three categories: knowledge, skills and competence**. This signals that qualifications capture a broad scope of learning outcomes, including theoretical knowledge, practical and technical skills, and social competencies where the ability to work with others will be crucial (European Commission 2008).

The European Credit System for Vocational Education and Training (**ECVET**) aims to give people greater control over their individual learning experiences and make it more attractive to move between different countries and different learning environments. The system aims to **facilitate the validation, recognition and accumulation of work-related skills and knowledge** acquired during a stay in another country or in different situations to improve compatibility between the different vocational education and training (VET) systems across Europe and their qualifications. In ECVET, an individual's learning outcomes are assessed and validated in order to transfer credits from one qualification system to another or from one learning "pathway" to another. The system also allows the possibility to develop common references for VET qualifications, and is **fully compatible with the European Credit Transfer and Accumulation System (ECTS).** Several projects focusing on the development and promotion of ECVET are being realised in different sectors, including automobile servicing, chemistry, tourism, and international trade. (For further information see European Commission 2009d.)

Europass is a direct public **service aimed at making qualifications and skills better understood throughout Europe**. People who are looking for a job, whether in their own country or abroad, need to be able to present their qualifications and skills in a way that employers can correctly understand and appreciate. The Europass service, available to individuals through a network of national centres and an on-line portal, aims to make this process easier. The Europass CV highlights people's skills and abilities, including those acquired outside of formal education and training. The Europass Certificate Supplement explains vocational training certificates in terms of skills and abilities, enabling employers to better appreciate what the individual can do.

European Quality Assurance Reference Framework (**EQAVET**) is a reference tool for policy makers based on a four-stage quality cycle that includes goal setting and planning, implementation, evaluation and review. It aims to bring about better recognition of skills and competencies acquired by learners in different countries or learning environments. (For further information see European Commission 2009c.)

European Skills, Competencies and Occupations Taxonomy (**ESCO**). There is wide recognition among public employment services and brokers in labour markets that skills, competencies and capabilities complement formal qualification-based approaches in dialogue with employers (notably, for recruitment) and are increasingly able to provide a sufficient degree of specificity necessary for highly productive employment relationships. In light of this paradigm shift, one of the main deliverables of the Commission's New Skills for New Jobs Communication from December 2008 is the development of the **first ever multilingual dictionary linking skills and competencies to occupations** at European level**.** ESCO will be made available in 25 languages to all labour market operators and brokers in 30 countries (EEA). ESCO has the potential to become the European standard classification for skills and competencies, building a bridge between labour markets and the world of education and training. In the wider context of the EU 2020 strategy, ESCO will be a tool that further facilitates the creation of dynamic labour markets characterised by smooth job (occupational) mobility and moves from education and training to work (European Commission 2010a). Between 17 August and 1 October 2010 the European Commission conducted **a targeted stakeholder survey** to gather feedback on the development of the ESCO classification. The first overview of the quantitative results based on 178 respondents from 34 countries was presented in the ESCO Newsletter in October 2010 (ESCO 2010). It confirmed the importance of a common language and clear consensus that transversal competencies/soft skills and work activities/task descriptions should be included in ESCO. Among potential uses of ESCO the following are perceived as high priority: supporting skills-based matching between job seekers and job vacancies, development of transparent and comparable occupation profiles, support of individuals in identifying relevant education and development of transparent and comparable learning outcomes. Among the main ESCO challenges the following were mentioned: ensuring the relevance, accuracy and quality of information, securing the involvement of relevant stakeholders, getting up-to-date information and the scale of the task. ESCO should be available by 2012 as one of **key priorities for the Commission** in the context of "New Skills for New Jobs" and "Europe 2020".

European Competence: Learning, Innovation, Development (**EUCLID**) is an expert network focused on longer-term comparative research on competencies. Lack of global or at least EU consensus on the concept of competencies is reflected in **differences and confusions in the definitions and language used in the area of skills and competencies**. The development of a typology of knowledge, skills and competence was contracted to a team at Toulouse Business School and the EUCLID network of experts (Winterton 2009) who produced a paper comparing different competency models and offering a harmonised system throughout Europe with a special focus on EQF and ECVET frameworks. They call for **standardised international classification of skills and competencies** that would facilitate recognition of qualifications not only across Europe but on a global basis.

In the course of the project several initiatives relevant to the theme of the study have been launched or are in progress. In particular the following can be mentioned: the "Agenda for new skills and jobs", "Youth on the move", "Industrial policy for green growth" and the "Digital Agenda". Furthermore, some recent Council conclusions were published that relate to the "New skills for new jobs" initiative and the VET communication and the Bruges Communiqué on enhanced European Cooperation in Vocational Education and Training. These documents, of which a brief review follows, provide an updated policy context. It can be stated that **many of the relevant messages are complementary to or coincide with the outcomes of this study**, including the following:

Agenda for new skills and jobs (European Commission 2010b):

- developing labour market intelligence and skills governance;
- providing the right mix of skills;
- matching people´s skills and job opportunities.

Youth on the move (European Commission 2010c):

- supporting the acquisition and validation of skills through non-formal and informal learning;
- developing modern education and training systems to deliver key competencies such as learning to learn, communication in foreign languages, entrepreneurial skills and ict skills;
- quality career guidance centres;
- the existing europass elements to be transformed into the european skills passport.

Industrial policy for green growth (CEDEFOP 2010):

- boundaries between what is and what is not low-carbon work are becoming increasingly blurred;
- many of the skills needed for low-carbon economy can be found in existing occupations;
- a balance of generic skills, e.g. autonomy and communication, generic green skills (such as reducing waste and improving energy and resource efficiency) and existing job-specific skills is much more important to developing a low-carbon economy than more specialised green skills.

Digital Agenda (European Commission 2010d):

- europe is suffering from a growing professional ict skills shortage and digital literacy deficit;
- the digital era should be about empowerment and emancipation; background or skills should not be a barrier to accessing this potential;
- it is essential to educate eu citizens to use ict and digital media which calls for multistakeholder partnerships and recognition of digital competencies in formal and informal education and training systems.

VET Communication (European Commission 2010e):

- IVET must equip youngsters with skills directly relevant to evolving labour markets, such as e-skills and highly developed key competencies;
- Adults must be able to update their skills and competencies through CVET;
- Employers´role in the provision of CVET is increasing and they must provide their employees with opportunities for intensive periods of training;
- Flexible access to training will have to be combined with flexible work organisation;
- Validation of non-formal and informal learning provides pathways to up-skilling and reintegration of people into the labour market;
- Lilelong learning opportunities must be coupled with guidance and counselling services to facilitate transition to employment and between jobs.
- The role of teachers and trainers is crucial in the modernisation of VET and there is a convergence in their roles. The trainers need more pedagogical competencies and must play a supporting and mentoring role. The teachers in a school need, like a trainer, a good understanding of work practices.
- The focus on key competencies is becoming an urgent priority. At the same time rapid technological change implies constant improvement of job-specific hard skills. The challenge is to achieve the best possible combination of them.

Bruges Communiqué (European Commission 2010f):

- empowerment of people to adapt to new developments and manage change, i.e. enabling people to acquire knowledge, skills and competencies that are not purely occupational;
- the key competencies are important to succeed in life and it should be possible to acquire them in VET and other forms of education;
- VET has to give learners a chance to catch up, complement and build on key competencies without neglecting occupational skills;
- ICT skills and competencies and foreign language skills will become more and more critical in terms of getting and keeping a job.

The common point of all the above-mentioned policy documents is a wide consensus among the key decision makers at European level concerning the **crucial role of skills and competencies in occupational pathways**. The initiatives and actions needed to put the described strategic aims into practice have been defined in the documents listed. Their implementation, supported by key stakeholders, will substantially improve skills transferability among occupations, sectors and geographical areas.

1.6. Conclusions and recommendations

Transferable skills do not correspond to any objectively given and qualitatively different category of skills. They are skills which are applicable to different tasks and jobs, where the applicability is conferred by economic, legislative, geographic and other contexts. The more general the skill, the more transferable it is and vice versa. Since there are no purely transferable or purely non-transferable skills, i.e. transferability is not a discrete, but continuous variable, it makes sense to discuss skills' **transferability level** instead of distinguishing between transferable and/or non-transferable skills as such.

Employers distinguish between **hard skills** such as job-specific skills closely **connected with knowledge**, easily observed and/or measured and easily trained and **soft skills** such as non-job specific skills which are **closely connected with attitudes,** intangible, and difficult to quantify and develop. Other actors, mainly policy-makers and educational institutions, work more often with a distinction between **general** (or generic) and **specific** skills.

A consistent theory for defining and classifying various skills is lacking, and there is no generally accepted skills taxonomy. The project team decided to distinguish, on the basis of previous analysis, **three categories of skills**:

- **soft skills**;
- **generic hard skills;**
- **specific hard skills.**

Specific hard skills are characterised by their lower level of transferability, whereas soft skills and generic hard skills are skills with high transferability.

Transferable skills is not a synonym for soft skills, as confirmed by analysis of skills transferability and examples of job-specific hard skills which are transferable between occupations. Nonetheless, a substantial number of professionals perceive it as such (similarly to perception of the term competence or competency as synonymous with skill). For example, the ESCO initiative defines "transversal skills" as a synonym for soft skills.

Recommendations

- ***Transversal rather than transferable skills should be used as a higher category term*** *that labels and groups together soft skills and generic hard skills which have, by their nature, a high level of transferability across all sectors and occupations and an important impact on success in life.*

- ***Internal and external transferability should be distinguished.*** *Internal transferability within one organisation and external transferability to other organisations, sectors and occupations are two interlinked but still different "worlds" with regard to motivation of key players, tools and methods used to support skill development (or validation of skills already acquired in previous learning).*

- *All skills are more or less transferable based on the specific context. The* ***real transfer of skills*** *(as a process connected with occupational mobility) should be supported by specific systems, methods and tools. Some of them are proposed in Chapter 5 of this study.*

There is a link between skill transferability and the risk of losing a job or failing to find another one. Employability of individuals **is based on specific skills, but transversal skills support it**. Individuals possessing a higher stock of skills have faced a lower risk of unemployment than others during the current economic crisis.

Easy outsourcing in the globalising world increases the dynamics of the labour market, and **employees should invest in their skills development** to enhance their chances of keeping their job or easily finding a new one. Neither the private nor the public sectors can be fully responsible for an individual's employability.

Personal responsibility and self-development are important. **It is an advantage to be multi-skilled** so that one can move both within one's current organisation, or away from it to other occupations and sectors if necessary. What employers look for is an employee able to do the job and do it well. In this respect, **transversal skills that range from problem solving to interpersonal skills are considered important**. Having these skills, which can be transferable from one context to another, represents a good basis for accumulation of specific skills required by a given job.

Companies' awareness of the importance of transferable skills development was not significantly influenced by the global economic crisis, as an expert survey suggests (see Appendix 1, Question 3). It is possible to identify two major reasons. Firstly, companies using advanced systems for human resources development pay continuous attention to this topic. Secondly, the crisis and subsequent high unemployment created a surplus of available human resources with adequate levels of specific as well as transversal skills. On the other hand, in times of crisis and large-scale restructuring the **public sector often subsidises development of skills (including transversal skills)** of employees (usually in combination with short time work measures implemented by employers) in order to maintain employment (ICT ILO 2010).

Recommendations

- ***Lack of resources for human capital development in the private sector due to the crisis should be compensated for by public resources****, which often reduces the cost of education for employers or even promotes replacing part of the unused working time by relevant training.* ***Supporting the acquisition of skills on the part of both employed and unemployed people helps to preserve employment and reduce unemployment****. Programmes of short time work combined with reduced working hours for workers enabling them to participate in up-skilling or re-skilling training are used for this purpose in several Member States. It is recommended to extend this approach to other Member States as an important measure in times of large-scale restructuring.*

- ***Preventive measures should be taken by policy makers*** *with regard to skills transferability development. The public sector should act as a "strategist" rather than a "fireman". In times of economic recovery, employers are or can be more motivated to invest in training, including transversal skills, than during economic recession. Relevant tax* ***incentives*** *for employers and "****employability rights****" for employees should promote pro-active behaviour among these key actors and smooth fluctuation of investments in education during business cycles (and so minimise the need for public interventions during an economic downturn).*

Recommendations are further specified in Chapter 5 of this report.

2. A detailed analysis of skills transferability across economic sectors in Europe in the current context and in the coming years

The following Chapter of the study is devoted to the quantification of transferability of skills by sectors, groups of sectors and occupations at the present time (Chapter 2.1) and over the next 10 years, i.e. up to 2020 (Chapter 2.2), which is one of the main aims of the study.

2.1. Present skills needs and skills transferability

Transferability can be defined as the applicability of skills to different jobs or tasks, regardless of where they were first acquired. The more jobs or tasks the skills are applicable to, the more transferable they are.

Analysis of different types of skills (see Chapter 1.1) has led to differentiating between soft skills, generic hard skills, and specific hard skills which differ in the extent of their applicability to the labour market and in relation to the occupation. It is possible to assume that soft skills and generic hard skills are skills with high transferability, while specific hard skills are skills with low transferability. This Chapter is focused on verifying this assumption.

Analysis of the transferability of separate skills was performed in two basic steps:
- creation of occupational skills profiles as information input for analysis;
- evaluation of transferability of skills between occupations, groups of sectors and in the economy as a whole.

Box 2.1: Methodology

Rigorous quantification of transferability of skills between occupations, economic sectors and within the whole economy requires competency models of all relevant occupations in the economy (or sectors) as an information input for analysis. Unfortunately, there are no competency models which have been created and accepted at EU level.

Because of this fact, it was necessary to create competency models (more precisely, occupational skills profiles) enabling exact quantification of skills transferability. This entailed the following steps:
- specification of relevant economic sectors (see Appendix 7.2);
- specification of relevant occupations (see Appendix 7.3);
- creation of skills classification containing relevant skills (see Appendix 7.1).

This made it possible to describe occupational skills profiles, which in turn enabled the quantification of skills transferability.

It has to be emphasised that results provided in this Chapter are influenced mainly by the number and selection of occupations used for the analysis, which also provides the context of the results. The context, as was stressed in Chapter 1.2, has to be taken into consideration for understanding and mainly practical application of the results.

A survey is an alternative means of assessing skill transferability. Although this method was used as well (results will be presented in this Chapter) it has to be stressed that the results are not based on exact computation of applicability of skills to different jobs and tasks, but on respondents' (experts from various fields) opinions. Moreover, the number of experts who participated in the survey is limited, which necessitates a cautious interpretation of results (e.g. at a level of individual economic sectors). These limitations have led to differences in outputs according to the methods used.

2.1.1. Occupational skills profiles

The starting point of the analysis of skill transferability across occupations, sectors and the whole economy was the **description of skills profiles for 219 occupations in 20 economic sectors**.

Box 2.2: Occupational skills profiles, methodology

The absence of an EU-wide occupational system with information on skills requirements, led to the choice of alternative tools for the specification of occupational skills profiles. They were specified on the basis of data from the Integrated System of Typal Positions (Ministry of Labour and Social Affairs of the Czech Republic, on-line) and O*Net (O*Net On-line, on-line), which were further discussed and developed by the research team. Although the levels of individual skills are relevant (e.g., communication is needed nearly everywhere, but the necessary level of its mastery varies significantly), they were not integrated into occupational skills profiles because of their strong dependence on a specific context (different requirements of the same occupation in different countries, regions, sectors, etc.). Instead, the importance of the skills (at least at basic or advanced level) for each occupation was taken into consideration in deciding which of them will be used in the respective occupation profile.

Occupational skills profiles describe skills required for job performance of chosen occupations according to the classification of skills described in Appendix 7.1. An example of skills profiles for two selected occupations from the group sector "Civil engineering and construction" is given in Table 2.1; skills profiles for all 219 occupations, including descriptions of occupations, can be found in Appendix 8.1.

Table 2.1: Sample of occupational skills profiles

Civil engineering and constructing	
Construction technician (2142)	GH1 Legislative/regulatory awareness, GH2 Economic awareness, GH3 Basic competencies in science and technology, GH4 Environmental awareness, GH5 ICT skills, GH6 Knowledge of foreign languages SH015 Technical drawing, SH054 Maintenance of buildings, SH077 Elaborating of project documents, SH106 Management of non-manufacturing plants, SH129 Projecting of buildings, SH130 Project management, SH168 Formulating of investors' and other authorities' demands SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, SS15 Concern for order, quality and accuracy, SS17 Problem solving, SS18 Planning and organizing, SS20 Autonomy, SS21 Analytical thinking, SS22 Conceptual thinking
Plumber (7136)	GH3 Basic competencies in science and technology SH009 Orientation in technical documentation, SH013 Appraisal and control of quality of raw materials, semiproducts and products, SH015 Technical drawing, SH016 Waste disposal, SH033 Handling of machines for metal processing, SH050 Control measurements in operational and manufacturing processes, SH054 Maintenance of buildings, SH077 Elaborating of project documents, SH119 Installation, operation, maintenance and optimizing of energy equipment, SH152 Mounting, compounding and installation of piping SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, SS15 Concern for order, quality and accuracy, SS17 Problem solving, SS20 Autonomy, SS21 Analytical thinking

*Source: Ministry of Labour and Social Affairs of the Czech Republic, on-line; O*Net On-line, on-line; authors.*
Note: GH is classification code for Generic hard skills, SH is classification code for Specific hard skills, SS is classification code for Soft skills.

In this study, **occupational skills profiles form the main input for analysing the transferability of skills** since they **enable a comparison of the skills requirements in different occupations and sectors**. In HR management, where the term "competency models" is used for these profiles, they are most suiTable for describing requirements for job applicants or for defining learning needs of current employees.

Box 2.3 gives a comparison of the EurOccupations task profiles and skills profiles developed in the transferable skills study.

Box 2.3: Euroccupation and occupational skills profiles for plumbers

The EurOccupations project [4] described job content, required qualification level and tasks for 150 occupations in eight EU countries. As an example of output of the Euroccupation project the description of **Plumber** is stated below:

Description: *Assemble, install and repair pipes, fittings and fixtures of heating, water and drainage systems, according to specifications and plumbing codes.*

Level of education: *(Upper) secondary education*

Tasks:

- review blueprints, building plans, building regulations, product information and specifications to determine work details and procedures (e.g. sequence of pipe installations, to plan around obstructions such as electrical wiring);
- select sizes and types of equipment and materials;
- locate and mark the position of pipe installations, connections, passage holes and fixtures in structures, using measuring instruments such as rulers and levels;
- measure, cut, thread and bend pipe to required angle, using different techniques and hand and power tools or machines such as pipe cutters, pipe-threading and pipe-bending machines;
- assemble pipe sections, tubing and fittings, using materials such as couplings, clamps, screws, bolts, cement, plastic solvent, caulking, and techniques such as soldering, brazing and welding;
- install pipe assemblies, fittings, valves, appliances and fixtures (e.g. sinks, toilets, dishwashers, heating and cooling systems, gas appliances, water tanks), e.g. using hand and power tools;
- maintain and repair plumbing systems;
- check the work (e.g. by filling pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks) and repair and correct faults;
- keep records of assignments and produce detailed work reports.

The description, unfortunately, does not identify skills necessary for job performance, i.e. performance of the above-stated tasks. Such information is, on the other hand, provided by occupational skills profiles described in this study (for information on plumber skills needs, see Table 2.1 or Appendix 7.1). There is a possibility of merging the outputs of this study and the EurOccupations project to build a system describing all relevant occupations in the EU. This system could represent a significant tool for harmonisation of occupation profiles across the EU and an important device for HR development.

Source: EurOccupations, on-line.

Occupational skills profiles also provide information on the skills intensity of different sectors. Skills intensity represents the average number of skills per occupation in a group of sectors. Analysis shows that 7 out of 20 sectors have on average more than 20 skills listed per one key occupation. "ICT" is the sector with the highest skills intensity, followed by "Manufacture of wood and furniture" and "Manufacture of chemical and pharmaceutical products; supply of electricity, gas, steam and water; computer repairs". At the other end of the scale, "Manufacture of textile and leather" together with "Transport, sewerage, security" and "Agriculture, forestry and fishing" are sectors with the lowest skills intensity. For detailed information on skills intensity, see Appendix 8.3.

2.1.2. Skills transferable between specific occupations

Knowledge of skills which are transferable between pairs of occupations facilitates effective job changes during an individual's working life. Finding the most suiTable occupation, where the worker can apply the most of his/her present skills, not only minimises losses of qualification due to the change but also reduces the costs of training new employees and the time necessary for handling tasks connected with the new occupation. The more skills that are identified as common to each pair of occupations, the higher the transferability, and vice versa. This knowledge is very useful for the facilitation of occupational mobility during restructuring, which has a substantial impact on both the speed of restructuring processes and level of unemployment. Moreover, combining information on transferable skills with a skills profile of the new occupation helps to identify what kind of re-skilling or up-skilling is necessary to achieve a smooth transition for those made redundant.

(4) This project is funded and supported by European Commision.

Box 2.4: Skills transferable between specific occupations, methodology

Comparison of occupational skills profiles (see Appendix 8.1) enables identifying the skills that are common to different occupations, i.e. skills which are transferable from one occupation to another. Skills occurring in the "skills profiles" of two occupations are considered as transferable between them.

Skills which are transferable between selected pairs of occupations (see Box 2.4) in the group of sectors "Civil engineering and construction" are listed in Table 2.2, while transferable skills for all combinations of occupations in each sector can be found in Appendix 8.2. An example of the use of this output is given in Box 2.5.

Table 2.2: Sample of skills transferable between Painters and related workers, Construction mounter and other selected occupations from the group of sectors Civil engineering and construction

Civil engineering and construction	Stonecutter -Bricklayers and stonemasons	Bricklayer -Bricklayers and stonemasons	Carpenters and joiners	Tinsmith -Plumbers and pipe fitters	Construction locksmith -Plumbers and pipe fitters
Painters and related workers	SH037, SH054, SH089, SH090 SS14, SS20, SS21	SH009, SH013, SH037, SH054, SH078, SH090 SS08, SS09, SS14, SS18, SS20, SS21	SH009, SH013, SH016, SH043, SH051, SH055, SH078, SH089 SS08, SS09, SS14, SS18, SS20, SS21	SH009, SH043 SS08, SS09, SS14, SS18, SS20, SS21	SH009, SH013, SH043 SS08, SS09, SS14, SS20, SS21
Construction mounter - Builders	SH09, SH015 SS14, SS17, SS20, SS21	SH009, SH015, SH090, SH127, SH206 SS08, SS09, SS14, SS17, SS18, SS20, SS21	SH009, SH015, SH127, SH128 SS08, SS09, SS14, SS18, SS20, SS21	SH009, SH015, SH127, SH128 SS08, SS09, SS14, SS17, SS18, SS20, SS21	SH009, SH015, SH127, SH128 SS08, SS09, SS14, SS17, SS20, SS21

Note: SH009 Orientation in technical documentation, SH013 Appraisal and control of quality of raw materials, semiproducts and products, SH015 Technical drawing, SH016 Waste disposal, SH037 Handling of building and mining machines, SH043 Control of production processes and product parameters, SH051 Preparation of materials and raw materials, SH054 Maintenance of buildings, SH055 Knowledge, selection and maintenance of tools, instruments and devices, SH078 Calculations of material consumption, SH089 Surfacing by cementation, grinding, varnishing, staining, patina coating and glazing, SH090 Walling, concreting, plastering and building of structural elements, SH127 Mounting, demounting and compounding of metallic and other building constructions, SH128 Mounting, demounting and compounding of building components, SH206 Applying knowledge of surface constructions.

SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, efficiency, SS17 Problem solving, SS18 Planning and organization, SS20 Autonomy, SS21 Analytical thinking.

Although identification of **skills which are transferable between occupations can be considered as the most interesting output**, **its use is limited** by the fact that **only occupations in the same sector are compared**. This is a limitation if we look for a new job outside a given sector, which can be necessitated both by individual preferences and/or a downturn in an entire sector resulting in reduced job opportunities. This limitation is due to the need to compare 219 occupations in a non-interactive way (for this the final matrix would consist of 47961 cells). **An interactive approach, namely a web or database application, would enable us to overcome this problem.** Comparing all relevant occupations across the economy would then become easy. Users could form their own view of skills transferability, and obtain additional information on sectors and occupations, e.g. the importance of a profession to its sector calculated by its share of employment, projected future developments in the sector, occupational employment, etc. The research team recommends creating this type of interactive platform as part of another project for which this study could provide a methodological basis. The **second limitation** that needs to be emphasised is that **only selected occupations were taken into consideration**, and in many sectors the overall view of transferability would be different if all occupations were analysed. The **third limitation concerns the importance of respective skills**. For example, "Medical doctor" has 17 skills, yet in the current model it is not possible to identify which skills are more important, i.e. "General medicine" is considered to be of the same importance as, say, "Foreign medicine". Therefore, the outputs provided by this matrix have to be treated with caution.

Box 2.5: Skills transferable between specific occupations, example

As a case in point, let us take a painter who has just lost or given up his job and is looking for another, in a different field. The job loss may have been caused by conditions in the labour market, health problems and/or any number of other issues. Stonecutter, bricklayer, carpenter, tinsmith and construction locksmith are occupations to be considered (see Table 2.2). By comparing the numbers of skills transferable from "Painters and related workers" to the others, he/she should choose "Carpenters and joiners" as his/her new occupation simply because it would be possible to use 6 soft skills and 8 specific hard skills that the worker already has. If the worker chose any other occupation, he/she would not be making maximum use of his/her current skills. If a construction mounter were to choose his/her new occupation from those listed, he/she should choose bricklayer. This is different to the painter's, because the construction mounter's current skills set differs from that of the painter.

Moreover, identification of skills transferable between occupations (see Appendix 8.2) enables the quantification of a **transferability index**, i.e. the share of skills transferable between occupations as a ratio of the total number of skills for each sector. This analysis shows that in sectors with a higher skills transferability index **it is easier to switch from one job to another**, while in other sectors it is much more difficult; this impacts on sectoral labour market mobility. Education, ICT and media are sectors with the highest transferability indeces. On the other hand, household activities and other personal service activities, manufacture of food products, beverages and tobacco and manufacture of wood and furniture are the sectors with the lowest transferability indeces. It should be emphasised that these results indicate potential mobility between occupations within different sectors, whereas the specific context has to be taken into consideration to assess real occupational mobility in a given sector. For more information on the methodology and results, see Appendix 8.3.

2.1.3. Skills transferable between specific sectors

Skills profiles were defined for 219 occupations in 20 economic sectors (see Appendix 8.1). It is possible to identify skills that are required for work performance in at least one occupation in each of the sectors compared, i.e. to identify skills transferable from one sector to the other. It should be emphasised that the **list of identified skills transferable between sectors very much depends on occupations assigned to individual sectors**.

Box 2.6: Skills transferable between specific sectors, methodology

If there is a particular skill required to perform any occupation in the sector under consideration, then the skill is considered relevant for that sector. If the skill is relevant for more sectors, then it is transferable between these sectors.

Skills which are transferable between the "Manufacture of textile and leather" and three other selected sectors are listed in Table 2.3, while the description of skills which are transferable between all possible combinations of sectors can be found in Appendix 8.4.

Table 2.3: Sample of skills transferable between "Manufacture of textile and leather" and other sectors

	Manufacture of textile and leather
Agriculture, forestry and fishing	SS03 Flexibility, SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, efficiency, SS18 Planning and organization, SS20 Autonomy GH1 Legislative/regulatory awareness, GH2 Economic awareness, GH3 Basic competencies in science and technology, GH4 Environmental awareness, GH6 Knowledge of foreign languages SH014 Handling of production lines and machineries, SH015 Technical drawing, SH052 Maintenance and adjusting of machines and appliances
Manufacture of wood and furniture	SS04 Creativity, SS07 Customer orientation, SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, efficiency, SS15 Concern for order, quality, accuracy, SS18 Planning and organization, SS20 Autonomy GH1 Legislative/regulatory awareness, GH2 Economic awareness, GH3 Basic competencies in science and technology, GH4 Environmental awareness, GH6 Knowledge of foreign languages SH009 Orientation in technical documentation, SH013 Appraisal and control of quality of raw materials, semiproducts and products, SH014 Handling of production lines and machineries, SH015 Technical drawing, SH016 Waste disposal, SH020 Machine and industrial sewing, SH021 Hand sewing and needlework, SH035 Handling of programmable and semiautomatic machines, SH039 Upholstery, SH046 Restoring and conservation of artefacts, SH051 Preparation of materials and raw materials, SH052 Maintenance and adjusting of machines and appliances, SH066 Mounting, compounding and completion of products, SH078 Calculations of material consumption, SH084 Design, SH099 Leading of staff collectives or teams, SH160 Applying knowledge of history of art
ICT	SS03 Flexibility, SS04 Creativity, SS07 Customer orientation, SS08 co-operation with others, SS09 Communication, SS14 Achievement orientation, efficiency, SS20 Autonomy GH1 Legislative/regulatory awareness, GH2 Economic awareness, GH3 Basic competencies in science and technology, GH4 Environmental awareness, GH6 Knowledge of foreign languages

Source: Authors.

This output provides information on transferability of skills between economic sectors, i.e. similar information on skills' transferability to that provided in the case of specific occupations (see Chapter 2.1.2), but on the level of economic sectors. So, it is possible to deduce which sectors are close to each other based on the skills applied in those sectors, i.e. which are suiTable for people searching for a job in other sectors. When many people are made redundant due to decline in a sector while there are other sectors with similar skills needs, there is a reasonably high probability that these people can find jobs in those sectors, as Box 2.7 shows.

As regards the fact that the worker is always employed in a specific occupation (rather than in a specific sector) and the list of skills applicable to each sector was identified on the basis of a combination of all occupations described in the study, the Tables describing transferability of skills between specific sectors offer rather more information on general similarities between sectors from the point of view of skills rather than on the real possibility of occupational mobility for redundant workers. For information on skills relevant for occupational mobility of individual workers, see Chapter 2.1.2. Direct application of this output would secure only limited benefits as compared with the output described in Chapter 2.1.2, since the context of individual workers is not taken into consideration. Moreover, the sectors examined differ significantly between selected occupations. This could result in misrepresentation of the real nature of inter-sector bindings. This deficiency can be eliminated only by including all occupations from all chosen sectors.

Box 2.7: Skills transferable between specific sectors, example

A long-term drop in employment in the "Manufacture of textile and leather" sector can be seen and this trend gives rise to the issue of finding follow-up employment for those made redundant. These workers usually only look for work in the same sector because they cannot imagine that they could use their skills in other sectors. However, their skills can be used in various sectors, but there are some sectors where they could use more of these skills and others where they could use few of them. E.g., a redundant worker from "Manufacture of textile and leather" can be more easily employed in "Manufacture of wood and furniture" as opposed to "Agriculture, forestry and fishing" or "ICT". This is due to the range of applicable skills already at his/her disposal. He/she can use the same number of generic hard skills from "Manufacture of textile and leather" in "Manufacture of wood and furniture" as in "Agriculture, forestry and fishing" or "ICT", and approximately the same number of soft skills. However, he/she can use 17 specific hard skills from "Manufacture of textile and leather" in "Manufacture of wood and furniture", but only three in "Agriculture, forestry and fishing", and none in "ICT".

Further analysis of skills transferability between economic sectors (only specific hard skills and soft skills were taken into consideration) enabled the identification of pairs of sectors with the highest and lowest skills similarity.

These are the sectors with the highest number of common skills, where similarity is concentrated more on specific hard skills:

- manufacture of food products, beverages and tobacco and Manufacture of paper, rubber and plastics products; other manufacturing: 40 common skills;
- retail trade and Wholesale, warehousing and rental: 37 common skills;
- manufacture of paper, rubber and plastics products; other manufacturing and Wholesale, warehousing and rental: 36 common skills;
- wholesale, warehousing and rental and Specialized, postal and librarian services: 36 common skills;
- accommodation and food and beverage service activities and Retail trade: 35 common skills;
- manufacture of food products, beverages and tobacco and Manufacture of wood and furniture: 34 common skills.

These are the sectors with the lowest number of common skills, where similarity is concentrated more on soft skills:

- civil engineering and construction and ICT: 8 common skills;
- health and social care activities and Agriculture, forestry and fishing: 8 common skills;
- manufacture of textile and leather and ICT: 7 common skills;
- manufacture of metals, electronic equipment and transport vehicles and Education: 7 common skills;
- civil engineering and construction and Education: 6 common skills.

For detailed information on similarity of sectors based on skills, see Appendix 8.5.

2.1.4. Skills transferable within economic sectors

The occupational skills profiles (see Appendix 8.1) enable identification of skills that are important and transferable across different occupations within economic sectors; they also show differences in requirements of individual sectors.

Highly transferable hard skills identified in different sectors are listed in Table 2.4. Detailed information on the transferability of all skills, i.e. soft skills, generic hard skills and specific hard skills, according to the level of transferability between different sectors and the economy as a whole (all sectors together) can be found in Appendix 8.6.

Box 2.8: Skills transferable within economic sectors, methodology

Transferability of a skill within a specific economic sector was assessed as a share of occupations in the sector where the skill is required. Based on the share of occupations where the skill is applicable, three levels of transferability can be seen:

- high transferability (66.6 - 100.0 per cent of occupations);
- moderate transferability (33.3 - 66.5 per cent of occupations);
- low transferability (0.0 - 33.2 per cent of occupations).

The information on skills which are transferable within different sectors is useful for taking supportive measures aimed at a particular economic sector. The number of workers with relevant skills can be boosted through education regardless of the specific occupations of individuals.

Box 2.9: Skills transferable within economic sectors, example

Let us assume that decision-makers intend to support development in the "Manufacture of metals, electronic equipment and transport vehicles" sector. One possible measure is subsidised education/training in companies aimed at developing basic competencies in science and technology and ICT skills in the case of generic hard skills, and orientation in technical documentation, appraisal and control of quality of raw materials, semi-finished and finished products, technical drawing, handling of machines for metal processing, maintenance and adjusting of machines and appliances and knowledge, selection and maintenance of tools, instruments and devices in the case of specific hard skills. Developing those skills would support the "Manufacture of metals, electronic equipment and transport vehicles" sector, since they are required for work performance in more than two thirds of occupations in it (they are less widespread in other sectors), and for the same reason it also increases occupational mobility.

Another possibility is the development of such skills within the framework of the vocational education system, which would support the "Manufacture of metals, electronic equipment and transport vehicles" sector by preparing the workforce to respond to the sector's needs. Moreover, the integration of "common (or shared) skills" into vocational education would lower business expenditure on the education necessary for employees.

Table 2.4: Highly transferable hard skills within economic sectors

Skills	Sectors																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Generic hard skills																				
GH1 Legislative/ regulatory awareness						80.0		91.7		100.0	80.0		75.0	80.0	75.0	100.0	90.0	83.3	100.0	
GH2 Economic awareness	80.0					80.0		91.7		100.0	80.0					100.0	90.0		100.0	
GH3 Basic competencies in science and technology			100.0		100.0	70.0		91.7		100.0	80.0		66.7	100.0	83.3	100.0	80.0	100.0	90.9	
GH4 Environmental awareness								91.7		100.0	70.0			100.0	91.7	100.0		83.3	90.9	
GH5 ICT skills			91.7		100.0	80.0		91.7		100.0	80.0		66.7	80.0		100.0	90.0	91.7	100.0	
GH6 Knowledge of foreign languages					70.0	80.0		91.7		100.0	80.0					100.0	90.0		100.0	
Specific hard skills																				
SH009 Orientation in technical documentation			91.7				66.7		80.0											
SH011 Administration of information and documentation records													66.7				80.0			
SH013 Appraisal and control of quality of raw materials, semi- and products			83.3																	
SH015 Technical drawing		66.7	100.0				75.0											66.7		
SH020 Machine and industrial sewing		75.0																		
SH021 Hand sewing and needlework		75.0																		

Skills	Sectors																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Generic hard skills																				
SH030 Planning and preparation of trainings and educational events								83.3												
SH033 Handling of machines for metal processing			91.7																	
SH034 Handling of textile machines		66.7																		
SH052 Maintenance and adjusting of machines and appliances			75.0																	
SH055 Knowledge, selection and maintenance of tools, instruments and devices			75.0																	
SH070 Teaching, education and training								91.7												
SH082 Analytical preparation of programming										100.0										
SH083 Sales of goods and products						80.0														
SH088 Nursing													66.7							
SH093 Programming of applications and SW modules										90.9										
SH112 Methods and principles of educational results assessment								83.3												
SH131 Moderating of programmes and discussions, announcing								66.7												
SH172 Applying knowledge of information science										100.0										
SH223 Applying knowledge of software environments, operating systems										90.9										

Note: 1. Accommodation and food and beverage service activities, 2. Manufacture of textile and leather, 3. Manufacture of metals, electronic equipment and transport vehicles, 4. Manufacture of food products, beverages and tobacco, 5. Manufacture of paper, rubber and plastics products; other manufacturing, 6. Retail trade, 7. Civil engineering and construction, 8. Education, 9. Manufacture of wood and furniture, 10. ICT, 11. Wholesale, warehousing and rental, 12. Activities of households and other personal service activities, 13. Health and social care activities, 14. Mining & engineering, 15. Agriculture, forestry and fishing, 16. Media, 17. Specialized services, postal and librarian services, 18. Manufacture of chemical and pharmaceutical products; supply of electricity, gas, steam and water; repair of computers, 19. Telecommunications, management, public and administration service, 20. Transport, sewerage, security

Note: Blue colour means "highly transferable skill"; the number represents the percentage share of occupations where the skill is applicable.

Transferability of skills across occupations regardless of sectors, i.e. across the whole economy, was calculated as a share of occupations where individual skills are required (see Appendix 8.6, column "All"). Comparing the results of transferability of skills across occupations regardless of sectors (across the whole economy) with the results for individual sectors shows the most pronounced negative effect of aggregation, namely disappearance of specific information which is usually of the same level of importance as aggregated information. While some skills are highly transferable within specific sectors, their transferability across the economy is moderate or even low, and vice versa. The application of aggregated information for the development of measures aimed at specific sectors would lead to the relevant context being ignored, and subsequently to low efficiency of those measures.

It has to be stressed that identification of skills which are transferable within economic sectors is significantly influenced by occupations chosen for analysis in individual sectors. Therefore, results are relevant for the sample of 219 occupations in 20 economic sectors (see Appendix 7.3). This deficiency can be eliminated only by including all occupations from all chosen sectors.

2.1.5. Skills transferable across the economy

Skills which are transferable across the economy, i.e. skills applicable to different occupations in different sectors, are best classified under the "transversal skills" heading. At the same time, this represents the most aggregated output of the analysis of skills transferability.

Box 2.10: Skills transferable across the economy, methodology

If a skill is required by three or more occupations in the same economic sector, it is considered as transferable within the sector. The number of sectors in which the skill is considered as transferable defines the level of its transferability across the economy. It is possible to distinguish three levels of transferability:

- high transferability (66.6 - 100.0 per cent of occupations);
- moderate transferability (33.3 - 66.5 per cent of occupations);
- low transferability (0.0 - 33.2 per cent of occupations).

An evaluation of transferability of soft skills, generic hard skills and specific hard skills across the whole economy, including identification of sectors where the skill is required by at least three occupations, is contained in Appendix 8.7. The summary of this output, without information on sectors, is provided in Table 2.5.

Results of the analysis of transferability of skills across the whole economy, presented in Table 2.5, confirm the relevance of skill classifications and suitability of assignment of skills to the above-defined categories. This is obvious for hard skills, because all skills which were identified as **generic embodied high transferability**, whereas 260 of 264 skills identified as **specific embodied low transferability,** and the remaining four skills embodied moderate transferability. Soft skills were not divided into generic and specific due to lack of empirical evidence of the existence of specific soft skills and the presentation in relevant literature of soft skills as mostly generic (see Chapters 1.1 and 1.2), although the existence of specific soft skills is supported by theoretical background (see Chapter 1.1). Analysis disproved the assumption that all soft skills are mostly generic (i.e. transversal), as Table 2.5 shows, because only 5 of 22 soft skills showed high levels of transferability, whereas 9 showed moderate levels of transferability, and 8 showed low levels of transferability.

Table 2.5: Transferability of skills across economy

	High transferability	Moderate transferability	Low transferability
Soft skills	SS08 Co-operation with others (100.0) SS09 Communication (100.0) SS14 Achievement orientation (95.0) SS17 Problem solving (70.0) SS20 Autonomy (90.0)	SS01 Self-control and stress resistance (55.0) SS03 Flexibility (35.0) SS06 Interpersonal understanding (45.0) SS07 Customer orientation (40.0) SS10 Impact/Influence (55.0) SS15 Concern for order, quality and accuracy (50.0) SS16 Initiative-Active approach (55.0) SS18 Planning and organizing (55.0) SS21 Analytical thinking (65.0)	SS02 Self-confidence (20.0) SS04 Creativity (15.0) SS05 Lifelong learning (15.0) SS11 Organisation awareness (0.0) SS12 Leadership (10.0) SS13 Developing others (5.0) SS19 Information exploring (15.0) SS22 Conceptual thinking (30.0)
Generic hard skills	GH1 Legislative/regulatory awareness (85.0) GH2 Economic awareness (80.0) GH3 Basic competencies in science and technology (95.0) GH4 Environmental awareness (75.0) GH5 ICT skills (90.0) GH6 Knowledge of foreign languages (75.0)		
Specific hard skills		SH011 Administration of information and documentation records (40.0) SH013 Appraisal and control of quality of raw materials, semiproducts and products (35.0) SH019 Administration of manufacturing and operational records (35.0) SH043 Control of production processes and product parameters (35.0)	All specific hard skills except SH011, SH013, SH019 and SH43, which are semi transferable. For the identification of specific hard skills with low transferability see Appendix G.

Source: Authors.
Note: Numbers in parentheses indicate the level of transferability; they show the share of sectors (from total of 20) in percentages, where individual skills are relevant for at least three occupations.

Nonetheless, it must be emphasised that transferability of skills as presented in Table 2.5 is significantly affected by occupations representing various groups of sectors. The occupations were selected mainly from ISCO major classification groups 4 - 9 (see Appendix 7.3). The **selection of mid-level and low-level occupations led to identification of skills including creativity, leadership, information exploring and other soft skills as having low transferability**, because these skills are not often required in the selected occupations. **Selection of occupations from ISCO major classification groups 1 - 3 would change these results significantly**. It can be assumed that widening the current sample of 219 occupations with emphasis on ISCO major groups 4 - 9 to include all occupations would lead to the identification of soft skills with high or moderate transferability. It can be said that the structure of occupations selected for the analysis places the results in their proper context.

Box 2.11: Skills transferable across the economy, example

Let us assume that decision-makers intend to support the development of the economy in general. One possible measure is to support the development of skills with high transferability (see Table 2.5) through subsidised education/training in the business sector and/or within the framework of the educational system. A doubling of the effect of the development of highly transferable skills, i.e. transversal skills, can be seen. First, highly transferable skills are required by many occupations in various sectors as a precondition for high-quality work performance, so it can be assumed that developing these skills will increase efficiency at work. Second, the applicability of the above-specified skills to different occupations across the whole economy will facilitate mobility of the labour force as well as adaptability to structural changes.

Although the results presented in Table 2.5 are significantly influenced by selecting occupations mainly from ISCO major classification groups 4 – 9, they conform relatively well to the opinion of business experts on general transferability of different skills, as can be seen from the comparison of Table 2.5 and Box 2.12.

Box 2.12: EU survey on skills transferability (Question 7)

Skills with high and moderate transferability across the whole economy and within individual sectors were identified on the basis of the responses of 185 experts from companies. They were asked to mark skills they considered easily transferable between different occupations. The following results are based on their personal opinions and not on any calculation of transferability on the basis of exact data.

Soft skills:
- high transferability: communication, problem solving, planning and organizing, flexibility, co-operation with others, self-control and stress resistance, and creativity;
- moderate transferability: customer orientation, concern for order, quality and accuracy, self-confidence, lifelong learning, interpersonal understanding, leadership, analytical thinking, achievement orientation, initiative - active approach, autonomy, organisation awareness, conceptual thinking, developing others, information exploring, and impact/influence (all soft skills which were not identified as highly transferable).

Generic hard skills
- high transferability: knowledge of foreign languages;
- moderate transferability: ICT skills, economic awareness, environmental awareness, basic competencies in science and technology, and legislative/regulatory awareness (all generic hard skills which were not identified as highly transferable).

Specific hard skills:
- high transferability: *none;*
- moderate transferability: Administration of information and documentation records, Preparation of documentation and information materials.

As was emphasised by respondents, it is very difficult and sometimes even of doubtful relevance to look for skills transferability in general, i.e. across the whole economy, since there are significant differences between sectors and/or occupations. High level of aggregation leads only to scratching the surface of the problem or establishing a "general truth" with limited potential for practical application and significant positive results. Moreover, analysis at the level of individual sectors, rather than at the level of the whole economy, provides necessary information on transferability of specific hard skills (the basic requirements for getting and/or keeping a job in those sectors). For detailed information on transferability of skills within different sectors that can be compared with the results in Chapter 2.1.4, see Appendix 1.5.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

2.2. Future skills needs and skills transferability

The identification of future skills needs can generally be based on quantitative or qualitative approaches. The former is represented by quantitative projections of future supply of and demand for skills, e.g. CEDEFOP projections of qualifications needs (CEDEFOP, 2009a; CEDEFOP, 2009b), while the latter is focused more on the qualitative description of future skills needs without any quantifications; e.g., 18 EU sector studies published in 2009 (European Commission 2009a).

At EU level, both approaches have been under development over the last few years. The research team formed by the Institute for Employment Research at Warwick University, Cambridge Econometrics, Research Centre for Education, the Labour Market (ROA) at Maastricht University and Alphametrics Ltd., develops medium- to long-term skills projection at EU level for CEDEFOP, broken down by country, sector, education level and occupational groups. EU sector studies provide an outlook on key skills required in selected sectors of the economy, for respective jobs based on different scenarios.

Table 2.6: Analysis of forecast approaches and their application

	CEDEFOP forecast	18 EU sector studies
Coverage	41 sectors covering the whole economy (NACE rev 1.1)	34 economy sectors (NACE 1.1) and approximately % of total employment
Forecast period	2020	2020
Scenarios	Base, Optimistic, Pessimistic (based on scenarios of recovery from the economic crisis)	Up to four scenarios per study
Skills analysis	None (skills represented only by level of education)	Soft skills, generic hard skills and knowledge' in some studies also specific hard skills
Occupations analyzed	ISCO 2-level (27 occupational groups)	Selected ISCO 1 to 3-level (usually 8-12 occupational groups)
Impact of economic crisis	Taken into account	Not embodied (except for the study on financial services)

Source: Authors.

Since CEDEFOP forecasts use educational levels or occupational groups as proxies, information on actual types of skills needed is provided mainly by 18 EU sector studies. These studies identified several emerging skills/competencies for the year 2020 (Oxford Research, 2010):

- **social/cultural:** intercultural skills, team work, self-management, entrepreneurship and innovativeness;
- **technical:** ICT and e- skills (both at user and expert level), skills/knowledge related to new materials and new processes, health and green skills;
- **managerial:** intercultural management, international value chain management, international financial management, green management;
- **multiskilling and new combinations for skills and competencies.**

Unfortunately, this output does not provide any information on transferability of identified emerging skills across economic sectors, occupational groups and the economy as a whole. This information is available in the meta-analysis of EU sector studies (Balcar 2011), whose methodology and detailed results are contained in Appendix 4.

Box 2.13: Knowledge and skills' transferability in 2020, methodology

The meta-analysis is based only on mutually comparable EU sector studies and covers 11 of 18 sector studies. In the relevant sector studies, 98 skills profiles (covering 12 different occupational groups) were described in total. Each skills profile contains information on the future needs of 29 competences and skills for 2020, which were common to all 11 sector studies. (The information on the future knowledge and skills needs used the values "yes" or "no", which were interpreted as 100 per cent need of the knowledge or skill in the future for the value "yes" and 0 per cent need of the knowledge or skill in the future for the value "no"). This approach enabled us to quantify transferability of emerging skills. The meta-analysis distinguishes 3 levels of transferability:

- high transferability (66.6 - 100.0 per cent of occupations/sectors);
- moderate transferability (33.3 - 66.5 per cent of occupations/sectors);
- low transferability (0.0 - 33.2 per cent of occupations/sectors).

The analysis of transferability of emerging skills reveals that **flexibility, communication, e-skills, intercultural skills and language skills will be highly transferable across the whole labour market** in 2020. It is obvious that skills needs and their transferability or applicability, will differ across economic sectors and occupational groups in 2020. This has led to the quantification of future transferability of emerging skills for individual sectors and occupational groups; see Table 2.7. (The Table presents only results for selected sectors and occupational groups. Full results are in Appendix 4.)

Table 2.7: Highly transferable skills within selected economic sectors and occupational groups

Sectors	Highly transferable skills within economic sectors (across occupation groups)
B. Chem., pharm., rubber & plastic products (NACE 24, 25)	E-skills (97.5), Flexibility (95.0), Team working (87.5), Language (85.0), Intercultural (85.0), Legislative, regulatory (66.7)
D. Computers, electronic and optical products (NACE 30, 32, 33)	E-skills (100.0), Flexibility (100.0), Stress and time management (72.7), Team working (68.2), Communication (68.2)
H. Transport and logistics (NACE 60, 61, 62, 63)	Legislative, regulatory (100.0), E-skills (100.0), Intercultural (96.9), Communication (93.8), Language (93.8), Process optimizing (76.9), Flexibility (71.9), Analytical skills (70.0)
I. Post and telecommunications (NACE 64)	Flexibility (90.0), Stress and time management (75.0), Understanding suppliers and customers (67.5), Process optimizing (67.5)
Occupation groups	**Highly transferable skills within occupation groups (across economic sectors)**
I. Managers (ISCO 12, 13)	Understanding suppliers and customers (100.0), Business development (100.0), Trend setting / spotting (100.0), Communication (90.9), Language (90.9), Intercultural (90.9), Flexibility (90.9), Strategic and visionary (90.9), E-skills (86.4), Change management (86.4), Networking (81.8), Marketing skills (81.8), Stress and time management (77.3), Legislative, regulatory (68.2), Creativity (68.2), Planning (68.2)
VIII. Clerks (ISCO 4)	E-skills (90.9), Flexibility (90.9), Communication (86.4), Team working (68.2), Language (68.2), Intercultural (68.2), Planning (63.6)
X. Craft and related trades workers (ISCO 7)	Flexibility (90.9), Technical / product knowledge (86.4), Communication (86.4), E-skills (68.2)
XII. Elementary occupations (ISCO 9)	Flexibility (81.8), Communication (72.7)

Note 1: Results for all relevant economic sectors and all relevant occupational groups are contained in Appendix 4.

Note 2: The number in parentheses represents percentage value of the share of occupational groups (in the case of transferability within the sector) or percentage value of the share of sectors (in the case of transferability within occupational groups), where individual knowledge and skills are applicable.

An EU survey on future skills and their anticipation reveals a strong tendency to extrapolate past trends in skills needs development and use them for future projections. Combining extrapolation of past developments with collection of information from other sources leads to similar results as those of the above-mentioned EU studies. For more information, see Box 2.14.

Box 2.14: EU survey on future skills and their anticipation (Questions 9 - 13)

Skills requirements imposed on the labour force change over time, sometimes due to application of new technologies or organisational changes, sometime due to the creation of new tasks or even jobs. **Employers mainly mention ICT development as a key driver affecting their demand for skills** over the last few years. Information technologies have significantly **changed the set of competencies required in many jobs**, both in industry and services. The second most important change is the **growing demand for language skills**; not just for major languages like English or Spanish, but also for less widely-spoken ones depending on relevant markets of individual companies. This change is accompanied by an increased demand for inter-cultural skills necessary for managing international teams or even international branches of global companies. **Some companies also mention soft skills**, mainly leadership, and commercial skills like client orientation, relationship building, problem solving, etc. Growing competition increases the importance of **skills related to buying, selling and logistics**. It can be said that these trends have been stronger in the countries of Central and Eastern Europe, where the transition from industry- or agriculture-oriented economies to higher value-added services has been taking place.

These trends were confirmed by **educators** (in both interviews and a questionnaire survey). More than ¾ of **educators** identified ICT skills/e-skills and knowledge of foreign languages in the case of generic hard skills, and communication, problem solving, lifelong learning and co-operation with others in the case of soft skills, as skills for which development through education and training is in increasing demand. The survey also revealed relatively **high adaptability among educators** because at least 60 per cent of educators who participated in the survey are now providing training on all of the above-listed skills. Development of ICT skills/e-skills, foreign languages, communication, problem solving, i.e. skills with the highest increase of demand, are currently the most widespread.

Employers usually evaluate current skills needs. They do it in-house (especially larger companies) or hire independent consultants or employment agencies (all companies). **Evaluation of future skills needs is rather unusual**, but some large employers or consulting companies try to manage or analyse forthcoming demographic problems (age gaps) or low availability of specific skills. **The public sector** (sometimes in co-operation with **educators**) is **usually responsible for the development of forecasting tools for skills needs** at national or regional levels, but those systems tend to cover occupational groups rather than specific occupations or even skills. These are (in most cases) **developed by research institutions** in the private sector or in education. National skills frameworks are being established in many countries, and they are developed in close co-operation with employers and/or professional associations. Many countries invest in improving the systems for skills analysis and forecasting and linking them more closely to educational provision.

Both employers and the public sector often see future skills requirements as a question of "more of the same". This means that trends identified in the previous period are expected to continue to shape the labour market in the future. **ICT skills take precedence**, because technological development will facilitate their efficient use in a growing number of occupations, tasks and areas. The number of occupations which will require advanced ICT user knowledge will grow. **Skills linked with specific technology** (specialised skills in chemistry, biology, electronics, nanotechnology, etc.) will become increasingly important, but for a relatively small group of expert occupations. Environmental technologies will trigger further growth in demand for skills in that area. Other future trends identified include **business and management skills**, even in middle- and low-level occupations. This will be connected with a growing need for **inter-sector knowledge**. **Language and cross-cultural requirements** will grow in importance. Some employers also mention **process management, skills related to teleworking** (autonomy, ability to work and solve problems independently) and **some soft skills**. It is interesting that **moral values like ethics and loyalty** were often mentioned by employers as important "competencies".

In response to the changing demand for skills, **many employers are working on improving their human resources development systems**. Respondents mentioned, among other things, **tools for identification of key skills/competencies for occupations**.

The **tools and methods most often used by enterprises for anticipation of future skills needs** are various kinds of analyses, regular monitoring of trends in relevant sectors and using the services of specialists or consultancies. Respondents also referred to customer needs and predicted that technological changes would play a crucial role. **The public sector** mainly uses labour market analyses and long- or medium-term prognostic studies, e.g. regional prognoses on occupational or skills trends, regional employment observatories (annual survey on current and future needs of employers, branch-specific growth prognoses, demographic development, employment and unemployment rates) and analysis of new trends in technology. **Educators** rely on various analyses, as do enterprises and the public sector, but they also try to reflect changes in education and perform surveys aimed at ascertaining the demands on education. (For information on tools for anticipation of needs, see Appendix 1, Question 13.)

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

2.3. Conclusions and recommendations

The following outcomes of this Chapter are the most valuable contributions to further development of the EU skills-based HR system:

Classification and description of skills, especially in the case of transversal skills, i.e. soft skills and generic hard skills: A general understanding of the proposed classification of skills, including their description, has been confirmed by the EU survey respondents.

Recommendation

- The classification and description of skills should be taken into consideration in EU initiatives related to common taxonomy of skills, competencies and occupations, particularly in ESCO.

Skills profiles for 219 occupations developed in conformity with a **"T-shape" style**, recommended by the New Skills for New Jobs group of experts, **which combine transversal skills** (horizontal bar) and **job-specific skills** (vertical bar).

Recommendation

- *The skills profiling tool **can be used for description of all occupations in all sectors** in the future using the transversal skills as a common base and the job-specific skills description as a guide for their further development. The tool can be **transferred into an interactive on-line platform** in order to enable both easy updating of general **"T-shaped" occupational skills profiles** and their easy **customisation** according to users' needs (to reflect the specifics of regions, sectors, companies).*

- *Generic occupational skills profiles should be designed in relation to different **levels of skills** required in individual occupations. It is recommended to define and use scales of levels and to select the **entry level** expected from new hires and first job seekers in their respective occupations in order to create generic occupational skills profiles. Detailed specification of skills levels can be customised for transfer from generic to specific skills profiles in various companies or countries and the following two levels should be added for this process: **adaptation level** expected from workers after their adaptation period (usually 1 year), and **advanced level** expected from competent professionals.*

The methodology for identification of skills transferability between occupations and sectors and its **verification on a selected sample of occupations and sectors**: Despite limitations due to the size of the sample, the methodology proved to be useful for the analysis of skills transferability. The results demonstrate **levels of skills transferability within and across sectors**, relationships between **individual occupations,** and several other relationships which are important for occupational mobility. **Potential for further use in several practical applications** has been revealed which can lead to further development of tools supporting transferability of skills and labour force mobility.

Recommendation

- *The methodology can be used as a **basis for a career-counselling tool** if it is designed for a maximum of both high-skilled and low-skilled occupations in all sectors, transferred to an interactive on-line platform and linked to a system of job demand predictions.*

- *Skills identified as highly transferable across the economy or within sectors should be developed at corresponding levels of educational systems.*

Forecasting future skills needs becomes an extremely difficult task if it is done for a more complex entity than a single enterprise. It requires a combination of sound methods and tools for occupational forecasts together with a standardised description of their skills. **Sector studies** already exist, but provide insufficient information - they cover only a sample of occupations or just wide occupational clusters. Sustainability of this research is another issue - it should be done yearly. The EU methodology for **Employer Surveys** is currently being developed within "Pilot Employer Survey on Skills Needs in Europe", but it may take years to fully implement this tool. **CEDEFOP projections** of skills supply and demand in Europe is another source of information. The projections also face issues that limit their use for identification of future transferable skills. The other important obstacle is the impossibility of taking replacement demand (e.g., job opportunities created by those who leave existing jobs either permanently or temporarily) into account.

Thus the projection allows only for distinguishing between growing, sTable and declining occupations. However, the issue of replacement demand for occupational groups is being examined by the CEDEFOP forecasting project and synergy with this project may be improved in the future. Another issue to be solved concerns skills and their importance in occupational profiles. There is a default presumption that the level and range of skills required for occupations will not change during the period under consideration. This is a serious simplification of the structural changes that affect the labour market. Indexing of skills importance in occupational profiles is another important factor (skills associated with an occupation may have different levels of significance). Skills importance can be indexed by groups of experts (such as sector skills councils) or (in a survey) by a representative sample of employers who employ people involved in the occupations under consideration. The latter option is used in the O*Net project which is developing the core of a European skills indexing tool. **Analysis of future transferability of skills therefore relies on multiple tools that are either already used or currently under development. These tools have to be used in combination in order to compensate for weaknesses in each approach and provide detailed and reliable information**.

The above-described outputs serve as important **information inputs** for either development of existing systems or creation of new ones for increasing adaptability of the economy by supporting companies' HR processes, career counselling and relevant skills development. These systems, however, have to be built on a **solid theoretical basis** as regards definitions, taxonomy of skills and other relevant elements, which should be connected to the specific **company sector** as the main factor influencing their application.

Recommendation

- *Possibilities for **synchronisation of project outputs within existing frameworks and initiatives** at European level (e.g., EQF, ESCO, EurOccupation) should be examined. Great potential for use of the methodology and tools presented also lies in their application for processes of **recognition and validation of prior formal and informal learning**. Application of the outputs in this way may require further research in corresponding fields.*
- *The methodology and tools should be **further tested in 3 or 4 sectors** where they would be applied throughout the whole range of occupations, i.e. all occupations would be described, the profiling methodology would be applied in combination with tasks to be performed, and implications for education sectors would be further specified, as would tools for career counselling and job matching. Also the views of jobseekers should be analysed and taken into consideration in this further research in order to develop easy-to-use and comprehensible tools.*
- *The methodology enables the creation of **generic occupational profiles** (defined at EU level) that **should be made available for customisation in different contexts** (national/regional/sector specifications) through the **development of a flexible and dynamic tool which is able to provide a reflection of the changing situation in the labour market**. **Synchronisation with existing systems and initiatives** at EU level is needed, particularly EQF and ESCO. EU systems should not impose their application by all actors. **Improved HR management in SMEs could be promoted** by the cost-efficient use of generic occupational profiles adapTable to their conditions.*
- ***O*NET and CareerOneStop systems (USA)** are recommended **as a benchmark** for future initiatives by the EU or other actors at national level related to systems supporting occupational mobility, skills transferability and future skills forecasting and which offer an interactive and interlinked set of easy-to-use application tools for all interested users.*

Recommendations are further specified in Chapter 5 of this report.

3. A detailed analysis of the role, importance and involvement of the players concerned

The main aim of this Chapter is to **identify, describe and analyse the role of the actors** in the field of skills transferability support **at European and national levels**. Since **information sources are very scarce** on this topic, a survey of various actors around Europe was undertaken and its results are presented in this Chapter. The role of businesses, different actors from the public and educational sectors, trade unions, players at regional and local levels as well as European Union is discussed below.

3.1. Enterprises

At enterprise level, the initiatives for recognition and assessment of transversal skills are rare, even though they do play a role in the employee selection process. The possibilities companies have to assess transversal skills as part of their recruitment process are limited, since they are time-consuming and often require additional financial and human resources. Very often, it is possible only for large companies to create specific assessment procedures that can be used in such cases.

In the majority of EU countries, **employers' training policy depends on their size.** Whilst companies with more than 100 employees invest in training and skills development, the training policy of SMEs depends to a large extent on the managers and their attitude towards skills development. Businesses are, moreover, **reluctant to pay for skills that employees can use at any other company**, unless their level of technical and specialised (specific) knowledge requires employees with a high level of general/transversal skills. The cost of this investment can be carried by larger firms whose strategy relies on internal labour markets. Access to learning differs depending on previous educational attainment, age and gender, because these factors influence personal attitude and readiness to engage in lifelong learning and acquiring skills. The aim of policy-makers is to support skills and transversal skills development, as well as to create an environment in which it is possible to train employees on the job in a specific industry or sector while at the same time paying attention to individualising the learning processes in order to meet the needs of individual employees.

Box 3.1: Tools supporting education/training in companies, example

In France, an important instrument for increasing the training efforts of businesses is a **tax imposed on employers if they do not train their workers**. Every company with more than ten employees has to devote a percentage of its total wage bill to training its staff. If the company is unable to document its training expenses as being equal or greater to the minimum percentage imposed, it must pay the difference between its actual training expenditures and the minimum imposed training expenditures to public-benefit training organisations. The need for centralised and government-controlled continuous training is explained by the (relatively) weak relationships between employers and unions, as well as between employees and the companies they work for. Furthermore, the French state has traditionally played an active role in regulating employment relationships.

Another tool worth mentioning are **sector-specific funds** that can be used for training the workforce (e.g., in **the Netherlands**). This helps businesses to overcome their training dilemmas. A similar model is used in Germany, where the system is administered through the chambers of commerce.

The role of consultancy for skills/transversal skills development should be emphasised. Many of the modern management theories, including those concerned with human capital development in companies are conveyed by consultancies. They offer new HR systems as well as training to top managers tailored to the needs of their companies; mainly large companies which can afford such services.

These findings were validated in the EU survey by respondents from business, as Box 3.2 shows.

Box 3.2: EU survey on the transferable skills development in enterprises (Question 14)

Companies are the most important actors in acquisition, development, recognition and assessment of transferable skills **in all European countries**. This is done in a systematic manner, especially in large and medium-sized companies whose organisational structure includes human resources (HR) departments, or at least an HR specialist. In small companies, transferable skills are acquired mainly through experience on the job. It seems that the **existence of HR in a company provides a fertile ground for developing transferable skills**.

Companies are often ambivalent towards systematic acquisition of transferable skills. On the one hand, they understand that these skills can improve work efficiency, which benefits the company as a whole. On the other hand, such systematic training promotes willingness to leave on the part of the employee, which the company does not want. Against this background, acquisition of transferable skills is often performed in a muted way, with some, but not all employees targeted.

Large and Medium-Sized Companies with HR Staff: Acquisition of transferable skills for top management in large or medium-sized companies mainly occurs **through use of external consultancies**. For HR departments, they are very important partners. They **provide HR staff with tools and models** that can be used for assessment, acquisition, development and recognition of transferable skills. Frequently, **consultants also support HR staff in adapting** such tools to meet specific needs of the company. **New developments** are also **introduced through consultants**. A widely used approach in companies appears to be **competency models;** e.g., the tool box of the Universal Competence Framework (see also good practice No 26 in Appendix 2). Commonly, consulting companies are not specifically brought in for the introduction of tools for acquiring transferable skills. Instead, they assist re-organisation or re-structuring processes and identify which transferable skills are necessary. They then deliver the tools for obtaining the skills, or conduct training sessions. In this sense, personnel development is part of a larger organisational development process.

Small-sized companies without HR Staff: Staff development presents a serious challenge for small (and micro) enterprises. HR management know-how and personnel resources are mostly insufficient. As became clear during the interviews, such companies are scarcely aware of the positive effect of transferable skills on their business. This lack of awareness means that appropriate skills are not systematically developed. It is quite a common attitude to believe that required skills (regardless of their transferability) can be developed within business processes and that **practical experience is sufficient**.

A common feature in companies of all sizes is that when companies introduce new technology, there is frequently a need for technically-oriented training of technology-related skills. The training is conducted within companies, very often by external consultants or suppliers of the technology. The view in a lot of companies is that "ordinary" **employees learn from each other**, without requiring systematic training. **This applies very strongly to the area of transferable skills**.

Only a handful of companies take advantage of the training on transferable skills offered by chambers of commerce, trade associations and other public bodies. These are not entirely comparable to what specialist consultants or professional trainers may offer. Most large or medium-sized companies are largely or completely, unaware of such offers. Small and micro companies are much more aware of them, in particular those from the Chambers of Commerce. They regard them, however, as not particularly relevant, since they see no urgent need for the acquisition of transferable skills.

A serious challenge confronting companies of all sizes relates to assessment of highly transferable (transversal) skills in new hires. Since only a few of the transferable skills are certified - above all, languages and ICT – it is difficult for companies to identify quickly whether the skills possessed by the applicant are sufficient or not. HR departments conduct appropriate assessments of applicants for middle and upper management positions. Other levels are not catered for in this way due to insufficient resources. In small companies, there are less possibilities for assessing whether such skills are actually there or not. Against this background, companies **expect more certification to be made available so that required standards can be specified.**

The phenomena described above seem to be present in all European countries and companies. The limited sample does not permit any clear conclusions to be drawn about national differences. However, it appears to be quite possible to say that there are no substantial differences as the acquisition of transferable skills, for the most part, occurs outside of the formal educational systems.

It can be summarised that **acquisition of transferable skills occurs mainly in the corporate world, above all in large and/or medium-sized companies. Private consulting companies are the largest impulse providers** for the continuing development of tools and practices. The initial education actors are more or less detached from this. The reasons may include little awareness of the importance of transferable skills; no available curricula or possibility for certification; no perspective of being able to develop these tools and practices in an economical way, etc. **There is a perceived need to increase the systematic co-operation between these actors** and create an awareness of and provide a basis for exchanging tools and best practices. **Such initiatives should be undertaken locally.**

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

3.2. Public sector

At **national level**, there is a division of responsibilities between public institutions related to education and employability. Sometimes this can result in **competing/counteracting systems** and methods for identifying, assessing and recognising non-formal learning. The goal of these institutions is mostly the same: rendering the system of vocational education and training more flexible and inclusive by recognising alternative paths of knowledge and skill acquisition and linking them to the needs of the labour markets and employers.

Public labour administration and placement offices have specific target groups, whose chances in the labour market they try to boost. These are especially groups whose formal qualifications are either outdated or not up to standard. Among those groups are young people who have possibly dropped out of school; older employees/jobseekers whose qualifications are outdated or have expired; migrants whose qualifications have not been recognised and women who have had a break from work to look after their children. It is the responsibility of such organisations to stress the need of investing in appropriate skills, including transversal skills in order to improve one's employment perspectives. Additionally, the target groups need information about the various opportunities open to them as well as about their personal strengths and weaknesses. These latter needs are met through the profiling tools which most labour placement offices use in order to determine the existing skills of a person and any possible career paths. Based on that, they offer advice as to the best ways of obtaining employment in an area where their strengths lie.

This basic information on the role of labour administration and placement offices can be **enriched by the opinions** of experts participating in the EU survey on transferable skills development in the public sector, see Box 3.3.

Box 3.3: EU survey on transferable skills development in the public sector (Question 14)

Public Labour Administration and Placement Offices Train the Unemployed: Public labour administrations and the placement offices often associated with them are **the most important actors for assessment and acquisition of transferable skills outside of companies**. They possess the relevant tools for assessment and offer targeted training, taking into consideration what businesses need. Especially important here is the **learning of language skills**. Many labour administrations develop **skills profiles** (profiling) with their clients. This is necessary as their target groups frequently have low or no formal qualifications they could present to a potential employer. **Particularly important for the development of transferable skills are the young and older unemployed people**, two groups with specific problems in entering the labour market. The former lack experience, and thus also a set of transferable skills. The latter group often has outdated formal qualifications. Updating transferable skills increases their employability. Other target groups include **migrants** with unrecognised degrees or women whose experience within the family is not accepted as working experience.

Aside from awareness building, some of the public actors provide concrete tools related to transferability of skills that can be directly utilised by individuals and companies to support career guidance and job matching. These tools stem partially from **new competence-based education concepts**. However, survey interviews give the impression that these are quite isolated initiatives. With a few exceptions, there is little indication of systematic and comprehensive efforts in this area in the EU Member States.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The public sector could also have a significant impact on the flow of restructuring and adaptation to the economic crisis, although this potential is not fully used, as Box 3.4 suggests.

Box 3.4: EU survey on public sector activities focused on reducing the global crisis impact (Question 21)

Public sector institutions mainly mentioned various existing educational activities, such as counselling, which are not specifically designed to mitigate the impact of the crisis but the importance of which is nonetheless increasing during the crisis. They use existing programmes aimed at the development of skills, which may include transferable skills, but which were not primarily created as educational programmes directly focusing on transferable skills. Within the framework of existing educational activities offered by employment services centres, educational institutions or development projects, skills can be developed that are generally applicable to various jobs, not just a particular position. Formulation of specialised courses with greater emphasis on transferable skills is also made possible by ESF funds within development projects.

Some programmes directly aimed at reducing the negative impact of the crisis were mentioned, e.g.: "Educate Yourself" in the Czech Republic (under which grants were given to companies that as a result of the recession have had to limit production, for the implementation of training courses for employees who are at risk of being made redundant). The Netherlands indicated that working hours had been shortened to allocate time to training and in Portugal, the Employment Qualifications programme was implemented.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The importance of acquisition of skills, notably highly transferable skills, in order to maintain favourable conditions in the labour market during the period of economic recession and related restructuring is not in doubt. Workers with a substantial range of skills, many of which are applicable in different occupations or even sectors, can respond to new economic conditions more easily. They have the potential to use their skills in other fields of economic activity, occupations or sectors. This potential is significantly weaker for workers with a low stock of skills, including transversal skills.
The role of public bodies, in general, is to create suiTable conditions for the development of skills, and especially transversal skills that are not usually developed by companies, as discussed earlier. Various approaches and methods related to the development of skills and transversal skills, i.e. support of flexibility and adaptability of individuals, used in different EU countries are described in detail in Appendix 9.1.

3.3. Education sector

It is assumed that there are **complementarities between the formal education and training systems**, which would account for the **differences in the national responses to transferable skills and skills transferability**. **Colardyn and Bjornavold (2004)** have created a typology taking into account different approaches towards identification, assessment and recognition of non-formal learning, which was adjusted according to the needs of this study to distinguish the following clusters of countries:

- Austria, Germany and Switzerland;
- Mediterranean countries;
- Scandinavian countries;
- UK, Ireland and the Netherlands;
- France, Belgium;
- Central and Eastern European Post-Communist countries.

Knowledge of the differences between systems across the EU, including relevant educational and training methods used, is important for the practical development of skills transferability in Europe. Especially interesting are the education systems in which attention is paid to the creation of competence-based curricula that focus on transferability of competencies and their recognition, including transferability of non-formally acquired skills. Description of the basic features of these systems can be found in Appendix 9.2.

Box 3.5: EU survey on transferable skills development in the educational sector (Question 14)

Primary and secondary education organisations have been to date, only marginally connected with the assessment, acquisition, development and recognition of transferable skills. To be fair, they develop some activities, but these are only sporadic and not systematically linked to the corporate world. There is **a significant need for more systematic and more intense co-operation** starting with development awareness of the meaning of such organisations' roles and possibilities.

Universities train their graduates. Students receive specific training or career guidance in order to learn those transferable/soft skills that are required by companies. Alumni who know the corporate world from their own experience are often involved in this process. Some universities work with profile documents which systematically document types of standardised skills.

Academia supports the continuing development of tools and training. Some universities develop tools and make them available to training institutions or directly to companies. Primarily, these are assessment and accreditation tools; for example, in France, there is Accreditation of Experiences (VAE), or the profile document in Germany. In combination with this, universities train representatives from the continuing education area or from companies, so that they can also apply and evaluate the tools developed there. However, these remain isolated activities.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

As the EU survey revealed, the system of initial education is heavily criticised all around Europe, despite the differences described above, for its focus on the acquisition of theoretical knowledge and marginalisation of the importance of skills, especially transversal skills. It is also significant that criticism comes from all sectors involved in the interviews, i.e. businesses, the public sector, and even the educational sector. The importance of this issue is underlined by the results described in Box 3.6, with opinions of respondents from different sectors very similar.

Box 3.6: EU survey on initial education/training (Question 18)

The representatives of the corporate sector (companies) highlighted in particular that **initial training does not provide students with sufficient practical skills** necessary for immediate work performance required by the employer and the labour market. They criticised the **weak link between the education and business environments and the labour market**, which does not comply with the requirements of employers. Initial training is more focused on the acquisition of theoretical knowledge, and lacks the skills development for practical use and further development. Initial training is too theoretical; it does not develop independent thinking, neither does it teach proper working skills nor the ability to work with information. Graduates lack expertise and practical knowledge, and they are not sufficiently equipped to exercise autonomy, teamwork, and problem solving in their professional as well as personal lives.

Representatives of the **public sector** hold practically identical opinions. **Initial education is criticised** for its emphasis on theory and lack of focus on the importance of transferable skills. It is desirable to achieve **orderly development of transferable skills and soft skills** and to equip graduates with skills and abilities consistent with the needs of employers, and which facilitate their integration into society (social participation). Education needs to be linked to practice in order to prepare young people for real-life conditions and the world of work. **Developing soft skills in the process is essential for future success**.

Surprisingly, initial training is also criticised by the representatives of educational institutions, especially for its overwhelming focus on the acquisition of knowledge and **lack of attention to the development of transferable skills, soft skills** and the ability to use them (lack of learning methods that require more active participation of students, promoting critical thinking, etc.). Education generally fails to meet the demands of the labour market, disregarding the requirements of employers in its curricula, which in turn causes problems when employers face a shortage of manpower with appropriate knowledge and skills. It is also important to take into account individual needs of citizens and give them more responsibility for their development, such as by providing **career guidance**.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The EU survey also reveals a request for balancing the accumulation of theoretical knowledge and practical skills, including transversal skills within the framework of continuous education/training. This should be done with the aim of strengthening individual employability. More detailed information on this issue can be found in Box 3.7.

Box 3.7: EU survey on continuous education/training (Question 19)

From the perspective of **employers (companies)**, continuous education **should be adapted** to the needs and demands of the labour market, **focused on transferable skills, soft skills development and certification systems** of acquired knowledge and skills. Furthermore, there are also demands to ensure and guarantee **high quality training**.

The representatives of educational institutions **do not detect a focus on transferable skills in continuous education** which should - in addition to theoretical knowledge - be adequately developed. There is a need for a **more precise definition and understanding** of the development of transfer-

able skills in adult education. **Transferable skills must be developed together with theoretical knowledge** and the demands of the labour market have to be taken into account in training. Furthermore, there is a pronounced need to ensure the **quality** of what education offers, **recognition of skills and abilities**, **support and motivation** of citizens to take part in learning and raising interest among employers (show case studies, financial incentives, etc.).

Representatives from the **public sector** institutions describe similar problems in further education. These include failure to link learning with practice, people's reluctance and lack of awareness of the need to carry on learning and develop skills, insufficient adaptation of what education offers to the needs of individuals, non-systematic development of further skills, and lack of attention to transferable skills and to recognition of acquired skills and abilities.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

Respondents not only described problems in initial and continuous education/training (see Boxes 3.6 and 3.7), but they also recommended future steps in these areas, presented in Box 3.8.

Box 3.8: EU survey on recommendations for initial and continuous education/training (Question 20)

Recommendations by representatives of companies correspond to the previous evaluation of deficiencies in education. In their view, it is necessary that the development of **professional qualifications correspond to the need to develop the required skills**, where - in addition to theoretical knowledge - **soft skills** are sought after, specifically organisational and communication skills, teamwork skills, problem solving, planning and implementation of personal development. From the initial stage of training, certain skills must be developed, especially independence, flexibility and the ability to adapt. **Education and business need to cooperate closely** to ensure a steady supply of workers equipped with relevant skills that would meet the high requirements of advanced societies, with intense competition for jobs.

Recommendations of the respondents representing **educational institutions** also correspond to the previously-raised issues. **Transferable skills need to be developed at all levels of education**, linking theory with practice to reflect the demands of the labour market. Knowledge must not only be theoretical but also practical, with **soft skills playing a major part**. Individuals have to be sufficiently aware of the necessity of and positive impact associated with the acquisition and continuous development of knowledge and skills. Other requirements concern the **creation of a system of transferable skills and related certification**. Further recommendations are aimed at **improving teaching methods in order to better serve the needs of individuals**, **presentation of established good practices** by other organisations for the purpose of transfer and dissemination, and the **promotion of quality learning**.

Similarly, representatives of **public sector** institutions identified the necessity of linking education more closely with practice, **learning practical skills built on theoretical knowledge**, and developing key skills, and **soft skills** in particular. It is necessary to focus on **raising awareness** of the importance of transferable skills and their development, which must be systematic from the earliest stages of education. It is also necessary to enhance citizens' awareness of the necessity of skills development and motivation of people to take part in further education. Mutual co-operation between all the key actors involved in the learning process is recommended.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

Improved soft skills development was one of the recommendations made by representatives of companies, the public sector and the educational sector for initial and continuous education. An example of good practice concerning this issue was identified, see Box 3.9.

Box 3.9: Competencies for the Labour Market, good practice (No 6)

"**Competencies for the Labour Market**" from the **Czech Republic** is a unique programme focusing on the area of transversal soft skills. It was initiated by employers' demand for introducing soft competencies into the initial and continuous learning process. At the beginning, a methodology was developed to identify and describe 14 soft competencies most frequently required by employers. They were then integrated into the "Competence Model of the Moravian-Silesian Region". Based on that, a sophisticated and easy-to-use set of 14 training programmes, each of them containing 3 levels, was developed and tested. In 2006, the initiative was validated as a good practice example by the European Commission within the IDELE project. Since then, the methodology and programmes have been adapted and transferred in co-operation with partners in 12 EU Member States and Turkey, and the number of partners is growing. A methodology for soft skills description is being negotiated to be used in the next stages of the National Qualification and Occupation Systems in the Czech Republic.

Note: For detailed information on examples of good practice, see Appendix 2.

3.4. Regional and local players

Regional and local players, together with businesses, are one of **the most important actors** in the labour market initiatives relevant to the transferability of skills. The main reason for this is the prevailing **regional and local mobility** of the workforce in EU Member States and, next to this, the regional and local **competence for development of partnerships** of key players to deal with complex issues of the labour market. Regional and local employment initiatives and partnerships are very important strategic tools for efficient interventions in the labour market. They operate in the majority of

OECD countries, e.g. Territorial Employment Pacts in Austria and other countries; RESOCs in Belgium; Workforce Investment Boards in the U.S., and many others. There are **three main aims** of their activities in the labour market: **economic development, education and social inclusion** of specific target groups. Often, their focus is on a combination of all three. **Some partnerships directly focus on development and transferability of skills.** For more information on types of partnership and description of examples from across Europe, see www.oecd.org/cfe/leed/forum/partnerships.

Box 3.10: Partnerships, example

Methodological and organisational support, global networking and exchange of good practices for these partnerships are provided by the OECD LEED forum on partnerships and local governance in co-operation with the European Commission. Among other things they have produced a report on "Designing Local Skills Strategies" which offers a valuable guide for all regions interested in this issue. One of the most inspirational good practices are the Michigan Skills Alliances in the USA (see www.michigan.gov/rsa). They allow employers to directly provide crucial input to educators and community partners that should help shape and coordinate skills solutions to specific industry or regional workforce needs. Another inspiring initiative is the area skills-based strategy, entitled the High Talent Initiative in Shanghai, China.

3.5. Trade unions

Participation of social partners varies in the EU countries and is **concentrated at policy level**. Trade unions are involved mainly in policy development within the framework of national training systems, national qualification frameworks and standards and legislative provision at national level. At sector level, they play an active role in **sector councils**, setting occupational standards by defining occupational training needs and the structure, contents and duration of courses. More rarely, they are directly involved in the assessment process as members of examination boards. Examples of direct union involvement in the delivery of training came from Denmark and Austria. The trade union representatives influence training policy and issues related to internal and external occupational mobility of their members in the process of **collective bargaining**. Several examples of the role of social dialogue and collective bargaining related to skills development in the CVET can be mentioned. The idea of an "individual right to training", enabling employees to receive training throughout their careers emerged in the **French** debates at the start of 1990s. The trade unions now accept the individualisation of rights as long as career development is collectively guaranteed for employees. The new Individual Right to Training (DIF) confirmed in the May 2004 law is intended to be a key career tool for employees (EIROnline 2009a). For **Germany**, the recent crisis has been one of the worst in the country's history. Within the metal and electrical sectors around 200,000 jobs were lost along with an additional 220,000 job losses for temporary agency workers. An improved short-time work programme, agreed by IG Metall and work councils, has been the most important instrument in preventing further job losses (IG Metall 2010). In the **U.K.** the government established the Union Learning Fund in 1998 which funds unions´ learning projects and the nomination of Union Learning Representatives. In May 2007, the Confederation of British Industry, the TUC and the Department of Trade and Industry launched a joint project to produce best practice guidance to help employers, employees and trade unions to foster workplace dialogue on training and skills (EIROnline 2009b). The emergence of **European Works Councils** (EWCs) represents a major innovation in transnational industrial relations institution-building due to EWC's involvement in transnational corporate restructuring. Through EWCs, workers are informed and consulted at transnational level by management on the progress of businesses and any significant decision that could affect them. In countries where unions are weak, their involvement in training issues is less pronounced. The limited involvement of social partners can be explained by the fact that in many cases, recognition of non-formal learning does not result in better pay or career advancement.

3.6. European Union

The EU is continually active in continuous education and training issues, which can most clearly be seen in the **creation of various reference frameworks** at supra-national level and policy learning networks of national actors. **The European Qualifications Framework** serves as a starting point for establishing National Qualifications Frameworks (NQF) which are the key instruments for restructuring and reforming the education, training and qualifications systems. They have been fully implemented in only a few countries (Ireland, Malta, France and the UK), but other countries are in the process of fully incorporating these frameworks into their national systems. Thus, the NQFs bring together both the European perspective and national goals.

Additionally, supra-national discussion of the role of transferable skills in learning economies plays an important role in raising awareness of the necessity to improve the framework for acquiring and developing transferable skills at company and individual levels. The **Agenda for new skills and jobs** and the **Digital Agenda for Europe** are key initiatives of the European Commission in this field. From 2012 the Commission expects to make available tools such as an **EU skills Panorama** (for forecasting of skills supply and labour market needs), the **European Skills Passport** (a record and presentation of the skills acquired throughout life), a reformed **EURES** network (matching and placement implemented by employment services in the EU), etc. The **ESCO initiative** should play a major role in further development and wide acceptance of a common taxonomy for skills, competencies and occupations and its use in relevant applications.

3.7. Evaluation and co-operation of key players

The EU survey on key players in transferable skills development has made it possible to evaluate co-operation between various players in the transferable skills area, i.e. information and consulting, education and training, assessment and recognition, as Box 3.11 shows.

Box 3.11: EU survey on key players in transferable skills development (Question 15)

The analysis focuses on players whose participation in transferable skills development (provision of information, education and assessment) or its efficiency was evaluated as above average. Subjects whose participation in these services and their efficiency were both below average, were considered as not relevant. The following conclusions concerning the role of various players in transferable skills development were reached in accordance with the prevailing opinions of respondents; opinions had to be the same in the case of at least 2 out of 3 groups of respondents (respondents were from the business sector, the public sector and the educational sector). For more information see Appendix 1, Table A1.6 or Question 15.

Analysis of the results shows that in the field of provision of information and consultation on transferable skills, colleges and universities, private and public institutions for further training and education, companies and research institutes are the most important subjects which are both active and efficient in providing the service. Chambers of commerce and industry, together with guilds are perceived as subjects with potential for providing these services; i.e. they are efficient, but not very active. A problem was identified in the case of public authorities and business and employers' associations and organisations, for whom activity was evaluated as above average, but efficiency as below average.

In the field of providing education and training, colleges and universities, private and public institutions for further training and education, schools and other institutions in the field of secondary education and companies were identified as subjects with a high frequency of providing these services and their efficiency is perceived as above average. On the other hand, business and employers associations and organisations were identified as active, but not efficient.

In the case of providing assessment and recognition of transferable skills, colleges and universities, private and public institutions for further training and education, schools and other institutions in the field of secondary education, and companies, i.e. the same subjects as for provision of education and training, were evaluated as subjects with both above average frequency of services and efficiency. Public employment services and private employment agencies are seen as subjects with high potential in providing assessment and recognition of transferable skills since their efficiency was evaluated as above average, but their activity in this field falls below the average. Public authorities and business and employers' associations and organisations were, on the other hand, evaluated as subjects with above average participation, but below average efficiency.

On the basis of the opinion of respondents from all sectors it can be summarised that colleges and universities, private and public institutions for further training and education, schools and other institutions in the field of secondary education, research institutes and companies are perceived as the most successful in the area of transferable skills development, with public authorities and business and employers' associations and organisations at the other end of the spectrum.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The study identified several good practice examples of labour market actors´ cooperation in the areas related to transferable skills as the following box shows.

Box 3.12: Support of activities leading to transferable skills development, good practice (No 1; 2; 6; 7; 8; 10; 13; 18; 21; 25; 27; 31)

Information and consultation on transferable skills is often supported by competence-based systems focused on description of an individual's competencies required for work performance in different occupations. Some of these systems have been developed in cooperation with various actors, e.g. "**City Service model of competences**" in **Lithuania** (see No 18) or "**National systems for qualifications and occupations**" in **Slovenia** (see No 27) and **the Czech Republic** (see No 7 and 8).

Development of transferable skills (or soft skills as a subset of transferable skills) in cooperation with labour market actors has been identified in good practice examples such as "**Coaching Model**" in **Poland** (see No 21), "**Laboratory for transversal competencies**" in **Portugal** (see No 25) and "**Warwick Advantage**" in the **U.K.** (see No 34). There are also partnership initiatives driven by private companies like "**Training in the field of Service Sciences Management and Engineering**" in **Hungary** (see No 13).

Note: For detailed information on examples of good practice, see Appendix 2.

Key roles of various actors cooperating with companies most often were identified and their efficiency evaluated separately; see Box 3.13 or Appendix 1, Table A1.6 for detailed information.

Box 3.13: EU survey on key players cooperating with companies (Question 15)

Data from the EU survey has made it possible to evaluate the co-operation of companies with other actors in transferable skills development. (This description is possible only in the case of companies that provided answers on their co-operation with others. Respondents from the public and educational sectors provided answers on participation of relevant actors in the process of transferable skills development in their country in general.)

Values in **frequency of co-operation** in transferable skills development (provision of information, education and assessment) and its **efficiency** are colour-coded. According to the relationship between **frequency** and **efficiency,** it is possible to distinguish three different relationships:

- **light blue** refers to **above-average frequency** and **above-average efficiency**;
- **medium blue** refers to **below-average frequency** and **above-average efficiency**;
- **darker blue** refers to **above-average frequency** and **below-average efficiency.**

Subjects	Information and consulting	Education and training	Assessment and recognition
Companies (other companies)			
Business and employers' associations and organisations			
Chambers of commerce and industry; guilds			
Trade unions and related organisations			
Public employment service			
Private employment agencies			
Research institutes			
Public authorities			
Schools and other institutions in the field of secondary education			
Private and public institutions for further training and education			
Colleges and universities			

Since the Table provides detailed information on co-operation of companies with other actors, it is possible to summarise that colleges and universities, private and public institutions for further training and education, and other companies are perceived as suiTable subjects for sTable co-operation, because their co-operation in terms of provision of information, education and assessment is frequent and efficient. Potential for co-operation, i.e. co-operation is efficient but occasional, was identified for specific services (providing information or providing assessment) in the case of research institutes, private employment agencies, public employment services, trade unions and related organisations. There are also players perceived as problematic for co-operation, i.e. frequent but not efficient.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

3.8. Conclusions and recommendations

Enterprises are among the most important **players** in the field of skills and transversal skills development, although they focus mainly on skills applicable (transferable) within the company. It can be surmised that the opportunity for employees to develop their transversal skills as well as opportunities for internal mobility and transferability of their job-specific hard skills **depend on the size of their employer**. This means that employees of small companies and micro-companies are disadvantaged in their access to relevant training and personal development, which can make redundancies especially troublesome for them. **Recognition and assessment of transversal skills in new hires** is more difficult for small companies, although even large and medium-sized companies often carry out these assessments only for high level positions. Companies would welcome certification concerning individual levels of transversal skills.

HR consultants and training organisations play a crucial role as **innovators** and **service providers**. Human resources and management consultants are leaders of innovation in the development and application of new tools aimed at improving companies' competitiveness. As an example, competence models' introduction to HR management can be mentioned.

Recommendation for employers

- *It is recommended that employers cooperate in clusters along the value chain in development of **common competency models for key occupations** and use them for targeted training of their staff. This approach supports integrated development of the workforce within the cluster and enables sharing of resources and reduction of costs related to training activities. **In times of restructuring it enables pooling of the key workforce** available to members of the cluster and, if necessary, it **eases professional transition of workers** within the cluster without wasting of key personnel skills.*

Public employment services are the most important actors for the assessment and acquisition of skills and support of their transferability for the target groups of unemployed people. The most vulnerable group is **older people** (upskilling of obsolete skills and reskilling for new jobs), **first jobseekers** (skills needed to enter the labour market) and **migrants** (language skills, intercultural skills and job-specific skills). Public employment services use a "traditional" portfolio of tools and methods such as individual assessment of skills, career guidance, training of skills and assistance in job seeking but **introduction of new tools and nationwide supporting systems are limited**.

Initial education is the weakest point in the development of skills, both transversal and job-specific. This is a widely accepted opinion among all actors, not only enterprises but, surprisingly, also public sector and educational representatives. The prevailing focus on theoretical knowledge which has little relation to practical skills, an insufficient link between educational curricula and employers' requirements, and insufficient development of soft skills are the most significant weaknesses of initial education.

Recommendation for public and education sectors

- *It is recommended **to start the development of transversal skills at a very early age**, i.e. at nursery or primary school at the latest, and to continue throughout initial and continuous education. **The basic level should be a target as a learning outcome from initial education for all pupils and students.** It is necessary to make sure that teachers have the relevant know-how and can handle their task, i.e. provide a "toolkit" and to train teachers in supporting competence-based learning in order to develop their abilities to use new teaching methods and reflect labour market demands in the teaching practice. **A competency model of transversal skills at European level** is proposed in **Chapter 5** for this purpose. This model can be supported by internationally validated tools such as the "**Competencies for Labour Market**" **good practice** example (see Appendix 2.2, good practice 6).*

Regional and local players are, after enterprises, **probably the second most important actors** in labour market initiatives including those relevant to transferability of skills. The main reason for this is the prevailing **regional and local mobility** of the workforce in the EU and, next to this, regional and local **competence for developing partnerships** of key players to deal with complex issues of the labour market. There are many examples of best practices at this level. However, **not all regions and their key stakeholders are aware of their role** and/or play an active role in development and implementation of regional or local skills strategies.

Recommendations for regional actors

- *Setting up **regional and local labour market observatories** to complement national labour market observatories, is recommended. Based on the fact that a major part of the workforce in the EU is closely connected to their environment and geographical mobility is relatively low, regional and local players can use such a tool for detailed mapping of current needs and forecasting future demand. Relevant information can be collected in close co-operation with companies, and targeted surveys and analyses would add value to them. Such observatories can form, mainly at national level, an "**early warning system**" focused both on **anticipating recessions or large-scale restructuring** and on the **threat of important skills shortages** in the future.*

- ***Territorial Employment Pacts**, as a communication and action platform for stakeholders, enable complex challenges of the labour market that cannot be solved by individual organisations to be dealt with. These partnerships can identify and deal with skills shortages, transfer of skills (employees) in the event of mass redundancies and future skills demand more efficiently. It is recommended to **promote and support this form of partnerships at local, regional, national, and EU levels**.*

Trade unions play an important role in the area of skills development and transferability through their participation in **sector councils** setting occupational standards. The trade union representatives influence training policy and issues related to internal and external occupational mobility of their members in the process of **collective bargaining**. In the event of restructuring and mass redundancies they play an active role in negotiating and implementation of **outplacement programmes**. This role is **missing in small companies and micro-companies** whose employees have more difficult access to development of transversal skills and skills transferability.

Recommendations for public and education sectors

- *Development and implementation of competence-based **national qualification and occupation standards**, prepared in close co-operation with sector councils, including employers, and systems for **accreditation of prior learning** should be fostered by the public sector **in all EU Member States** so as to support acquisition, development, accreditation and transfer of skills relevant for the labour market.*

- *In order to bridge the gap between the world of work and education, **targeted promotion campaigns** are recommended in order to **increase awareness of the importance of skills transferability** among labour market actors. Chambers of commerce and other branch organisations should be used and supported as multipliers among small and medium sized firms. These campaigns should be **linked to dissemination and mainstreaming of relevant tools** and methods supporting skills transferability which have been validated as best practice instruments.*

There are **substantial differences in approach to skills development and implementation of systems concerning transferable skills** at EU Member State level. EU measures in this field have led to positive, but rather slow changes. Smart strategies are scarcely or slowly put into practice.
Since recommendations concerning players (see Chapter 3.8) and tools (see Chapter 4.5) relevant for transferable skills development cannot be separated due to the strong link between them, see also the recommendations in Chapter 4.5.

Recommendations are further specified in Chapter 5 of this report.

4. Analysis of the identification of the tools and methods used to enhance mobility in the labour market through transferable skills

This Chapter is devoted to the identification and analysis of instruments, tools and methods used to enhance mobility in the labour market through skills transferability. According to available sources, improving mobility in the labour market and adaptability to various occupations clearly linked to skills transferability is an issue which has received scant attention and on which few information sources are available. This shows that awareness of this problem is limited. The following description of practices, procedures, methods, etc. which serve to improve mobility in the labour market via skills and their transferability is based on relevant literature and enriched with the results of an EU survey and assorted good practice examples.

4.1. Enterprises

It is necessary to highlight that **employers are mainly interested in developing the internal mobility** of their staff. External mobility, i.e. applicability of their employees' skills to other companies, is usually developed unwittingly, as a by-product of education and training designed in accordance with the needs of the current employer (see Chapter 1.1 and Box 1.8). From the perspective of employers ,(enterprises) usual **tools and methods** for improving internal occupational mobility through transferability of skills of employees are:

- job rotation;
- multi-skilling;
- learning on the job;
- job enrichment;
- job enlargement;
- team building.

Job rotation is a method which enables an individual to move through a series of assignments, giving him or her extensive exposure to the entire operation. Job rotation is also practised in order to allow qualified employees to gain more insight into the processes of a company, and to reduce boredom and increase job satisfaction by providing variety (Mohanta 2010:30). The way a business operates job rotation allows people to take part in different projects and work with colleagues from other branches of the business. A specific type of this approach is to send employees to other branches of the company around the world to learn and understand the global market operations and develop intercultural understanding. At another level of a large company, managers and supervisors are sometimes moved around in a series of planned job rotations. Business owners and operating officers might use a rotation plan so that management personnel become familiar with various sections of the business. Then, when the time comes to fill a vacant position due to retirement for example, there may be more than one candidate familiar with the duties of that role. At the senior management levels, job rotation, frequently referred to as management rotation, is directly linked with succession planning, creating a pool of people capable of taking management responsibility. (The Gemini Geek, on-line)

Multi-skilling is a very efficient method for supporting internal transferability of skills and employees. Employers train their staff to cover a range of different jobs in one workplace (Actu Worksite, on-line). A more common use of multi-skilling is structuring a labour organisation so that workers need to have a range of skills for different projects or related occupations. A multi-skilled worker is an individual who has acquired a range of skills and knowledge and applies it to work tasks that may fall outside the traditional boundaries of his or her original occupation. This does not necessarily mean that a worker develops high-level skills in multiple areas. (AllExperts, on-line). However, the worker can be an effective and productive contributor to the work output in several traditional occupations. Some large organisations are spread out across various industries or national markets. Given the multi-dimensional nature of such organisations, their employees have to make use of multi-dimensional skills. Employees take part in cross-functional training to increase the talent pool. Knowledge sharing is encouraged and formally acknowledged in these organisations. On the other hand, without proper career counselling and training, multi-skilling can backfire. From the skills point of view it is clear that not only must job-specific hard skills be multiplied but that soft skills also play an important role. Flexibility, stress resilience, achievement orientation and learning to learn skills are very important in this multi-skilling environment.

Learning on the job, or learning by doing, is one of the best and most efficient methods for developing competencies. On-the-job learning is defined as the acquisition of skills and knowledge required for the job at the work place. Parts of the sections and goals outlined in learning curricula are to be learnt on the job, in real-life work situations. Empirical studies conclude that 60 - 70 per cent of actual learning takes place on the job, and the remaining 30 - 40 per cent is due to other methods such as reading, observation, etc. (Career-change-mentor.com, on-line)

Job enrichment is a human development strategy based on extension of the range of responsibilities and tasks in a worker's current role. It is an attempt to motivate employees by giving them the opportunity to use and develop a wider range of their skills. Job enrichment includes project assignments, participating in committees or project teams, developing new skills or knowledge as part of an expanded role and rotating temporarily into a position or set of tasks. It can be compared with job enlargement which simply increases the number of tasks without changing the nature of the work. As such, job enrichment is "vertical loading" of a job, while job enlargement is "horizontal loading".

Job enlargement helps to increase the scope of a job through extending the range of job duties and responsibilities. This contradicts the principles of specialisation and division of labour whereby work is divided into small units, each of which is performed repetitively by an individual. Some motivational theories suggest that the boredom and alienation caused by the division of labour can actually cause efficiency to drop. Thus, job enlargement seeks to motivate workers through reversing the process of specialisation. A typical approach might be to replace routine tasks on assembly lines with modular work; instead of an employee repeating the same step on each product, they perform several tasks on a single item. In order for employees to be provided with job enlargement they will need to be retrained in new fields, which could prove to be a lengthy process. (AllExperts, on-line)

Team building is used in a wide range of activities in businesses, schools, religious or non-profit organisations and is targeted at improving team performance. Team building is pursued via a variety of practices and can range from simple exercises to complex simulations and multi-day team building. It is generally related to the theory and practice of organisational development. Team building programmes promote self-development, positive communication, leadership skills and the ability to work closely together as a team in problem solving. As such, it is a very efficient tool especially if it is a component of a team work culture built up in the organisation.

Box 4.1: Development of good transferable skills and internal mobility practice (No 5, 32, 33)

The study has identified a set of good practice examples supporting the assumption that developing transferable skills and supporting internal mobility and talent management of employees is a natural part of HR processes in many businesses. We can highlight internationally recognised HR champions like "**Novartis**" from **Switzerland** (see No 32), "**SV Group"** from the same country (see No 33), and "**People Reviews**" in **Belgium** (see No 5).

Note: For detailed information on examples of good practice, see Appendix 2.

The list of tools, methods and instruments related to skills and transversal skills development within the framework of a company's HR processes may be supplemented with other tools identified during the EU survey on tools for transferable skills and occupational mobility development; see Box 4.2.

Box 4.2: EU survey on tools for transferable skills and occupational mobility development (Questions 16, 17)

Enterprises differ in the complexity of their approaches to the recognition, development and assessment of skills. It is possible to identify two types of company: those having a sophisticated and well designed system for recognition, development and assessment of skills, and those performing these activities intuitively through ad-hoc solutions.

The most frequently used tools for recognition, development and assessment of skills are periodical employee appraisal, feedback and 360-degree assessment, which are perceived as basic. Other tools include balanced score-card, competency based performance review or behavioural event interview (for the recognition and evaluation of soft skills), quality control circle, benchmarking or assessment of capacity. Assessment and development centres were also mentioned as important. One of the respondents mentioned the DNLA tool (Discovery & Development of Natural Latent Abilities) for the measurement of management skills, i.e. "a tool to assess the potential and individual development of leaders/managers and key experts (for the discovery and development of natural latent abilities)".

Some companies do not recognise, develop and/or assess skills themselves but use the services of personnel and consultancy firms such as for assessing and hiring new staff, testing employees, surveying employee satisfaction, etc.

Skills are most often developed through learning-by-doing, which is usually supported by such other tools as reviews, coaching, simulation of job tasks, etc. The skilled worker, in the role of a mentor, is a very important element in this process. Admittedly, developing skills through mentoring can be either purposeful and systematic (if it is a part of an individual development plan and is evaluated regularly), or messy, intuitive, even random. This elementary form of skills development is often accompanied by targeted education/training, which can be internal (in the enterprise) or external (carried out by an external actor) and have different forms such as education, training, workshops, seminars, conferences, meetings and solving concrete tasks by brainstorming or case studies.

According to the representatives of the **corporate sector (companies)**, development of skills with regard to labour mobility is essentially determined by the transformation of job performance requirements. Therefore, in the case of skills development it is necessary to ensure that the requisite skills are acquired, particularly through practical training and in conformity with the requirements and interests of employees, thus ensuring their motivation to acquire the skills. Respondents did not often refer to specific tools, although occasionally, tools such as **multi-skilling, job-rotation, assessment or development centres** were mentioned. The Danish respondent stressed "the importance of **conversations between the managers and employees every year**, where both the manager and the employee can bring up suggestions for training and further development of employees' skills".

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

The awareness of employees with regard to transferable skills development is of equal importance to that of employers. Different approaches of employers to motivating employees to develop their skills are summarised in Box 4.3.

Box 4.3: EU survey on raising the motivation of employees for developing their skills (Question 33)

It is possible to distinguish between three different approaches of employers to raising awareness and motivation among their staff of the need to develop transferable skills:

Enterprises feeling **no need to convince** employees, because they recruit flexible people. The staff must know what is important. Individual development, according to them, is a personal decision ("your development is in your hands").

Enterprises motivating employees **by higher wages and special benefits**. In return, workers are obliged to meet the skills requirements.

Enterprises motivating employees by **creating a good career plan**, setting personal goals, taking part in tasks they like, discussing with the staff the latest innovations and the need for further qualification, etc. Small companies prefer this personal approach.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

4.2. Public sector

Transferability of skills as a concept for increasing employability and helping people to take an active part in the labour market is understood on a general level, and put into practice in some countries. Among the most frequently mentioned instruments and tools are:

- initial and continuous education and training;
- motivating people by various means (financial motivation, career prospects, etc.);
- vocational and activation counselling;
- job-search skills development;
- evaluation, recognition and accreditation of knowledge and skills previously acquired in learning;
- career guidance and job matching systems.

The role of **education and training is seen as pivotal**. Education and training provide a very wide range of people with a good chance of acquiring all kinds of necessary skills or adapting previously acquired skills to new situations. Many models are used to support occupational mobility through skills development, e.g. identification of skills gaps for new jobs, career counselling, development of skills through training for laid-off workers, etc., and many of them are based on local skills needs. For example, there are relevant activities in Italy where local context-based training is used to meet the demands of very homogeneous and relatively close-knit districts and their local labour markets. All such activities can contribute to identifying which skills are applicable (transferable) in the current labour market situation, and help people in searching for new jobs using previously acquired skills. It must be stressed that there is **strong evidence of dissatisfaction of employers in many EU Member States with the quality of initial education** in relation to labour market demand for skills. In spite of many strategic initiatives by EU and at national levels, initial education is still too theoretical and far from meeting employers' expectations (see Boxes 3.6 - 3.8). **Particularly in the field of highly transferable skills, i.e. soft skills and generic hard skills like ICT and language skills, a lot more needs to be done to support employability of individuals.**

Motivating people to develop their skills gives good results as long as it is correctly applied. At the same time, it is quite expensive and demanding and certain procedures are only useful in very limited areas or circumstances, while used anywhere else they fail. However, motivation is still a very effective instrument. **Financial motivation for acquiring all kinds of skills is not the only option, but still the most preferred one.**
Agencies and centres providing **vocational (and activation) counselling** serve diverse groups of people, helping them to identify and evaluate their skills, and teaching them how to improve them. They can significantly widen the range of potential jobs for an individual, and thus inspire people to gain new skills to improve their labour market value or start a new career.

Job-search skills development is **one of the most efficient and frequently used methods for supporting occupational mobility**. Instead of "giving the fish for free" it is much better to teach people "how to catch it". Usually, this method is applied to the unemployed but **it should be trained at secondary school level at the latest**. These job-search skills have already been integrated into school curricula in Denmark.

With regard to tools and methods for improving mobility in the labour market through transferability of skills, special attention must be paid to **systems of accreditation and recognising previous learning outcomes**. These represent combined efforts and initiatives of key players (public sector, education sector and enterprises) on strategic and operational levels. In the majority of European countries such systems have been developed **as combinations of tools and methods that are used to assess learning outcomes**, especially those acquired during the process of non-formal and informal learning. Through accreditation (recognition) processes many skills can be identified, assessed and certified. Skills recognised through this process (and subsequently certified) become a part of an individual's portfolio. The system can be applied in other occupations or jobs which the individual will execute in the future. There are various tools and methods integrated into these systems. Comparing national accreditation/recognition systems, it seems that learning (personal) portfolios, occupational/professional standards and assessment counselling are the most important methods for supporting transferability of skills and improved mobility in the labour market.

Learning (or personal) portfolios are widely used for mapping acquired learning outcomes, mainly competencies and skills possessed by an individual. In some countries, electronic versions of portfolios (e-portfolio) have been introduced. This type of tool simplifies the transfer of skills acquired, even those not certified or assessed by other means. It also protects some (usually specific) skills from being lost during transfer to another job, occupation or sector. The learning portfolios differ in title and usage from country to country, but the described features and impacts are usually the same.

Occupational/professional standards are usually competency/skill-based and can be identified in many countries across Europe as well as globally. Using them helps an individual to find occupations where their skills can be applied. These standards can also provide information on which skills in the individual's personal profile (or portfolio) can be used in the desired occupation and which skills she/he is lacking. Thus the potential skills range of an individual can be significantly enhanced by simply transferring previously gained skills. Although standards differ between countries not only in their description and application but particularly in their origin since there are many authors and responsible institutions, they still cover the features and effects described above which are very likely to be the same.

Combining both these tools (portfolios and standards) can be very useful for promoting workers' mobility. By comparing information gained with these tools, an individual can be directed towards new employment, a new occupation or simply towards a change in her/his labour pathways in the event of restructuring.

Another important tool (method) adopted in some accreditation/recognition systems is **assessment counselling**. This instrument is frequently a part of vocational or training advisory systems. In other instances, it stands alone and is used by the accreditation/recognition system as an important part of accreditation/recognition advisory processes. In this way, assessment counselling is reported as being successful to a greater or lesser extent in many countries. It helps people to identify all kinds of learning outcomes they have acquired, above all skills and competencies. Taking into consideration all skills and competencies that can be transferred and utilised across the labour market, the counsellor can create a comprehensive spectrum of recommended, appropriate jobs. This can be fundamental for inspiring people to start a new career or to improve their working status.

Career guidance and job matching systems are supported by several **national and supranational systems and databases of occupations** and they are seen as another tool that can support transferability of skills within and across economic sectors. These systems can help users to develop job descriptions for hiring employees, to evaluate employee performance or identify training needs. **The usual target users** of these systems are:

- **employers**: easy-to-use descriptions of jobs are especially designed to help small and medium-sized organisations with their HR management activities;
- **students**: job descriptions enable pupils and students to gain an overview of current occupations and related skills. The systems help with choosing an occupation, or show the appropriate path to take in initial and continuing education;
- **jobseekers**: job descriptions are linked to vacancies for people looking for new jobs. Some of them also show information about occupations that are expected to grow rapidly in the coming years and will have a large number of job openings, as well as new, emerging occupations;
- **job centres**: recruitment agencies are able to provide clients with better career guidance. They can evaluate the employment opportunities by comparing the client's skills with job descriptions.

Box 4.4: Career guidance and job matching systems, example

O*NET (USA) is the USA's primary source of occupational information. Central to the project is the O*NET database, containing information on hundreds of standardised and occupation-specific descriptions. The database, which is available to the public at no cost, is continually updated by surveying a broad range of workers from each occupation. Information from this database forms the heart of O*NET OnLine service, an interactive application for exploring and searching for occupations. The database also provides the basis for Career Exploration Tools, a set of valuable assessment instruments for workers and students looking to find or change careers. The Occupational Information Network (O*NET) is being developed under the sponsorship of the U.S. Department of Labour/Employment and Training Administration (USDOL/ETA) through a grant to the North Carolina Employment Security Commission. O*NET has detailed descriptions of the world of work for use by jobseekers, workforce development and HR professionals, students, researchers, and others.

CareerOneStop (USA) is a tool sponsored by the U.S. Department of Labour. It provides comprehensive career guidance. It also offers standardised competency models for defined sectors (see www.careeronestop/competencymodel) and tools to develop and customise competency models for any sector. In addition, it offers tools to design a career path on the basis of existing or required skills. The competency models are interlinked with the O*NET database.

We recommend these two systems as a benchmark for future initiatives of the EU and/or other actors at national, regional and sector levels related to **systems for supporting the process of skills development and transferability**. For examples of career guidance and job matching systems in EU countries, see Appendix 9.3.

Box 4.5: Current and future demand for skills identification, good practice (Nos 1, 2)

In the EU there are many good practice examples of labour market intelligence including skills demand identification at national, regional and local levels. Two of them were identified in **Austria**. "**Qualification Barometer of the Austrian Labour Market Service– AMS" (see No 2)** provides an on-line information system to measure qualification trends in Austria. Among other characteristics are explanations of 230 qualifications and 560 professions and trends in all professions are presented including data on job vacancies. It is a well-recognised on-line tool for stakeholders in the labour market as well as among the scientific community in Austria and Europe, and its user-friendliness is a bonus. A key aim in this field is to invest more time in classification of work (skills, occupations) in order to describe labour market demand and supply more easily, more efficiently and in more standardised form. "**Viennese Employment and Qualification Monitor**" **(see No 1)** is an example of a local (metropolitan) system of labour market intelligence. It is based on periodical surveys of Human Resource managers in Vienna concerning various needs related to the labour market. The Monitor's survey questions have been used by other European projects for surveys.

Note: For detailed information on examples of good practice, see Appendix 2.

The list of tools, methods and instruments related to skills transferability and transversal skills development used by the public sector may be supplemented with other tools identified on the basis of the related EU survey; see Box 4.6.

Box 4.6: EU survey on tools for transferable skills and occupational mobility development (Questions 16, 17, and 21)

Learning-by-doing supported by education, training and other tools (similar to those used by companies; see Box 4.2) are tools for skills development most often referred to by respondents from the **public sector**. There are differences between tools used for recognition and assessment of skills by respondents from the business and public sectors. Moreover, respondents from the public sector have emphasised the importance of formal systems such as diplomas and certificates, e.g. EVC Certificate, CQP - Certificat de Qualification Professionnelle, French VAE Degrees.

The UK respondent described a specific example of public sector support for developing transferable skills - The National Health Service (NHS) Skills Escalator. Employees have the opportunity to move through different roles and engage in education and training in order to move up to other levels in the organisation. According to the NHS website, "The Skills Escalator is the structure by the NHS which will enable all levels of the workforce to acquire new skills and invest in professional development. Staffs are encouraged through a strategy of lifelong learning to constantly renew and extend their skills and knowledge giving them greater influence over their careers."

The representatives of **public sector** institutions consider education and training important for labour mobility, in terms of a lifelong process. It should be done systematically while motivating those involved (e.g., motivate through examples, show opportunities). The importance of education should be stressed in schools. Educational offers must respond flexibly to and be consistent with the needs of individuals and demands of the labour market, i.e. of employers. Emphasis is placed on transferable skills (**soft skills**, or **green skills**). Also **certification of previous experience** and skills is among effective tools for promoting mobility in the labour market.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

Box 4.7: Good practice in transferable skill development in the public sector (Nos 16, 17)

The EU survey has revealed two examples of transferable skills programmes used by the public sector. Both of them came from **Italy**. "**Evaluation system and development of human resources in INAIL** - National Institute for insurance against accidents at work" **(see No 17**) has been one of the most significant interventions in the HR area within Italian public administration. A new evaluation system based on skills was introduced in 2003. The project was selected as one of the best international practices at the 41st meeting of European Directors General responsible for public administration.

The second example concerns skills development of 50+ employees in "**Vocazione Professionale programme of Poste Italiane" (see No 16**). Besides knowledge and skills related to tasks and quality of service, the employees are pushed to learn and apply new skills connected with their own identity and personal development. The programme was developed in co-operation with the trade unions of the Observatory on Corporate Social Responsibility and won the Ethic and Business Award in 2008.

Note: For detailed information on examples of good practice, see Appendix 2.

Box 4.8: Good practice in public support of occupational mobility (Nos 3, 31)

"**Cellule de reconversion - region Wallonne**" was introduced in **Belgium** in 2004 (**see No 3**). The programme is aimed at helping workers to find new employment after mass dismissals. Socio-professional assessment of skills and their upgrading or re-skilling supports the individuals in their search for new jobs.

Another good practice solution was presented by the public employment services in **Switzerland** – "**Economy and Labour Office Canton Zürich**" **(see No 31**). Based on a review of common and widespread instruments aiming at assessing soft, generic and specific hard skills, a tool was developed to support an integration strategy for consultants working in public employment services. Fact sheets (criteria catalogue) have been produced covering all kinds of competencies and structural data on clients at different levels of complexity. These fact sheets (which resemble mind maps) can be incorporated into consulting and developing processes for nearly all kinds of jobseekers. One of the most important success factors is the "soft tool character" which makes the tools easy to use, understandable and easy to adjust.

Note: For detailed information on examples of good practice, see Appendix 2.

Creating the right environment for transferable skills development is the most important task of the public sector, as discussed above. Another important task is the creation of incentives/motives for relevant groups in the labour market to participate in transferable skills development. Tools already used by the public sector for this purpose are described in Box 4.9.

Box 4.9: EU survey on incentives/motives of target groups to participate in transferable skills development (Questions 29, 30, 31, 32)

Raising awareness of people about the role of transferable skills in their employability and occupational mobility is the task of employment centres and agencies as well as education institutes and the university system. These organisations use different channels: individual professional guidance and counselling through career guidance services, information seminars and workshops, job clubs, promotional events like "labour fairs" or "education fairs" or websites and e-tools. Employment agencies have a number of official publications, flyers and posters that highlight the need for new skills in the workplaces of the future. These publications support career guidance and counselling. Generally, the main task is to motivate people to be interested in developing their transferable skills. Tools used for motivating people to develop their transferable skills may differ according to the specifics of different groups.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

Accreditation and formal systems play an important role in occupational mobility support, as the results in Box 4.5 suggest. For this reason, the issue of public sector **activities** related to **transferability of skills within the APL** systems (Accreditation of Prior Learning) was further examined. Public sector respondents gave Information on this topic which is summarised in Box 4.10.

Box 4.10: EU survey on public sector activities related to transferability of skills through accreditation of prior learning (Questions 22, 23, 24, 28)

The **public sector** respondents confirmed that systems of accreditation/recognition of skills are usually based on professional standards, qualification standards and/or assessment standards. The **accreditation/recognition systems largely appear to have a nationwide character**, but a few countries have regionally-based systems. It appears quite common that the accreditation/recognition system is controlled and **organised by the state** (government) but **delivered through private companies**. The systems are usually considered as formalised. Only a small proportion of respondents specified their national systems as non-formalised. Some systems are in the start-up phase. Also, in a few countries there are no systems of this kind.

Accreditation is frequently provided by:
- specialised certification/accreditation institutions;
- schools, universities, and training centres;
- employers and private companies;
- employment service agencies.

Among the sectors/professions where accreditation practices are common, respondents listed construction, metal industries, security services, health care, social services and other services.

As for assessing and documenting transferable skills, the general opinion of the **public sector** is that there are a number of skills that can be assessed. Many skills were listed, noticeably **foreign languages and ICT skills**. The following skills were also mentioned: personal skills, professional hard skills, metal production skills, social care skills, CNC machine operating skills, health care skills, soft skills, team working skills, autonomy, creativity, maths, communication, analytical skills, planning, management and leadership. Some respondents even stated that all skills can be assessed and documented.

Concerning the methods used by APL systems, the most frequently used seems to be that of **practical performance**. Other usual methods according to respondents are:
- written tests;
- in-work observation;
- interview;
- education document analysis;
- practice simulation;
- practical exams;
- presentations;
- consulting.

Respondents usually believe that the selection of an assessment method depends on the skill to be evaluated as well as the evaluator. Also, it is widely agreed that methods need to be combined in order to get the best results.

The vast majority of respondents from the **public sector** said that **accreditation of prior experience and learning would become more important over time**. In most cases, their opinion is that the importance of accreditation **will rise due to the need for increased flexibility in the labour market and a growing number of "second careers"**. However, some expressed the view that accreditation will be useful only for limited areas (e.g. ‚when reducing educational costs, company education, for practical skills, in declining sectors) or limited periods (during restructuring processes, for short-term employment, etc.)

Fairly strong attention is paid to the issue of European integration processes in education, e.g. the European Qualifications Framework. All new qualification certificates, diplomas and "Europass" documents issued by the competent authorities contain a clear reference, by way of national qualifications systems, to the appropriate EQF level.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

4.3. Education sector

Educational institutions use the following methods to promote labour mobility through transferable skills:
- self-awareness;
- career counselling;
- assessment and development centre;
- coaching;
- mentoring;
- ICT applications;
- extra-curricular activities.

Self-awareness. Individuals can create their profiles which are then compared with current labour market demands. Gaps in skills are filled through targeted training. At the end of this process, learning outcomes are monitored and compared with targets according to profiles. Many testing methods which have been validated to a greater or lesser extent have been used to assess individuals' personality and talent in order to support self-awareness; e.g., MBTI (Myers-Briggs Type Indicator), Strengthsfinder (Gallup institute), etc.

Career counselling. Career decision-making is a process that needs time, self-study and planning. Often, it is assumed that a decision regarding a career or educational pathway can be made quickly or on the basis of a test. Instead, students need to develop their ability to make good decisions, clarify their understanding of themselves, and enrich their knowledge of work opportunities and demands. When students develop these career planning skills, they are in a better position to make informed decisions regarding their educational pathways and potential careers. (NDSU, on-line)

Assessment centre (AC/DC) is based on a variety of testing techniques designed to allow candidates to demonstrate, under standardised conditions, the skills and abilities that are essential for success in a given job. The assessment centre proceedings consist of a variety of exercises, such as oral exercises, counselling simulations, problem analysis exercises, interview simulations, role play exercises, written report/analysis exercises and leaderless group exercises. Assessment centres allow candidates to demonstrate more of their skills through a number of job-relevant situations. Assessment centres are used primarily for selecting the right people for the right places. DC is used for development of identified skills (soft and/or hard) to a requested level of performance through targeted training. (HR Guide, on-line)

Coaching refers to the activity of a coach in developing the skills of coachees. Methodologies for coaching are not directive or facilitative, rather they rely on accompanying clients in a dialogue that will allow emerging patterns and solutions to surface. Coaching is a method situated between mentoring and training at one end, and psychotherapy and counselling at the other. (Mukherjee 2010)

Mentoring involves communication and is relationship-based. In an organisation, mentoring can take many forms. One definition of the many that have been proposed, is: "Mentoring is a process for the informal transmission of knowledge, social capital, and the psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less". (Mukherjee 2010)

ICT-applications. Using of ICT applications like MOODLE, Connect-pro, Mobile, Social media for lifelong learning, etc. is growing. Students have continuous access to educational materials and they can study according to their timeTable. These applications not only develop transferable ICT skills but also help in acquiring many transferable soft skills like autonomy, organisation and planning of work and learning to learn.

Extra-curricular activities, such as volunteering (for charity work). Work in such an environment and its reflection is important as it helps students to make sense of the skills they have developed and confirm how they will be useful in a work-related context. This can make a person more adapTable to different work contexts. The skill to do this is called "career adaptability" and is defined as the ability to reflect on experiences and distil from them lessons that can be used in other contexts.

The list of tools, methods and instruments related to skills and transversal skills development as used in the educational sector, may be supplemented with other tools identified on the basis of the related EU survey; see Box 4.11.

Box 4.11: EU survey on tools for transferable skills and occupational mobility development (Questions 16, 17)

Educators see learning-by-doing as a crucial method of skills development, which can be supported by other relevant tools such as workshops, seminars, conferences, coaching, distance learning, blended learning, e-learning, consulting, observation and review of work by expert or peer, sharing of experiences, skills and knowledge, training courses with certificate, team discussions, etc. For the recognition and assessment of skills, analyses of competencies, RDA-tests/assessments (to expose strengths and weaknesses), entry exams or periodical employee appraisal are used by educators.

Representatives of **educational institutions** consider adaptation of educational activities to the needs of students and labour market demands as very important in terms of developing skills in relation to occupational mobility. Besides practical skills, particular skills and knowledge with a wider application to more jobs have to be simultaneously developed. Developing skills should be a lifelong process for which people must be sufficiently motivated and the results officially recognised. There was an interesting and specific recommendation to create wider awareness of good practices in the area of transferable skills training. Some specific instruments promoting skills development were mentioned, such as **coaching, buddying, mediator systems**, targeted advanced training initiatives, and collaboration with **mentors** in businesses.

Note: For detailed information on results and methodology of EU survey, see Appendix 1.

4.4. Sector councils

Sector councils are associations of various stakeholders from one specific sector of the economy. Usually, sector councils bring together representatives of employer federations, professional organisations, trade unions, educational organisations and other human resources experts in the particular sector. These councils focus in particular on presenting and promoting sector interests in human resources to public administration and educational system institutions. Among their main goals is to represent the sector in the field of human resources development (HRD).

Sector councils' main tasks are:

- to gain insight into the likely developments in employment trends and skills needs with the aim of contributing to policy making within the sector;
- to provide analysis of developments in the sector labour market ;
- to reduce skills gaps and shortages;
- to improve productivity;
- to boost the skills of their sector workforces;
- to improve the learning supply.

Transversal councils are similar to sector councils, but they cover trends and developments in two or more sectors of the labour market. According to "Sector Councils on employment and skills feasibility study" (Peters et al, 2010), there are sector councils in 13 Member States, and transversal councils in 17 Member States.

There is a close relationship between the role of sector councils and transferability of skills. Trying to ensure that employers in the respective sector have a qualified and skilled enough workforce to cover their needs and to balance both sides of the sector labour market, they identify and analyse skill gaps and shortages within the sector. Consequently, they can foresee trends in supply and demand of professions and estimate the future development of skills in the sector. With an extensive information database, they can also anticipate new trends in the sector and skills needs for the distant future. Some sector councils use selected experts in order to form their own bodies for describing work positions and occupations and creating qualification or education and training documents for the respective sector needs, based on competencies and skills.

Being so familiar with skills and how to use them, they can also be very effective in identifying and promoting skills transferability within the sector. When adopting the concept of skills transferability, it would be natural for the sector councils to implement it in appropriate documents and highlight its importance for occupational mobility in the sector.

For the future, an initiative supported by the European Commission ([5]) to establish European Sector Councils on employment and skills (ESCs) has been launched and will involve various stakeholders. The main role of European Sector Councils should be to:

- provide crucial support in the process of managing sector changes;
- anticipate developments in terms of employment and skills needs;
- adapt skills to supply and demand;
- cooperate with current national sector councils or support establishment of national sector councils where they do not exist;
- cooperate with professional associations and organisations providing vocational education and training.

Sector Councils and particularly Transversal Councils have several instruments/possibilities on how to cover sector needs in skills and employment, including:

- transfer of skilled workforce from one sector to another. This can be done subject to close co-operation between sector councils, or simply by elaborating good information sources and implementing practical and focused measures through transversal councils (who can organise direct exchange of skills/workforce in their sphere of activity);
- influencing the supply of education (formal, vocational, or lifelong learning). Co-operation with educational institutions and professional associations enables the councils to influence changes in formal education, VET (vocational education and training) and lifelong learning which are beneficial for the sector employers as well as employees.

([5]) Revised Draft Opinion of the Consultative Commission for Industrial Change (CCMI) on Matching skills to the needs of industry and services undergoing change - In what way could the establishment of sector councils on employment and skills at European level contribute to reaching this objective?

4.5. Conclusions and recommendations

Employers are nearly exclusively interested in **internal mobility** of employees supported by transferable skills development. A lot of large and medium-sized companies possess **sophisticated and well-developed competence and talent-based HR systems**, whereas **small and micro-companies** usually develop skills as part of their business processes, i.e. through **learning-by-doing**. Even so, it is possible to mention quite specific methods that are used for recognition, development and assessment of skills by employers: periodical employee appraisal, feedback, 360-degree assessment, balanced scorecard, competency-based performance review or behavioural event interview, quality control circle, benchmarking or assessment of capacity, assessment and development centres.

Recommendation

- *Application of a competence-based approach in employers' HR processes is recommended. A general **competency model for the company** (description of competencies, usually transversal, within the organisation, which should be common for each employee) and **competency models for occupations** (competency-based description of requirements for all or at least key professions within the company) can serve as the **basis for all HR processes** such as recruitment, personal development, training, performance assessment and coaching. Costs to employers of competency model creation can be significantly reduced through **a publicly funded on-line system offering generic competency models for sectors and occupations** enabling **easy to use customisation** by users. More detailed specifications are presented in Chapter 5.*

Employers, usually larger ones, also use specific tools for **anticipation of their skills needs**. They use various kinds of analyses, e.g. SWOT analysis, analysis of company needs, analysis of market demand and customers' needs (surveys of market needs), scenario analysis, global analysis, technical analysis of future projects or trend forecasting and keeping track of industry developments. **The time horizon for making forecasts differs according to company size, stability of market position, respective market trends and dynamics, technological changes,** etc. Large companies are usually more able to predict their skills needs in the longer-term (5 years or more), whereas small companies' horizons tend to be much shorter (months or a couple of years). **Anticipation of future skills needs** is promoted and sometimes organised by public sector organisations. They mainly use **labour market analyses and long- or medium-term prognostic studies**, such as prognoses of occupational or skills trends, observatories of the labour market, and analyses of new trends in technology.

The public sector also ensures the transformation from traditional knowledge-based to competence-based educational systems that have been launched in many countries, as well as **implementation of national qualification and occupation standards**. These systems provide for a basic framework supporting transferability of skills and occupational mobility of people. A standardised description of occupations and related qualifications supports skills-based matching between job seekers and job vacancies, enables development of transparent and comparable occupational profiles, supports individuals in identifying relevant education and supports development of transparent and comparable learning outcomes. The next step, facilitated by the above-described systems, is the development of **systems for accreditation/recognition of skills acquired in prior learning** that are necessary for further support of occupational mobility. The **accreditation/recognition systems largely appear to have a nationwide character**, but few countries have regionally-based systems. It is quite common that the accreditation/recognition system is controlled and **organised by the state** (government) but **delivered through private companies**. The need for these systems is further underlined by the **importance of formal diplomas and certificates** which serve as signals for employers.
Public employment services use several tools to support employability and occupational mobility of jobseekers that are directly connected with skills transferability. **Job-search skills training** and **individual career counselling** (including career plans) are among the most important tools.

Recommendation

- ***Certification systems for soft skills should be introduced** as they are rather difficult, time-consuming and costly to assess. It could help both jobseekers to introduce themselves and employers to gain better information about candidates and new hires. This recommendation is linked to the proposed Competency Model of Transversal Skills described in Chapter 5.*

- ***Talent/skill/competence audits** and subsequent **skills/career development** plans **should be introduced as a standard measure** for jobseeker support. This recommendation is linked to the tools and methods described in Chapter 5.*

Educational sector and HR consultants develop and apply the following methods and tools related to transferability of skills: self-awareness development, career counselling, assessment and development centres, coaching, mentoring, ICT applications and extra-curricular activities. Learning-by-doing is a crucial method of skills development which can be supported by such other relevant tools as workshops, seminars, conferences, coaching, distance learning, blended learning, e-learning, consulting, observation and review of work by expert or peer, sharing of experiences, skills and knowledge, certified training courses, team discussions, etc. Besides many examples of good practice at grass roots level, **there is a wide gap and strong demand for changes to approach and delivery methods** with regard to development of both specific hard skills and transversal soft skills**, especially in initial education.**

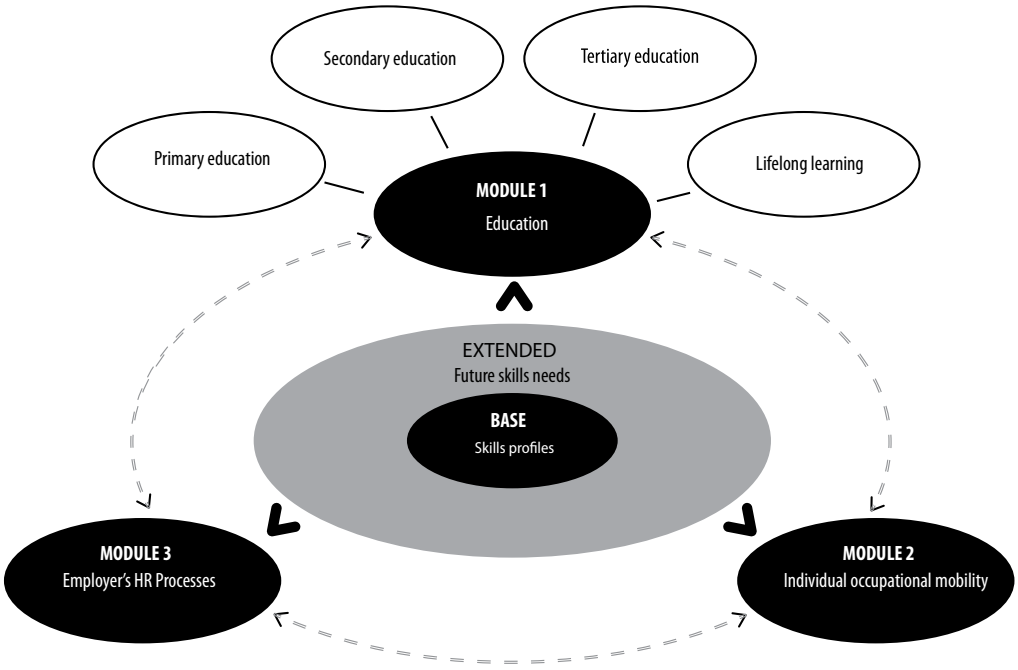
Since recommendations concerning actors (see Chapter 3.8) and tools (see Chapter 4.5) which are relevant for transferable skills development cannot be separated, because of the strong relationship between them, see also the recommendations in Chapter 3.8.

Recommendations are further specified in Chapter 5 of this report.

5. Recommendations of tools and methods related to skills transferability

Recommendations presented in previous Chapters are closely linked with the relevant conclusions. However, they are also a starting point for further development of systematic tools supporting occupational mobility through skills transferability, which is proposed in this Chapter. The recommended system of different tools is built on crucial outputs of the study. Since the implementation of systematic solutions always faces many difficulties due to limited financial resources, institutional limitations, and sometimes even reluctance to change existing systems or behaviour, it was designed as a modular system. The modular structure of the system enables implementation of different modules, i.e. individual tools, independently of the others, although the synergy of all modules significantly boosts the system's impact on occupational mobility. The structure of the proposed modular system of tools is charted in Figure 5.1.

Figure 5.1: Modular system of tools supporting skills development and transferability



The system of tools supporting occupational mobility through skills transferability consists of two core modules (BASE module and EXTENDED module) and three user modules. The following paragraphs are devoted to detailed description of each module, their functioning and synergy effects in cases of coexistence and interaction of all of the modules.

BASE MODULE: Skills profiles

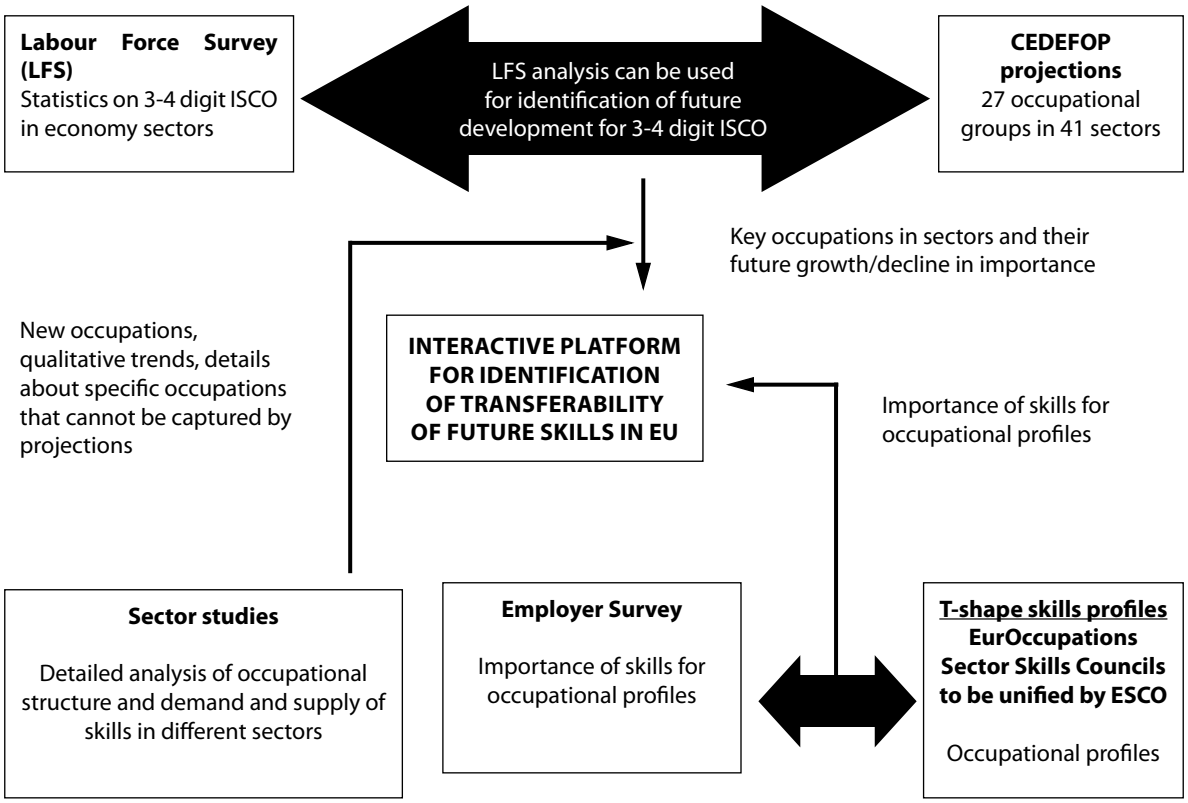
The core of the system is formed by skill profile descriptions, which provide data inputs for other modules and so enable their functioning. Skills profiles, which should be composed of transversal skills and job-specific hard skills (this corresponds to the "T-shaped" skills profiles design), can be specified by sector skills councils, on the basis of intersection of national occupational systems which define required skills, or by any alternative approach. To reach a common description of skills profiles, it is also necessary to create a common skills taxonomy (the outputs of transferable skills profiles and/or the ESCO initiative can be used). The descriptions of skills required for work performance of different occupations should be supplemented with definitions of different occupations and description of their tasks (the outputs of EurOccupation project can be used for this purpose).

The description of skills profiles for all occupations in all sectors would be an ideal solution and it is possible to move towards this step by step, starting with the creation of skills profiles for key occupations in chosen sectors. It has to be emphasised that description of skills profiles in a limited number of sectors will limit its applicability only to those sectors for which descriptions are provided.

EXTENDED MODULE: Future skills needs

The BASE module enables all user modules (MODULEs 1 - 3) to function, but all outputs of the system will be related to the prevailing situation in the labour market. This means that it is possible to define educational needs of the labour force or identify appropriate new occupations for system users, but the system is able to provide information only for a relatively short period. It is able to show what is available now, regardless of future changes.

Figure 5.2: Future skills needs anticipation



The time dimension can be added to the system through implementation of the EXTENDED module, which will contain the forecast of demand for skills in different occupations and sectors. There is no system (institution) that can provide such a forecast at present, although some steps have already been taken to change this (e.g., PIAAC programme or new approaches of CEDEFOP). Figure 5.2 describes the tools already being used or currently under development, which can provide detailed and reliable information on any future developments in skills demand if they are combined to compensate for weaknesses in individual approaches.

MODULE 1: Education

The major problem of educational institutions all over Europe is their unfamiliarity with requirements of employers in relation to their outputs, i.e. which competencies their graduates should have. The possibility to see employers' requirements of employees (graduates) in specific occupations is one of the important functions of this module, which can be useful for defining graduate profiles and subsequently the focus of education.

The module can also be used for identification of skills which are applicable to nearly all occupations regardless of sector, the development of which should start in primary education, and skills applicable to nearly all occupations in different sectors, which should be developed by institutions of secondary and tertiary education according to their fields of study. Development of these highly transferable skills, regardless of whether they are hard or soft skills, will improve the future occupational mobility of graduates and help to reduce their risk of unemployment.

Figure 5.3: Transversal skills development

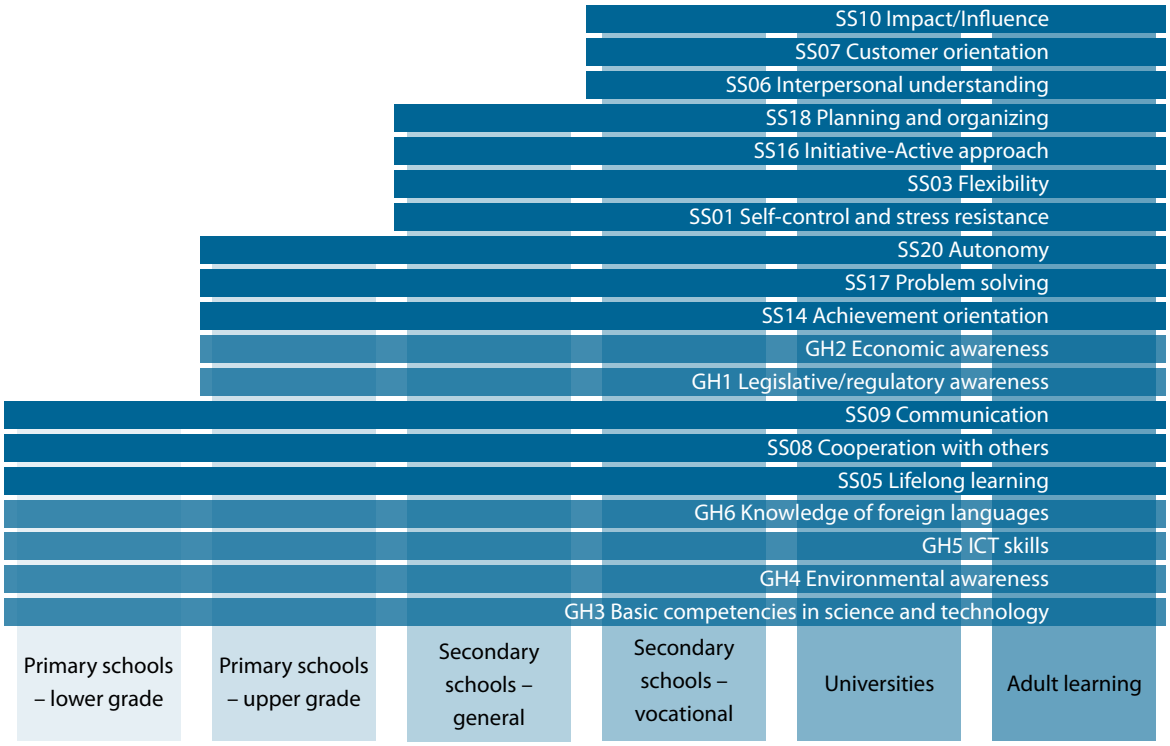


Figure 5.3 presents a proposal for the development process of transversal skills, i.e. highly transferable soft and generic hard skills demanded by employers across all economic sectors, during initial and continuing education and training. This could be promoted by a **Competency Model of Transversal Skills** at European level, which should be designed to support the existing EU Reference Framework for Key Competencies. The selection of transversal skills and methods for their development must be adapted to different age groups and grades of schools. The detailed description of the proposal for development of transversal skills at different levels of education is contained in Appendix 10.1.

Efficient development of skills and support for future employability and occupational mobility of people through generating excellence in skills can be further improved by the integration of **talent management into initial and continuous education**. (Talent management, however, is not included in MODULE 1.) Growing competition and requirements of the current and future labour markets indirectly bring to the fore talent identification and development from the early years of life, because skills development based on natural talent is significantly easier, more efficient and enjoyable. Raising awareness of the role of talent in a professional career and availability of tools and methods to identify and develop the talents of each individual should be one of the most important tasks for the public sector and initial education, in co-operation with families.

MODULE 2: Occupational mobility

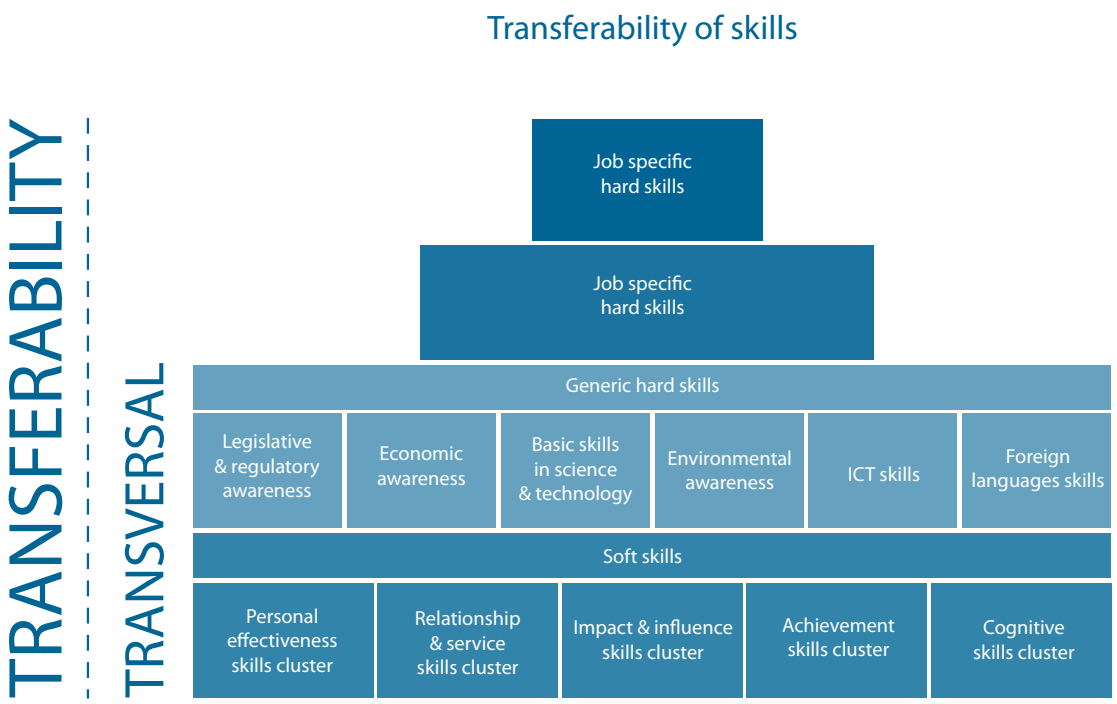
Skills profiles defined in the BASE module can serve also as a platform for **career counselling**. An on-line application, which can be used by both individuals and career counsellors, will focus on identification of occupations that are most suiTable for a given person. The criterion for the identification of the most suiTable occupation is to minimise the number of skills which will be lost as a consequence of job change. The module will enable not only identification of suiTable occupations, but also identification of individual educational needs on the basis of the individual's work experience and his/her qualifications and the new occupations' skills requirements. The EXTENDED module would also enable identification of the perspectives within suiTable occupations. It means that the individual would obtain information on occupations which is most consistent with his/her actual skills and expected development of these occupations, which would help to find the most favourable response to his/her job needs.

MODULE 3: Employers' HR processes

The content of this module is designed according to the needs arising from application of the competency model approach in HR processes. The module enables the creation of skills profiles for occupations relevant to the employer,

which can be further used for the hiring of new employees and identification of their educational and training needs. A skills profiling on-line tool can be used for a description of skills profiles of any occupation in all sectors, but the facilitating function of this system is available only for occupations that are already described in the BASE module in the form of generic skills profiles which have been defined/validated by sector councils (or other relevant actors). In these cases, the user will choose the generic skills profile of a particular occupation from the BASE module, which will be customised according to the user´s needs. The customisation can be carried out either on the basis of a predefined list of skills, in which the skills are described on several levels of performance, or new skills can be added for this purpose. When a user's occupational skills profile is saved to the system, it can provide further services such as identification of transferable skills inside the company or development of career ladders. The module could also provide other functions connected with individualised personal processes, e.g., comparing workers' profiles with relevant occupational skills profiles and identification of educational and training needs of individual workers, under the condition of anonymity and security of personal data.

Figure 5.4: Structure of skills profiles (designed with regard to skills transferability)



Application of modular system

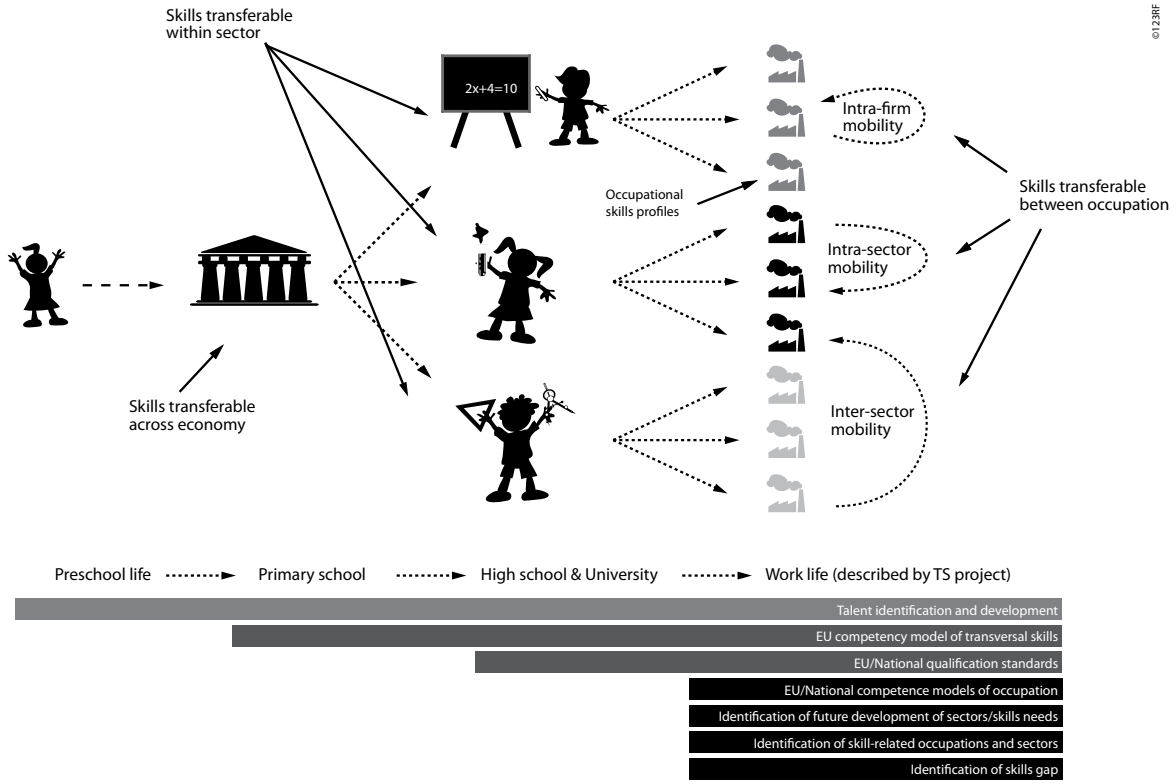
The proposed modular system of tools supporting development of individuals' skills and their improved transferability within and across sectors and occupations, general employability and occupational mobility would have positive effects on the European labour market if it were further developed, transferred into free on-line applications, tested, validated and offered to the EU Member States as an open model to be implemented by those countries, regions or sectors that would consider it worthwhile in their national environments.

Practical application of the proposed modular system, as presented in Figure 5.1, is described in Figure 5.5. The figure follows the career path of an individual from pre-school life to work life and shows how best to support efficiency within his/her career path by using the modular system.

The focus of the system on the individual is noticeable from his/her early childhood, because activities for the identification and development of his/her innate talents start in the pre-school period.

Primary education institutions focus on the accumulation of basic knowledge and skills, including personal development of the individual. Within the framework of primary education, the **Competency Model of Transversal Skills** at European level should be applied to launch the development of transversal skills which will later become applicable across the whole economy. (Such skills were already identified in Chapter 2.1.5.) Later studies within the framework of secondary and tertiary education will shape an individual's professional knowledge and skills for a specific sector or/and occupation.

Figure 5.5: Practical application of modular system for support of occupational mobility through transferable skills development



Identification of skills to be developed in these educational institutions should correspond to the real requirements of sectors relevant to that institution´s focus in which their graduates can find jobs. An extremely narrow qualification focus usually causes problems for an individual's future employability in the event of decreased demand for the specific qualification. Development of skills, generally required in relevant sectors, can support the occupational mobility of individuals significantly. (Skills transferable within different sectors were already identified in Chapter 2.1.4.) The described activities are supported by MODULE 1 of the modular system.

After finishing initial education and acquiring skills necessary for their chosen profession, the individual applies for the job. The employers can use job skills profiles for finding suiTable workers and for identification of his/her educational and training needs. This is done by comparing the job skills profile with skills peculiar to job applicants. (The initial description of skills profiles for 219 occupations can be found in Chapter 2.1.1 and Appendix 8.1 and should be further explored and developed in the future). These activities are supported by MODULE 3 of the modular system described above.

Workers can occasionally face the problem of unemployment and need to change occupation. This can be caused by economic downturn, technology changes, individual health problems or a number of other reasons. In these cases the individuals usually rely on themselves, i.e. on their opinion, preferences and judgment, but often they are not able to overcome their dependence on past experience. Therefore, they usually look for an occupation in the same sector or one which is very similar to the previous one. This can be problematic (or even impossible) in cases where the whole sector has declined. The on-line platform for career counselling described in MODULE 2 could solve these problems. The worker could define his/her own skills, find new occupations corresponding to them (occupations which minimise the devaluation of current skills) and identify educational or training needs for attaining the necessary skills to perform his/her new job. (The method for identifying the relationship between different pairs of occupations on the basis of skills similarity can be found in Chapter 2.1.2.) These activities are supported by MODULE 2 of the modular system described above.

The system's performance can be improved by implementation of the EXTENDED module, which extends the system to include forecasts of future developments in various occupations and sectors. This means that employers will know which skills will be required in future and will be able to set up the company's education and recruitment policy accordingly.

The individual will choose their occupational path based on the expected increase or decrease in demand for labour in different sectors and occupations, and the educational sector will know with which skills they have to equip their graduates in order to support their future employability.

Each of the modules and the whole modular system can support occupational mobility of the labour force through targeted development of skills and support for their transferability. A principal impact of the proposed system should be higher availability of a properly skilled labour force and significantly more efficient labour market performance evidenced by more instances of the right people finding the right jobs at the right time. These effects will be even more important in times of economic downturn or restructuring.

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