

## Skillsnet discussion paper

# **Employers' surveys as a tool for identification of skill needs**

## Draft conceptual outline

1. Introduction .....	2
2. Skillsnet efforts to meet the demand for information on future skill needs .....	3
3. A new Skillsnet initiative on employers surveys .....	4
3.1 Objectives .....	4
3.2 Beneficiaries and target groups .....	5
3.3 Strengths and weaknesses of employers surveys .....	5
4. Activities in the framework of the new initiative .....	7
5. Further steps .....	10
6. Basic terminology .....	11
7. References .....	13

# 1. Introduction

The information deficit about future skill needs in Europe has been observed for a long time. Cedefop and other European organisations have been repeatedly approached with requests for information on this issue. The European labour market is becoming a reality but at the same time a fully reliable database on future demand for occupations, skills, competences and qualifications in Europe is not yet available.

Today's world is changing rapidly. Technological development and innovation, growing competition on global markets, increasing labour force mobility and Europeanisation/internationalization of certain jobs and sectors, environmental change, aging workforce – these are few but important factors that affect day to day existence of enterprises. The way companies organize and manage their work, production and services is influenced by these developments a great deal. Work becomes technologically and intellectually more demanding. Management structures become flatter. An older workforce needs to be retained in their jobs to compensate for the lack of younger recruits. Presence of foreign workers becomes indispensable and demands special attention for intercultural communication. Corporate social and environmental responsibility as well as sustainable development are the issues widely discussed on the business agenda.

The pace of change at workplace level causes emergence of new skill requirements, obsolescence of qualifications, alteration of skill and competence composition of occupations, multitasking and emergence of new and hybrid occupations, incidence of skill shortages and gaps.

Skill gaps and skill shortages have significant economic consequences for affected employers. They can be highly damaging to company productivity, turnover and profitability, and certainly to organisational competitiveness. Skill shortages and gaps may prevent employers from filling posts or make employers accept staff with sub-optimal skills. The result will usually be that the organisation adopts sub-optimal working arrangements, and endures production cuts, lost orders, and dissatisfied customers. Concentration of skill problems in territories damages local productivity and competitiveness and in aggregate, the potential exists for serious knock-on effects for the whole economy. (Strietska-Ilina, forthcoming). Competitiveness of European economy therefore directly depends on the efficiency of preventing skill gaps and shortages on the labour market. This is only possible, if the efficient information and data collection system at European level is at hand.

Timely and reliable information on how skill needs will develop in the coming years is therefore essential not only for employers, but also for education programmes' design, for the provision of counselling and guidance services, and for efficient human resource development and labour market policy making at all levels: enterprise, local, regional, national and European.

## 2. Skillsnet efforts to meet the demand for information on future skill needs

As a response to the information deficit about future skill needs at European level Cedefop, together with a number of researchers and stakeholders from the EU Member States (MS), launched an initiative on early identification of skill needs in Europe. Initially (2002-2004) the main aim was to make European activities in the field more transparent and to present and discuss these activities with researchers, policy makers and practitioners. As a result, the international network on early identification of skill needs *Skillsnet* was launched by Cedefop in 2004 (see the Skillsnet webpage: <http://www.trainingvillage.gr/skillsnet/>).

Skillsnet has brought together experts and stakeholders to present and discuss research and analysis methods and outcomes in the field of new and changing skill needs. The network has served as a useful platform for dialogue and information exchange among stakeholders. This platform helps to verify different methods of and approaches to anticipating and identifying skill needs. The network discussed the results of research and summarises the main trends and developments in skill needs in Europe. At an early stage of its work Skillsnet focused on the discussion of projects organised and methods used in individual Members States (Cedefop (ed.) 2003). The discussion in a cross-country perspective was limited to certain sectors, and occupations whereas such research was of an occasional, ad-hoc, nature (Cedefop (ed.) 2003, 2004).

Among others the network discussed strengths and weaknesses of approaches to early identification of skill needs at national level. It discovered that many countries developed systems where regular early identification of skill needs and occupational forecasting played an important role (Cedefop (ed.) 2007). At the same time it was widely recognised that to be efficient systems need to comprise additional data and analysis, such as vacancy statistics, enterprise surveys, scenarios and observatories, studies on skill needs in individual sectors and regions (Cedefop (ed.) 2007). Skillsnet verified strengths and weaknesses of quantitative and qualitative methods (Cedefop (ed.) 2003, 2004), and came to the conclusion that the most reliable and sound results on future skill needs can only be achieved by efficiently combining data from various sources based on both quantitative and qualitative methods (Cedefop (ed.) 2004, 2007).

First years of Skillsnet activities also revealed absence of reliable and comparable data on future skill requirements at European level as well as lack of a tool which could allow to measure current and future skill demands and possible imbalances on the European labour markets. Although many national systems and approaches have some similarities, their results and data on skill needs are not comparable (Cedefop (ed.) 2007). In November 2004, at a Skillsnet conference in Dublin, the network members asked for more activities in the field of skill needs forecasting at European level with the view of achieving results comparable across MS (Cedefop (ed.) 2007). Cedefop was asked to take the lead through its network and to

organise a feasibility workshop on forecasting skill needs at European level. The workshop and discussion with national experts in Cyprus in October 2005 (Cedefop (ed.) 2007a) and later in Warwick, UK, confirmed feasibility of pan-European forecasting of skill needs. The method choice was dictated by practical reasons of cost and time effectiveness, and availability of Eurostat data which could serve as the principal data source for the forecast.

Subsequent work on a medium-term forecast of occupational skill needs in Europe has already produced some interesting results which are available at [http://www.trainingvillage.gr/etv/Upload/Information\\_resources/Bookshop/488/8026\\_en.pdf](http://www.trainingvillage.gr/etv/Upload/Information_resources/Bookshop/488/8026_en.pdf) (see also Cedefop (ed.) 2008). Cedefop has also recently launched a project on the supply-side forecasting and on the comparison between skill supply and demand to indicate possible imbalances on the labour market, first results of which will be available by the end of 2008. Cedefop intends now to produce regular biennial forecasts of demand and supply of skills and the subsequent measurement of skills mismatch (shortages and surpluses of skills) in Europe.

At the same time the first forecast detected a number of data gaps and weaknesses which affect the robustness of the forecasting results. What is more, quantitative forecasting produces results mainly at an aggregate level by sector, occupation and qualification providing information on general trends in skills demand in Europe, but it can and will not provide qualitative data on changing skill and competence needs, nor can it explain skills and competences demand at the company level. Although forecasts can provide very important information, they cannot capture all the factors of such changes. Forecasts cannot adequately consider political and behavioural aspects of all actors involved as well as qualitative or social aspects. For this reason and in parallel to the forecasting activity Cedefop's network Skillsnet started a new initiative to use employers surveys – i.e. surveys among public and private enterprises/organisations – as one of potential tools which can add lacking information on skill needs in Europe.

### **3. A new Skillsnet initiative on employers surveys**

#### ***3.1 Objectives***

Cedefop's network Skillsnet launched the new initiative which

- (a) explores possibilities of employers surveys as an analytical tool which may help to reveal qualitative changes in the demand for skills, competences and qualifications;
- (b) identifies existing employers surveys in the EU Member States and at EU level;
- (c) joins efforts of country experts to achieve comparability of information;
- (d) looks for feasible ways to achieve a comprehensive and comparable analysis of skill requirements at company level in Europe.

The main objective is to find common agreement and to develop a tool or a set of tools to reliably identify future needs of skills, competences, occupations and qualifications in public and private enterprises in Europe as an input for broader skill needs analyses.

### ***3.2 Beneficiaries and target groups***

A common European approach to employers surveys used as a tool for identification of skill and competence needs can bring comparable information on future skill needs, shortages and gaps recognized by enterprises/employers. This information would complement national as well as European data in this field and the results can contribute to evidence-based policy making at various levels (national, cross-national, EU, etc.) and in various fields such as employment, education and training, career counselling and migration.

This initiative fully respects the needs of Member States and does not intend to replace existing efforts at national level. It is a voluntary exercise and should be a complementary source of information providing value-added information and a broader, European, picture. This would not only reinforce evidence-based and informed policy making at European level but also could help individual MS to draw useful conclusions by comparing their situation against other countries and by knowing general trends in skills demand and possible labour market imbalances in Europe.

The primary beneficiary of the project are mainly politicians and civil servants responsible for decision making at European and MS levels. Other potential beneficiaries and target groups are administrators, trade unions, employers' associations, counselling and guidance services, enterprises, education and training providers, individuals, researchers and a broader public at national and European levels.

### ***3.3 Strengths and weaknesses of employers surveys***

Employers surveys provide a first-hand information on skill needs directly from employers. By these means they represent an invaluable 'insight' to the current demand side of the labour market, giving access to the qualitative information on skill and competence requirements, their changes, and skill gaps among specific categories (e.g. occupations, graduates with specific qualifications). Employers surveys not only allow to collect the information but also to verify already available data and to better understand the processes and phenomena on the labour market.

At the same time employers surveys as a method have a number of limitations. First and foremost, such surveys are very time and resource consuming and require a meticulous planning for the success of the future result. Second, companies are already overloaded by numerous surveys and any additional one becomes an extra burden and may result in a lower

response rate. Third, not always employers can assess their current human resource situation and their future needs objectively, and therefore the data they provide often turn to be inflated or deflated.

Most survey results show that planning of training and recruitment goes hand in hand with a broader strategic planning of companies to expand, reduce, outsource or dislocate their production and/or services. Yet, strategic thinking and the ability of the enterprise management to look beyond presence is another drawback of the employers surveys methodology. Indeed, companies often become hostages of a broader economic strategy of the country, sector or region, and sometimes have to adjust to changing global markets on the ad hoc basis. A broader awareness of economic trends and their driving forces is not always present inside companies and this hampers strategic thinking.

How to overcome the above mentioned weaknesses of the method?

First of all, questionnaires need to be limited to a minimum number of questions essential for the task of identification of skill and competence needs for a particular purpose (e.g. policy making, financing of training, design of qualification profiles or training programmes, provision of information for the guidance system)

Second, not only the length of the questionnaire is important for the quality of answers and for the rate of response but also questions themselves. Careful selection and formulation of questions may help to increase the response rate and the reliability of answers. For instance, the question ‘Which skills do you need?’ would puzzle a respondent. It might be more useful to ask which tasks are performed in this or that job, which composition of skills and competences are necessary to perform a specific job/task, which skills are core skills for a job, and, finally, what reasons to provide in-company training are<sup>1</sup>. Therefore, the questions have to be tested in a pilot survey.

Likewise questions about future recruitment plans may not bring fruitful results. But one can learn about future by carefully analysing past and present. Regular surveys based on the same methodology and/or longitudinal surveys allow comparison over time and gradually the creation of time series. Analysis of trends may help to shed light onto the future in a more objective way than employers’ answers based on their subjective judgement.

Third, survey results need to be verified and enriched by additional focus groups and expert panels. Cautious treatment of results along with the usage of holistic methods certainly diminishes the negative effects of any methodological limitation. At the end of the day, there is no ideal method but there certainly is an ideal approach: that is to combine different methods as well as to analyse results in combination with results from other statistical

---

<sup>1</sup> The incidence of training provided by enterprises may not be necessarily influenced by enterprise conditions. It can be a result of presence of public-sponsored training courses and be rather influenced by the supply of courses rather than the demand for training. In such cases training provision may not be always linked to skills demand.

sources, surveys and studies. Employers surveys should not be seen as a panacea but just one of tools, yet very useful. In the context of Cedefop/Skillsnet activities a survey of skill needs among enterprises appears an especially useful tool which can provide key qualitative answers to add and to verify the quantitative mid-term occupational skills forecast at European level.

#### **4. Activities in the framework of the new initiative**

In the framework of the new initiative, an expert workshop was organised in Bucharest in June 2007. The workshop

- (a) mapped existing surveys at European level with the view of their potential usage for skill needs analysis,
- (b) compared approaches to employers surveys among 16 EU Member States (MS) with the view of their potential comparability and compatibility, and
- (c) discussed future steps towards feasibility of a common approach to employers surveys to analyse skill needs at European cross-country level.

A number of surveys at European/cross-country level were identified as having the potential for adjustment to comply with objectives of identification of skill needs. First of all, Continuing Vocational Training Survey (CVTS) which is an EU-wide survey conducted by Eurostat and national statistical agencies every 5-6 years, was identified as the most suitable one for the purposes of skill needs analysis given its coverage, sampling and relevance of the subject for correlation of questions. At the same time it was repeatedly mentioned that any extension of the survey involves very time consuming procedures and may turn out not to be feasible at all.

Other potentially useful surveys include Eurostat Vacancy Survey, Innovation Survey, European Public Employment Services' Vacancy Monitor, Establishment Survey (Eurofound, Dublin), a planned survey by European Agency for Safety and Health at Work (Bilbao), Job Requirement Approach module of the Programme for International Assessment of Adult Competencies (OECD), and a questionnaire of the once planned harmonised skill monitoring survey in the UK and Ireland. The list is not exhaustive but it provides a good basis for future discussions about how existing surveys (if at all) could be used for skill needs analysis. Although in their current layout the direct usage is problematic, their methodological and operational experience is invaluable.

To verify current approaches to employers surveys on skill and training needs and other related subjects in individual MS, experts were invited to submit short information based on a template prepared by Cedefop's Skillsnet team. Skillsnet's coordination team received

answers from nineteen MS<sup>2</sup>: Belgium, Bulgaria, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia and England - the only part of the UK covered.

The comparison revealed that all nineteen MS concerned conduct some kind of employers surveys relevant to a broader subject of identification of skill and training needs. The surveys however differ greatly in their objectives, regularity, sample sizes and in a range of questions covered in questionnaires.

Objectives of surveys can be divided into five broad categories:

- (a) design of policies in the field of initial and continuing education and training;
- (b) design of training programmes, vocational training standards;
- (c) identification of skill deficiencies according to level and type of education/training;
- (d) work organization, operating environment, business and technological changes and their impact on company's skill and training needs;
- (e) HRM/HRD and recruitment practices and problems, skill gaps and labour shortages.

In practice surveys pursue more than one objective and in many cases it is a combination of several of above mentioned objectives.

Twelve countries out of nineteen conduct surveys in specific sectors / industries / occupations or territories. Some surveys are particularly targeted at SMEs. At the same time Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Portugal, Romania, Slovakia and England have conducted or conduct now some sort of a nation-wide survey.

Eight countries have regular employers' surveys of varying periodicity (monthly, annual, biennial) and eight more countries plan or discuss repeating existing surveys in future, subject to support, interest and funding. Altogether sixteen countries envisage continuing employers' surveys in future.

Although methods and tools used for employers' surveys differ across countries, a number of similarities were identified. All countries use structured questionnaires. Eight conduct face-to-face interviews either with help of CAPI<sup>3</sup> or not; others use a combination of on-line, postal, email and telephone interviewing techniques.

---

<sup>2</sup> Filling in the template was a voluntary exercise. Although only sixteen experts responded to the template in the initial phase, Cedefop's Skillsnet team continues to receive indications of interest to participate in the initiative from other countries. The comparison therefore will be updated to include the newcomers' responses in a due course.

<sup>3</sup> Computer-assisted personal interviewing



Response rate depends on the surveying method. Those using face-to-face interviewing enjoy around 80% response rate, postal, telephone and on-line interviewing brings between 20-50% of responses with the exception of France where telephone interviewing succeeds in gaining the 80% response rate. In Italy response rate of 100% among small enterprises (less than 50 employees) is achieved by the sampling method where in case of non-response, the enterprise is replaced by another one.

A unit of analysis is an establishment (10 surveys) or an entire enterprise/organization (10 surveys), whereas in Greece and Romania different surveys apply both approaches. Respondents are mostly HR managers/officers, in smaller companies - owners, directors or top managers. Some MS complement surveys with focus groups or additional surveys among social partners and other stakeholders (e.g. regional/local representatives). Only nine MS cover in the same survey or run a complementary survey among respondents-employees, of which six have results at least partially matched with responses by employers to make identification of skill gaps and training needs more robust.

The sample size largely depends on objectives pursued and level of detail needed but in general surveys seek to provide a good coverage of the segment under scrutiny (e.g. sector, profession, region etc.). Many MS survey a large number of enterprises (e.g. 100 thous in Italy, 27 thous in England, 16 thous in Germany, 15 thous in France) aiming at covering a large proportion of the labour force. Most MS use targeted or non-targeted sampling stratified / weighed by type and size of enterprise/organization/establishment (in terms of number of employees), economic activity and region.

In their analyses MS widely use international classifications, such as NACE, ISCO-88 and ISCED. Only four MS however use national classification systems mostly linked to the international ones. This, under certain conditions, provides good grounds for potential comparability.

Responsibility for surveys is mostly in hands of ministries and their research bodies but also it often belongs to private or public research institutions, consulting companies or universities. Funding mostly combines a number of resources: fifteen countries enjoy funding from state budgets (through ministries, PES, national training funds), six countries (Finland, Italy, Lithuania, Luxembourg, Poland and Romania) report (co-)funding from EU sources (ESF, Leonardo da Vinci, Eures, Phare, ETF), two countries (Finland and the Netherlands) had support from social partner organizations and/or their training funds, and finally in Germany there is also some Länder support.

No matter how different methods and objectives of employers' surveys in individual MS, it is very optimistic that absolute majority of countries expressed their willingness and preparedness to discuss and to look for possibilities to make their results comparable to similar surveys in other countries. It is particularly important that even in countries with

already long-established tradition of enterprise surveys there is readiness to make some sacrifices of comparability over time in order to achieve comparability over European space.

## 5. Further steps

Further steps remain at the moment a subject to further discussion and collaboration with the MS experts, EU institutions and other organisations. The following options might be pursued:

- (a) modifying / enriching questionnaires and surveys already existing or planned at European level;
- (b) choosing core questions and adjusting national surveys in selected / volunteering countries to achieve comparability of results;
- (c) launching a new European-wide employers' survey specifically targeted at identification of skill needs.

In the foreseeable future it is proposed to keep all options open for verification and for possible implementation to inter-complement the results. Cedefop intends to launch a detailed feasibility study on employers' surveys as a tool for identification of skill needs which should analyse all options and come up with detailed methodology and planning.

The feasibility work will evaluate in detail national surveys and, in discussion with experts from MS, will select a limited number of questions for a comparable regular European Employers Skills Survey at European level. These questions can alternatively be used at a later stage for the inclusion of a comparable module into national enterprise surveys on a voluntary basis.

A pilot European survey which would verify the questionnaire and the method, and which should further discuss selected questions and their relevance with enterprises themselves appear another useful component of the new initiative. As a result of the pilot study, a detailed, robust and validated questionnaire and methodology should be made available for the future use at European level (EU-27 or selected/volunteering countries). The appropriate and feasible survey frequency should also be identified during the pilot survey. The work and discussion will be organised around a series of workshops, and should eventually achieve the agreement about the organisation, content, concepts and the methodology of the survey.

The Cedefop coordination team also looks for means to complement national surveys with questions or a specific module comparable at cross-country level. In parallel Cedefop and its Skillsnet network will continue discussion with MS and stakeholders of European and international organisations in charge on a possibility of extension/modularisation of existing EU surveys, such as CVTS.

The next expert workshop will take place in May 2008 in Paris. Among other issues the workshop will focus on detailed analysis of core questions which can help to identify skill needs used in national surveys and on identification of a limited number of common questions (variables) to be used both in national employers' surveys on a voluntary basis and, at a later stage, possibly in a survey at EU level.

The emerging European labour market requires European level monitoring. The Council of the European Union in its Resolution of 15 November 2007 on the new skills for new jobs stresses the need to anticipate the skills needs — and also the skills gaps — which are emerging in the European labour market. The need has also been repeatedly expressed and supported by the MS (e.g. recent Spring 2008 European Council; Education, Youth and Culture Council; Employment, Social Policy, Health and Consumer Affairs Council). It is therefore the momentum to put together efforts of the Skillsnet network, national and EU authorities, research and data collection institutions to improve the situation on the transparency of skill needs in Europe and to add qualitative information on skills demand coming from employers to the quantitative forecast results.

Concluding, the new initiative of Skillsnet aiming at finding a common European approach to employers surveys as a tool for identification of skill needs is timely and necessary. The team will continue to follow-up the interest and willingness of MS to agree on a common approach and will look at possible ways to proceed further.

## 6. Basic terminology

The lack of uniformity of definitions has been repeatedly mentioned as a problem during discussions on methods and approaches to identify skill needs. In spite of existence of numerous glossaries and thesauruses, experts felt the need in achieving common grounds when it comes to certain terms. From the point of view of the new initiative on employers surveys as a tool for identification of skill needs, it is not necessary to invent a new glossary or to achieve a consensus about definitions of all terms. What remains important, however, is common understanding of terms in use. For this reason alone a short list of definitions is provided below.

The term '**skill**' stands for the knowledge and experience needed to perform a specific task or job (Cedefop 2004a). For our purposes it is important to understand 'skill' as *an umbrella term* which encompasses competences, knowledge and qualifications.

'**Competence**' is ability to apply knowledge, know-how and skills in an habitual or changing situation (Cedefop 2004a).

'**Qualification**' is understood as an official record (certificate, diploma) of achievement which recognises successful completion of education or training, or satisfactory performance

in a test or examination. Award of a qualification usually signifies satisfaction of requirements for an individual to enter or progress within an occupation. (Cedefop 2004a)

**‘Knowledge’** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. Knowledge could be theoretical, factual or practical.

**‘Skill shortage’** is a genuine lack of adequately skilled individuals available in the accessible labour market with the *type* of skill being sought and which leads to a difficulty in recruitment (NSTF 1998). A skill shortage characterises the situation where employers are unable to recruit staff with the skills they are looking for at the going rate of pay (EEO 2001). This could result from basic lack of people (when unemployment levels are very low), significant geographical imbalances in supply (sufficient skilled people in the labour market but not easily accessible to available jobs), or a genuine shortfall in the number of appropriately skilled individuals - either at new entrant level, or for higher level skilled occupations (NSTF 1998). The term, therefore, refers to both quantitative and qualitative shortages of skills. The term ‘skill shortage’ will be used as *an umbrella term*, which encompasses more specific terminological expressions such as ‘labour shortage’ and ‘skills gap’ explained further (Strietska-Ilina, forthcoming).

The term **‘labour shortage’** stands to denote the situation of an overall shortage of labour at national level across sectoral and occupational levels (although often the labour shortage is sector and occupation related), often used to refer to the *quantitative* lack of labour. (EEO 2001)

**‘Shortage occupations’** define the situation of the shortage of labour with types and levels of qualifications suitable – as perceived by employers – for specific occupations. The term however is often used to describe the situation on the labour market in quantitative terms, where ‘shortage occupations’ and ‘surplus occupations’ are identified as the result of (econometric) forecasting. (Strietska-Ilina, forthcoming).

**‘Skill gap’** is used to describe the *qualitative* mismatch between the supply or availability of human resources and the requirements of the labour market. Skill gaps exist where employers feel that their existing workforce has inadequate skill types/levels to meet their business objectives; or where new entrants to the labour market are apparently trained and qualified for occupations but still lack a variety of the skills required (NSTF 1998).

**‘Recruitment difficulty’** is an umbrella term incorporating all forms of employer recruitment problems, not specifying the reason. Such problems can be caused by skill shortage but also by poor recruitment practices, poor perceived image of the industry, low remuneration, or poor terms and conditions of employment, and can occur even where there are sufficient skilled individuals available and accessible for work. (Strietska-Ilina, forthcoming).

## 7. References

Brussels Spring 2008 European Council - 8/9 March 2007 – Presidency conclusions  
[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/93135.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/93135.pdf)

Cedefop; Schmidt, Liane Susanne et al. *Early identification of skill needs in Europe*. Cedefop Reference series. Luxembourg: Office for Official Publications of the European Communities, 2003.

Cedefop; Schmidt, Liane Susanne et al. *Identifying skill needs for the future: from research to policy and practice*. Cedefop Reference series. Luxembourg: Office for Official Publications of the European Communities, 2004.

Cedefop; Tissot Philippe. *Terminology of vocational training policy. A multilingual glossary for an enlarged Europe*. Luxembourg: Office for Official Publications of the European Communities, 2004a.

Cedefop; Strietska-Ilina, Olga; Tessaring, Manfred. *Systems, institutional frameworks and processes for early identification of skill needs*. Cedefop Panorama series; 135. Luxembourg: Office for Official Publications of the European Communities, 2007.

Cedefop; Zukersteinova, Alena; Strietska-Ilina, Olga. *Towards European skill needs forecasting*. Cedefop Panorama series; 137. Luxembourg: Office for Official Publications of the European Communities, 2007a.

Cedefop. *Future skill needs in Europe. Medium-term forecast: synthesis report*. Luxembourg: Office for Official Publications of the European Communities, 2008.

Council of the European Union. *Council resolution of 15 November 2007 on the new skills for new jobs*. Official Journal of the European Union, C 290, 4.12.2007. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2007:290:0001:0003:EN:PDF>

Education, Youth and Culture Council – 15/16 November 2007  
[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/educ/97160.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/educ/97160.pdf)

EEO. *Labour shortages and skill gaps*. EEO Annual conference 2001, EEO Secretariat, June 2001.

Employment, Social Policy, Health and Consumer Affairs Council – 5/6 December 2007  
[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/lsa/97445.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/lsa/97445.pdf)

NSTF. *Towards a national skill agenda*. First Report of the National Skills Task Force, DfEE, Sheffield, 1998.

Strietska-Ilina, Olga. Skill shortages. In: Cedefop. *Modernising vocational education and training. Fourth report on vocational training research in Europe: background report*. Luxembourg: Publication Office, forthcoming (Cedefop reference series). Available on Internet as working document: [http://www.trainingvillage.gr/etv/Upload/Projects\\_Networks/ResearchLab/ForthcomingRepot/Volume-1/04-Strietska.pdf](http://www.trainingvillage.gr/etv/Upload/Projects_Networks/ResearchLab/ForthcomingRepot/Volume-1/04-Strietska.pdf)

Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning, Brussels, 29 January 2008.  
[http://ec.europa.eu/education/policies/educ/eqf/rec08\\_en.pdf](http://ec.europa.eu/education/policies/educ/eqf/rec08_en.pdf)