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Area Research and Policy Analysis

## **“Developing and piloting an employer survey on skill needs in Europe”**

**Cedefop Expert workshop, 29-30 April 2010, Prague, Czech Republic**

### **Background paper for Phase 1**

of the Cedefop contract No AO/RPA/AZU-TODUN/Pilot-European-Employer-Survey/015/09

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*Not for dissemination*

## 1. OVERVIEW

The aim of the project “is to develop and pilot a survey instrument to reliably identify future needs of occupations, skills, competences and qualifications in enterprises in Europe, covering the whole economy. The piloting should verify the whole survey approach and statistical methodology, including the relevance of the questions and availability of information/data in enterprises. As a result, a detailed, robust and validated methodology should be made available for future regular use at EU-27 level that ensures data according to agreed international quality standards” (Open Invitation to Tender p. 11). The tasks to be done by the contractor within the framework of the project are manifold and comprise a wide range of challenges. They range from agreeing the topics to be investigated, via developing adequate questionnaires and sampling frames to data collection and reporting.

### *The project team*

It is understood that there will be no single person or single institution which is able to carry out all the various tasks at a high standard level. Therefore it is one of the characteristics of our proposal that we combine the knowledge, the skills and the resources of a number of different institutions and persons for the purposes of this project.

Our project team will be organised in two groups: A so called “core group” and an “extended expert group”. The core group will jointly be responsible for all deliverables to be presented to Cedefop throughout the project, with some variations in the degree of involvement of the various members in the different phases and work packages. The core group consists of the following institutions and persons:

- TNS Infratest Sozialforschung, Munich, Germany (Arnold Riedmann, Miriam Gensicke and Kathrin Buengeler)
- Fraunhofer-Institut für Arbeitswirtschaft und Organisation (Fraunhofer IAO), Stuttgart, Germany (Bernd Dworschak, Hartmut Buck, Helmut Zaiser)
- Prof. Francis Green, University of Kent (from 1<sup>st</sup> April at: L Lakes University, London), United Kingdom)

In the course of Phase 1 and for the check of national questionnaire versions in Phase 2 of the project, this core team will be supported by an “extended expert group” consisting of the following eight experts resp. institutions:

- John McGrath, FAS – Training and Employment Authority, Ireland
- Lina Vaitkute/Giedre Beleckiene, Qualification and Vocational Training Development Centre, Lithuania
- Magdolena Benke, National Institute for Vocational and Adult Education, Hungary
- Jos Sanders/Karolus Kraan, TNO, Netherlands
- Ferran Mañé , Fundació URV, Spain
- Věra Czesaná/Věra Havlíčková, National Observatory of Employment and Training, National Training Fund , Czech Republic
- Olympia Kaminioti, Employment Observatory, Greece
- Mariana-Cristina Mocanu, National Research Institute for Labour and Social Protection, Romania

The main tasks of this expert group will be to give input and advice on the choice of the most appropriate general approach to the survey and on an optimisation of the questionnaire to be used. In particular, the expert group will bring in the perspectives and experiences of countries with a diverse background (different vocational training systems, different economic structures etc.) into the discussion.

Throughout the project, the formal lead will be with TNS Infratest Sozialforschung (Arnold Riedmann). In all steps of the project, the research group will closely cooperate with the employer survey team set up for this project at Cedefop.

*Consistency over all 3 phases and across countries – a major precondition for the success of the project*

Our philosophy for the overall design and coordination of the project aims at optimizing and harmonising quality across all working steps – from survey design via questionnaire development, translation and fieldwork to data processing and reporting – in order to provide best value for money for Cedefop. The overall design of the project has to ensure consistency across all working steps and all countries involved. To this end, in each of the working steps the relevant practical possibilities and limitations of data-collection will be taken into account as well as the time frame and the budget set by Cedefop. TNS Infratest Sozialforschung and all its partners are very experienced in this type of research and will ensure that all reasonable efforts will be made in order to achieve a maximum overall quality of the survey.

The work to be done is split into three phases which are closely linked to each other:

- Phase 1: Development of the survey instrument
- Phase 2: Improvement of the questionnaire and pilot survey preparation
- Phase 3: Implementation of the pilot survey

Being aware of the links between these separate working steps is one of the key elements for achieving high overall quality:

- Before developing a questionnaire it is important to clearly formulate the key political and research questions to be answered by the survey results. Against the backdrop of the experiences of Fraunhofer IAO with and in Cedefop's Network on early identification of skill needs (Skillsnet), we know that intensive effort and discussion in the network and with Cedefop is needed on this issue right at the start of the project. Well elaborated research questions are crucial since they serve as guidelines for all further steps in the research process and are indispensable to achieve high quality results. So, much effort has to be invested in the first phase to define the information needs properly and definitely as well as to find consensus among all stakeholders involved.
- On the basis of the results of the feasibility study Cedefop had commissioned before launching this call for tenders, an in-depth discussion will be needed in the debate on whether an investigation of occupational structures is the best option to assess future skill needs. This refers to both the adequate unit of analysis and the envisaged time horizon of the results to be expected. Taking into account the roots and origins of the Cedefop network, a debate on ways and methods of **early** identification of skill needs (in contrast to analysing current skill needs) has possibly to be launched in the network and with Cedefop. What can really be expected from employer surveys on this issue?
- When designing the questionnaire one has to take into account the possibilities and limitations of practical data collection (e.g. respondents' ability and willingness to answer the questions correctly) as well as the later analysis (e.g. interrelation between certain variables) against the background of the information needs of Cedefop.
- In the fieldwork phase a profound knowledge of which topical information is to be gathered by means of the various questions is important in order to give adequate advice and support in the case that any queries from part of respondents or the local fieldwork institutes should emerge. Also it is important that all experiences made in the data collection phase which might have an impact on later analysis are identified and documented in the fieldwork phase (e.g. possible misunderstanding of questions or deficiencies of the sample).

- Finally, in the analysis phase the collected information can only be adequately used if the underlying ideas from the questionnaire development phase are available. From the questionnaire itself it is often not evident which “questionnaire questions” are asked in order to answer more abstract “research questions”. Familiarity with the practical aspects of data collection is necessary for a well-founded evaluation of the possibilities and limitations of what can be analysed.

Summarizing these points, it is important to clearly know in advance what the data are needed for and at the same time always to take into account what is feasible in practice. Only by keeping these points in mind it is possible to achieve high quality results that are useful for political decision making.

## 2. LITERATURE REVIEW AND ANALYSIS OF THE FEASIBILITY STUDY

The central objective of the employer survey is to provide a source of qualitative and quantitative information on current and potential *future* skill needs in organizations of different sizes covering the whole economy (including non-marketed services) in each of the EU Member States. A survey instrument to reliably identify future needs of occupations, skills, competences and qualifications in enterprises in Europe, covering the whole economy, has to be developed and piloted.

The background is an increasing interest in *early* identification and *anticipation* of skill and competence needs. New and changing skill needs constitute challenges for policy, practice and research in their attempt to achieve wider social and economic goals, particularly the cohesion and competitiveness of the European Union, and to improve the links between education, training and the labour market. Timely and reliable information on how skill needs will develop in the coming years is therefore essential for employers, 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.

### *Literature review*

The subject matter of this chapter is a short review of selected literature which refers to the main aspects neglected by the feasibility study. When comparing the questions asked and the terms to be used in the employer survey to those of the feasibility study, the main aspects neglected by the feasibility study refer to *future* skill needs and *early* identification of skill needs. Therefore, this subchapter outlines the activities, approaches and discussion on the anticipation – i.e., forecasting and early identification – of skill needs.

After the acknowledged failure of the 'manpower' forecasting attempts of the 1960s and 1970s, skills anticipation activities and discussions were taken up again in the 1990s and to a great extent took place within regional, sectoral, national and European networks. From the discussion and the available information on activities, it can be concluded that there is no European system and no systemic or systematic approach to the anticipation of skill needs. Instead, the different approaches use different quantitative and qualitative methods which are partly combined but not really integrated. There are different branches of the anticipation of skill needs which are reflected in, e.g., three of the four Cedefop fields of research on early identification and forecasting of skill needs: skill needs in the sectors, forecasting skill demand and supply, and employer survey on skill needs. The fourth and latest field or branch of Cedefop’s activities on identifying skill needs is ‘Analysing skill mismatch’ (see Cedefop 2009c, Cedefop 2010).

The outline of the activities and discussion on the anticipation of skill needs since the 1990s bases on the selected references with regard to the *anticipation* of skill needs and *future* skill needs. These references are given in brackets with the list of references in the Annex.

The failed 'manpower' forecasting attempts of the 1960s and 1970s referred to numbers of people (see Psacharopoulos, 2004). In contrast, the question for future-oriented research into skill needs, which has been prevailing since the 1990s, "is not 'how many people in this profession will be required in 5 to 10 years?' but 'which professions and what kind of new qualifications and skills?' and 'what qualities of the workforce will be in demand?'" (Strietska-Iliina, 2007, p. 224).

The activities and discussions on the anticipation of skill needs, which were taken up again in the 1990s, to a great part take place within networks and have been related to the building of networks, including Cedefop's network for the early identification of skill needs (Skillsnet). Cedefop launched Skillsnet as a result of two international conferences on the anticipation of future skill needs in Europe which took place in 2002 (Berlin) and 2003 (Thessaloniki). The comprehensive conference proceedings are Schmidt; Schömann; Tessaring (eds.), 2003 and Schmidt; Strietska-Iliina; Tessaring; Dworschak (eds.), 2004. With regard to networks and network building see especially the proceedings contributions by Gatti 2003, Gatti 2004, Planas 2004, Schmidt 2003, Schmidt and Steeger 2004, Tessaring 2003, Tessaring 2004. For Skillsnet, network building and networks see also Cedefop 2009a, Dworschak and Zukersteinova 2007.

The discussions and analyses of the activities and approaches to the anticipation of skill needs led, among other things, to the following results (see Cedefop 2008a, Strietska-Iliina 2007, Strietska-Iliina 2008, Tessaring 2003):

Although having several similarities in features and development trends, the systems for anticipation of skill needs across EU countries are very different. There is still no European system for the anticipation of skill needs. Data are collected by different – sectoral, regional, national, European – institutions or as one-off, e. g. project-based, activities. The available data on future skill needs are not comparable.

An overview of the numerous regional, national, and European activities referring to the anticipation of skill needs from the 1990s onwards shows that these activities already differ with regard to their possible objectives (see Tessaring, 2003, p. 319):

- the projection of future trends or developments of supply and demand of existing (formal) qualifications;
- the analysis of the increasing or declining significance of contents or elements within specific qualifications;
- forecasting changing skill profiles in a given occupation or sector;
- identifying newly emerging skills and requirements;
- detecting new configurations or bundles of skill elements in a given activity.

Furthermore, the activities differ with regard to their approaches. There are macroeconomic projections which use quantitative methods. Such quantitative methods are e. g., econometric forecasting models or skills audits. Projections which use quantitative approaches may be consistent and can provide representative results with a time horizon of 10-15 years. However, they are not able to provide detailed insights into specific skill needs and to identify skill needs in their emerging phase. In contrast, studies which apply approaches with qualitative methods – such as, for instance, case studies, work process analyses, or expert interviews – are able to provide such insights and to identify skill needs in their emerging phase. However, their results are not representative and restricted to a time horizon of about 2-5 years.

Therefore, since the 1990s there has been a trend towards 'holistic' approaches, such as the scenario analysis, which include quantitative and qualitative methods or apply quantitative and qualitative methods simultaneously. Nevertheless, there still seem to be no really integrated approaches to the identification of skill needs.

Instead, there are branches of the anticipation of skill needs. These are, for instance, reflected in three of the four Cedefop fields on the anticipation of skill needs: skill needs forecasting, future-oriented employers' surveys, and future-oriented research on skill needs in the sectors (see for a comprehensive overview Cedefop 2009a).

The numerous regional, national, sectoral and European research activities on skill needs in the sectors apply approaches using qualitative, quantitative, holistic or combined methods and refer to a great variety of sectors or cross-sectoral fields (see Schmidt et al, eds., 2003; Schmidt et al., eds, 2004). With regard to future-oriented research on skill needs in the sectors, activities on the European level mainly referred to the “Green Economy”, the healthcare and agri-food sectors, tourism, nanotechnology, and ICT (see Abicht et al. 2006; Frinking et al., 2005; Niitamo 2004; Strietska-Ilina and Tessaring 2005).

With regard to skill needs forecasting on the European level, there are current extensive skill needs and skill supply medium-term forecasts up to 2020 (see Cedefop 2007, 2008c, 2009b). However, “[...] 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 skill and competences demand at company level [...]” (Cedefop, 2008b, p. 4).

This is the reason why “Cedefop’s network Skillsnet started a new initiative to use employer’s surveys [...] as one of potential tools which can add lacking information on skill needs in Europe” (Cedefop, 2008b, p. 4). So, the envisaged future-oriented European employers’ survey represents Cedefop’s third field or branch on the anticipation of skill needs (see also Cedefop 2008d, 2008e). Against this background and for the time being, *future* skill needs could be seen as the results of skill needs forecasting, future-oriented employers' surveys, and future-oriented research on skill needs in the sectors.

### ***The feasibility study***

The feasibility study concludes that the only option that allows full comparability of results across countries is a new survey at European level dedicated specifically to the identification of skill needs in enterprises. However, work on the use of the CVTS as an existing European survey should continue, and the harmonisation and adjustment of existing national surveys by Member States should be further explored in parallel. Therefore, the survey should serve primarily as an independent tool but also as a basis for a specific module to be possibly used in existing EU or national survey(s) by Member States.

One of the central research challenges is how to measure skill needs. This becomes even more complicated when we are thinking of *future* skill needs or future needs of occupations, skills, competences and qualifications. In this context, the project on piloting an employer survey takes into account the results of the feasibility study concerning the three approaches “vacancies”, “training” and “occupational structure” but it will, nevertheless, shed a critical light on them and scrutinise alternative approaches. In consequence, there will be severe doubts that approaches outlined in the feasibility study are adequate to tackle the issue of *future* skill needs.

### ***The “occupational structure” approach***

Following the approach on occupational structures has some advantages: the approach allows for a wide range of comparison throughout the EU27 and has been tested in a row of surveys both on national and European basis (see feasibility study). In general, the category “occupation” is well known and most of respondents will have an idea of what is meant. There are large data sets already available and the connection to Cedefop’s forecast exercises on skill needs is given.

Concerning future developments, however, “occupation” is a quite inflexible category. In particular, when it comes to qualitative changes, these phenomena cannot be derived from occupational statistics. In

this respect, we can speak of some kind of *inertia* of the occupational concept in dealing with future skill needs. “Occupation” is a traditional and to some extent static concept. Of course the contents of occupations change over time and are modernised but this cannot be drawn from the statistical category. In this sense, the concept of occupation always lags behind future developments in the respective field of occupation. It is not really a surprise that, for example, most of the fields of activity the German initiative on early identification of skill needs has been dealing with in the last years (e.g. renewable energy, nanotechnology, “Internet of Things”) could not have been extracted from any occupational structure since there are simply no standard classifications and no clear references concerning occupations for these fields.

Apart from the fact that the meaning of occupation varies substantially from one country to the other, it has to be taken into account that there is no direct link between occupations and skills: “It should be underlined, however, the occupations, even though duly classified (through the ISCO classification), are an indirect and generally weak measure of skills and competences, which typically are of a more transversal nature.” (Feasibility study, unrevised version 2010, p. 29). More importantly, the competences and skills needed for a specific occupation change over time, involving a continual change of the links between occupations and skills. But this is, unfortunately not mirrored in the occupation category. The feasibility study concludes that the major problem of occupational structure surveys is that these are successful only to the extent that the employer can associate skill gaps with occupations. In practice, the link between occupations and skill needs is likely to be weak in both large and small firms, albeit for different reasons. In large firms, the survey will likely be answered by heads of personnel department (or equivalent). While these persons have a clear and precise view of the occupational structure of the firm, they are ill-suited to answer questions about how proficient employees are in doing their job or whether some employees have skill gaps. Such information can be better obtained from the employees’ direct supervisors and managers, who are well aware of the skills and competences of the personnel who report to them. However, it is unlikely that these managers will be asked to answer the survey. Moreover, when assessing the distance between the competences and qualifications of the existing workforce and the production or organisational needs of the firm, the employers usually do not perform such assessments in terms of occupation but in terms of the firm’s divisions (sales department, production department, administration, etc.) weakening the link between occupations and skill gaps. In small firms, the link between occupations and skills is also weak but for different reasons because employees are unlikely to perform a precise task, but tend to perform different tasks that can be classified in different occupational categories (unrevised version 2010, p. 37-38).

A further, more practical difficulty of the occupational approach is related to the large number of existing occupations: According to the ISCO classification, there are 10 different occupations on the 1-digit level and already as many as 28 on the 2-digit level. On the 3-digit ISCO level (which is intended to be used for such a survey according to the feasibility study), there are already as many as 116 different ISCO sections. In large companies or establishments with a broad spectrum of different fields of activities, an approach by occupations could easily end up with an extremely lengthy and repetitive questionnaire. But even if this problem could be solved in a reasonably satisfactory way by restricting the questionnaire to the set of quantitatively most important occupations in the establishment, the large diversity of different occupations would require an enormously large number of employer interviews in order to get to a sufficiently high number of cases for each of the occupations, especially if the 2-digit or even the 3-digit level would be chosen.

#### *The “vacancies” approach*

As the feasibility study points out (unrevised version 2010, p. 31), “vacancies” provide timely information on employer skill needs and are the most immediate way to assess the **current** needs of enterprises. In addition, government policy and regulatory changes are likely to have a direct impact on the type of vacancies to be filled. To separate the skill needs from the business cycle impact, surveys generally focus on hard-to-fill vacancies, which are more precise indicators of those areas where the mismatch between employer skill demands and supply is highest. Nevertheless, hard-to-fill vacancies

alone merely point to possible mismatches in the labour market and not necessarily to the demand for skills. “Vacancies” in this respect is a doubtful indicator for **future** skill needs. But what is the most obvious reason for vacancies (and this is also valid for hard to fill vacancies): Massive fluctuation due to low wages or/and poor working conditions. Skill needs are not really a major issue of importance here. The question is also how “vacancies” are categorised on the basis of the respondents’ answers. And here again the category “occupation” comes into play with all its limitations mentioned above.

Another problem of the vacancies approach is that it is very susceptible to general business fluctuation. Temporary economic crises within a branch influence the results obtained from the vacancies approach considerably and can easily lead to wrong forecasts for the future. An example is the crisis of the engineering sector in the mid-1990s which led to a situation with only very few vacancies for occupations like engineers or technicians in this sector. As a result, students were deterred from these professions, leading to pronounced skill shortages a few years afterwards when the sector had overcome the crisis.

According to the feasibility study (unrevised version 2010, p. 32), two approaches can be adopted to assess enterprise vacancies:

(a) the first approach aims to investigate solely the current vacancies (i.e. vacancies open at the time of the survey/interview). This approach has limitations because it is unable to anticipate future skill needs through future vacancies. Nevertheless, it has the benefit of being completely objective: employers are not asked to make a judgement, but merely to state their current needs. Examples of this approach are the employer surveys conducted in the UK, such as the national employer skill survey (NESS) in England.

(b) the second approach aims to investigate both current and future needs by asking employers about any future vacancies they plan to advertise. Generally the time horizon of future vacancies is restricted to between a-few-weeks and a-year-maximum because employers cannot give accurate forecasts for periods longer than one year. Compared with the former, this approach has the advantage of enabling to investigate future skill needs; however, by doing so, it introduces a certain degree of subjectivism, given that it requires employers to formulate expectations about the future. Examples of this approach are the excelsior information system in Italy and the panel enterprises forecasts in France.

We do not really see a problem in employers formulating expectations about the future. When we are dealing with **future** skill needs this formulation of expectation and also speculation about the future is even needed to some extent. What is more critical is the assumption that future skill needs are not really advertised in job advertisements. Other channels are used to fill vacancies for jobs including innovative tasks (and in this sense future skill needs). Even if there are innovative and/or “new” elements in job advertisements, the difficulty is to extract these i.e. to separate them from the already existing, “traditional” elements of a job, what brings us back to the occupation concept. The main drawback of assessing skill needs through information on vacancies is that they are not able to indicate any structural change in the job composition.

### *The “training” approach*

According to the feasibility study (unrevised version 2010, p. 38), the third approach to enterprise skill needs investigates the personnel training policies implemented by companies. Like vacancy surveys, training surveys can focus on employees already working in the enterprise or on newly-recruited employees. Nevertheless, this is only one side of the coin. There are other specifications as well. It is, for example, difficult to distinguish between the need for new skills and the upgrading of existing skills. The presence of a high training intensity in a sector as such is not a clear indication of the need to acquire new skills. It could simply be an indicator for the obligation to regularly update skills due to existing legislation.

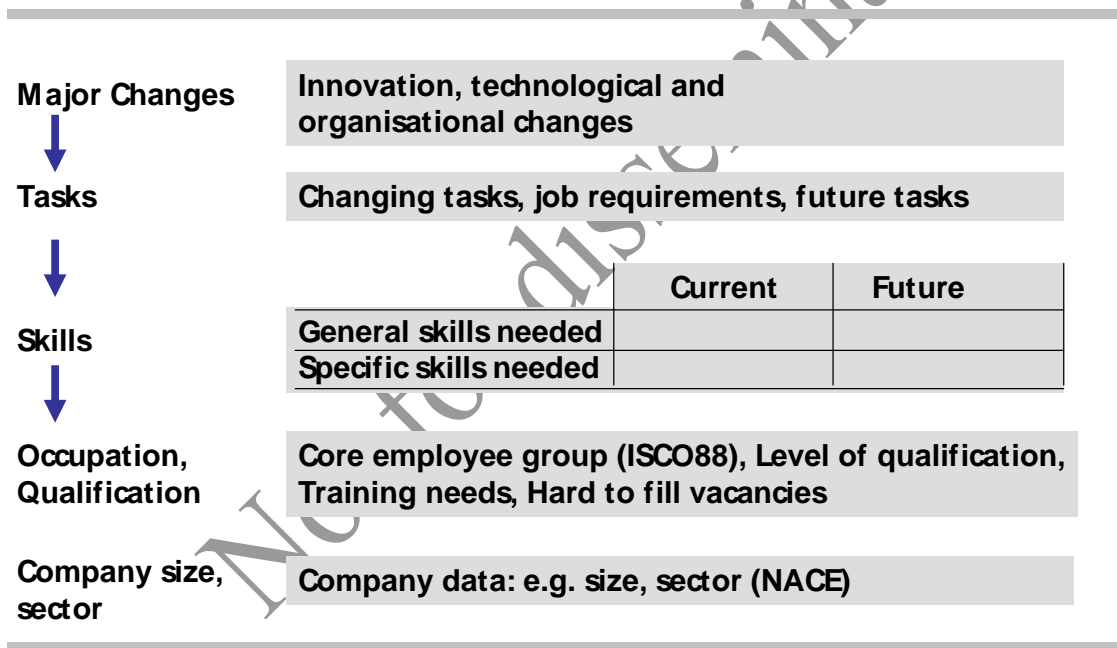
Existing training surveys usually ask for the type of training, the reasons for training, resources, target groups and satisfaction with the training. But instead of asking for the “who” and “how”, these surveys should ask “what” has been trained. However, contents of training are usually omitted and with that the

opportunity to establish a substantial link to skills. Admittedly, “training” is a quite interesting indicator for future skill needs and the “training” approach a good supplement. But if we want to know about the real content of the training we also have to bring it into relationship with the changed/new skill/competence/occupation/qualification. This seems to be extremely difficult and ambitious. Here also the objective of early identification of skill needs becomes blurred to some extent: Is training provision in this context the source of derivation of future skill needs or one of the final targets of findings of early identification of skill needs?

*Towards a task-related approach*

So, not very surprisingly, there is according to the feasibility study no consensus among experts which might be the best approach for the identification of skill needs. According to this, we have to consider whether a task-related approach might be the more promising one. “Employers are known to find it difficult to think in terms of skills as it is generally simpler for them to think in terms of production processes, tasks to be executed and objectives to achieve (Feasibility study, unrevised version 2010, p. 101).

The feasibility study is a good starting point since it points out different options and their practical problems. The approaches discussed, however, might not be appropriate to cope with the issue of future skill needs in particular. The following figure depicts a first draft on the process of a task-oriented approach:



On the basis of major changes in the company with regard to innovation, technological and/or organisational changes, the relevant tasks have to be identified. In detail, the current tasks and dependent skill needs as well as the future tasks and dependent skill needs have to be identified. At this stage of the process, we encounter the specific challenge of this approach: On the basis of the identified skills we intend to bring them into relationship with the occupation and qualifications of the respective core employee group. This would enable a link to ISCO and to the forecast exercises of Cedefop.

As already discussed a thorough discussion is needed before being able to develop a questionnaire. As indicated, we think that a task-related approach could be superior compared to the occupational structure or an occupational needs approach favoured by the feasibility study: Skills refer to tasks. In addition tasks can easier be consolidated to a number manageable in a questionnaire. It should however be mentioned that, although we think a task-related approach to be the better solution, we are also aware that the two other approaches ought to be part of the discussion when beginning to work on the questionnaire – maybe

the ultimate result of this discussion process will be to test different approaches, possibly within one combined questionnaire.

The survey should deliver a description of the economy regarding tasks and skills needed for completing these tasks for the point of time of the interview, whereas the future perspective is still missing. The future aspect has to cover three possible developments:

- First, changes in the quantitative importance of tasks,
- second, the emergence of new tasks – both already existing and not yet existing,
- and third, – in theory – changes in the relationship between tasks and skills needed.

It is well-known that the assessment of future developments is a difficult issue. Therefore, we recommend being cautious regarding the time span reaching into future. Given the experiences of Fraunhofer IAO and TNS Infratest Sozialforschung within the ADeBar project of the FreQueNz network, we know that the maximum is three years – more would be unrealistic. But we also see that a trade-off between the reliability of the assessment and the utility of the information regarding decision making has to be found. So, we propose to apply a time horizon of three years in the employer survey to estimate the development.

It might be interesting to further ask for the reasons for the skill gaps and for the groups of workers where the gaps are most prominent: For future policy making related to education and training, it is for example quite a difference whether newly recruited young workers or older workers lack certain skills. While in the first case, action has to be concentrated on the system of initial training or education, in the latter case the focus would have to be put on further training.

For a better identification of future skill needs, it might also be worthwhile to first ask the respondents to reflect on the past developments by e.g. asking them how certain skill needs have developed in the past 3 or 5 years before asking them to estimate future developments. At least for the first wave of the survey, this is likely to enhance the quality of the forecasts by the employers, leading their attention away from short-term developments such as a current crisis in the sector and generally opening the horizon towards the reflection of more general trends. If the survey should later be conducted on a regular basis, the view into the past might lose some importance since developments can then be analysed on the basis of the data from past waves.

It is understood that there is a need of an intense discussion before starting the development of the questionnaire. Nevertheless, we think, that it is worthwhile to at least consider the task-related approach as an alternative to the approaches of the feasibility study.

Once the general approach has been agreed, the concrete questionnaires will be developed in close cooperation among the members of the core group, seeking further input and expert advice from the broader group wherever this is considered to be useful (WP3).

### 3. METHODOLOGICAL ASPECTS

In the call for tender for this project, the methodological outline of the survey has not yet been fully defined. Among the open issues were e.g. the method of data collection, the choice of countries to be covered and technical details of the sampling. Decisions on major aspects of the survey design such as the interview duration, the number of interviews, the choice of countries and the selection of a data collection methodology had to be taken. It is understood that these decisions were of a preliminary nature only and might need revision in the course of Phase 1 of the project. The choice for the most appropriate data collection methodology, for example, will depend on the choice of the general questionnaire approach since not all data collection methodologies are equally suitable for the different approaches.

### *Options for data collection methodology*

For the collection of the data for the employer survey on skill needs, various options exist:

- Face-to-face interviewing (CAPI or PAPI)
- Telephone interviewing (CATI)
- Mail interviews (postal survey)
- Online interviews (CAWI)

There is no generally best method for mapping skill needs at the employer level. All methods have their advantages and disadvantages and some of them work well in some countries, but less so in others (e.g. due to the availability of address sources or the penetration with computers with an internet connection). While the interviewer-based methodologies CAPI- and CATI usually render higher response rates and have a considerably lower risk of a selection bias than Mail or Online surveys, the latter have the advantage that the respondent can take more time to reflect on questions, to look up information in the company files or to discuss issues with colleagues. But this advantage goes at the expense of response rates and a strong self-selection bias. In several countries mail response rates in employer surveys are meanwhile so low that mail should be considered as a European-wide option only if there is a good chance that the survey will later be carried out as a compulsory survey by Eurostat respectively the national statistical offices.

Though for the calculation of an overall price, CATI was selected as the most recommended method by the research group, we are generally open to also consider other methods of data-collection. Decisions on the method should be made together with the decision on the choice of the general questionnaire approach to be chosen for mapping skill needs.

### *Unit of analysis*

Regarding the unit of analysis, a decision will have to be taken towards the end of Phase 1. Basically, there are three options:

- Interviewing at the establishment level in all countries
- Interviewing at the company level in all countries
- Choosing different levels for the pilot countries, using the most appropriate level for each country (in terms of availability of address sources and statistical background information)

Each of these options has its advantages and disadvantages. The choice of the most appropriate level also depends on the questionnaire approach. Choosing different levels for different countries would have the advantage that it could be tested which of the levels proves to be the most feasible in practice.

### *Choice of countries and sample size*

The preliminary choice of countries (serving as base for the price calculations) for the piloting of the questionnaires foresees 50 pre-test interviews and 1.000 interviews in the main phase for each of the following countries:

- Finland
- France
- Germany
- Greece
- Romania
- Poland

The final choice of countries for the pilot surveys will be made in the course of Phase 1. To this end, the research group will define selection criteria and will give a recommendation on this base. The decision on the countries to be chosen will then be made jointly with Cedefop.

#### *Interview duration*

The interview duration on which the overall costs were based is a 20 minute interview (CATI). For the purpose of testing a broader spectrum of questionnaire questions, it might however be worthwhile to consider an enhancement of the average interview duration to 25 minutes.

#### *Universe of the pilot survey*

The survey instrument is meant to be designed for interviews in **all size classes** and **all sectors of activity**, also including micro firms with 1 to 9 employees and sectors of activity which are mainly or even exclusively made up by establishments of the public sector, such as public administration, education and health and social work. For the pilot survey to be conducted in 5 to 6 countries, a limitation of the sample to selected sectors of activity was, however, discussed as an option in the kick-off meeting on 17 February 2010. Final decisions on the sector coverage will be made at a later stage of the project. But even if in principle all sectors should be included in the survey, we strongly recommend not to include agriculture, forestry and fishing (NACE Rev. 2 “A”), private households (NACE Rev. 2 “T”) and extra-territorial organisations (NACE Rev. 2 “U”) in the sample. While the latter two sectors of activity are of negligible quantitative importance, the agricultural sector is extremely hard to access because it is not covered by most business address registers. Also, the agricultural sector in Europe is quite specific as regards the skill profiles of employees: Although new skills certainly will be needed in some parts of agriculture, it can be expected that this especially concerns the owners (and not the employees), who for example increasingly need knowledge in the application of new technologies or economic skills.

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## ANNEX 2 CEDEFOP COMMENTS ON THE INCEPTION REPORT

In general, information on the development of skill needs is equally important both for politicians, employers and individuals. We agree and would like to stress that survey outcomes and results should not only be useful for policy decision-making but also feed into or complete other Cedefop projects, among others the regular forecasting of skill demand and supply. Information and data provided specifically by employers should reveal in more detail changing patterns of skills and skill needs, and how enterprises perceive, assess and anticipate skill needs. The measurement approach would have probably to consider that changing patterns of skill needs and possibly of the composition of the workforce in enterprises are not isolated from existing skills of individual staff or their up-grading. In so far, links to other aspects, such as (formal) qualifications and training of staff, or vacancies are very relevant. To link and to use outcomes from different surveys and projects, it is important to keep the relationship with international standard classifications, such as ISCO and ISCED (“formal qualifications”). Regarding classification aspects and “skill levels”, it is recommended to evaluate the practicality of the European Qualification Framework (EQF). A new Commission initiative, “ESCO (European Skills Competences and Occupations)”, aiming at a multilingual dictionary of occupations and skills (mapping of national and sectoral taxonomies), might help to apply agreed definitions and a standardised terminology. A first draft might become available in September this year.

It needs special attention how to define and capture the aspect of “future” in the measurement of skill needs. As discussed in the kick-off meeting, different options might be possible (from the past to current and/or future-next few years-3 years etc); something to be tested in the pilot exercise.

Whereas the pilot survey might eventually provide first valid and reliable results for selected countries, it is likewise the opportunity to test different approaches, scenarios and related methodological options. The piloting exercise should evaluate the on pros and cons of main ways in measuring skill needs and implementing the survey. The availability of data and information in enterprises, and their quality and added-value are important criteria. We agree that every effort should be made to finally provide a robust and evidence-based tool for future regular use at EU-27 level, including recommendations and guidelines for practical implementation.

The principle way how the survey tool as such will be used in future is of minor relevance to the approach proposed for measuring skill needs and the methodology. Though Cedefop would favour a future implementation of the survey within the European Statistical System, it is far too early to say something final about the future use of the survey tool. The pilot survey might use, for example, a modular approach. Whereas a future large scale survey might keep all modules, they could provide in itself appropriate information in context with structural and background data (possible causes of skill changes) to be also collected from the enterprises. A modular approach has also the advantage that it might finally enable both Eurostat and countries to integrate (some of) the modules in existing Eurostat and/or national surveys.

It is important to use for the development work experiences from other relevant European and national enterprises surveys, including new developments (for example, the European Continuing Vocational Training Survey, the Community Innovation Survey; the NESS in England). This is particularly true for methodological aspects. Eurostat and National Statistical Institutes have a full range of expert knowledge and know-how in enterprises surveys for many years that could add to your experiences. As discussed in the kick-off meeting, clarification is needed (for preferably all countries) in how far samples from the Statistical Business Registers (SBR) might become available (according to national legislation; work on behalf of Cedefop). Principle information on the coverage of the SBR and derogations can be found in the relevant legislation. Country specific information is available at National Statistical Institutes (or relevant National Authorities). As discussed in the kick-off meeting, the possible availability of samples from the SBR might be a more technical criterion for the selection of countries for the piloting exercise.