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Future Jobs and Skills in the EU

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Purpose

The renewed Lisbon strategy stresses the need for Europe to place more emphasis on anticipating skill needs. Globalisation, technological change and demographic developments (including ageing and migration) pose huge challenges in that respect, comprising both risks and opportunities. At the same time, a lack of information on future skill needs has been a long-standing concern in Europe. With specific targets set in the Lisbon strategy, the need for regular forward-looking assessments has gained momentum. Subsequently, this resulted in the recent New Skills for New Jobs initiative by the European Commission, and related European projects aimed at identifying future job and skills needs using quantitative modelling approaches. While having advantages of robustness, stakeholders as well as the European Commission identified a clear need for complementary, more qualitative forward-looking analysis. Consequently, the European Commission (DG EMPL) earlier this year commissioned a series of 17 future-oriented sector studies (Horizon 2020) on innovation, skills and jobs following a qualitative methodology. The final results of these studies will become available in spring 2009, and will be followed by a number of other initiatives over the year to come and beyond.

Future of European Employment

The future of European employment is shaped by two overarching developments: globalisation as well as an ageing population. With both determining demand and supply of future skills, they provide the background to this study. The large number of “baby-boomers” retiring over the coming decade will cause the working-age population to decline. At the same time, many industry sectors in Europe are currently exposed to pressures from globalisation forcing substantial restructuring processes. These developments should be placed in the broader context of securing and improving the EU’s competitiveness, redeploying the European economy to new activities with new and better jobs. In order to be successful, this redeployment should be underpinned by a strategic management of human resources, encouraging a more dynamic and future-oriented interaction between labour demand and

supply. Otherwise, there is the risk that bigger shortages, gaps and mismatches of skills will result in structural unemployment.

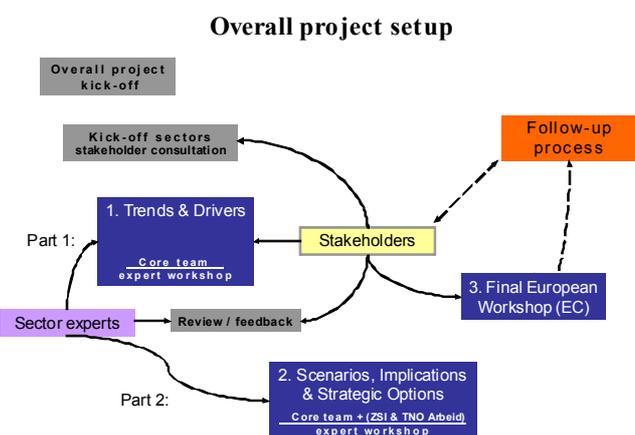
17 Sector Studies, One Methodology

As a first step, the results of this study aim to provide guidance in launching further EU and other actions to promote the strategic management of human resources and to foster stronger synergies between innovation, skills and jobs, encouraging adaptations to national and regional level. The study comprises 17 sector studies, including a pilot study, analysing emerging competences and economic activities. Of these, 11 were carried out by a consortium led by TNO (Delft, the Netherlands), SEOR Erasmus University (Rotterdam, the Netherlands) and ZSI (Vienna, Austria).

To validate, add and complement the findings of the project and to increase impact, results are disseminated as broadly as possible across Europe. Relevant stakeholders including rele-



vant social partners were involved in the project from the beginning and were asked to provide information during the research phase and for feedback in the interim review process. Furthermore, they participated along with experts from industry and academia in a final workshop organised by the EC to validate the results and develop recommendations. The sectoral partners will also play a key role in the follow-up process.



With different contractors conducting the studies, a uniform methodology, designed by Prof. Rodrigues and further developed by the consortium led by Dr. van der Zee and his colleagues, was employed to ensure comparability of results. The methodology consisted of two parts: a mainly backward-looking part, identifying trends and drivers, and a forward-looking part, including scenario building, identification of emergent skills and strategic implications. Throughout, results were discussed with internal and external experts and stakeholders. A final workshop, organised by the Commission and Eurofound staff, served to bring together European experts from industry, academia and sector organisations to validate and refine the recommendations.

Based on the common methodological framework, each contractor proceeded in eight defined steps, starting with the mapping of main trends, key drivers of change, emergent competences, leading to scenarios and their implications and subsequent recommendations. Many of the steps were based on pre-defined tables filled in by experts to allow comparisons across sectors but also to enable easily updating results over time. Furthermore, such a pre-defined structure allows other actors in the future to repeat and adapt this exercise to local needs.

From Backward- to Forward-looking

Trend, Developments and State of Play

The main purpose of this analysis was to provide the factual background to identify key drivers for the subsequent scenario development. Consequently, part 1 of the report analyses recent sector developments and trends and, at the same time, depicts the current state of play in the sector with an emphasis on inno-

vation, skills and jobs. It is based on an analysis of available time series data and relevant existing studies and is both backward- and forward-looking in nature. It analysed 1) structural characteristics (production, value added, employment in various dimensions and related factors), 2) the value chain, 3) technological change and innovation, 4) trade and international competition as well as 5) regulation.

The results of all sections were summarised in a SWOT analysis (strengths, weaknesses, opportunities and threats) and were used as input for a workshop to identify key drivers. During the workshop, experts were asked to assess a generic list of 26 drivers grouped in DESTEP categories (demographic, economic, social, technological, environmental and political). They were further requested to assess drivers for their relevance, uncertainty, their impact on the level of employment, the composition of employment, and the impact on new skills. Additionally, for each driver, the expected short, medium and long-term impact, as well as differences between groups of countries and subsectors were assessed. Where adequate, also sector specific drivers were identified to complement the generic list.

Knowledge, Skills and Competences Defined

Knowledge – refers to the outcome of the accumulation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual.

Skills – refers to the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

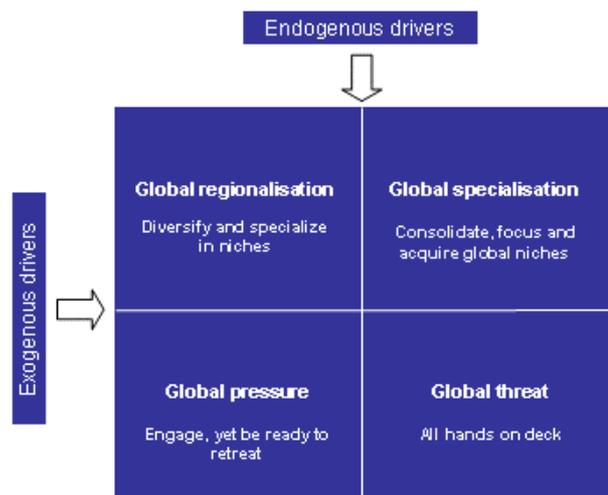
Competence – refers to the proven ability to use knowledge, skills and personal, social and/ or methodological abilities in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy.

Qualitative Scenarios

This second part of the study consisted of scenario development and implications of the scenarios for different occupations between 2008 and 2020. In a first step, the drivers identified in the workshop were clustered in relevant exogenous and endogenous drivers to construct the scenarios. Endogenous drivers were defined as representing factors that can be directly influenced by EU policies. For each sector, 3-4 scenarios were developed (see example from the chemicals, pharmaceuticals and rubber and plastic products sector below).

Implications of Scenarios

Scenarios were built to assess the implications for the level (absolute demand) and composition (relative demand compared to other job functions) of employment. Additionally, new and emergent skills required by different job functions were identified using, as before, standardised tables to ensure comparability between job functions and sector studies.



Rather than producing a full and exhaustive list of all competences required for each job function, the key focus was on identifying and describing key and critical competences for the future. For that purpose, job functions were derived from the Eurostat Labour Force Survey (LFS) based on four criteria: employment shares, closely related job functions, the strategic role in the sector as well as emergent job functions not yet covered and/or brought fully to light by current statistics. In a further step, sector experts assessed tables for each job function inquiring about emergent skills. These formed the basis for the strategic choices subsequently identified.

Strategic Choices to Meet Emergent Competence Needs

Each sector study assessed possible strategic choices in terms of feasibility and actor involvement, based on a standardized list of 13 options. The options comprise recruiting workers from other

sectors, countries (EU & non-EU), recruiting graduates, training employed workers as well as changing work organization. Additionally, options requiring action from sector organisations, educational institutions and governments, including adapting vocational education and training, providing better information and improving cooperation between actors, were assessed.

Generally, rather than focusing on one single solution, a set of linked strategic choices is prime in most cases. Prioritising both in time and in allocation of resources is necessary to guarantee that skill needs are targeted and solved. Skill needs can be identified at various levels, ranging from assessments at the national or even European sector level – which are by nature rather general – to more precise assessments at the regional and company level. Especially for large enterprises not only the identification of skills needs but also the search for adequate solutions will be an integral part of an overall longer-term business strategy. Some solutions will be found within the company itself, for instance by reorganising functions within or between plants, by offering (re)training trajectories and by active global sourcing of personnel. For SMEs, and especially for micro-enterprises, such longer-term, more strategic human resource management often will be more difficult to put in practice. It is to emphasize that at all levels a range of actors need to act, preferably in close concert.

Skills Needs, Skills Shortages and Skills Gaps Defined

Emergent skills needs are defined here as the change in skills that is needed to adequately fulfil a certain job function in the future. Addressing emergent skills is required in order to avoid skills shortages and/or skills gaps in the future.

Skills shortages exist where there is a genuine lack of adequately skilled individuals available in the accessible labour market. A skill shortage arises when an employer has a vacancy that is hard to fill because applicants lack the necessary skills, qualifications or experience.

Skills gaps arise where an employee does not fully meet the skills requirements for a specific job function but is nevertheless hired. This skills gap needs to be closed through training. Skills gaps can arise where new entrants to the labour market are hired and, although apparently trained and qualified for occupations, still lack some of the skills required.

flesh out results in more detail, rather than providing standardised solutions. However, with many industry sectors experiencing similar pressures from globalisation, some general tentative recommendations can be distilled:

Intensify co-operation between relevant stakeholders

The challenge to overcome sectoral skill gaps and shortages will only be met sufficiently if industry, research institutions, training providers, social partners and public authorities act in close concert, both at the national and the European level.

Recommendations

Each sector study contains specific recommendations to the sector to be published by the EC in spring 2009. But with the studies analysing Europe as a whole, the recommendations remain general and need further action at national and regional level. The intention of the project, especially in the follow-up phase, is to stimulate stakeholders at lower territorial levels to

Invest strongly in human capital

Enhanced investment in human capital is required. Cost sharing mechanisms between actors, such as public authorities, companies and individuals, need to be developed and lifelong learning throughout the life cycle promoted: learning must be made more attractive to all, e.g. via tax incentives.

Standardize regulations

Environmental, health and safety regulation (sector dependent) differ in many European countries, lowering the possibilities for job mobility (migration) and posing additional training costs for workers moving between countries. Standardization potentially increases labour mobility within Europe.

Attract top international talent through universities

European universities enjoy a good reputation, attracting considerable international talent. This opportunity should be used to keep top talent in Europe in research and industry. The search for excellence in university education and research should be continued and further stimulated. Strict immigration regulations currently make it difficult for the sector to keep the wanted talent. An effective EU 'blue card' could enhance further mobility of top talent in Europe. At the same time, attracting and keeping top talent requires more flexibility from national governments and cooperation between universities and the sector (firms).

Enhance VET to increase social mobility

Social mobility in many European countries is low with the vocational education and training (VET) system playing a key role for people to move up the social ladder. It is especially important to exploit the potential of late developers that in the first instance did not reach tertiary education. To accomplish that, the VET system should be enhanced to facilitate the option for people to continuously up-skill especially in light of life-long learning.

Coordinate national and European vocational qualifications

With different VET systems in Europe having their own merits, standardization is difficult to impossible. But there is a strong need for coordination to increase labour mobility. One option is to complement the European and national framework already

in place with a sectoral framework.

Diversify personnel and take positive action

Female workers as well as ethnic minorities are still greatly underrepresented in certain sectors (e.g. chemicals). A main recommendation therefore is to implement an active strategy of diversification of personnel in all job functions. This goal is to be met through a broadening of the recruitment scope.

Next Steps

While this project provides a full sectoral analysis on future jobs and skills, the most important thing is to implement actions. For that purpose, it is crucial to see the results so far as only a first step in a much longer, ongoing process. Several actions are foreseen for the dissemination of the results:

- 1) As part of the Restructuring Forums organised by the European Commission, a large **forum** in the second half of 2009 will present key findings to European social partners and public authorities at all levels.
- 2) "**National**" seminars in each EU country will bring together stakeholders of the sector. About 100 representatives of education and training institutions, national, regional and local authorities relevant for the sector as well as national social partners will be invited. The seminars will provide the opportunity to discuss the results of the studies and have an exchange of views on their possible adaptation to national and local contexts.

Beyond specific steps, in the long run, these forward-looking assessments should be performed regularly, with the key stakeholders of the sector (e.g. companies, social partners, local authorities) building partnerships and developing joint actions with a common goal of adapting the management of human resources to face future needs. Furthermore, in addition to the sector studies, links between sector activities will be identified in a follow-up to depict possible labour movements between sectors. This study will be launched in 2009 once the sector studies have been completed.

Sources and Links

It is planned to publish studies on the DG EMPL website *Anticipedia*, the new tool for pooling all relevant information related to the anticipation of change and a forum for stakeholders concerned by the issue. The website will be online in the first half of 2009.

TNO – *New Skills and New Jobs*

http://www.tno.nl/content.cfm?context=markten&content=markt_nieuwsbericht&laag1=280&item_id=2008-07-17%2018:15:53.0&Taal=2

European Commission links

New Skills and New Jobs:

<http://ec.europa.eu/social/main.jsp?catId=568&langId=en>

Responding to economic change – restructuring:

<http://ec.europa.eu/social/main.jsp?catId=103&langId=en>

About the EFMN: Policy Professionals dealing with RTD, Innovation and Economic Development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. One of the most important tools they apply is FORESIGHT. The EFMN or European Foresight Monitoring Network supports policy professionals by monitoring and analyzing Foresight activities in the European Union, its neighbours and the world. The EFMN helps those involved in policy development to stay up to date on current practice in Foresight. It helps them to tap into a network of know-how and experience on issues related to the day to day design, management and execution of Foresight and Foresight related processes.