SIMOVET

2014-1-ES01-KA202-004679

OUTPUT 7

LESSONS LEARNED CHRONICLE

Co-funded by the Erasmus+ Programme of the European Union

April 2016

Table of Contents

ABOUT THIS PROJECT 5

APPROACH OF THE LESSONS LEARNED CHRONICLE 6

CASE STUDY 1: SKILLS OBSERVATORIES 7

Lessons learned from our experience 7

Methodologies for skills monitoring 8

Obstacles and Barriers in Skills Monitoring 10

Success factors for skills monitoring 11

Recommendations for Skills Monitoring 12

Particularities for public entities 12

CASE STUDY 2: FORESIGHT SYSTEMS 13

Lessons learned from our experience 13

Methodologies for projections/ forecasts on expansion demand 15

Replacement demand opportunities 18

Sources and data providers 21

Main products of foresight systems 24

Obstacles or lacks 26

Success factors 27

CASE STUDY 3: DATA ANALYTICS SKILLS ESCALATOR 28

Lessons learned from our experience 28

Methods / processes used to encourage VET providers to provide training in topics of strategic importance 31

Methods / processes to encourage employer demand for learning in strategic areas 33

Methods / processes to encourage individual demand for learning in strategic areas 34

CASE STUDY 4: COOPERATION WITH VET-COACHES 35

Lessons learned from our experience 35

Expert knowledge as a source for LMI products 36

Implementation of expert-knowledge 37

Successful Cooperation 37

Main difficulties when working with labour market and/or VET experts 38

VET-coaches as a specific target group and provider of LMI 41

CASE STUDY 5: EMPLOYABILITY OF GRADUATES 42

Lessons learned from our experience 42
Methods for monitoring the employability of graduates 43
Frequency of the monitoring 45
Obstacles when monitoring employability 45
Cooperation with Schools 47
Main products 47
Use of the products 49

Co-funded by the
Erasmus+ Programme
of the European Union

ABOUT THIS PROJECT

SIMOVET (SMART INFORMATION MODELS TO ADEQUATELY ADAPT VOCATIONAL TRAINING TO THE LABOUR MARKET NEEDS) is an ERASMUS+ strategic partnership which seeks to improve VET systems in order to adapt the workers' skills to current and future labour market needs.

Labour market monitoring can play an important role in reaching the goals of the Europe 2020 strategy: high levels of employment, productivity and social cohesion. However, there is a lack of adequate information concerning the real skills needs of companies, often resulting in inhibiting the competitiveness of European companies. Our strategic partnership supports the development, transfer and implementation of smart innovation systems aimed at reducing skills mismatches. Through exchange with knowledgeable and experienced actors from different European regions, different ways for improving labour market instrument in regard to the skills needs of companies are explored and tested. The project activities focus on regional and local labour market monitoring instruments.

The specific objectives of this European project are:

- To support the development, transfer and implementation of innovative smart information systems at local, regional, national and European level for reinforcing links between education training fields with the world of work.
- To exchange practical approaches among the partners and the implementation of new skills on smart information systems directly related to the VET decision making process will reinforce the links between education and the world of work and achieve a better supply of a skilled work force for the strategic economic sectors in each region
- To increase the labour market relevance of VET through enhanced labour market information systems which support the decision making process and the planning of the training offer for both training providers and users of VET
- To link quantitative and qualitative information on the needs and opportunities of different strategic economic sectors, in terms of professional skills demanded and qualified workers, with the vocational training offer and with the professional profiles of the job seekers (current and potential).
- To allow changes in training and employment policy objectives as well as seeking an impact within the consumers of the labour market information, guiding them towards a career which fits their profile as well as the needs of the labour market

More information about the project at the project's website: http://www.regionallabourmarketmonitoring.net/simovet_project.htm

Co-funded by the Erasmus+ Programme of the European Union

APPROACH OF THE LESSONS LEARNED CHRONICLE

Under the SIMOVET's project framework, 5 pilot projects have been carried out in the 4 participating regions. All partners have been responsible for implementing all necessary activities in order to obtain truly relevant information to support decision-making in education and training regarding future and current workers, with the final objective to further adapt the training to the needs of companies.

At this stage, it was vital to receive feedback from the VET system in each region about the usefulness of the new or adapted information on the labour market. The 5 case studies have been therefore contrasted with partners, VET providers, public authorities and other organisations related to the VET decision making process. With their feedback, partners have developed this report detailing the lessons learned from their experience of piloting practices as well as from the corroboration with stakeholders.

Each of the partners prepared a set of questions that they wished were answered by the other regions concerning their pilot project and its relevance or past experience in that particular region. This means that each region has analysed the pilot projects developed in other regions and has looked for similar experiences in their environment that could be of interest to the partner. In order to collect the information on the key learnings, the regions have conducted meetings or focus groups with their regional working groups to assess the adequacy of the information generated on the labour market for decision-making in vocational training systems.

In the following pages, you will find a chronicle with the collective lessons learned from all pilot projects and the exchange of best practices.

Co-funded by the
Erasmus+ Programme
of the European Union

LESSONS LEARNED ABOUT

CASE STUDY 1: SKILLS OBSERVATORIES

Lessons learned from our experience

Topic	Key Learnings
Do you monitor somehow the skills in your region? If so, how do you do it?	Mix of formats and approaches taken rather than a centralised 'offer'. In some cases data sources are collected nationally and then supplemented by local activities such as surveys and focus groups. Also, there are sectoral approaches, which focus on the monitoring of the skills of a certain sector. And finally a more systematised approach where both the demand and the supply sides are monitored by the Regional Labour Office, through the unemployed and the job vacancies respectively, plus personal interviews to selected businesses.
What obstacles/ barriers do you find when monitoring skills? (i.e.: with a sectorial approach or a sample survey we don't reach everybody…)	1) Limited scope and reach of the monitoring of the sectoral approaches as only skills and occupations within one particular sector are monitored. 2) The lack of formalised systems, responsibilities and approaches. 3) The lack of economic resources for providing LMI 4) Difficulties to arrange personal interviews due to the workload of bushiness representatives 5) Staff not prepared enough for the interviews also because of the work load. 6) Taking into account only the job vacancies reported to the Labour Office limits the picture of skills demand as many skill intensive jobs are advertised in other portals.
What has been successful and what are the success keys/ factors (methodologies, key agents…)	1) To build long-term relationships with the businesses based on mutual trust and respect. 2) To engage with policymakers and practitioners and be able to deliver different levels and types of LMI. 3)To develop a suite of market-facing 'offers' that includes elements such a project management, bid writing, event management and evaluation
What are your recommendations when monitoring skills?	1) To be open and engaged. 2) To provide feedback to the businesses that provide information through surveys or personal interviews (distribute reports among the participants in the investigation). 3) To use social media and make sure people know what you are doing and why 4) Workshops and events help to build an audience for the resultant LMI.
Do you think there are any particularities we should take into account for being a public entity?	To keep it useful and to have the audience in mind throughout. Steering committees, workshops, working-groups, practitioner relationships and policy-level meetings are all absolutely pivotal to ensuring the product is fit for purpose. It is easy to commission LMI, the challenge is getting people to use it and to change the way they work in response to it.

Co-funded by the Erasmus+ Programme of the European Union

Methodologies for skills monitoring

In the UK, there are no formal regional labour market observatories with a responsibility for monitoring skills within the region or local area, however this kind of information is needed by:

- Local government
- Local Enterprise Partnerships (LEPS) – a form of development agency with powers to drive EU funding and economic growth
- Employers
- Social Partners
- Training Providers (Higher, VET, schools)
- Careers Advisors
- Plus many others

Consequently we find ourselves (as labour market experts) responding to requests for skills intelligence from many different sources. Consequently there is a mix of formats and approaches taken rather than centralised 'offer'. Mostly we use data sources which are collected nationally (e.g. the labour force survey) supplemented by local activities such as surveys and focus groups.

In Germany, what IWAK is doing in terms of monitoring skills is a project in the health care sector. It is a strictly sectoral approach where the demand and supply for all occupations in the sector is determined. Based on this evaluation of the situation a coordinated plan for creating further training positions for these occupations is determined. The result is the "Ausbildungsstättenplan" (VET-Position Plan) for the health and elderly care sector in Rhineland-Palatinate, which is part of the general statewide strategy to secure skilled labour in the health care sector by the responsible ministry.

The VET-Position Plan as part of the project "Branch Monitoring in Health Care Professions in Rhine-land-Palatinate" is a unique case in Germany as it is the only strategic approach to plan the provision of VET-positions based monitoring of demand and supply for skilled labour. Its basis is a comprehensive skills monitoring approach, which concentrates on trainings and training position in each occupation in the field.

Co-funded by the Erasmus+ Programme of the European Union

In the Czech Republic, skills in the region are monitored on both the supply and demand sides, especially indirectly by the Regional Labour Office. Demand is monitored through the job vacancies and supply through the unemployed people. Monitoring graduates entering to the labour market is monitored by Regional Authority that is a founder of the higher secondary schools.

Labour office collects information about the level of education attainment and profession performed by each of the unemployed person registered at the labour office. The level of education is monitored by 14-grade scale, the last performed profession by four digit ISCO code. In this manner the labour office receives the overview of the supply of individual profession/skills that are in the regional labour market in the concerned period.

Skills requirements for individual professions are described in the National Occupations System (http://katalog.nsp.cz/). Here demands of individual professions on soft skills, generic skills and professional theoretical knowledge and practical skills are defined.

If the Labour Office needs information about school graduates entering the labour market in a particular year the Office can ask Regional Authority for this information. Regional Authority receives data on the number of students and graduates from individual schools because the Regional Authority is a founder of these schools and schools are financed by the Authority on the basis of norms related to student. In this way labour office knows about "new" skills supply.

Information about graduates from universities/faculties the Labour Office can obtain from the specific web portal (http://krakatau.uiv.cz/statistikyvs/vykonyVS.aspx). This portal provides the information according to the graduates´ place of residence. Based on the characteristics of educational programs we can deduce the nature of knowledge and skills of graduates. The problem is that graduates do not have to enter the labour market at the place of residence, but elsewhere.

Demand for skills is monitored mainly through job vacancies, reported by individual employers to the Labour Office. Vacancies are monitored using five-digit ISCO code. Labour Office has an overview of the size of the current demand for individual professions. The Labour Office also conducts a survey among the most important employers in term of their share of total employment in region. This questionnaire includes among others also questions about employer intention to dismiss or to hire individual profession within next three month and a question about what professions are not available in the regional labour market.

In addition to this type of monitoring the Labour Office carries out interviews aimed at identifying the enterprises needs in term of current and anticipated skills within next 6/12 month. Personal interview are carried out at selected businesses usually twice a year.

Co-funded by the Erasmus+ Programme of the European Union

Obstacles and Barriers in Skills Monitoring

First of all, the Branch Monitoring is a strictly sectoral approach. Thus, it has a limited scope and reach. Only skills and occupations within one particular sector is monitored. On the other hand, limiting the general reach of the project opens up possibilities within this particular reach. What this means is that due to the limitation to one sector, this particular sector can be monitored in great detail. This can be shown with an example: To determine the current state of trainings and training positions in the sector, the project could only partly rely on already existing statistics. For all trainings not executed in a hospital, school statistics could be used. For trainings in hospitals however, a survey was designed and conducted with all hospitals in the state. To make things even more complicated, in some occupations, school cooperate with hospitals, in others they do not and in some cases they do in a certain but special and complicated to assess way. In such cases, the details have to be researched and sometimes you have to make your own calculations based on different primary data sources from different surveys. Such a detailed approach can only be realized when the general scope of the project is limited to a small number of industries, as in this case one. Thus, the limitation to one branch is of course exactly that – a limitation – but it also opens up opportunities to go into a depth of research that would otherwise not be possible.

The main obstacle is the lack of formalised systems, responsibilities and approaches. The lack of regional government with budgets for providing LMI is a major obstacle and to provide LMI within this system requires LMI providers to be entrepreneurial and flexible. Whilst this has benefits it does not result in a consistent local/regional dataset supplemented by long-term local/regional programmes with the kind of employer and social partner input that can be found in some other countries and models (Regio Pro for example). The available data is ok – but we always need to tailor it to the needs of disparate groups. The sectoral networks in the UK are in decline and are having central support removed so most are not providing significant labour market intelligence.

Government favours making data available for people to use then allowing the market to find ways of using it (LMI for all). This leaves it to the large market organisations to choose what to provide and what to ignore (what is not cost effective to analyse).

Co-funded by the
Erasmus+ Programme
of the European Union

In the Czech Republic, due to a high workload of business representatives, it is difficult to arrange a personal interview. The willingness to provide information about the intentions in dismissing/hiring people varied among the individual employers. It is necessary to stimulate their interest somehow. During the interview are presented measures that employers can use, for example grants for employees training, grants for creating new jobs etc. The interview is thus also used as a promotion of activities performing by Labour Office.

Personal interview are demanding also on time of Labour Office staff. Not every worker who performs this activity pays adequate attention to preparing himself/herself for this interview and the skills for this activity also differ among the interviewers.

Demand for skills monitoring through data on job vacancies reported to Labour Office does not provide a complex picture of skills demand. Businesses often use specifically targeted websites for advertising skill-intensive jobs or other suitable means for obtaining the necessary staff. According to calculations made by National Training Fund the share of vacancies reported to the labour office out of the total number of vacancies decreases with rising demands for educational level. Therefore the findings are usually biased in favour of the demand for lower –level skills. Advertising in other portal should be taken into account.

Success factors for skills monitoring

It is important to build long-term relationships with the businesses based on mutual trust and respect. Then the companies are more willing to fill in the questionnaires and provide personal interview.

Our Learning Theme case study is an excellent example of what we have worked with and how we can produce innovative methodologies. To be successful we need to engage with policymakers and practitioners and be able to deliver different levels and types of LMI. To achieve this we have had to develop a suite of market-facing 'offers' that includes elements such a project management, bid writing, event management and evaluation as we cannot exist purely on the financial returns to providing local and regional LMI. Whilst this makes the job varied, it does not guarantee the presence of always up-to-date LMI as we provide this when required, in the format requested and when paid to do it.

Co-funded by the
Erasmus+ Programme
of the European Union

Recommendations for Skills Monitoring

Businesses that provide information whether through a questionnaire survey or through personal interview, appreciate the feedback. It is therefore good to handle a brief summary report on the current situation and expected development on the labour market in term of supply and demand for skills and distribute this report to participants in the investigation.

To be open and engaged. Use social media and make sure people know what you are doing and why. It makes sense to scope things early on to make sure what you are doing is really needed and in the right format. Workshops and events help to build an audience for the resultant LMI. Simply putting the result on a website is too static. Results should be presented in easy to understand format (e.g. executive summaries and data-visualisations) with recommendations that will make the audience think.

Particularities for public entities

Keep it useful and make sure you have the audience in mind throughout. Steering committees, workshops, working-groups, practitioner relationships and policy-level meetings are all absolutely pivotal to ensuring the product (LMI) is fit for purpose. It is easy to commission LMI, the challenge is getting people to use it and to change the way they work in response to it.

Co-funded by the
Erasmus+ Programme
of the European Union

LESSONS LEARNED ABOUT

CASE STUDY 2: FORESIGHT SYSTEMS

Lessons learned from our experience

Topic	Key Learnings
How do you make projections/ forecasts for the expansion demand? (Econometric models…)	Broader use of econometric models for forecasting the demand and supply of the labour market by educational levels, occupations and economic sectors: *Working Futures, Monte-Carlo randomization method, INFORGE model and REGIO model,..* The models have been specially developed for the regions or could refer to national forecasts adapted to the specific region. The models work extrapolating past trends on employment with experts adjustments based on macroeconomic models on expansion demand by sectors. Some of these quantitative perspectives trend to be fairly abroad and are very usefully supported by more detailed examinations.
How do you take into account the replacement demand opportunities considering that the future job opportunities will not correspond precisely to current jobs?	Differences between the three models regarding the replacement demand. Some of them calculate it on a basic assumption that the distribution of jobs in an industry will remain stable over time, being least able to recognize rising and declining jobs. Therefore the qualitative part where experts are asked about their opinions on future jobs and occupations is needed. Plus, there is then the issue about the extent to which the supply side is actually providing the skills that will be required. At the Czech model the projection of replacement demand takes into account that in case of decrease in employment not all jobs will need to be replaced. It is also included the substitution demand: the additional demand for people with a given educational profile who can fill vacant job positions requiring a different type of education.
What sources and data providers are critical in a foresight model?	A comprehensive pool of data sources is very important. Several different statistics are utilized under the different models: public sources from the official statistical offices or the employment agencies (Labour Force Survey microdata, Employment in industries,..), economic data (production, loan, income, value creation, demand and prices for example); demographic statistics as well as data on graduates for past and for the next years by level and field of education,.. It is very important to compare and evaluate different data sources, their strengths and limitations and find ways to integrate all ideally matching sources into a fully working

Co-funded by the Erasmus+ Programme of the European Union

	model.
What are the main products of the system and for which policies are they used?	Medium term prognosis providing information about demand, supply and possible mismatches regarding skilled personnel, focus on occupations, qualification levels and economic sectors and opportunities or gaps for the educational groups. They provide basic information as a valuable starting point for a discussion for political decision-making and the activities of actors in the labour markets for the development of regional strategies programmes or assessment criteria for the selection of projects
What obstacles or lacks do you observe in your own system?	1) These models cannot predict the future (do not anticipate economic shocks or disruptive technologies) and forecasts need to be updated continuously; 2) The assumption that the distribution of different jobs and occupations remains fairly stable over time; 3) The use of the mean retirement age of all occupations for each occupational group; 4) The accessibility and usability of the results (easy to understand and easy to use them); 5) sustainable models of funding foresight systems
What are the success factors of a foresight system?	1) Good relationships with providers of input data; 2) Data quality; 3) To be updated continuously and caution with long term forecasts; 4) Communicating and explaining the results; 5) The way in which it's used as a basis for discussion or as a support for strategy development processes.

Co-funded by the
Erasmus+ Programme
of the European Union

Methodologies for projections/ forecasts on expansion demand

When developing employment and skills strategies for UK Regions, the Marchmont Observatory has normally followed the traditional structure, examining:

a) Demand for Skills
b) Supply of Skills
c) Skills mismatches and shortages.

Employment projections / forecasts form an important element of the Demand side analysis. They normally follow an examination of historical trends in employment (employment growth by sector and by occupation) and an analysis of the current structure of employment, usually benchmarked against national data or other regions selected as geographical comparators. The questions being addressed here are normally fairly broad, i.e. to what extent is employment concentrated in knowledge intensive industries and occupations? Are there specific industries that are particularly prevalent in the area or growing particularly quickly? Are there particular occupations within those industries that are growing quickly?

We are, of course, very aware, that such generic overarching and quantitative perspectives are very limited in their scope and, while useful, are very usefully supported by more detailed examinations of the structural and occupational changes that are taking place in certain sectors. Therefore, we often work with regions to identify priority sectors, making use of projections / forecasts of expansion demand, as a basis for selecting priority sectors and then drilling down to look at ways in which changes in technology, legislation or working practices etc are impacting on the occupational structure of specific sectors and the skills content of specific jobs within each of the broad occupational categories. It's worth noting that the occupational categories used in econometric tools tend to be fairly broad.

Co-funded by the
Erasmus+ Programme
of the European Union

The econometric model forecasts the demand and supply side of the labour market separately for 27 educational and 30 occupational clusters, matches them and indicates future shortages and surpluses at the labour market. The projection period is 5 years.

The core outcomes of the model are

- expansion demand by occupation and education,
- replacement demand by occupation and education and
- labour market indicators (IFLM - Indicator of Future Labour Market prospects, IFRP - Indicator of Future Recruitment Problems).

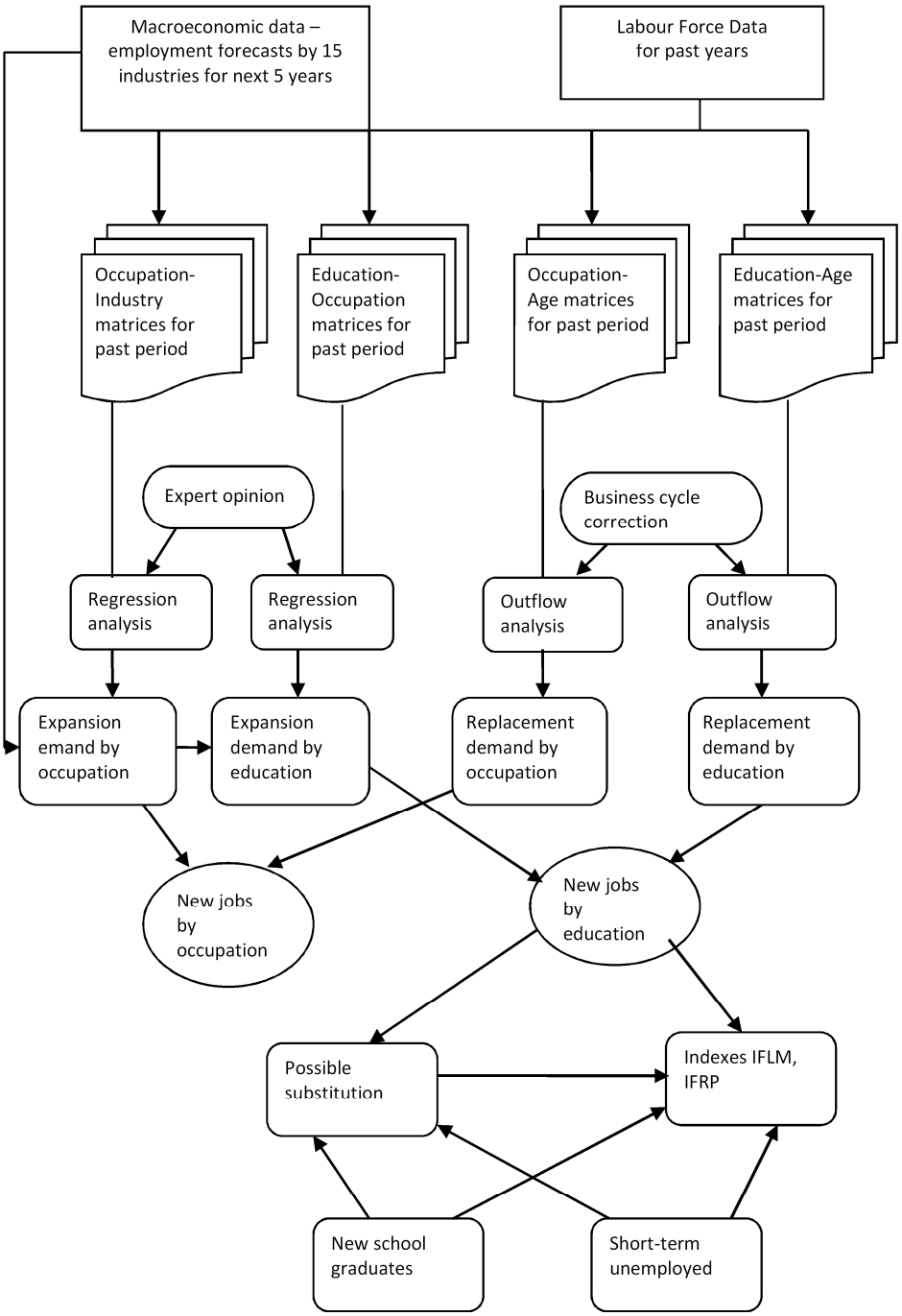
Additional features include substitution demand, shift-share analysis and confidence intervals predicted by the Monte-Carlo randomization method.

The model works on the basis of extrapolating past trends with possibility of expert adjustments. The model uses sample survey microdata (Labour Force Survey), education statistics (projection of graduates by fields and levels of education) and macroeconomic projection of employment for NACE sectors as the inputs.

The projection of expansion demand is based on the projection of employment in sectors. Employment in sectors is translated into employment by occupation and by education using the LFS data in the form of matrices of industry x occupation, occupation x education and industry x education. The model uses time series of these matrices and the researcher may choose the method of prediction for the model as a whole or separately for different occupations, sectors and education clusters (OLS, robust regression, random coefficient model, same as before, average). The expansion demand is calculated as the difference between employment in the year t+5 and the current year t (the projected number can be used in the current year instead of the observed number - so that the expansion demand is not strongly influenced by the year-to-year discrepancies caused by the sample error.). It can have positive as well as negative values (increase/decrease of employment in the group).

Co-funded by the
Erasmus+ Programme
of the European Union

Scheme of the econometric model that presents the components of the model and their relations.:



Co-funded by the Erasmus+ Programme of the European Union

The project ‘regio pro’ is a foresight tool developed by IWAK to provide prognostic information about future developments in occupations, qualifications and economic sectors in Hesse, its regions, municipalities and free cities.

The goal of the project is to provide information valuable for policy processes and strategy develop-ment in the regions in Hesse. It targets political actors, employers, VET-providers and other interested actors in the field of VET and labour market policy and action.

The prognosis in regio pro is based on the INFORGE model, which has been expanded and improved to the model LÄNDER, which is what is used in regio pro for Hesse. INFORGE is a bottom-up, sectoral, macroeconomic model. That means that all 59 sectors in Germany are modelled in full detail while the national economic variables are built via aggregation. Furthermore, the model is fully integrated, which means that not only the sectoral factors but also income developments, distribution and use for products and services in private households are included in the projections.

For the prognosis of skilled labour developments on a smaller scale (regions, municipalities and free cities) the model REGIO is used. It works similar to the LÄNDER model and includes a rich number of economic indicators in the model. The expansion demand is mainly derived from economic factors in each sectors. Industry developments (growth/decline and qualitative factors such as shifts in structure) are the most important basis for such projections on future required employment.

Replacement demand opportunities

The modelling in regio pro is static in that sense that is not able to make prognoses for future, not yet existing jobs based on quantitative figures. In addition, the model calculates on a basic assumption that the distribution of jobs in an industry will remain stable over time. Based on the used figures, the model is at least able to recognize rising and declining jobs and make prognoses for the future about such developments.

What is also included in the model is a qualitative part where experts are asked about their views and opinions on future jobs and occupations as well as sectoral developments and trends. In this part of the model, information on future occupations and job opportunities can be gathered and taken into account.

Co-funded by the
Erasmus+ Programme
of the European Union

Perhaps the most useful source is Working Futures. It's advantages are that a) data is free b) it's available at Local Enterprise Partnership Level (the data below is for the Heart of the South West c) it's available by occupations within 22 different sectors at the local Level d) it contains both historical and forecast data and e) it contains data for expansion demand, replacement demand and the total labour requirement. Of course it is the total labour requirement that most closely relates to the overall skills requirement.

The example below is for the construction sector in the Heart of the South West. It's a bit out of date (sorry – I didn't have the most recent example to hand), but it shows that construction is forecast to grow rapidly in the HotSW area (+14,000 jobs), though the replacement demand (+21,000) is larger than the expansion leading to a requirement for +36,000 skilled people in the ten year period,of whom +20,000 were projected to be in skilled trades and occupations.

Having established this, you can look at the number of people who are being trained by the Supply Side, though you also need to understand to what extent people are transferring into the sector with transferable skills, i.e. the extent to which each individual in the replacement demand figures actually equates to a training requirement. Many jobs (e.g. administrative & secretarial) will have very transferable skills.

Plus, there is then the issue about the extent to which the supply side is actually providing the skills that construction needs. There are other issues to be addressed here, e.g. in relation to very traditional understanding by young people / parents / career advisors re what jobs in construction look like and a resulting excess in demand for rather traditional construction skills (bricklaying / carpentry etc) rather than the skills (e.g. cladding, working with high tensile wires, floating glass etc) required by modern methods of construction. Clearly the data below doesn't go into that and this is why you need to the qualitative analysis to run alongside this data.

	Changing Composition of Employment by Occupation							
Heart of the South West : Construction Employment Levels (000s)	1990	2000	2010	2015	2020	2010-2020 Net Change	Replacement Demands	Total Requirement
1. Managers, directors and senior officials	4	3	4	5	6	2	2	4
2. Professional occupations	4	4	5	6	7	2	2	4
3. Associate professional and technical	3	3	3	4	4	1	1	2
4. Administrative and secretarial	5	4	3	4	4	1	2	2
5. Skilled trades occupations	41	29	32	36	40	8	12	20
6. Caring, leisure and other service	0	0	0	0	0	0	0	0
7. Sales and customer service	1	1	1	1	1	0	0	1
8. Process, plant and machine operatives	5	4	4	5	5	0	2	2
9. Elementary occupations	4	3	3	3	3	0	1	1
Total	66	51	55	63	69	14	21	36
Percentage Shares	1990	2000	2010	2015	2020		Percentage Changes	
1. Managers, directors and senior officials	5.6	6.2	7.5	8.0	8.6	43.7	42.2	85.9
2. Professional occupations	5.8	7.3	8.9	9.4	9.9	39.4	37.0	76.4
3. Associate professional and technical	4.0	5.2	5.4	5.7	6.0	39.7	36.7	76.4
4. Administrative and secretarial	6.9	8.3	6.1	6.2	5.8	18.4	47.9	66.2
5. Skilled trades occupations	62.3	57.3	58.1	57.6	57.8	25.2	38.1	63.3
6. Caring, leisure and other service	0.1	0.1	0.1	0.1	0.1	36.0	44.2	80.3
7. Sales and customer service	0.8	1.1	1.4	1.5	1.5	32.2	33.0	65.2
8. Process, plant and machine operatives	8.1	8.1	7.8	7.2	6.6	6.0	40.3	46.2
9. Elementary occupations	6.4	6.3	4.6	4.1	3.8	3.9	34.0	37.9
Total	100.0	100.0	100.0	100.0	100.0	25.8	38.8	64.6

Co-funded by the Erasmus+ Programme of the European Union

The projection of replacement demand is based on trends in outflow of people from the occupation. The outflow can have various reasons (retirement, maternity leave, change of occupation). However the model does not distinguish between the reasons and uses the empirical trends to project the replacement demand. The computation of the outflow is based on Occupation x age and Education x age matrices for past years. A correction for the influence of the business cycle on the outflow is included in the model and some expert presumptions (e.g. 100% outflow in age groups over 65).

The gross replacement demand (called outflow in the model) is calculated as a cumulative number of people leaving the cluster in the next five years. The model presents so called net replacement demand which takes into account that in case of decrease in employment not all jobs will need to be replaced. Therefore the net replacement demand is calculated

- as equal to outflow if the expansion demand is positive,
- as outflow minus the expansion demand if the expansion demand is negative but the absolute value of the expansion demand is lower than the outflow,
- as equal to 0 if the expansion demand is negative and the absolute value of the expansion demand is higher than the outflow.

The total number of jobs describes the total demand in the next five years as an aggregate of expansion and replacement demand. It is calculated as a sum of positive values of expansion demand and of net replacement demand.

Substitution demand is the additional demand for people with a given educational profile who can fill vacant job positions requiring a different type of education. The model can identify that for some education clusters the demand will not be fully covered by enough supply of people with relevant education. These jobs will not stay vacant but they may be filled by people with different education.

This creates additional demand (called substitution demand) for some education clusters. Only substitution between educations that have a similar occupational structure is possible (the flexibility is driven by past structures in the data). The model allows substitution only at the same education level or from higher to lower level. A restriction is applied which prevents filling the jobs by people with lower qualification.

The substitution mechanism works in several steps from higher to lower education, which reflects that the chances of people with higher education to acquire a job are better. The substitution demand increases the chances in some education clusters to find a job. The model therefore calculates a second IFLM index which counts also for the additional substitution demand.

The shift share analysis is an additional feature which helps to better interpret changes in numbers of employed people. For a given education cluster the increase or decrease in employment can be caused by changes in the industry, in occupations, in the number of workers with the respective education level, or by interaction of these factors. The shift-share analysis therefore helps to explain and interpret these changes. The industry effect shows what change in employment could be observed in the education cluster in the next 5 years if only employment in industries changed and the occupation and education shares remained fixed. Similarly the occupation and education effects show what the change would be if the other factors remained fixed.

Co-funded by the Erasmus+ Programme of the European Union

Sources and data providers

To achieve a reliable and precise foresight model, a comprehensive pool of data sources is very important. In regio pro, this pool of data sources is comprised of several different statistics. They all share that they are public sources from the official statistical offices of national states or the Federal employment agency, such as the „Volkswirtschaftliche Gesamtrechnungen der Länder“ der Statistischen Ämter des Bundes und der Länder (VGRdL) and the „Statistiken zur Beschäftigung der Bundesagentur für Arbeit (BA)“ enriched with information from „Erwerbstätigenrechnung der Länder (ETRdL)“.

To get detailed information on a small regional scale, it is necessary that the statistical sources provide such detail. Thus, it is very important to compare and evaluate different data sources, their strengths and limitations and find ways to integrate all ideally matching sources into a fully working model. This is done in regio pro with the INFORGE model as a basis for LÄNDER and REGIO, where calculations and projections are based on seven different statistical sources. This way, the model is able to process cycle information on production, loan, income, value creation, demand and prices for example. This information is integrated in calculations on population developments as well as data on employment and occupations in each region and municipality.

Co-funded by the
Erasmus+ Programme
of the European Union

There are 3 main data inputs for the model:

- Employment in industries (sectors) for past and for the next 5 years. For past the employment by industry comes from the LFS. Projection for the next 5 years is developed externally (not part of the model). The data file is a matrix of 15 sectors x years (as many as available for past + 5 years in future).
- Numbers of graduates for past and for the next 5 years – by level and field of education (plus estimates how many of them will continue on the next education level and how many will come to the labour market). The projection of graduates and estimates of shares are developed externally, the data source for past are administrative statistics on graduates. The data file contains numbers of graduates in a matrix of education clusters x years (as many as available for past + 5 years in future). For the Czech Republic there are 26 education clusters by level and field of education.
- LFS microdata –The data files with individual records are used in the model (each row is one respondent). Each past year enters the model as a separate file with the same structure. For the Czech Republic the time series starts in 1995.

Co-funded by the
Erasmus+ Programme
of the European Union

We do also use the Heart of the South West Economic Model, produced by Oxford Economics, but this does not produce data for replacement demand and it does not look at occupational change within industries. Therefore it's limited. See the example below. It is however valuable for triangulation purposes and we do use it for describing historical and potential change across the economy as a whole, particularly at the very local area. It's one big advantage is that it provides data for District Authorities (smaller areas than Working Futures).

Employment (jobs) (growth rates- % p.a.)		
	2015	**2025**
A : Agriculture, forestry and fishing	-1.4	-1.1
B : Mining and quarrying	-2.9	-3.4
C : Manufacturing	-1.0	-1.6
Advanced manufacturing (excluding aerospace & marine)	-1.0	-1.6
Aerospace	-0.6	-1.2
Marine	-1.4	-2.1
Food, drink & tobacco	-0.9	-1.5
Other manufacturing	-1.0	-1.6
D : Electricity, gas, steam and air conditioning supply	-0.9	-0.8
E : Water supply; sewage, waste management and remediation activities	-1.5	-1.3
F : Construction	1.9	0.7
G : Wholesale and retail trade; repair of motor vehicles and motorcycles	1.4	0.1
Wholesale & retail trade & repair of motor vehicles & motorcycles and wholesale trade,	1.4	0.2
Retail trade, except of motor vehicles & motorcycles	1.3	0.1
H : Transportation and storage	2.6	0.3
I : Accommodation and food service activities	1.4	0.1
Accommodation	1.3	0.0
Food & beverage services	1.5	0.1
J : Information and communication	1.3	-0.1
K : Financial and insurance activities	-0.4	-0.4
L : Real estate activities	1.8	0.6
M : Professional, scientific and technical activities	2.4	1.2
Professional services	2.4	1.2
Scientific & technical	2.3	1.1
N : Administrative and support service activities	2.0	0.9
O : Public administration and defence; compulsory social security	-2.0	-0.1
Administration of the State and the economic & social policy of the community	-2.9	-0.1
Provision of services to the community as a whole	-1.3	-0.1
Compulsory social security activities	-3.2	-0.3
P : Education	-1.6	0.0
Q : Human health and social work activities	-0.6	0.6
R : Arts, entertainment and recreation	2.0	0.8
S : Other service activities	1.5	0.3
Total	0.6	0.2

Employment: occupation (people, 000s)		
	2015	**2025**
Managers and senior officials	120.4	129.7
Professional occupations	80.7	85.3
Associate professional and technical occupations	97.9	104.6
Administrative and secretarial occupations	74.5	75.9
Skilled trades occupations	99.8	100.5
Personal services occupations	64.5	68.6
Sales and customer service occupations	73.1	78.6
Process, plant and machine operatives	46.9	46.7
Elementary occupations	103.9	109.5
Total	761.7	799.3

Co-funded by the
Erasmus+ Programme
of the European Union

Main products of foresight systems

Core results by individual educational clusters are:

- Expansion demand for the educational group in the next 5 years (employment in target year minus employment in the current year);
- Replacement demand –new jobs in the educational group which will be created as a result of the outflows from this educational group;
- Number of graduates with this education expected to enter the labour market in the next 5 years;
- Number of unemployed less than 12 months with this education;
- New jobs – total demand in the next 5 years;
- Lower and upper bound of the 95 % confidence interval of the new jobs (Monte-Carlo randomization);
- Gap between supply and demand in the next 5 years;
- Indicator of future labour market prospects – „chances of individuals to get a job“;
- Indicators of future recruitment prospects – possibility for a firm to recruit workers for a given education;
- Unemployment index (all unemployed – gap)/(employment+graduates+short term unemployed);
- Employment in the current (last known) year;
- Expansion and replacement demand as a share of current employment;
- Number of graduates as a share of current employment;

Core results by occupation are similar to the results for educational cluster. Based on this data different LMI can be built.

Co-funded by the
Erasmus+ Programme
of the European Union

The main product of the system is a medium term prognosis providing early information about de-mand, supply and possible mismatches regarding skilled personnel in the Hessian labour market (focus on occupations, qualification levels and economic sectors). It provides basic information on the labour force and skilled personnel for political decision-making and the activities of actors in the regional labour markets.

The results form regio pro where one of the major statistical bases for the “Gesamtkonzept Fach-kräftesicherung Hessen” (General concept for securing skilled labour in Hesse), a targeted labour market strategy by both, the Hessian Ministry of Social Affairs and Integration and the Hessian Ministry of Economic Affairs, Energy, Transport and Regional Development. This strategy is based on a resolution by the Hessian cabinet made in 2012. In this resolution, the respective ministries in Hesse were commissioned to develop such a general concept including all programs and initiatives by the Hessian state government as well as recommendations made by the commission for skilled workers Hesse (“Fachkräftekommission”). (Also see case study about the strategy…)

They are mainly used to inform the development of regional strategies, which in turn can inform priorities for programmes or assessment criteria for the selection of projects put forward for funding under certain programmes.

However, we would always suggest that they form a valuable starting point for a discussion, particularly once brought together with data on the ways in which technology, globalisation, occupational change etc are changing skills requirements. There will always be experts (both from Industry and in the Skills Supply System) with a more nuanced understanding of the dynamics that the data illustrates.

Co-funded by the
Erasmus+ Programme
of the European Union

Obstacles or lacks

The main problem with all these models is that they cannot predict the future. They do not anticipate economic shocks (e.g. the financial crisis) or the arrival disruptive technologies which can have an enormous impact in a very short period of time. Labour Market Information data is a trail of historical data, which can be projected into the future. However, the analogy, is that this is like trying to drive while looking in the rear view mirror. If the curve remains in the road ahead resembles the curve in the road we have just travelled, we might stay on the road. We can try to be a bit more sophisticated, e.g. predicting that the curve will continue to sharpen up to given point, but even at this point, we are entering into a sphere of conjecture. What, for example, is our rationale for assuming that there will be some natural limit that will prevent a sector or occupation growing beyond a given point. For this reason, the forecasts need to be updated continuously (every two years) and the long term forecasts needed to be treated with very considerable caution. Indeed, we have seem them change very dramatically in the past, particularly at the moment of the economic crisis.

Like all models, the one used in regio pro leaves room for improvement in the future. Regarding the methods used to model future figures, the model in regio pro uses the assumption that the distribution of different jobs and occupations remains fairly stable over time. However, it was shown in the past that this is not always true. Some jobs or occupational fields rise very fast in numbers and replace others in a sector. Such developments and trends should be implemented better in future prognosis models.

A second shortcoming of the model is the use of the mean retirement age of all occupations for each occupational group. A possible solution could be to get data on the retirement age of each single occupation to improve the data quality further. It is not totally clear yet, whether such data is available and precise enough for the model.

Apart from other methodological issues that leave room for improvement in the foresight model, there are other issues that could be addressed in the future. These concern the accessibility and usability of the results. It is very important to provide the results in a way that makes them easy to understand and thus, easy to use. While the regio pro project has spent tremendous effort in designing an online resource for easy access and use, it remains important to stay in touch and communicate with regional and local users of the data to support their use. Currently discussed are scenario development strategies, which could even better illustrate the results for individual sectors, occupations or regions.

Co-funded by the
Erasmus+ Programme
of the European Union

This system was developed within one project. It is necessary to find another project that will allow further developing and operating the system.

Success factors

Apart from the obvious aspect of data quality, which is of course one of the major factors, it has proven very important to moderate and mediate the results of the project. What that means is that just producing data and providing it mostly uncommented does work significantly worse than com-municating the results in workshops, events and conferences with regional and local actors and practitioners. A very successful model in the past have been the regional conferences, where IWAK not only provided the results from regio pro, but also provided support for strategy development processes based on the data from regio pro. (also see the GP example on regio pro…)

The most important precondition for systems´ performing are good relationships with providers of input data.

- The way in which it's used as a basis for discussion
- The way it's explained by those who understand how it is put together
- Including occupational change within sectors, as this starts to provide data that can be used to inform the content of training systems. the forecasts need to be updated continuously (every two years) and the long term forecasts needed to be treated with very considerable caution. Indeed, we have seem them change very dramatically in the past, particularly at the moment of the economic crisis.

Co-funded by the
Erasmus+ Programme
of the European Union

LESSONS LEARNED ABOUT

CASE STUDY 3: DATA ANALYTICS SKILLS ESCALATOR

Lessons learned from our experience

Topic	Key Learnings
What methods & processes are used in your region to encourage VET providers to provide training in topics / subjects that are of strategic importance but where there is weak employer / learner demand? How easy, for example, is it to modify the funding system so that they are paid more per learner supported / qualification delivered.	A key lesson from Germany is that simply having employer engagement within the ET system through mainstream apprenticeship delivery and support does not in itself deliver a flexible and responsive system. Where topics have been identified as key ones to move towards and start delivering, the UK system may use financial incentives to attract providers to deliver the programmes whereas the German system will seek to modify the content of existing occupational training. The latter is slower but will ensure the skills are embedded, ultimately within large elements of training programmes at national and regional scale resulting in greater lasting impacts. The Basque example show the potential of funding flexibilities where depending on the rate of insertion of the different occupations, more or less money is allocated to the particular training of that occupation. This system also takes into account the strategic sectors (allocating more budget to the training of these sectors) and also considers the growth of certain sectors or the qualitative reports such as forecasting.
What methods / processes to you use in your region to encourage employer demand for learning in areas that are considered of strategic importance.	Tknika is a good example of a centralized (regional level) VET innovator making use of LMI and bringing together the relevant stakeholders to respond to new and emerging needs. This is an interesting practice that could be shared in depth with UK LEP level LMI interventions. Also in the Basque region by Hobetuz provides financial aid and the possibility of obtaining methodological assistance to carry out Training Needs Analysis and Detection Studies. Companies can also benefit from funding to develop strategic training actions (continuing training actions). From the German example we have learned that involving stakeholders early and providing them with

Co-funded by the Erasmus+ Programme of the European Union

	knowledge and information that actually is useful for them is key to the success of such projects. An example for this is the regional conferences in regio pro. Another more recent example is the regional day in the initiative ProAbschluss where regional stakeholders are brought together to engage in strategic processes to bring people into training with the goal of a certified professional qualification.
What methods / processes to you use in your region to encourage individual demand for learning in areas that are considered of strategic importance.	In Germany, alongside formal and non-formal education and training, informal adult learning also plays an important role in lifelong learning. In order to obtain an overall picture of lifelong learning in all contexts, it is not sufficient merely to take participation in non-formal education and training into account. If all forms of learning are considered, the proportion of adults involved in lifelong learning becomes significantly greater. It is, however, also revealed that informal learning has thus far contributed to compensating for inequalities in access to lifelong learning in the case of only a few individual groups. The Basque example of a lifelong learning service which encourages individual demand for learning, and provides a range of services and facilities aimed at citizens is useful and given the UK's recent history of cutting funding and provision of similar subjects, worthy of analysis. It provides: 1. Support for the implementation of activities related to lifelong learning. 2. Offers Training Modules that may lead to accreditation. 3. Provides a free website - Hiru.eus that provides free content, bringing training to individuals and families. 4. Includes an information advice and guidance (IAG) function. Given the UK's marketised approach to the provision of IAG (which has not resulted in significant take up) it would be worth looking at alternative models of provision that will be needed as people remain in the workforce longer and the nature of work changes. This could be an interesting idea for a Network project given the VET strength of the network – and the LMI focus would produce an interesting insight into how evidence is informing lifelong learning provision. The study could focus on how lifelong learning is being

Co-funded by the Erasmus+ Programme of the European Union

	encouraged to groups that are currently under-represented and this would draw in lessons from the German example.

Co-funded by the
Erasmus+ Programme
of the European Union

Methods / processes used to encourage VET providers to provide training in topics of strategic importance

The VET-system in Germany is very specific in a way that it is not originally skill-driven but structured by occupations. This has several further implications and consequences for the way actors can steer or even govern the activities in the VET-system.

First, occupations structure the VET-system and therefore the demand and supply side, although we are experiencing a certain shift in a sense that due to lifelong learning and flexible skill requirements in many occupational fields, skills and their acquisition post the initial training are gaining importance. However, occupations as a pre-defined set of actions, knowledge, qualifications and more recently skills, are still the dominant structural element. Occupations, what they are, what they include and what forms them are defined and filled with content by the employers, their interest organisations and the responsible chambers. These are very powerful organisations in the German VET-system and labour market.

Second and following the above, for initial VET, the main actors are not VET providers in terms of schools, colleges or private institutes but the employers and the chambers. Therefore, they also are the actors who are mostly responsible for the type of training young people get, what they learn and what skills they acquire. A great practical difficulty for VET policy arises from that: In the German VET-system, there is almost no method to sanction (neither positively nor negatively) employers for their (lack of) commitment and involvement in training and learning activities or policy. Usually only very large political programs on a national level lead to changes and developments in this field. There is also little to no way to make VET-providers engage in certain areas and even if, their role of minor importance in earlier stages of the VET-system. Even in later stage, the chambers are very dominant as in many industries and occupational fields, only trainings that are officially certified and acknowledged by a chamber have high labour market relevance. In the cases of VET-providers as well as for private employers, the only way to steer or govern their activities is by making money available for actions that are compatible or even favourable for reaching certain set goals.

Third, initiatives that for example provide financial support for trainings of individual workers in most cases are very open mostly target the acquisition of an official occupational degree. The content of the trainings, the skills to acquire and the knowledge to be gained is usually of secondary importance and the choice of a training as well as the providers is in many cases left to the individual. This is especially true fall all coupon systems, which exist in most states in Germany – also in Hesse. Here again the importance of the occupations and a formal occupational degree becomes obvious.

For a labour market observatory the only way to engage is processes of encouraging actors to take part in certain activities or take certain actions is by providing solid ground for such decisions. LMI is what we can provide as well as taking part in the strategic processes, which such LMI is one basis of. IWAK has a history in involving projects where a close communication with the important actors of a field played a pivotal role. Not all of the project were equally successful, though. Often interests and goals of different stakeholders in a field are not compatible and are very difficult if not impossible to accommodate. What we have learned from those projects however, is that involving stakeholders early and providing them with knowledge and information that actually is useful for them is key to the success of such projects. An example for this is the regional conferences in regio pro, where not only data on developments in sectors and occupations is provided, but where a complete cycle of a strategic process is initiated and supported by IWAK on the basis of this data and with the early involvement of diverse important strategic actors in a region. Another younger example are the regional day in the initiative ProAbschluss where again regional stakeholders are brought together to engage in strategic processes to bring people into trainings with the goal of a certified professional qualification.

Co-funded by the
Erasmus+ Programme
of the European Union

In the Basque Country we have an organization which is “Teknika, the Centre for Innovation in Basque Vocational Training” promoted by the Basque Department of Education, Universities & Research. Through networking and direct involvement by the Basque Vocational Training teaching staff, the Centre develops innovative projects in the areas of technology, education and management. It´s a tool for the innovation on vocational training centres and aims to transfer this innovation from the trainers to the students on initial vocational training and to the companies through the training of their workers and through technical assistance to their innovation process. Tknika Innovation Model is the Centre's innovation management model which develops two critical initiatives ‘Strategic Environments’ and ‘Specialization Areas’. The process begins with the collaboration and coordination of all the strategies of the Basque Country to select the sectors that will be targeted by the Model.

Strategic Environments.

Once the sectors have been identified, Tknika proceeds to the technological monitoring of strategic environments to identify which will be the changes in the sectors from the technological point of view that will affect the skills and profiles of those sectors. The aim is to adapt the training process to the real needs of companies; ultimately, to identify "the jobs of the future" in order for the training system to focus on them. The different fields considers critical: advanced manufacturing, car industry, energy, railway industry, robotics and artificial vision, 3D manufacturing and lean manufacturing. For this technological monitoring, Tknika counts with the participation of Universities, Research centres and other key agents (mixed working teams). Tknika is divided into lines of work to develop different projects and these lines network with one another. Once the monitoring system detects new impacts on jobs and occupations resulting from technological trends or changes, the working teams learn from these trends and develop specific projects, exploring all their possibilities, analysing their application to training, production or to the creation of new kinds of business. Lastly, these teams efficiently convey this knowledge to society by means of the VET centres. Here, the Vocational Training centre network not only plays a major part in the projects but is the leading vehicle in transferring the generated knowledge to companies and to the Basque society in general.

Specialization Areas

Corresponds to a more advanced phase of the Innovation Model. In this phase, the specialization areas are selected and the innovation teams are responsible for researching in these areas in order to prepare the trainers on those aspects they have considered of interest. To this end, they will generate suitable training material for the trainers and for the students, creating new courses and/or adapting the existing ones. The areas of specialization in which the Basque Country is currently working on are: Bioscience and new materials, Energy efficiency, Virtual Environments, Nanotechnology, Biotechnology, Electromedical, Biomedicine, Drones and Smart Cities. In these areas mixed teams are created to identify and learn about new technologies and they then develop educational materials for its inclusion in the provision of vocational training, either through curriculum development of new professional profiles or through the addition of new units of competency in traditional training. The objective is to create a portfolio of projects with technologies that make it possible to address new markets and therefore to generate activity. To achieve this, it is necessary to manage projects with numerous external collaborators (experts), seeking ways to exploit the results of these projects beyond the transfer of knowledge to centres, such as, for example, new products exploited by already existing companies, new technology-based companies, etc.

Regarding the modification of the funding system, in the past years, some key performance indicators have been taken into account in order to adequately plan the budget of the different families or sectors of the vocational training system for employment (training for workers and unemployed people, not initial training). This means that depending on the rate of insertion of the different occupations, more or less money is allocated to the particular training of that occupation. This system also takes into account the strategic sectors (allocating more budget to the training of these sectors) and also considers the growth of certain sectors or the qualitative reports such as the Cedefop’s forecasts.

Co-funded by the
Erasmus+ Programme
of the European Union

Methods / processes to encourage employer demand for learning in strategic areas

To encourage employer demand for learning in strategic areas in the Basque Country we have an organization named “Hobetuz”. HOBETUZ was created in 1996 for managing the Continual Training subsystem in the Basque Country and since 2012, is now part of Lanbide -the Basque Employment Service. It´s in charge of channeling all the financial resources intended for continual training plans for companies, workers and specialised centres that has signed the Agreement on Continuing Vocational Training in the Basque Country.

Apart from the pre-planned vocational training courses offer for employees, there is another possibility with a greater adaptation to the needs of companies. In order to become more competitive by improving skills and qualifications, companies can carry out their own specific study of their situation financed directly by Hobetuz. Financial aid is available to do this, as well as the possibility of obtaining assistance regarding methodologies to carry out the Training Needs Analysis and Detection Studies. Companies can also benefit from funding to develop strategic training actions (continuing training actions).

The ultimate impact pursued is that the company can develop an offer of vocational training tailored to its needs through which companies can ensure their future competitiveness and which will also be funded by Hobetuz. Training Needs Analysis and Detection Studies are part of a Hobetuz’s programme which is launched every 2 years and serves as a basis for improving the skills and qualifications of the workers of the companies, in order to achieve greater competitiveness.

This practice is a good example on how a vocational training offer can be developed in a way which is directly tailored to the business’s needs. The companies, through a systematic methodology and external technical support provided by Hobetuz through financial aid, identify their training needs, reflected these in an action plan to be developed by vocational training centers who provide this training offer to their employees through, once again, the financial aid provided by Hobetuz.

Co-funded by the
Erasmus+ Programme
of the European Union

Methods / processes to encourage individual demand for learning in strategic areas

The Ministry of Vocational training and lifelong learning was created in 2001 in the Basque Country, confirming the strategic role of these elements in the preparation and quality of people, in adapting vocational qualifications to the needs of the productive environment, and policies employment as an instrument of employability. The service of lifelong learning which encourages individual demand for learning, provides a range of services and facilities aimed at citizens:

1. Support for the implementation of activities related to lifelong learning. (Decree 248/2012 of 27 November). This is aid to promote learning actions carried out in any field of knowledge, in the context of lifelong learning.
2. Partial Offer Training Modules. It gives the possibility to enroll in modules (subjects) independently offered in both public and private. Through the modules you obtain an academic certification and partial cumulative accreditation of skills acquired.

3. Hiru.eus (2004) lifelong learning educational website that provides free content, bringing training to individuals and families. It has a number of tools such as:
   - Hirubila: Official search of learning activities and training courses
   - Hiru Ikasgida: provides information on learning activities in a given area or region of the Basque Country, advice and guidance to those

Co-funded by the
Erasmus+ Programme
of the European Union

LESSONS LEARNED ABOUT

CASE STUDY 4: COOPERATION WITH VET-COACHES

Lessons learned from our experience

Topic	Key Learnings
How do you value expert knowledge as a source for your LMI products – also compared to statistical data?	Expert knowledge complements statistical data in an important way. It provides insight into the current situation in a field, what urgent problems and upcoming trends are. Thus, it helps not only to understand the current situation but also to anticipate the future.
How do you implement expert-knowledge of specific groups of labour market and/or VET experts into your LMI products?	Expert knowledge can be obtained by establishing expert boards, regular working-groups or by conducting personal interviews. All these methods have proven successful in different occasions and did provide excellent data. In some cases, initiatives or programmes relied solely on qualitative data from expert knowledge.
Which cooperation with a group of labour market and/or VET-experts has been successful for you in the past and why?	Especially cooperation with experts with the goal to obtain knowledge and information on employers' needs for current and future skills of employees have been successful in the past. This is the kind of information hard to obtain other than from the employers who serve as experts for this question in such a case.
Which are the main difficulties when working with labour market and/or VET experts to obtain their knowledge and how can you solve them?	Some of the main difficulties are finding suitable experts, finding the time to talk with them, making clear what their benefit from the effort will be and finding the right method to involve them. Being precise and clear about the goals of the initiative or project you are working in solves some of the problems, making clear what the experts' role is, setting clear goals and a timeframe for each occasion of the cooperation also helps.
Would you work with VET-coaches as a specific target group and provider of LMI in the future and what would your setting look like?	While some partners have already worked with VET-coaches in the past, see their value as a target group for LMI or as experts in the labour market and the VET-system and thus plan to work with this group again, other partner do not have such plans yet.

Co-funded by the
Erasmus+ Programme
of the European Union

Expert knowledge as a source for LMI products

Expert knowledge is really important. Analysing LMI is a tool but it needs to be directed to a particular 'end'. The experts are important in identifying where we are 'now' what the problems are, what the LMI may mean and how can the sector/topic change or be influenced to do things differently. They understand the obstacles and can help guide the recommendations from any study.

Expert knowledge is an important complement to statistical data, enabling interpretation of statistical result. It is very valuable and reliable source for understanding the cause and effects of phenomena that are captured in the statistics.

Incorporation of value expert knowledge on Basque LMI products is aimed, on the one hand, to improve the knowledge about the trends in the different economic sectors and occupations to detect and analyse the economic activities with better perspectives for the future, and on the other hand, to anticipate the growth in employment that will come out of the jobs that will be created in the next few years, the job descriptions and the new professional skills that require training. The purpose of this is to determine the best course of action on active employment and VET policies. The participation of outside experts enabling LMI to reduce predictive uncertainty about specific opportunities and to have more precise qualitative information at job opportunities and training needs (less based on statistical data and more

Co-funded by the
Erasmus+ Programme
of the European Union

Implementation of expert-knowledge

The Sectoral Expert Panel in the labour market in the Basque Country we have described as a good practice under SIMOVET project is an example of this and I would recommend it as an answer to this question. The example is focused on Renewable Energy and Smart Grids Expert Panel detected as a strategic sector in the Basque industry where experts coming from vocational training centres, research institutions and industry worked together with Basque LMI in order to have a detailed view of each job opportunity and its associated skills.

The Learning Theme approach we have written up more than once is an example of this and I would recommend it as an answer to this question. Essentially we tend to let them guide the process of investigation and to identify obstacles and issues that could impact on the resultant recommendations. They can also identify good and interesting practices. They can finally be the audience to which you test your findings and recommendations to see if they are correct or need to be modified.

Expert knowledge represents an important input into the LMI. LMI focused on mapping the current and anticipated demands on ICT skills in the region was almost entirely based on the expert knowledge. Structured personal interviews with relevant national experts and regional employers were conducted. Monitoring of job vacancy was the other source of information. ICT skills for performing ICT professions (ISCO 25 - ICT specialists and ISCO 35 ICT technicians) and other the most demanded professions in the region were derived from the wording of the advertisement. Aim of LMI is to provide the basis for ensuring adequate courses of initial and continuing education in the region.

Successful Cooperation

Co-funded by the
Erasmus+ Programme
of the European Union

This practice is considered a success because one of the traditional demands of employers is the gap between formal education and actual skill needs. Following various dynamics a process was put in place to describe its value chain and activities and then explore into the key job positions and the skills required for each activity sector, current skills and future demand on skills. Conducting a proper diagnosis of the training needs of the current workers and demand on skilled workforce in a company is a guarantee as to the effectiveness of training plans developed by VET centers. This practice is a good example on how a vocational training offer can be developed in a way which is directly tailored to the business's needs. In turn, policy maker's participation is also a chance to identify necessary decisions to be taken into account on VET and active employment policies.

For the success of the cooperation the long-term personal contacts with relevant experts are the most important.

Most of our most successful collaborations have been when we are able to combine policymakers (local and regional) with VET practitioners, people from industry and social partners. The combination, when brought together to tackle a particular need – perhaps how to respond to a changing labour market or major new development – is ideal as they can help ensure the success of the work. Having a supportive regional government (or local government) is also important as they are a route to policy change.

Main difficulties when working with labour market and/or VET experts

The most difficult is the initial phase of establishing the cooperation because the experts are usually very busy. It is important to convince the experts about the usefulness of the activities and that their participation in individual activity will be beneficial for them as well.

Co-funded by the
Erasmus+ Programme
of the European Union

- To establish the profile of experts that are required: The starting point once the sector of interest has been chosen, is the identification and prioritization of the agents, companies or organizations that represent enough the sector: leading companies in this sectors, referents of the technological advances, representatives of small and large enterprises,.. It is also important to determine the profile of the experts. We usually address technical and qualified positions or management and executive profiles because Human Resources profiles are not always sufficiently qualified to fulfil the technical needs.
- Recruitment of experts. The opportunity to be involved in decision making processes, to be valued as experts, and to be given the chance to work collaboratively with public policy makers can be empowering for many participants, but it is not enough for companies and it is needed to ensure they see a benefit from their involvement. In our case there had a clear benefit with the training actions to be developed more adapted to their needs and the commitment for public financing.
- Ensuring the proper adequacy of sessions, methods and duration to the profile of the attendants; real chances of them taking the time: The context of minority involvement of companies for the design of labour market policies depends on lack of adequate methods and methodologies that would guarantee timely and skilled participation, in a framework of collaboration. Sessions of no more than two hours are recommended and it is also important to set clear goals and outcomes regarding in each session

Co-funded by the
Erasmus+ Programme
of the European Union

The main difficulties and solutions are typically:

a. Ensuring they see a benefit from their involvement

Where they are giving of their time voluntarily it is necessary to ensure that they see a purpose in their involvement this should also be the case if they are being paid if you are to receive their full attention). Logically the purpose of the work and the question that you are seeking answers to needs to be carefully set out and their particular role, and the length and scale of that role needs to be clarified.

b. Finding time in their diary

Ensure sufficient notice is given and that venues are chosen in the right location and at the right time. Breakfast briefings are often popular, especially with the private sector, and there is also a role for evening meetings when the occasion warrants it. Venues should have complementary wifi and easy transport connections. Ideally they should also have teleconferencing and dial-in facilities.

c. Getting them engaged in the first place (helping them understand the ultimate aims from the work)

This is critical. The involvement of senior policymakers, employers and senior VET staff will help ensure others see a benefit to the work. It makes sense to engage early with labour market/VET experts in 1-2-1 or small groups to discuss the work and to ensure they understand exactly what will be expected of them and why the work is important.

d. Differing timescales

The Policy cycle can be very slow and although an input may be very significant it can sometimes not be clear what the result was. Commercial partners tend to have far shorter timeframes whilst universities and colleges can have long lead-in time to activities. It is important that those involved understand the likely timescale and structure of the changes early on so they understand why they are being engaged at different times and why it may take a long time to see a result. University and research timescales can be very slow and long.

e. Choosing the right way to engage

Different approaches suit different audiences and needs. Online surveys and telephone interviews can be very effective for a quick study but larger work/research needs longer and more detailed engagement, often qualitative in nature. Speak to the experts and see what format they would prefer and tailor this to their needs.

Co-funded by the
Erasmus+ Programme
of the European Union

VET-coaches as a specific target group and provider of LMI

Yes we have worked with VET-coaches before and this is practical again but is likely to be in response to specific needs that they have articulated (or government has articulated that they will be pivotal to resolving). Ideally it would be part of an ongoing relationship led by policymakers where VET-coaches are part of the LMI infrastructure and are invited to take part in regular (perhaps quarterly) themed events to identify issues and barriers and how they may be overcome. More likely is that we will be providing them with intelligence on labour market developments and new priorities/new skills that may be needed to help them advise customers (businesses and individuals).

Basque LMI has worked with VET-coaches before and is planning to work again with Sectoral Expert Panels on the future LMI foresight and skills tools to be developed in a short term. Basque LMI is looking for the establishment of a triple helix working group different strategic economic sectors, between VET centres (education and training providers and career guidance professionals), employment service (active polies and LMI) and socioeconomic agents (social organisations and employers and their representatives), which will jointly search for job opportunities and skills needs.

In the near future we do not intend to establish this specific target group.

Co-funded by the
Erasmus+ Programme
of the European Union

LESSONS LEARNED ABOUT

CASE STUDY 5: EMPLOYABILITY OF GRADUATES

Lessons learned from our experience

Topic	Key Leanings
What methods do you use for monitoring of employability of graduates?	Monitoring is performed either by public employment services in cooperation with the respective educational institutions or by educational institutions themselves. Two basic ways for conducting the survey are used – telephoning surveying, written completing questionnaire. Monitoring is aimed at graduates (a certain month/years after graduation) or at undergraduates when their attitudes to future career are monitored and appropriate interventions could be made.
How often do you realize this monitoring and why do you choose this frequency?	The practice is ran annually, because one of the general objectives is to describe the economic and labour market context in which students began their education. This frequency enables to monitor the evolution of students attitude to their future career.
What obstacles do you face during this process and how do you solve them?	Contacts with representatives of the university elected for four – develop contacts with technical staff. 2) Gathering data form students – updating phone and email with administrative support. 3) Updating and design of questionnaire – control size. 4) Use the result and their dissemination - develop a communication plan. 5)Paper form is not very effective – using online system
How the cooperation with schools works?	The cooperation is based on agreement with the universities.
What are the main products?	Presentation report. Table with the results. General Report for dissemination. Specific Reports by degree. Context indicators of the labour market. League tables by discipline and institution. In the case of monitoring undergraduates is the main product "graduates who have thought about his/her best career".
How are these products used?	As a base for decisions making a objectifying the decisions on allocation of public resources. Main users: Public managers responsible for VET, Heads of Universities and VET schools, teachers, career guidance professionals.

Co-funded by the
Erasmus+ Programme
of the European Union

Methods for monitoring the employability of graduates

In the Basque Country we monitor the employability of the university and VET graduates through a survey. The survey allows both the Public Employment Service and the university and vocational training managers, to count with a set of indicators that each year relate the training offered to the integration into working life of all graduates, detailing indicators of wages, stability, working time, relation with the employment, industries, occupations, etc.

It´s based on a telephone surveying directed to two target groups; all persons who obtain a university degree (three years after finishing the degree), and all persons who obtain a VET certification (after one year in the labor market). These consist of around 20,000 people in total and 100% are telephoned.

Co-funded by the
Erasmus+ Programme
of the European Union

The main metric for measuring the 'employment' of undergraduate and taught postgraduate students is the Destinations of Leavers from Higher Education (DLHE) survey which is conducted 6 months after graduation. This gives the number of graduates in a positive destination (e.g. further study or graduate level employment). Every University is legally obliged to conduct this survey and return the data to the Higher Education Statistics Agency (HESA) and it is from this that the league tables are constructed.

This academic year we have introduced a new 'Career Registration Survey' which is conducted at the point of registration at the start of the academic year. These questions give us an indication as to whether the individual has not started thinking about their career yet/ has started thinking but has no idea/ wants to gain experience/ through to has already applied for graduate level work or further study or has already secured further study or work. This survey is conducted at the point of registration each year so that the attitudes of cohorts and individuals can be tracked and appropriate interventions made if they are not progressing in their thinking.

All first year undergraduates attend a mandatory one day career development learning programme. In this they are asked questions on their attitude to career development learning using Responseware, questions include:legislation or working practices etc are impacting on the occupational structure of specific sectors and the skills content of specific jobs within each of the broad occupational categories. It's worth noting that the occupational categories used in econometric tools tend to be fairly broad.

When thinking about your future career, which of the following is most important to you? (answers: a) Promotion prospects; b) Work-life balance; c) Societal value; d) Salary; e) Opportunities for leadership; f) Geographical Location)

How important to you is it that your first job after graduating relates to your degree subject? (answers: a) Very important; b) Quite important; c) Not very important; d) Not at all important; e) Unsure)

How important to fulfilling your ambitions do you think it is to acquire an internship or a work placement during your time at the University of Exeter? (answers: a) Very important; b) Quite important; c) Not very important; d) Not at all important; e) Unsure)

The answers to this survey give us an indication as to the attitude of the cohort and whether individual students from a Widening Participation background need tailored support and guidance in a particular area. When the Careers Consultant with a remit for WP students sees the individual she already has a lot of background information on where they are in their career development thinking.

There were 61,000 individual engagements with the CareerZone on an extra-curricular, opt-in basis in 2014-15. We have 21,000 students studying across three campuses. This means that 98% of our students are using the service without being 'forced' to. We use the feedback from training sessions, careers fairs, sector related training, work experience, mentoring programmes, study abroad etc to review and improve our delivery and service to students. One aspect we are keen to measure is the confidence of our students to move forwards to the next stage of thinking.

Co-funded by the
Erasmus+ Programme
of the European Union

Frequency of the monitoring

Every session/fair/workshop has student feedback sent out. The work of each team and the CareerZone as a whole is also reviewed annually.

This practice is ran annually and it is developed in a census way. The database includes the identification and contact of the people integrating the class of the corresponding year, because one of the general objectives is to describe the economic and labour market context in which the student began his/her education.

Obstacles when monitoring employability

Co-funded by the
Erasmus+ Programme
of the European Union

- Changing interlocutors every 4 years, in the political terms. Political offices of universities and VET, can change each term.
    - Solution: Involve technical staff with more responsibility, and ensure that the political transition counts with our participation.
- Monitoring and evaluation. Difficulties in organising groups and meetings to do a periodic evaluation.
    - Solution: through personalised presentations with teams that are requested feedback and pick up modifications and new indicators.
- Gathering data from the students.
    - Solution: The universities and the Department of Education try to capture the updated phone and email in different administrative supports.
- Updating and design of questionnaires.
    - Solution: The size of the questionnaire is considerable, but responds to sectoral information needs of certain university departments or faculties, and involves introducing new questions. It is crucial to control de size of the questionnaire in order not to have very long surveys.
- Internal use within the university.
    - Solution: depends on the organisational structures of each university and personal interests. We try to answer it with the dissemination of results in university and the Public Employment Service Web.
- Media and public dissemination of results. We have very valuable reports but are weak on the dissemination.
    - Solution: Develop a communication plan at LANBIDE with external support to enable us to achieve greater visibility and impact.
- Very time intensive process:
    - Solution: focusing on quality debugging of databases and automate degrees reports using SPSS computer designs linking with Microsoft Office.
- Use of information by the network of educational and career counseling.
    - Solution: Identify individuals and organisations that develop guidance and distribute information through mail distribution list

We found that handing out paper feedback forms after a sessions was not very effective for collecting detailed responses from students. We now use an online system that means whilst we get fewer responses, these tend to be more detailed and more useful for us to assess the delivery.

Co-funded by the Erasmus+ Programme of the European Union

Cooperation with Schools

We have a very good cooperation. The Public Employment Service has an agreement with the 3 universities and the Education Department of the Basque Government. Annually they freely facilitate the contact database of people who end up studies of university and VET.

a) The Student Recruitment UK office works with schools on Outreach projects, this varies from Law sessions to encourage students to study Law, sessions aimed at Widening Participation students to raise aspirations about attending (any) University and Summer Schools for gifted and talented students to encouraged them to enter HE that may not have previously thought about it.
b) The Career Zone run the Aspirational Educators programme whereby we give Undergraduates the opportunity to gain classroom experience and think about whether they want to enter a career in teaching. We work with a local Exeter Primary school to achieve this
c) There are pockets of activity across the Colleges with undergraduates going into local schools to lead Drama workshops and teach Latin for example, this is very much down to the individual academic to organise, normally because they have a personal link with the school.

Main products

The main products are developing graduates who have thought about where they would be happiest working and helping to achieve their ambitions for work or further study.

Co-funded by the
Erasmus+ Programme
of the European Union

Once the surveys are complemented, the following products are produced annually:

- Presentation report.
- Tables with the results.
- General Report for dissemination.
- Specific Reports by degree.
- Context indicators of the labour market.

Reports are delivered in the format of: PowerPoint, Spreadsheets, and docx-pdf. The information is available on the websites of the project partners.

http://www.lanbide.euskadi.eus/estadistica/insercion-laboral-universitaria-durante-2013/y94-estadist/es/

http://www.lanbide.euskadi.eus/estadistica/insercion-laboral-de-los-titulados-en-formacion-profesional-en-2013/y94-estadist/es/

The main contents of the reports are:

- Evaluation of the university and/or the VET centre: Classrooms, access, technological equipment, libraries, computer rooms, cafeteria ... etc.
- Evaluation of the training received: adequate training regarding the labour market requirements, training skills of teachers, teacher knowledge, teacher availability, theoretical and practical training received, training in workplaces, etc.
- Employment status:
  - Work activity during the studies, at the end and at the time of the survey (3 years after ending University and one year later for VET graduates).
  - Characterization of current employment: Job Type in National Classification of Occupations to 6 digits, type of contracting company, number of employees of the company, branch of activity to which the company belongs to according to the National Classification of Economic Activities 2 digits, type of contract, number of weekly hours, monthly salary, number of annual payments, need for geographical mobility to work, channel of access to the employment, etc.
  - Characterization of unemployment: type and duration.
- Professional skills acquired during the training undertaken and professional skills required in employment, match-mismatch: Writing, speaking, teamwork, leadership, decision making, creativity, management skills, computer knowledge. Foreign languages: level of use in the workplace.
- Characterization of the people who continue to study: type of training, location, reasons for continuing to study.

Co-funded by the Erasmus+ Programme of the European Union

Use of the products

This monitoring allows you to take individual decisions and objectifying the decisions of allocation of public resources by public institutions, legitimizing these decisions and driving away from arbitrariness.

It´s also directly applicable to all the specialised job training and formal training resource forms and indirectly to guidance on productive activities and occupations.

The products are mainly used by:

- Public Managers
  - Responsibles for Vocational Training
  - Heads of Universities
- Responsibles of schools
- Teaching and pedagogical professionals
- Career guidance professionals

Creation of league tables by discipline and institution. These data are also likely to be included in the Teaching Excellence Framework (TEF) in the future.

Co-funded by the
Erasmus+ Programme
of the European Union

Co-funded by the Erasmus+ Programme of the European Union