



**REPORT REGARDING THE CENTRALITY OF PROCESSES IN
THE ANALYSED SECTORS
COMPETENCES FAVOURING PROFESSIONAL MOBILITY**

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0. PRESENTATION

As we already mentioned in the previous report "Report regarding the Sectors, sub-sectors and jobs acting as a bridge the professionals in the industrial sector can have access to", REINFORCE METAL COMPETENCES project is aimed at favouring the employability of human capital, its professional mobility and the flexibility of industrial organisations. Therefore, it is aimed at identifying and developing the key competences in the sector acting as a *bridge* from other economic activity sectors and towards other sectors.

The restructuring / transformation of an activity can involve changes in the organisation, introduction of new working methods or manufacturing processes, relocation of the entire or part of the production, an increase or decrease of manpower, closure of a working centre or part of it, creation or disappearance of a legal body or a merger/acquisition. The labour market is influenced by this reorganisation and the knowledge of the specific competences enabling this restructuring is basic to ensure the transition from one kind of job, sector or function to another, so that it is satisfactory for the workers and the companies.

Lead by the Federación Vizcaína de Empresas del Metal (Biscay Federation of Metal Companies), RMC Project is financed by the European Commission within the frame of the Second Stage of Leonardo da Vinci Program in order to *help improving the quality and innovation of practices, institutions and vocational education and training* and it will be developed during 2007-2009 in a coordinated way in Spain, Sweden, Lithuania and Romania.

1. OBJECTIVE

The objective of the present report is to show the results got about which main associated processes and competences in the studied activities have favoured the restructuring of a company. The professional activities the SMEs have considered as a *bridge* are:

- Sheet transformation
- Design and manufacture of new products requiring activity specialisation and constant adaptation to the clients' needs
- Process analysis

We can define “**bridge**” competence as the competence enabling the access to employment in the Metal Sector (in different subsectors: metallurgy, manufacture of metallic products, manufacture of electric machines and materials). It also enables mobility to other sectors (building, car making...).

In the following chart, there is a list of the processes identified within each of the professional activities selected as *bridge*:

	BRIDGE ACTIVITY SELECTED	Nº OF PROCESSES	PROCESSES TIPOLOGY
SPAIN	SHEET TRANSFORMATION	9	Sheet / tube purchase Cut Folding Pre-assembling Welding Assembling Packing Expedition Installation (external assembling)
LITHUANIA	Designing and manufacturing of the new diversified products requiring specialization of activities and constant adaptation to the needs of different customers	8	Manufacture order (design, specifications) Desing and production of stamps Machining Assembling Painting Control Packing and labelling Loading and dispatch

ROMANIA	SHEET TRANSFORMATION	9	<ul style="list-style-type: none"> Semi finished aluminum materials purchase Casting under pressure Removing burrs Drilling Abrasive cleaning Ground coat preparation Electro-static spray painting Storing Installation (final assembling)
SWEDEN	PROCESS ANALYSIS	10	<ul style="list-style-type: none"> Preparation for engaging workforce Conducting preliminary discussions Identify staff structure/ roles in process chain Prepare for interviews and observations Initiate observations, interviews and reviews Measurement and assessments Analysis of process, failures and flaws Evaluate readings and analysis findings Process captured data and visualize Results documentation and presentation

Source: own elaboration

2. METHODOLOGY OF INTERVENTION

In order to identify the competences favouring professional mobility within the professional activities identified as *bridge*, the work has been structured in two stages:

- Stage 1: Select the *bridge* processes within each professional activity
- Stage 2: Identify the *bridge* competences (those that can be transferred) associated to these processes, enabling professional mobility

2.1. STAGE 1: SELECT THE BRIDGE PROCESSES WITHIN EACH PROFESSIONAL ACTIVITY

Aim

The purpose of this sub-stage is to select the most relevant bridge process for the company during the restructuring process, within each identified transferable activity.

Method

It is agreed by the Partnership to carry out both quantitative and qualitative valorisation of the processes to select the most important (in terms of transferability) to work on later during the rest of the project. This Methodological contribution was born from the entire previous fieldwork, through which, we can see clearly the importance of the competences, not as much the technical ones as the transverse ones, in the restructuring process of a company. Therefore, we decided to make a more qualitative analysis with the companies, mainly focused on the workers' attitudes and capacities they consider as relevant when facing this kind of process.

A) QUANTITATIVE VALORISATION

To select the key processes for the company restructuring, first, we reach an internal agreement within the project about the most relevant indicators when valorising the identified processes. Besides, these indicators are externally validated with the interlocutors (company) so that they consider if there are any other more important indicators (or to change the suggested ones) for the evaluation of the importance of the processes already identified in the company. The parameters to evaluate are:

- human capital
- financial capital
- know how and
- Environment.

For each of these parameters from 3 to 5 indicators are suggested.

Second, some agreed criteria are established to select the experts who will evaluate the processes: managing personnel, department managers... with global vision of the company activity selected as "bridge". It is established that each country should consult and interview 2 experts.

Third, these experts are told to evaluate each of the processes identified in each of the transferable activities identified: *Sheet transformation; Design and manufacture of new products requiring activity specialisation and constant adaptation to the clients' needs; and Process analysis*, through a likert-type scale of importance from 1 (no relevant at all) to 5 (very relevant), according to the importance the interlocutor thinks the process has in terms of transferability.

B) QUALITATIVE VALORISATION

The coordinating organisation elaborates a proposal of interview schedule, validated by the other partners. It consists of a group of guidelines guiding the interviewer during this process and helping keeping the objective clear: to identify which and to which extent the transverse and attitudinal competences have been necessary for the company's restructuring.

It agrees to interview to 2 – 3 experts (managing personnel, people in charge of department...) with global vision of the company activity selected as *bridge* activity. They can be the same interlocutors that have collaborated in the previous step.

In the following chart, there is a summary of the selection of expert personnel collaborating in these two stages (qualitative and quantitative) in each country.

	SPAIN	LITHUANIA	ROMANIA	SWEDEN
Nº of experts	2	2	2	2
Expert	1- JOSEBA SAGASTIGORDIA, Director gerente de PROIEK. 2- LUIS FEIJOO, responsable producción de PROIEK.	1- Director de producción de METGA 2- Director gerente de METGA	1- Director de RR.HH. de Mecanica Fina SA. 2.- Ingeniero de proceso en Mecanica Fina SA.	1- Director gerente de LB:s Mekaniska Verkstad AB 2- Experto en el comité sectorial (LB:s Mekaniska Verkstad AB)

Source: own elaboration

Results

As a result of the processes valorisation in terms of transferability, we select the following *bridge* processes:

	SPAIN	LITHUANIA	ROMANIA	SWEDEN
Selected Process	Welding	Machining	Electro-static spray painting	Development/ change initiative
Score (from 1 to 5)	3,5	4,9	4	3,7

Source: own elaboration

As we can appreciate, both in Lithuania and in Romania (mainly in the first), the process centrality is important compared with the rest of processes belonging to the concrete professional activity. In Lithuania, the "Machining" process (with almost five points) has an average score much higher than the other analysed processes. This way, the following process in order of importance in the analysed activity is "Control", with a 3.7 score.

It is not the same in Romania, as, together with the selected process "Electro-static spray painting", there are other three also considered as important for the company restructuring: "Final assembling", "Casting" and "Drilling", with similar score. The reason for selecting "Electro-static spray painting" is the complementary information contained in the interviews, of more qualitative nature.

Regarding Spain and Sweden, the selected processes are clearly priority (although not with as high score as that of Lithuania or Romania) compared with the other processes analysed in the different professional activities; that is, the other processes have significantly lower score.

In the following section, we will identify the most relevant technical and transverse competences in each process to elaborate later their referents.

2.2. STAGE 2: IDENTIFY THE *BRIDGE* COMPETENCES (THOSE THAT CAN BE TRANSFERRED) ASSOCIATED TO THESE PROCESSES, ENABLING PROFESSIONAL MOBILITY

Aim

The aim of this sub-stage is to identify the *technical or transverse bridge* competences favouring professional mobility at transnational level in the industrial sector.

Our definition of competence agrees with the proposal of Guy Le Boterf "*Ability to mobilise and use correctly in certain working environment, own resources (skills, knowledge and attitudes) and resources from the environment to produce a defined result*".

Method

The procedure used in this sub-stage of the project follows the following steps:

First, disaggregate with the companies, the processes selected in the previous stage, into activities and operations. The information collection is carried out with the companies that have intervened in the previous stage through interviews and observing the activity. The activities and operations the process is disaggregated into are validated by the interlocutors of the companies.

Second, identify and formalise the competences. This task is developed immediately after the dissection of the activities into operations, dimensions and stages. Information collection in the company (interview, observation) and consultancy work (taking profit of the transnational meeting itself) are simultaneous. The objective is to identify the competences associated to each process and put them in order of priority, so that to allow us to select the most relevant ones for the company.

At last, to define the competences with the help of the referents, or look for the referents more similar to the definition we are elaborating. Competence levels (following the EU classification in five levels). The analysis is focuses in the individual competences. Because of this:

- The competence shows a result that can be reached by one only person
- It will be expressed in terms of observable or valuable result
- It will include a verb, an object and a condition. The competence will be formulated taking into account: the *action* to be carried out, the *means* to be used and the *result* to be got.

Results

As a result of the field work done in each country, it is concluded that the enabling competences for the professional mobility are not only technical, but also the transversal skills play a key role, such as: (see below)

- Empathy
- Ability and opportunity to learn new ways of working
- Ability to identify, manage, articulate the critical situations
- To estimate the current and potential characteristics of the market and identify significant trends
- Analysis of the challenges, opportunities, differences (gaps) identified
- Ability to implement a process analysis for a specific objective
- Contribute to implement and evaluate change initiatives
- Analytical thinking

Therefore, we decide to select (always with the help of the companies) to work within the project, not only the main competences relating to the *bridge* technical processes identified in the previous phase: Welding, Machining, Electro-static spray painting and Analysis of process, but expand the research to the transversal (non technical) competences more demanded by the labour market to face a situation of change of activity.

Thus, each country is responsible for carrying out the descriptions of the main technical competences of a *bridge* process identified, and also the descriptions relating to one or two transversal competences.

Similarly, and displaying the importance of the transversal skills for the company, it was decided also to develop training material for these competences in addition to the technical training material (predicted as last goal of the project), and thus expanding the outcome of the project.

In conclusion, the key competences (technical and non technical) facilitators of the professional mobility (also called *bridge* competences) within the Industrial Sector are:

TECHNICAL COMPETENCES

WELDING

- 1.- Being able to interpret information, working instructions (oral and/or written ones) and the technical documents used in the manufacture drawings of metallic assemblies allowing carrying out cutting and welding operations (electric welding with coated electrode and TIG, MIG/MAG welding), taking into account the quality, safety and hygiene standards.
- 2.- Being able to define processes and establish welding and cutting procedures, determining stages, operations, preparing machines, equipments and tools, according to quality and economic criteria, as well as to the required specifications.
- 3.- Being able to carry out skilfully operations of joining, cutting, recharging parts and ensembles with finishing ensuring the quality of the products, with manual and/or semi-automatic equipments, in stainless steel, copper and aluminium sheets, profiles and steel pipes in all the positions, so that the required specifications and standards are complied with.

MACHINING

1. To be able to cut with water jet, to understand water jet cutting principles, to know components of the machine, being able to switch on/off, to choose the mode, to regulate and to adjust the machine following the required technological operations.
2. Be able to bend with CNC press, to understand the principles of operation, programming methods and systems.
3. Be able to drill, to know construction, operation of the drilling machine.

ELECTRO-STATIC SPRAY PAINTING

1. To be able to carry on the complex of operations specific to the process of preparing the surfaces to be painted in order to obtain a maximum adherence for the applied paint.
2. To be able to execute the complex of operations specific to paint application using the powder coating painting equipment (the spray painting installation) in electrostatic field.
3. To be able to carry on the pieces to the working stations where the electrostatic spray painting process is on-going, place and tie the working devices, send the pieces to polymerization and after that carry them to depositing/storing place.

PROCESS ANALYSIS

1. Participate in planning and preparation of a technical change through implementation of a process analysis/process optimization of a prioritized/critical service/production process.

2. Develop technically creative/flexible approaches and solutions based on analyzed/optimized processes in areas where improvements were found to be desirable/ required.
3. Contribute to the management and handling of the technical challenges and opportunities through contributions of recommendations based on the outcomes from a process analysis / process optimization initiative.

NON TECHNICAL COMPETENCES (TRANSVERSALS)

COMMUNICATION

To be able to understand and interpret information (data, facts, opinions...) recognizing other people's emotions and understanding them; be sensitive to others' troubles and needs and be responsible of the consequences due to the transmission of the own messages (the communication result is not what the speaker says, but what the receiver understands).

TEAM WORK

To be able to cooperate and coordinate with other people work (colleagues, subordinates and superiors), to achieve shared objectives; to exchange information, assume responsibilities and face the conflicts and problems that appear in the joint work, keeping an appropriate social climate.

ENTREPRENEURSHIP

Being able to assess present and potential future market characteristics and identify significant trends, analyse problems, opportunities and differences, implement initiatives.

IMPLEMENTATION AND EVALUATION OF THE CHANGE

To be aware of and use the various means of change within the working environment, creating the foundations for the identification of the areas/levels where the change is needed to be implemented and the adequate methods and instruments to implement and assess the change.

PROFESSIONAL AND PERSONAL DEVELOPMENT

To be able to identify those knowledge, abilities and skills necessary to perform efficiently in a specific work-place and to design and perform a professional/personal development plan aimed to prepare/enhance your adaptation to that work-place / a career.

ANALYTIC THINKING

Use of analytical thinking and analytical thinking support tools in practical assignments.

