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Competence Development in SMEs: Practices and Methods for Learning and Capacity Building

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COMPETENCE DEVELOPMENT IN SMES: PRACTICES AND METHODS FOR LEARNING AND CAPACITY BUILDING

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EXECUTIVE SUMMARY

This report is part of a Leonardo project named Competence Development in SMEs: Practices and Methods for Learning and Capacity Building (CODE). The research has been carried out by a partnership of five European research institutes belonging to Spain (Ikei), France (Citia), Austria (Austrian Institute for SME Research), The Netherlands (EIM Business and Policy Research) and Finland (Small Business Institute, Turku School of Economics and Business Administration). Ikei has coordinated the project.

The aim of this study is to investigate the different methods manufacturing SMEs, and especially the Finnish manufacturing SMEs, use in order to develop and increase their current competence base. The research also analyses the attitudes, benefits and barriers the SMEs identify for engaging in competence development strategies. Yet another aim of the study is to provide one example of a Finnish company where competence development plays a central role and an example of a relevant and currently existing Finnish policy measure intended to foster competence development activities within enterprises.

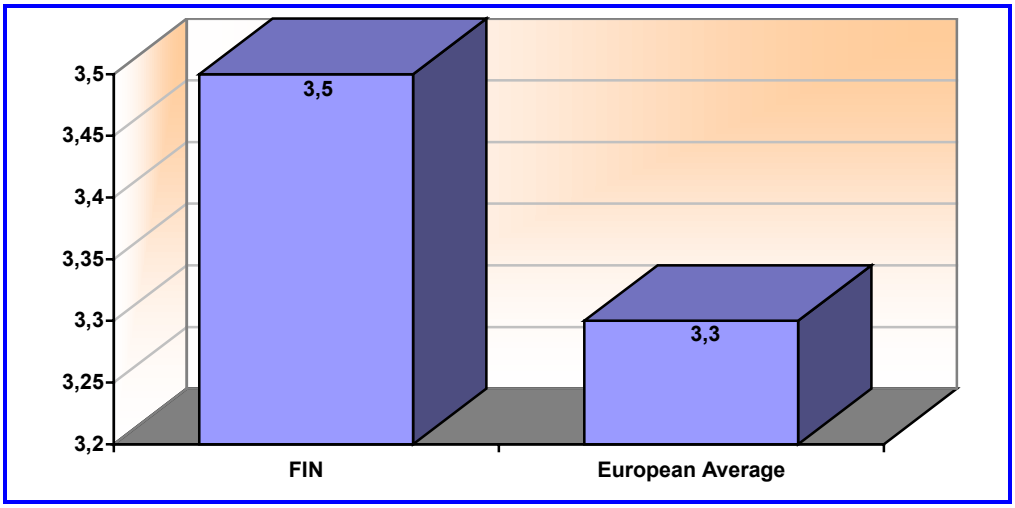
The results of the report are based on 1) a literature review of existing Finnish competence development literature since 1990 and 2) empirical material. The empirical material includes a survey of 153 Finnish manufacturing SMEs and 600 enterprises in Spain, France, Austria and The Netherlands, four interviews of Finnish experts in the field of competence development and an interview of a manager of a small manufacturing enterprise.

The concept of competence is defined in this report as a combination of human knowledge, skills and aptitudes serving productive purposes in SMEs and contributing to their competitiveness. 'Competence development' is therefore defined as the measures taken by an enterprise to develop its competence base t.

The results of the study illustrate the importance of competence development activities in SMEs. The results show that manufacturing SMEs consider competence development activities important for sustaining their competitiveness. The Finnish manufacturing SMEs consider the competence

development activities even slightly more important than their European counterparts.

Graph 1 **Importance attributed by enterprises to the competence development activities for sustaining their competitiveness, comparison between the national and the European average**



Results from '1'= Not important to '4'=very important
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

According to the Leonardo CODE survey almost four out of ten Finnish manufacturing SMEs suffer from lack of skilled labour. Small enterprises suffer from skill shortages more than medium-sized. The need to upgrade the competencies and skill base of the workforce is well perceived in the manufacturing enterprises. More than three out of four enterprises have identified the need to upgrade the competencies of their workforce. For example, new technologies, production methods and production management systems create skill gaps in 'engineering and manufacturing'. Other main areas containing with competence gaps in SMEs are 'sales and marketing','information technology' and ' management '.

The most important sources of knowledge and competencies for both the Finnish and European SMEs are clients and suppliers. However, it seems that the Finnish SMEs are considerably more co-operation oriented in increasing their

competence base. The Finnish SMEs consider the co-operation with other enterprises as the most relevant external practice. In spite of the awareness of the possibilities of co-operation and networking for developing competencies in the Finnish SMEs it seems that these possibilities are still inadequately utilised in Finland, too. The most relevant internal practices in the manufacturing SMEs are on-the-job learning and task rotation. In Finland the relevance of tutor systems for new employees is also considered high. On the whole, internal practices are considered more relevant than external ones.

The Finnish SMEs have traditionally used formal methods, especially training courses organised outside the company, for developing the skills and knowledge of their personnel. However, during the last few years the role of informal training methods has increased considerably. The results of the Leonardo CODE survey well reflect the importance of informal training methods for upgrading the competences and skills in the manufacturing SMEs today. The small enterprises favour informal practices considerably more than the medium-sized ones, whereas the medium-sized ones favour equally both informal and formal practices. The Finnish manufacturing SMEs prefer informal training methods even more than their European counterparts.

The central role of directors and managers and other key persons related to the competence development in the Finnish SMEs is addressed in the report. They are the groups benefiting the most from external competence development activities. Moreover, they are the groups responsible of identifying the current and future skill needs in the enterprises.

The use of ICT-based data systems for storage and dissemination of knowledge and information relevant to the enterprise is not yet obvious in the manufacturing SMEs. In Finland the utilisation of ICT-based systems is even lower than in Europe on an average.

The two most important barriers for the European manufacturing SMEs to engage in competence development activities are 1) organisational and 2) financial problems. The workload of employees makes it difficult to organise competence development activities and enterprises often have insufficient competence development budgets or the costs are too high. However, in Finland

the possibilities of the manufacturing SMEs to engage in competence development activities are reasonably good and slightly better than in Europe on an average.

According to the experts the Finish SMEs have great possibilities to develop the competence base of their employees, for example, by means of the current policy measures. The measures cover the development needs of SMEs comprehensively. The Workplace Development Programme is one example of a current successful Finnish policy measure.

According to the results the following recommendations are presented in the report for developing an environment conducive to the acquisition and development of skills and competencies in SMEs:

- It is important to focus the competence development research more on small and medium sized and especially the smallest enterprises.
- Documentation and dissemination of best practices related to the competence development of SMEs should be promoted.
- The information on competence development possibilities should be improved. In addition, the field of development should be clarified and coordinated.
- Policy makers should prepare for the changes and decrease of the European Union funding and develop new policy measures for sustaining the good competence development opportunities of the Finnish SMEs.
- The co-operation and networking of SMEs should be supported.
- The implementation and utilisation of ICT in competence development in SMEs should be supported.

1. GENERAL INTRODUCTION TO THE NATIONAL REPORT

This research report is part of a Leonardo project named Competence Development in SMEs: Practices and Methods for Learning and Capacity Building (CODE). The project has been conducted within the framework of the Leonardo da Vinci Community Vocational Training Action Programme.

The research has been carried out by a partnership of five European research institutes from Spain (Ikei), France (Citia), Austria (Austrian Institute for SME Research), The Netherlands (EIM Business and Policy Research) and Finland (Small Business Institute, Turku School of Economics and Business Administration). Each partner has been responsible for collecting the information for their respective country under the general co-ordination of the Ikei. This Finnish National Final Report is mainly based on the information gathered from Finland. To get a Europe-wide perspective the Finnish findings are, however, compared with the European results.

This research is focused on the manufacturing SMEs. The role of SMEs is crucial for the Finnish economy. The enterprise structure is dominated by small enterprises. The share of SMEs is 99.7 percent of all enterprises. As much as 93 percent of all enterprises employ less than ten employees and almost two out of three only one employee. (Hyrsky & Lipponen 2004)

The current economic environment is characterized by global competition, fast technology developments, shorter product life cycles and more demanding consumers. In this competitive and complex environment enterprises in general and SMEs in particular are increasingly aware of the importance of key words such as ‘knowledge’, ‘skills’ and ‘competencies’ for assuring their competitiveness. (European Commission 2003)

In Finland the change in the industrial structure has been profound and one of the fastest in the world. During the past 15 years Finland has undergone a considerable industrial transformation from a forest and metal dominated economy to an electronics and information technology dominated economy. The importance and overall contribution of the high technology sectors has considerably increased during this period. (Lipponen & Viitamo 2003) The

structural transformation has contributed to the development process in which knowledge, skill and competencies have become the key factors of the competitiveness of Finnish SMEs and especially the Finnish manufacturing SMEs. Against this background, it is very interesting to try to find out, in this study, how the competencies, knowledge and skill base are developed in the Finnish manufacturing SMEs, and what are the differences in the development practices and methods between the Finnish and European enterprises.

In this report the concept of competence is understood as a combination of human knowledge, skills and aptitudes serving productive purposes in SMEs and contributing to their competitiveness (European Commission 2003). Meanwhile, 'competence development' represents the measures an enterprise takes in order to develop the human knowledge and skills and thereby its competitive capacity of it (Isusi – Corral 2004). An enterprise can 'develop' its own competence base by a number of possible measures, for example, by recruiting the 'right' competence from outside or by developing the human resources the organization already possesses (European Commission 2003).

This report consists of four main parts:

Chapter 2 reports the results of the literature review of the existing Finnish literature on the issue of competence development in SMEs. For the review the Finnish studies and reports produced since 1990 on the topic were identified. The identified literature includes books, articles and official and unofficial reports.

Chapter 3 is based on the survey of 153 Finnish manufacturing SMEs. In addition to the Finnish data the same information collected in Spain, France, Austria and The Netherlands is exploited to get a Europe-wide perspective. The total number of the companies surveyed is 753. The data was collected in the spring 2004.

In addition to the results of the survey the chapter includes a description of a case study of a good-practice Finnish SME in the field of competence development.

Chapter 4 reports the results of the four Finnish expert interviews carried out in autumn 2004. The experts interviewed are representatives of the main national SME employers association, a public policy-making body and a national trade union and an experienced consultant in the field. Annex 1 includes the description of the experts.

The aim of the chapter is to validate and contradict the results obtained from the survey with first-hand qualitative information obtained from the experts interviewed.

In addition, the chapter includes a case study of a relevant and currently existing Finnish policy measure, the Finnish Workplace Development Programme, intended to foster competence development activities in enterprises.

Chaper 5 draws together and concludes a number of points raised in Chapters 2, 3 and 4. In addition the chapter presents recommendations for developing an environment conducive to the acquisition and development of skills and competencies in the Finnish SMEs.

2. RESULTS FROM THE NATIONAL LITERATURE REVIEW. WHAT DO WE KNOW IN .... ON COMPETENCE DEVELOPMENT IN SMES SO FAR?

In Finland the competence development research has focused mainly on the large companies. The findings offered by the studies of large companies are, in practice, often usable only in large companies. (Henttonen 2002) Therefore, this literature review concentrates mainly on studies concerning competence development in SMEs. For the review the Finnish studies and reports produced since 1990 were identified. The identified literature includes books, articles and official and unofficial reports.

2.1. DEFINITIONS USED IN THE NATIONAL LITERATURE ON COMPETENCE DEVELOPMENT

Competence development is currently accepted as a key tool for fostering the competitiveness of enterprises. In general, competence is defined in Finnish studies as knowledge, skills and features an employee needs to have to manage his or her work. A complementary, and partly alternative, definition is based on the insight that the meaning an employee gives to his or her work is important from the competence point of view. Tacit knowledge has a central role in the complementary definition. The shared interpretation of reality and sharing the interpretation is essential in the construction of meanings concerning work. (Kevätsalo et al. 2001)

Enterprises have two optional ways to increase the competence of the personnel. The first way is to train and develop the existing personnel. And the second way is to obtain the desired competence externally, for example by the recruitment of new employees. Increasing the competence base by recruitment is possible only in enterprises growing extremely fast or having high turnover of employees, whereas almost all enterprises have chances to develop the existing personnel. (Poutiainen & Vanhala 1999)

Finnish studies usually define two different paths for competence development: 1) individual oriented and 2) enterprise oriented (Henttonen 2002). The individual oriented competence development may have an effect on the value of

the employee both in the enterprise and the labour market. The competence development may lead, for example, to a substantial improvement of skills and widening of duties. On the other hand, the competence development may also lead to searching a new job or a new working place. In the enterprise oriented development individuals are trained and developed mainly from the point of view of the needs of the enterprise. The aim of the development is to increase the efficiency and profitability of the enterprise. (Kokko et al. 2000)

The development and improvement of competence has traditionally been explained to take place mainly inside the companies. However, according to the network point of view most of the competencies needed in industrial business, in fact, develop in the networking relationships and not inside the companies. The network view emphasizes that competence development is a result of co-operation between the networking partners. (Tikkanen – Alajoutsijärvi 2001)

2.2. DEGREE AND EXTENT OF INVOLVEMENT OF SMES IN COMPETENCE DEVELOPMENT ACTIVITIES

About 40 percent of the Finnish industrial employees participated in training organised by their employer in 2003. On average, the length of the training was 4,8 working days. The degree and extent of involvement in competence development activities seem to be slightly smaller among industrial employees compared to all employees. About 46 percent of all Finnish employees participated in training organised by their employer in 2003. The length of training was on average 6,4 working days. (Ylöstalo 2003)

The European Union funding has been a major source for funding competence development in Finland. According to an evaluation report of Object 4, by the early 1999 a total of 15.000 Finnish SMEs had participated in competence development projects with over 57.000 participants. Between 1995-1998 various projects produced over 511.000 training days. Participants in these projects were trained approximately for 9 days. (Välimäki - Immonen 2000)

About 70 percent of companies who participated in the above mentioned projects were very small enterprises employing 10 or less people and 25 percent enterprises with 11-50 employees. About 30 percent of the participants were

female. About 15 percent of the participants were under the age of 30 and 15 percent over 50. About 70 percent of participants were between 30 to 50 years of age. (Välimäki - Immonen 2000).

According to the SME-barometer the Finnish industrial SMEs were assessed to invest 1,2 percent of their turnover in personnel training in the year 2004. The figure is slightly higher compared to the same figure in construction (0,9 %) and trade (0,7) companies. In services the same figure is 1,4 percent. (Finnvera – Federation of Finnish Enterprises 2004)

In 2001 the Finnish SMEs organised an average of four and half days of training per employee (Table 1). Many SMEs have organised training very scantly; half of the SMEs have organised two training days per employee at the most. (Federation of Finnish Enterprises 2001)

Table 1 How many days per employee your company has organised vocational training, source: Federation of Finnish Enterprises 2001

	Training days, approximately
All SMEs	
- Mean	4,3
- Lower quartile	1
- Median	2
- Upper quartile	5
Companies employing 1-9 employees	4,3
Companies employing 10-49 employees	4,2
Companies employing 50-249 employees	4,1

In the mid 90's about 30 percent of the employees in SMEs had participated in training organised by their employer (Table 2). The same figure among large enterprises was almost 60 percent. As many as 40 percent of the employees in SMEs considered their training opportunities as weak while the same figure

among employees working in large companies was 25 percent. (Federation of Finnish Enterprises 2001)

Table 2 Training situation in Finnish companies by size, %, in 1997, source: Federation of Finnish Enterprises 2001

Number of employees	1-4	5-9	10-19	20-49	50-199	200-
Have participated in training	21	25	31	31	43	56
Bad training opportunities	48	50	39	43	35	25

Identification of the main methods used by SMEs for improving competencies

Finnish SMEs have traditionally developed their personnel by using training courses organised outside the company by external-to-the-enterprise personnel. The main problem concerning this kind of training is the fact that due to the limited resources of SMEs usually only one or, at most, a few employees have the possibility of participating in the training. Another problem concerning this kind of training is that the content of the training is often on a too general level from the company point of view. Due to this kind of problems SMEs have more and more often started to use in-house training. The share of in-house training has risen over 50 percent of all the personnel training organised by SMEs. (Hätönen 1999)

In-house training is training, which has been planned according to the own development needs of the enterprise. In-house training can be organised in the company facilities or outside the company. The training is participated only by the own personnel of the company. Trainers and consultants are often external-to-the-enterprise personnel. However, more and more often the own employees of the enterprises act as trainers. (Hätönen 1999)

Due to the problems of disengaging the personnel from work to participate in training courses, learning in SMEs often takes place as part of the daily work. The role of the on-the-job learning has increased significantly in the competence

development of SMEs. (Henttonen 2002) Other widely used in-house methods are, for example, job rotation, mentoring/guidance activities for staff by other people in the enterprise and tutor systems for new employees. (Hätönen 1999)

In Finland co-operation with other companies has also been seen as a good competence development method. (Henttonen 2002) In addition, for example, visits to other enterprises have been considered as a good external method of improving competences, especially in subcontracting SMEs (Hätönen 1999).

According to a study of the Confederation of Finnish Industries (2000) the most used competence development practices in industrial SMEs are learning in the daily work and the tailored training. Other widely used practices are internal training and voluntary supported training.

According to a survey conducted by the Small Business Institute 59 percent of employees in metal and electronics industries would like to participate in training organised by an external organisation and 33 percent felt that the company should organise the training itself. Hands-on expert guidance (within the same organisation) was seen as a good method of training (18%). Self-directed training during work time (16%) and distance learning (9%) were the two other popular methods. Work rotation was not among the most popular training methods (6%). (Mäki 2002)

Formal and informal training practices in SMEs

Formal training has traditionally had a strong status in the competence development of Finnish SMEs. It still has an important role. However, the significance of informal training and knowledge acquired on the job has increased considerably. So, nowadays both formal and informal training practices have their place in the competence development in Finnish SMEs. (Henttonen 2002)

There are at least three motives for the increased preference of informal training. First, due to their limited resources SMEs have often difficulties in disengaging the personnel from work to participate in the formal training courses. Second, investing in formal training can be seen as a too heavy cost compared to the

financial situation and resources of the company. (Henttonen 2002) And third, SMEs have often difficulties in finding competent and specialized experts for formal training (Pohjala – Vuori 2000).

SMEs' main sources for obtaining external competence

The traditional external sources of knowledge and competencies for SMEs are customers, subcontractors, distributors, competitors, business partners and exhibitions and trade fairs. Personal interaction is the main way to obtain information from these sources. The recruitment of employees from the competitors is a way to get new required competencies and information about the competitors. Annual reports of competitors, other brochures, Internet websites, sector magazines and other publications are important written sources of information. Other external sources of information are authorities, consultants, support organisations and business and trade associations. (Ahtinen et al. 1999)

The Finnish SMEs have a possibility to select trainers from various training and development organisations: private consult companies, vocational institutes, vocational adult education centers and other public and private training and education organisations. (Hätönen 1999)

When considering the sources for obtaining external competence from the point of view of the ESF-funded projects the main source for SMEs seems to be private training and development companies. Almost one third of the Object 4 ESF projects (competence development) in Finland were run by private training and development companies. One fourth have been run by public organisations, such as the Ministry of Trade and Industry. One sixth have been managed by educational institutions such as universities, research institutions, various training centers, and foundations and societies. (Välimäki & Immonen 2000, 19)

2.3. IDENTIFICATION OF COMPETENCE NEEDS AND PLANNING

Methods of identification of current and future skill gaps of the SMEs

To identify their development needs the SMEs utilise result based and development discussions between superior and employee. Other methods are, for example, registration of education and training information; quality system reporting; vocational qualifications and competence-based examinations; organisational climate, training need and customer satisfaction surveys; language tests and other tests. The carrying out of thorough need analyses is usually considered too difficult and awkward in the SMEs. (Hätönen 1999; Järvinen 2000)

According to the study of Finnish industrial SMEs using different evaluation methods and tools to clarify the competence base of the personnel has became more important for SMEs. Almost half of the enterprises interviewed use skill surveys to evaluate the competence of their personnel. The surveys are typically directed only to certain employees or employee groups. Usually, the carrying out of these surveys is not regular either. Only few industrial SMEs register basic education information of the personnel. (Confederation of Finnish Industries 2000)

The main responsible for the identification

In the SMEs the main responsible person for the identification of current and future skill gaps is often the owner manager. However, development activities are often planned and designed during the discussions between managers and employees. (Hätönen 1999)

On the other hand, the majority of competence development programmes in Finland are EU funded. The applications are produced by training and development organisations rather than a group of SMEs themselves. Therefore, it can be concluded that financiers steer the situation, SMEs just react to it. (Lehto 2001)

Finnish SMEs have also the possibility to utilise publicly conducted skill gap analyses. For example, the Ministry of Labour regularly monitors the potential shortages on employee skills in Finland. In addition, many publicly funded competence development programmes conduct skill gap analysis (or equivalent) prior to starting the programme.

Do SMEs plan their competence development activities or do they respond on a more ad-hoc basis?

The SMEs have usually a positive attitude towards development and training activities. In spite of that there is still a lot to do to change the planning of these activities into more systematic and long-term ones. Many Finnish SMEs implement development activities on an ad-hoc basis. The SMEs participate in training in order to solve particular problems at hand. (Hätönen 1999)

According to the study of Finnish industrial SMEs most of the enterprises prepare an annual development program concerning the whole personnel. Only few companies have longer-term plans. Many companies make personal development plans but usually only to certain key employees. (Confederation of Finnish Industries 2000)

Heavy workload and dependency on the changes occurring in the environment are presented as the main reasons for the ad-hoc based way of action. (Hätönen 1999; Järvinen 2000) Another reason for the lack of long term development planning is the fact that especially small companies do not usually have specific persons concentrating only to the training and development matters of personnel (Suurnäkki et al. 2000).

2.4. RATIONALE AND BARRIERS FOR SMES TO ENGAGE THEMSELVES IN COMPETENCE DEVELOPMENT ACTIVITIES

Rationale/reasons for SMEs to become involved in these activities: What do SMEs expect to gain from them?

The reasons to become involved in development activities vary in different SMEs. Business managers have presented, for example, the following reasons for organising training:

- to ensure skillful personnel in the future,
- to improve the motivation of personnel,
- taking care of quality requires continuous training,
- to improve the climate of the work community,
- to train employees to see their duties as part of a broader entity,
- to improve versatility,
- increase in exports requires new skills,
- company needs top know-how to manage in a highly competitive branch and
- to increase interaction between different actors (Hätönen 1999).

According to a survey conducted among the SMEs who participated in the ESF-funded project called GRAM[1] the most common motive for participating in the

[1] The support of structural change of small and medium sized industry in the graphic industry -project

development project was the development needs accumulated during the depression. Other motives were the inexpensive price of the training, the need to improve skills and vocational qualifications, interestingness of the project and the need to rise to the future challenges. (Järvinen 2000)

In the above mentioned survey the SMEs listed, for example, the following aims for participating in the project: 1) to improve the competence of all the personnel, 2) to increase versatility of the personnel, 3) to receive concrete benefit to the company, 4) to learn to plan long term competence activities and 5) to learn a collective terminology and language. (Järvinen 2000)

The Finnish SMEs have ranked 'sales and marketing' as areas where the development needs are most frequent (Table 3). The same area is ranked highest also among the industrial SMEs. During the last few years the need to improve 'sales and marketing' as well as 'co-operation, networking and subcontracting' has increased. The need to develop 'production and material operations, information technology, products and quality' is higher among the industrial enterprises compared to enterprises operating in other sectors. (Finnvera – Finnish Federation of Enterprises 2004)

Table 3 Development needs in Finnish SMEs, % of enterprises, source: Finnvera - Finnish Federation of Enterprises (2004)

	All SMEs %	Industrial SMEs %
Management	4	4
Personnel development and training	19	12
Sales and marketing	36	39
Export and internationalization	3	7

Finance and accounting	4	2
Production and material operations, information technology, product development and quality	12	16
Co-operation and networking, subcontracting	12	11
Environmental and other regulations	2	2
Other	1	0
Don't know	8	6

What results SMEs obtain from their involvement in these activities

The effects and results the SMEs have obtained from their involvement in the ESF-funded competence development projects has been studied by Henttonen (2002). According to the project actors participation in development projects encouraged companies to systematise their development activities. Due to the projects the companies started to take training as an important investment to the future instead of only as a compulsory cost. The project actors emphasized that many companies started to link training planning as part of the strategic planning and decision-making of the company. In addition, the quality and guidance systems were implemented in many companies.

The participants in the above mentioned competence development projects assessed that the control of technological processes and ADP skills had improved during the project. Due to the increased competence level the individual employees managed their work better and had better labour market value. The projects had also improved the working motivation of employees. (Henttonen 2002)

According to Järvinen (2000) the results an enterprise obtains from the involvement in a development project depends on the earlier training history of the company. Companies, which had trained their personnel a lot or on an average before the development project studied emphasized the improvement of training attitudes, better understanding of the importance of training and personnel planning, increased competence base, improved self-respect of employees and better working climate. Companies which had only little training experience before the project emphasized that the project had encouraged them to consider the significance of personnel training.

Barriers for SMEs to engage themselves in competence development strategies

Personnel development is part of the strategic planning of the company only in few Finnish industrial SMEs (Confederation of Finnish Industries 2000). According to the SME-barometer the most important barrier for the Finnish SMEs to engage themselves in development activities is tight competition (Table 4). Other quite significant barriers are problems in getting skilled employees and financial problems. These three barriers are the most common barriers also among the industrial SMEs. (Finnvera – Finnish Federation of Enterprises 2004)

Table 4 The most important barriers for developing the company, source: Finnvera - Finnish Federation of Enterprises (2004)

	All SMEs %	Industrial SMEs %
Bureaucracy	3	2
Labour legislation / collective agreements	1	1
Other regulations	1	1

Taxation	3	3
Wages / other production costs	5	6
Side costs	3	4
Unhealthy competition	6	4
Tight competition	18	16
Insufficiency / unsteady demand	4	3
Financial problems	7	8
Problems in getting skilled employees	8	8
Lack of subcontractors, facilities and machines	2	6
Other / Don't know	17	18

2.5. TOPICS AND EMPLOYMENT CATEGORIES BENEFITED BY THE COMPETENCE DEVELOPMENT ACTIVITIES

The following themes are common training fields in Finnish SMEs (Hätönen 1999):

- sustaining working ability
- team working
- financial issues
- customer service

- exporting
- quality development
- personal development discussions between superior and employee
- versatility development
- marketing
- ADP-training

In addition to the above, management training is one of the most important training field in SMEs. The focus in management training is, for example, in process management, personnel planning, profitability issues, internationalisation, strategic planning and managerial skills. (Hätönen 1999)

Objective 4 programmes are divided under various topics as can be seen in Table 5 below.

Table 5 Themes of Competence and SME development programmes, year and project breakdown. Source: Välimäki - Immonen 2000

	1995	1996	1997	1998	1999	TOTAL
HRM	13	20	24	14	16	86
MANAGEMENT AND BUSINESS COMPETENCE	5	12	16	5	15	53
INTERNATIONALISATION AND EXPORTING	7	14	14	11	2	48
ENTREPRENEURSHIP	13	7	11	5	4	40
NETWORKING AND SUBCONTRACTING	5	12	12	2	5	36
QUALITY	2	8	6	3	8	27
ENVIRONMENT	1	-	2	4	1	8
OTHER	3	3	4	7	-	10
TOTAL	48	76	87	47	50	308

HRM programmes have included issues such as teamwork, IT skills and personal communication. Other issues in this group are work and workplace improvement and specific skill development (production, marketing, EU law etc.). HRM projects are targeted to the whole personnel of a company. In the other categories above the projects are targeted to the key personnel of a company.

Management and business competence projects are based on organisational and competition analyses, development need evaluation or specific key success factor development. These projects include accounting, finance, marketing, law, and productivity or management/leadership issues.

Internationalisation/exporting projects deal with the evaluation of the company internationalisation potential. Other topics in this group are training in international law or culture, and increasing the knowledge of export services and contact information of target countries.

Entrepreneurship projects aim at new start-ups. These projects include various aspects that deal with starting up a company in Finland. Generally, business

competence is the key issue in the projects that fell under the entrepreneurship umbrella.

Networking and subcontracting projects try to increase co-operation between the participating SMEs. The co-operation can have different shapes and forms in these projects.

Quality issues concern quality system development for the participant companies. Based on the quality evaluations of the participant companies various development projects try to improve the quality of the companies.

Environment projects deal with the environmental issues of production. Various environmental programmes aiming at saving the flora and fauna are being developed for participant companies. (Välimäki - Immonen 2000)

Main employment categories benefited from these competence development activities

The higher the position in an organisation the more the person participates in competence development. In 2003, 70 percent of the upper white-collar workers participated in competence development. At the same time somewhat over 50 percent of the white-collar workers and 28 percent of the workers participated in competence development (Ylöstalo 2003).

Most of the ESF-projects are directed to the managers or key personnel of SMEs. (Välimäki - Immonen 2000) However, more and more often the competence development activities are directed to all the personnel. (Hätönen 1999)

The same persons often benefit from competence development activities in a company. One reason for this is that, for example, employees who have participated into some training get more information about other training possibilities. (Hätönen 1999)

Differences in the methods used for improving competencies by the different job categories

The competencies and skills of management, superiors and other key persons are often developed in external training courses. The competencies of other employees are more often developed by internal activities, and especially by learning in the daily work. (Hätönen 1999).

Learning in the daily work is often used to orientate new employees. The working methods, ways of action and operation of machines and instruments are introduced to new employees in the daily work. Also other employees get guidance in the above mentioned issues during their daily work, for example, when implementing a new operation line in the company. (Confederation of Finnish Industries 2000)

In developing the competencies of the personnel it is typical to mix the job learning and other training practices, for example internal or external training or distance learning. This kind of multiform training is common, for example in quality development. (Confederation of Finnish Industries 2000)

2.6. ORGANISATIONAL LEARNING IN SMES:

Knowledge management in SMEs: practices and barriers

Finnish studies on knowledge management in SMEs are scarce due to the fact that knowledge management has been used mainly in large companies. However, it can be applied also in SMEs.

The knowledge processes of an enterprise i.e. activities linked to knowledge and information can be classified as follow (Ahtinen et al.1999):

- Creation of new knowledge
- Acquisition of knowledge
- Using knowledge in decision-making

- Using knowledge in processes, products and services
- Storing knowledge in documents, databases and software
- Supporting the increase of knowledge: organisational culture
- Disseminating knowledge in the organisation
- Measuring of the value of knowledge reserves and the effects of knowledge management

Usually, in developing projects, companies have focused only on one of the above mentioned processes instead of paying attention to all of them. Usually, the development of knowledge management has focused on technology. The four most common development issues have been construction of intranet or databases, and installing decision-making tools or team working software. (Ahtinen et al.1999)

The means used in the industrial SMEs to support the increase of knowledge are, for example, open discussion of projects between superiors and employees, networking with external actors, personnel development, motivating to documentation and sharing information, team working, creating a learning culture and climate, encouraging interaction between employees and formulating common values. (Ahtinen et al.1999)

The biggest challenge in developing knowledge management is often the changing of the behaviour of the personnel. Employees may be unwilling to share information and knowledge. Another common barrier is the lack of time. Sharing information and knowledge requires time. So, in addition to the need to create a culture encouraging to share knowledge, an enterprise has to show that sharing information is important and employees can also spend time in it. In addition to these barriers, SMEs do not usually have resources to recruit a special knowledge expert for the acquisition of knowledge. Due to this fact, the acquisition of knowledge is often unsystematic and irregular. (Ahtinen et al.1999)

Storage and dissemination of the existing and new knowledge within the SMEs: practices and barriers

According to a survey conducted among 11 industrial SMEs the enterprises document, for example, information concerning machines and facilities. Other quite generally documented information relates to product development or quality systems. The enterprises document also, for example, information concerning the production premises, patents and protections of designs. Among the enterprises who participated in the survey these documents are usually accessible to all the personnel. Documentation and sharing of the knowledge acquired during customer meetings, expositions and trade fairs or business trips is less general. (Ahtinen et al.1999)

According to the same study, regular meetings and appointments, intranet, personal interaction and email are important ways to disseminate information within enterprise. Personal interaction is used more commonly than sharing written information in the dissemination of knowledge. (Ahtinen et al.1999)

In SMEs the dissemination of knowledge and information is often easier than in large companies due to the smaller number of employees. However, the small size can also cause some problems. For example, SMEs do not often have resources and expertise for storing the relevant knowledge in such a way that it would be usable when needed. (Ahtinen et al.1999) Another problem is that the use of information and communication technology is often avoided in SMEs. Especially older entrepreneurs have negative attitudes towards ICT. (Kauppinen 2004)

2.7. GENERAL CONCLUSIONS TO BE OBTAINED FROM THE AVAILABLE LITERATURE

In Finland the competence development research has focused mainly on the large companies. The findings offered by the studies of large companies tend to be inapplicable in small and medium sized companies. In the future it is important to focus more on the small and medium-sized and especially the smallest enterprises.

Leonardo Programme

European Union has been a major source in funding competence development in the Finnish SMEs. The number of competence development projects among the Finnish SMEs has been huge since 1995. The great number of development projects indicates the fact that SMEs are increasingly aware of the importance of knowledge, skills and competencies for assuring their competitiveness.

Finnish SMEs have traditionally used formal methods, especially training courses organised outside the company, for developing the skills and knowledge of their personnel. However, during the last few years the success of informal training and knowledge acquired on the job has increased considerably. Learning in the daily work has been evaluated even as the current most important competence development method in the industrial SMEs.

In spite of the positive attitude toward the competence development there is sill a lot to do to change the planning of development activities from an ad-hoc basis into more systematic and long-term oriented.

In spite of the trend that competence development activities are more and more often directed to all the personnel managers and key persons are still the employment categories who benefit from the competence activities most in the Finnish SMEs. It seems that the lower the position in an organisation the less the person participates in the competence development activities.

Finnish studies on knowledge management in SMEs are scarce. It seems, however, that the application of knowledge management practices is uncommon among the SMEs, too, and only the forerunners of the SMEs have addressed the importance of knowledge management and developed their knowledge management systems and practices.

3. COMPETENCE DEVELOPMENT ACTIVITIES IN NATIONAL SMES: RESULTS FORM THE SURVEY

3.1. METHODOLOGICAL CONSIDERATIONS

The chapter is based on a fully structured survey of 153 Finnish manufacturing SMEs. The data was gathered through telephone interviews during March –April 2004. The interviews were directed to the owner or the general manager. If he/she was not available the human resources manager, personnel director or some other manager was interviewed. The distribution of the sample by size and sector can be found in the following table (Table 6).

Table 6. Sample breakdown by companies' size and sector

COMPANIES' CHARACTERISTICS	Number of companies	%
Size (Employment)		
10-49	78	51.0
50-249	75	49.0
Sector		
Food and beverage	21	13.7
Textile, clothing, leather and shoes	21	13.7
Woods and furniture	21	13.7
Paper and print	21	13.7
Fuel, chemical an plastic	23	15.0
Metal products, machinery and equipment	24	15.7
Electric and electronics	22	14.4
TOTAL	**153**	**100.0**

Source: Ikei and ENSR partners, CODE Leonardo project

In addition to the Finnish data the corresponding data collected in Spain, France, Austria and The Netherlands are exploited in this research to get a Europe-wide perspective. The European data consists of a sample of about 150 manufacturing SMEs per country. So, the total number of the companies surveyed is 753.

The results of the Leonardo CODE Survey have been re-weighted according to the real size and sector distribution within Finland. For obtaining the European averages, national results have been weighted according to the real weight of national manufacturing SMEs within the five participating countries: Finland, Spain, France, Austria and The Netherlands.

3.2. ACQUISITION OF EXTERNAL COMPETENCE

The most relevant sources of knowledge and competencies for the Finnish manufacturing SMEs are the clients and suppliers of the enterprise (Table 7). Clients were valued 3.2 and suppliers 2.9 (on a scale from 1 = not relevant for my enterprise to 4 = very relevant for my enterprise). Clients and suppliers were mentioned as the most relevant external source of knowledge and competencies in both small and medium sized-enterprises, although clients were slightly more valued by the medium-sized in comparison to the small enterprises.

Table 7. Relevance for the enterprises of different actors as sources of knowledge and competencies, by enterprise size

	Enterprise size		
	10-49	50-249	Total
Recruitment of new external personnel with required new competencies	2.7	2.8	2.7
Suppliers	2.9	2.9	2.9
Clients	3.2	3.4	3.2
Competitors and business colleagues	2.6	2.6	2.6
Consultants and accountants/auditors	2.5	2.2	2.5
Universities and training centres	2.3	2.2	2.3
R&D centres and technical experts	2.2	2.5	2.3
Business and Trade Associations	1.9	1.9	1.9
Government & public agencies	1.9	1.6	1.8

Results from '1'=not relevant for my enterprise to '4'=very relevant for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Other well-valued actors are recruitment of new external personnel with required new competencies (2.7), competitors and business colleagues (2.6), consultants and accountants/auditors (2.5), universities and training centres (2.3) and R&D centres and technical experts (2.3). Meanwhile, actors regarded as less relevant sources of knowledge and competencies are business and trade associations (1.9) and government and public agencies (1.8).

Finnish manufacturing SMEs use a variety of different training and learning practices to increase the knowledge, competence and skill base. The most relevant external-to-the-enterprise practices are co-operation with other enterprises and visits to exhibitions (Table 8). These practices were valued 2.9 and 2.6 (on a scale from 1 = not relevant for my enterprise to 4 = very relevant for my enterprise). Other practices valued above 2 include the reading of

information available in trade sector magazines/publications (2.5) and Internet (2.5), study visits to other enterprises/institutions (2.3) and attendance to training courses/seminars provided by external personnel (2.0). Analysis of patents and licenses (1.6) and job rotation and exchanges with other companies (1.4) are the least relevant external-to-the-enterprise practices for the Finnish manufacturing SMEs. Size considerations do not show any significant differences in the relevance of external-to-the-enterprise practices between small and medium-sized enterprises.

Table 8. Relevance of different practices for increasing the enterprises' knowledge, competence and skill base, by enterprise size

	Enterprise size		
	10-49	50-249	Total
External-to-the-enterprise practices			
Visits to expositions/trade fairs	2.6	2.7	2.6
Attendance to conferences/seminars provided by external personnel	2.0	2.1	2.0
Attendance to training courses provided by external-to-the enterprise personnel	2.2	2.3	2.2
Co-operation with other enterprises	2.9	2.7	2.9
Study visits to other enterprises/institutions	2.3	2.4	2.3
Job rotation and exchanges with other enterprises	1.4	1.4	1.4
Reading of information available in trade and sector magazines, publications	2.5	2.4	2.5
Reading of information available in Internet (websites, databases, etc)	2.6	2.4	2.5
Analysis of patents and licenses	1.6	1.8	1.6
Internal-to-the-enterprise practices			
Internal training courses/seminars provided by own personnel	2.4	2.8	2.5
Self-study activities during working time	2.2	2.3	2.2
On the job learning/learning in the daily work (for current personnel)	3.3	3.3	3.3
Job /task rotation (in-house)	2.7	2.6	2.7
Coaching/guidance activities for staff by other people in the enterprise	2.7	2.6	2.7
Tutor/mentoring systems for new employees	3.1	3.0	3.1
Apprenticeship schemes	2.0	2.0	2.0
Meetings amongst personnel for knowledge exchange/quality circles	2.8	2.7	2.8
Innovation and R+D activities	2.5	2.8	2.5

Results from '1'=not relevant for my enterprise to '4'=very relevant for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project.

3.3. INTERNAL ACTIVITIES FOR COMPETENCE DEVELOPMENT

Internal-to-the-enterprise practices seem to be more relevant than external ones for the Finnish manufacturing SMEs for increasing the in-house knowledge,

competence and skill base (Table 8). The most valued practices include on the job learning/learning in the daily work (3.3) and tutor/mentoring systems for new employees (3.1). Other highly-valued practices are meetings among personnel for knowledge exchange/quality circles (2.8), in-house job/task rotation (2.7), coaching/guidance activities for staff by other people in the enterprise (2.7), internal training courses/seminars provided by own personnel (2.5) and innovation and R & D activities (2.5). The least relevant internal-to-the-enterprise practices are self-study activities during working time (2.2) and apprenticeship schemes (2.0).

According to size considerations there are some differences between small and medium-sized enterprises. Internal training courses/seminars and innovation and R&D activities are more relevant for medium-sized in comparison to the small enterprises.

The results of the Leonardo CODE survey clearly indicate the importance of non-formal competence development methods for improving the in-house competence base and skills in the Finnish manufacturing SMEs (Table 9). Almost half of the enterprises (49.7 %) assessed informal methods as most effective for them, and almost as many (47.6 %) suggested that both formal and informal methods are equally relevant for them. Only in few (2.1 %) enterprises formal methods were ranked as most effective.

Table 9. Percentage of enterprises, according to their preference of formal/informal training practices, by enterprise size

	Enterprise size		
	10-49	50-249	Total
The formal training acquired in a course (external or internal)	2.5	0.7	2.1
The informal training and knowledge acquired on the job	52.5	40.4	49.7
Both equal	44.6	58.0	47.6
Don't Know/ No answer	0.5	0.9	0.6
TOTAL	**100.0**	**100.0**	**100.0**

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Size considerations show that small enterprises favour informal practices considerably more than medium-sized ones (52.5. % versus 40.4 %). Whereas,

medium-sized enterprises favour equally both informal and formal practices more than small enterprises (58.0 % versus 44.6 %).

According to the Leonardo CODE survey the three occupational groups benefiting most from the competence development activities in the Finnish manufacturing SMEs are middle managers/technicians, manual workers/operators and directors/managers (Table 10). The clerks/administrative personnel are the group benefiting least from the development activities, especially in small enterprises.

The occupational groups benefiting most depend on the specific nature of the competence activities. As far as the external competence development activities are concerned middle management/technicians are benefiting most and directors/managers second most. Whereas, when the internal competence development activities are taken into account, manual workers/operators are benefiting most and middle management/technicians second most.

Table 10. Percentage of enterprises, according to occupational groups, who mainly benefited from external and internal competence development activities, by enterprise size

Group categories	External activities			Internal activities		
	10-49	50-249	Total	10-49	50-249	Total
Directors and managers	70.1	75.4	71.3	47.5	24.9	42.4
Middle management, technicians	71.3	86.8	74.8	56.5	86.0	63.2
Manual workers, operators	32.9	14.9	28.8	74.5	64.3	72.2
Clerks, administrative personnel	14.3	21.1	15.8	15.6	23.4	17.4

Vertical totals may sum more than 100% as enterprises were requested to identify the two groups mostly benefited.
All enterprises.
Source: Ikei and ENSR partners, CODE Leonardo project.

The previous results indicate that in the Finnish manufacturing SMEs methods, sources and processes of competence development vary strongly between different occupational groups. Directors/managers and middle managers/technicians are more oriented towards external sources of competence, whereas manual workers/operators are more oriented towards internal sources of competence. According to size considerations this division is clear especially in the small enterprises. In the medium-sized enterprises middle

managers/technicians participate equally in the external and internal competence development activities.

3.4. FORMALISATION AND DIFFUSION OF THE IN-HOUSE KNOWLEDGE

The results of the Leonardo CODE survey show that most of the Finnish manufacturing SMEs have formalised at least some of the available in-house knowledge (Table 11). Almost three out of four enterprises apply written manuals describing the main tasks and activities of each working post (73.0%) and the productive standards and routines (72.5%). Over 60 percent of the enterprises have also quality management systems (66.2%), a formal strategic plan (66.0%) and a formal organisation chart (61.3%). However, only every fourth enterprise (25.4%) has any ISO certifications.

The degree of formalisation is considerably higher in the medium-sized compared to the small enterprises. The degree of formalisation is considerably higher in the medium-sized enterprises in all considered management tools.

Table 11. Percentage of enterprises with formalised management tools, by enterprise size

Variables	Enterprise size		
	10-49	50-249	Total
A formal organisation chart	51.4	95.1	61.3
A formal strategic plan	58.9	90.4	66.0
Written manual(s) describing the main tasks and activities of each working post	67.6	91.2	73.0
Written manual(s) describing the productive standards and routines	67.8	88.5	72.5
Quality management systems	61.6	81.8	66.2
ISO certifications (9000, 14000, others)	15.9	57.7	25.4

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

When considering the formalisation of the human management tools it can be seen that almost all of the Finnish manufacturing SMEs (98.8%) carry out meetings to inform employees on changes/developments about job/enterprise, whereas only about every third enterprise has defined processes for the recruitment and selection of personnel (35.0%) and a written training plan (29.4%) (Table 12). About half of the enterprises have systems for collecting employees' suggestions related to work issues (57.6%) and formal systems for

evaluating the personnel performance (45.5%). About forty percent of the enterprises have formal systems for evaluating the personnel training needs (38.6%).

Table 12. Percentage of enterprises with formalised human resources management tools, by enterprise size

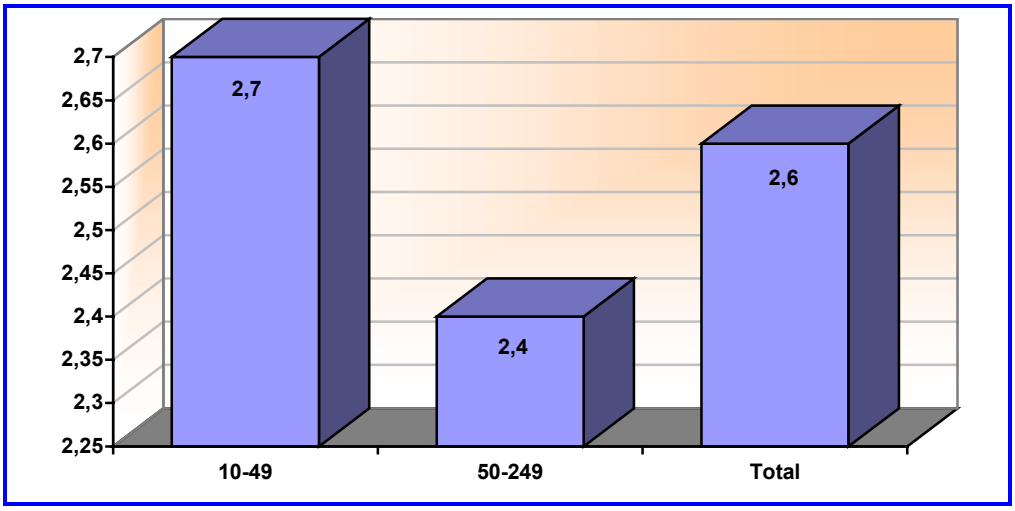
Variables	Enterprise size		
	10-49	50-249	Total
Defined process(es) for the recruitment and selection of personnel	32.2	44.7	35.0
Formal system(s) for evaluating the personnel performance	39.0	67.6	45.5
Formal system(s) for evaluating the personnel training needs	31.1	64.0	38.6
A written training plan	20.6	59.5	29.4
System(s) for collecting employees' suggestions related to work issues	53.9	70.3	57.6
Meetings to inform employees on changes/developments about job/enterprise	99.3	97.2	98.8

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The share of enterprises carrying out meetings to inform employees is high among both small and medium-sized enterprises, and in fact, it is slightly higher among small enterprises. However, when considering the other suggested human resources management tools the degree of formalisation is considerably more common among the medium-sized in comparison to the small enterprises.

According to the results of the Leonardo CODE Survey relevant knowledge and information are quite well disseminated within the organisation in the Finnish manufacturing SMEs (Graph 2). In the enterprises the degree of dissemination was rated 2.6 (on a scale from 1 = very badly disseminated to 4 = very well disseminated). The degree of dissemination was ranked slightly higher among small (2.7) in comparison to medium-sized enterprises (2.4). Naturally, due to the smaller personnel the dissemination of knowledge and information is often easier in the small enterprises.

Graph 2. Assessment of the degree of dissemination of relevant knowledge and information through the organisation, by enterprise size



Results from '1'= Very badly disseminated to '4'=Very well disseminated
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Finnish manufacturing SMEs prefer informal dissemination mechanisms (informal meetings, daily interaction) over formal ones (intranets, manuals, internal newsletters) for disseminating relevant knowledge and information within the organisation (Table 13). Almost half of the enterprises prefer informal mechanisms (49.3%), whereas only five percent prefer formal ones (5.2%). However, 45.3% of the enterprises prefer equally both informal and formal methods. Small enterprises seem to prefer considerably more informal methods in comparison to medium-sized enterprises (54.6% versus 31.1%). Whereas, medium-sized enterprises favour equally both informal and formal mechanisms, more than small enterprises (62.2% versus 40.6%)

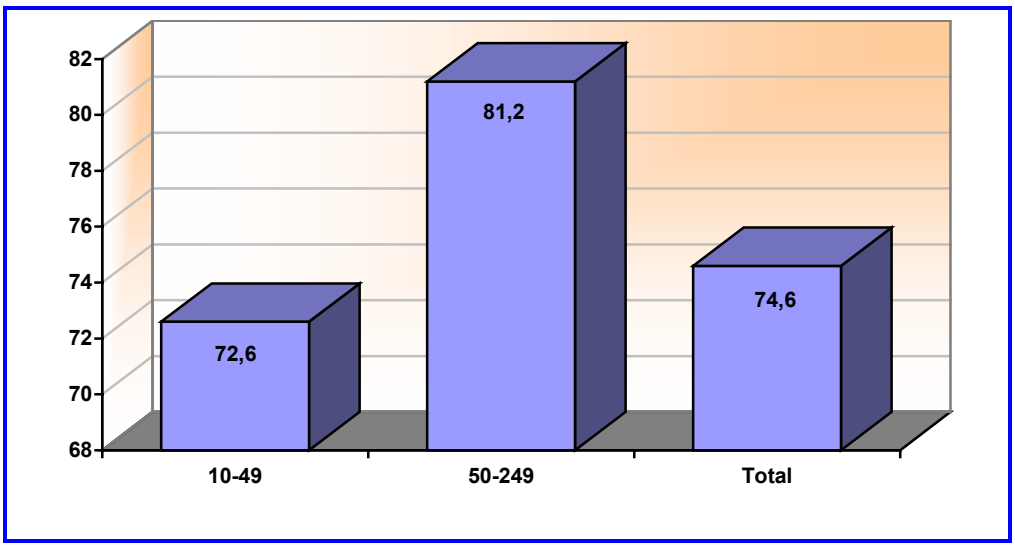
Table 13. Preference of enterprises of formal versus informal tools for disseminating relevant knowledge and information within the organisation, by enterprise size

Variables	Enterprise size		
	10-49	50-249	Total
Formal mechanisms	4.8	6.6	5.2
Informal mechanisms	54.6	31.1	49.3
Both equal	40.6	62.2	45.5
Don't Know/ No answer	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Three quarters (74.6 %) of the Finnish manufacturing SMEs have databases where relevant-to-the-enterprise knowledge, experiences and documents are stored (Graph 3). Databases are considerably more common among medium-sized enterprises than small ones (81.2% versus 72.6 %).

Graph 3. Percentage of enterprises who inform to have databases where relevant-to-the-enterprise knowledge, experiences and documents are stored for subsequent use, by enterprise size



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The databases are updated periodically almost in every manufacturing enterprise (94.9%). They are accessible through ICT-based systems, i.e. Intranet, in 65

percent of the enterprises. However, only in a quarter of enterprises (25.4%) the databases are accessible to all the workforce of the enterprise. In most enterprises (69.3) they are accessible only to chosen personnel including the management board.

Table 14. Characterisation (updating and accessibility) of databases available within enterprises, by enterprise size (% of enterprises)

Variables	Enterprise size		
	10-49	50-249	Total
Databases are periodically updated	95.7	92.5	94.9
Databases are accessible through ICT-based systems (i.e. Intranet)	59.9	79.7	64.8
These databases are accessible to			
All the enterprise's workforce	23.3	31.8	25.4
Only allowed personnel (including management board)	70.4	66.1	69.3
Only the management board	6.3	2.0	5.2
Don't know/no answer	0.0	0.0	0.0

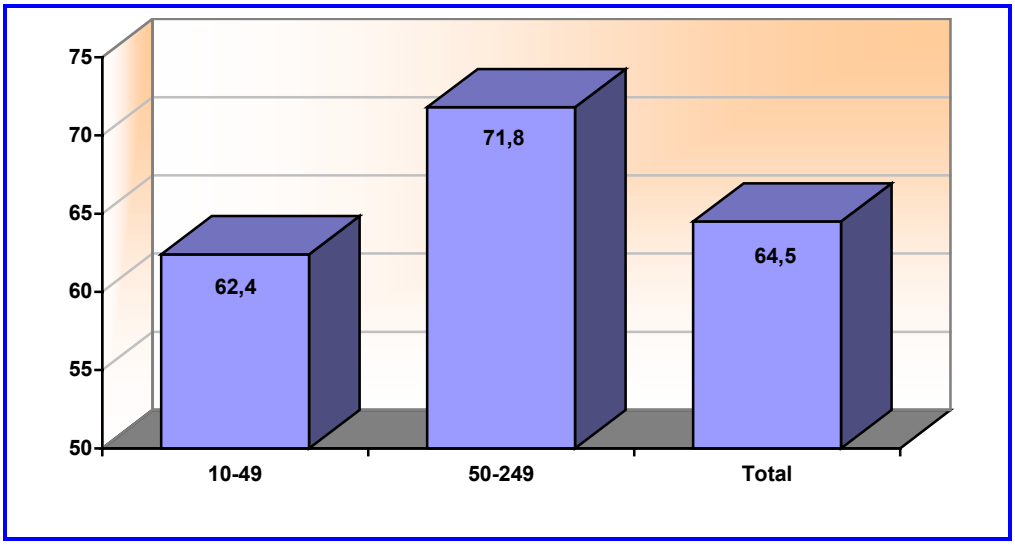
Data referred only to enterprises with databases
Source: Ikei and ENSR partners, CODE Leonardo project

According to size considerations the percentage of the enterprises where the databases are accessible through ICT-based systems is higher among the medium-sized compared to small enterprises. In addition, the access to the databases is slightly more centralised in the small than in the medium-sized enterprises. The databases are accessible to all the workforce in 31.8 % of the medium-sized enterprises, whereas the same figure is 23.3 % in the small enterprises.

3.5. SCANNING COMPETENCE DEVELOPMENT NEEDS

According to the Leonardo CODE survey 64.5 % of the Finnish manufacturing SMEs have a specified person or group within the enterprise responsible for identifying the current or future skill needs (Graph 4). The presence of this kind of person or group is strongly related to size. The presence is substantially more common among the medium-sized than the small enterprises (71.8% versus 62.4%).

Graph 4. Percentage of enterprises who inform to have a special person or group responsible within the enterprise for identifying current or future skill needs, by enterprise size



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

In 55.1 % of the manufacturing SMEs the management team is responsible for the identification of the current or future skill needs (Table 15). Other persons/groups are considerably less frequently responsible for the identification task. In 22.4 % of the enterprises the owner/general manager and in 10.9 % a group formed by representatives of the management team and employees is responsible for the task. Only in 6.2% of the enterprises the human resources manager/training director is responsible for the identification.

Table 15. Percentage of enterprises according to the person/group(s) responsible of identifying current or future skill needs, by enterprise size

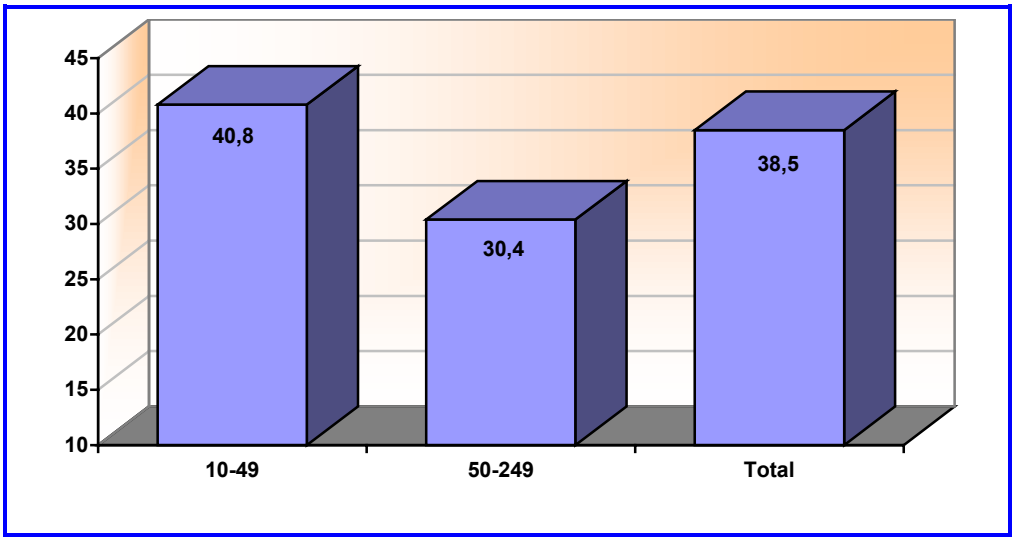
Variables	Enterprise size		
	10-49	50-249	Total
The owner/ the general manager	22.8	21.1	22.4
The human resources manager/training director (if different from above)	4.1	12.4	6.2
The management team	57.7	47.2	55.1
A group formed by representatives of the management team and employees	10.9	10.8	10.9
Other	4.5	8.5	5.5
Total	**100.0**	**100.0**	**100.0**

Only enterprises who have a special person or group for this task
Source: Ikei and ENSR partners, CODE Leonardo project

According to size considerations there are some differences between the small and medium-sized enterprises in the identification of the current and future skill needs. First, the role of the management team is more significant among the small enterprises compared to the medium-sized ones. The share of those enterprises where the management team is responsible for the identification task is substantially higher in the small enterprises (57.7% versus 47.2%). And second, the human resources manager/training director responsible for the identification work is more common in the medium-sized than small enterprises (12.4% versus 4.1%). This difference, however, is understandably due to the fact that small enterprises rarely have any specific human resources manager or training director.

According to the Leonardo CODE Survey almost four out of ten Finnish manufacturing SMEs suffer of a lack of skilled labour (Graph 5). Small enterprises seem to suffer from skills shortage more than medium-sized enterprises (40.8% versus 30.4%).

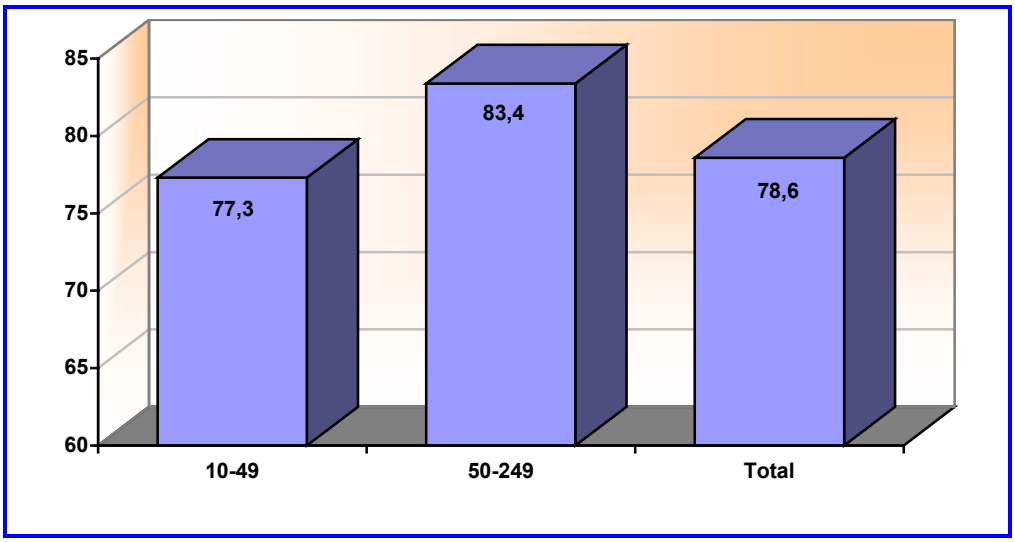
Graph 5. Percentage of enterprises agreeing or totally agreeing with the statement 'My enterprise is currently experiencing a lack (shortage) of skilled labour', by enterprise size



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

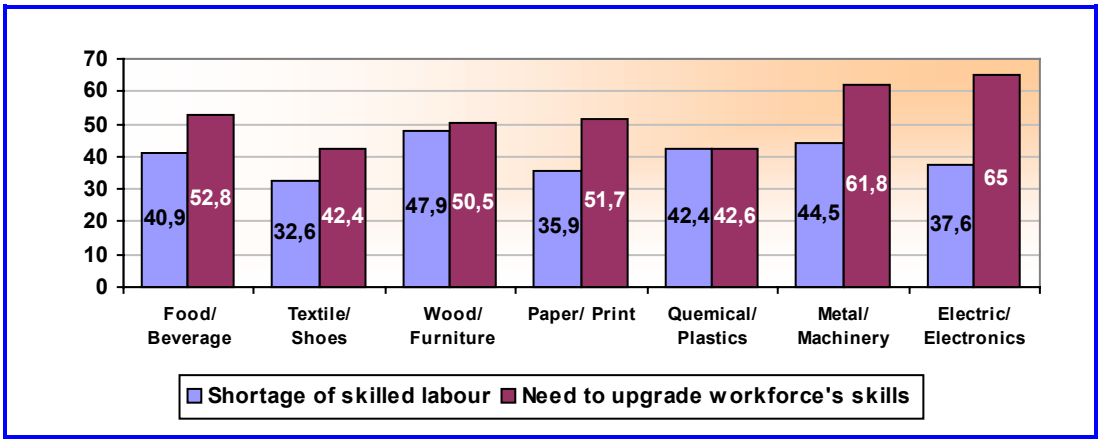
The need to upgrade the competencies and skills base of the workforce has clearly been perceived in the manufacturing enterprises (Graph 6). More than three out of four Finnish enterprises agreed with the statement that it currently needs to upgrade the competencies and skill base of its workforce. The skill gaps seem to be more present in the medium-sized than the small enterprises (83.4% versus 77.3%).

Graph 6. Percentage of enterprises agreeing or totally agreeing with the statement 'My enterprise currently needs to upgrade the competencies and skills base of its workforce', by enterprise size



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

According to the Leonardo CODE Survey the shortage of skilled labour is the most present in the European wood enterprises (Graph 7). Whereas, the need to upgrade the competencies and skill base of the workforce is highest in the European electronic and metal enterprises.



All enterprises
Source: Leonardo CODE Project

Graph 7 **Percentage of enterprises agreeing or totally agreeing with the statements 'My enterprise is currently experiencing a lack (shortage) of skilled labour'/'My enterprise currently needs to upgrade the competencies and skill base of its workforce', by sector**

The Finnish manufacturing SMEs ranked 'engineering and manufacturing' and 'sales and marketing' as areas where the need for upgrading the knowledge/skill base are the highest (Table 16). Enterprises valued the need of upgrading 2.8 (on a scale from 1 = no need for my enterprise to 4 = very urgent need for my enterprise) on both areas. Other also highly ranked areas include 'personal skills' (i.e. communication, team-working, proactivity) (2.7) and 'language abilities' (2.7). The manufacturing SMEs regarded 'office work' as less important area for upgrading the knowledge/skill base. Size considerations do not show any significant differences between the small and medium-sized enterprises even though the relevance of most of the suggested competence areas is slightly higher among medium-sized enterprises.

Table 16. Relevance of different competence areas according to the enterprises' identified needs, by enterprise size

Variables	Enterprise size		
	10-49	50-249	Total
Engineering and manufacturing	2.7	3.0	2.8
Sales and Marketing	2.7	3.1	2.8
Management, finance	2.4	2.7	2.4
ICTs, computers	2.3	2.6	2.4
Office work	2.0	2.1	2.0
Personal skills	2.7	2.9	2.7
Language abilities	2.6	2.9	2.7
Environment protection	2.2	2.2	2.2
Health and safety issues	2.4	2.5	2.4

Results from '1'= no need for my enterprise to '4'= very urgent need for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

3.6. BARRIERS FOR ENTERPRISES TO ENGAGE THEMSELVES IN COMPETENCE DEVELOPMENT ACTIVITIES

According to the results of the Leonardo CODE Survey, the two most important barriers for the Finnish manufacturing SMEs to engage in competence development activities are 1) organisational and 2) financial problems (Table 17). The workload of employees makes it difficult to organise competence development activities and enterprises have insufficient budgets or the costs are too high. Both the statements concerning these problems were valued 1.8 (on a scale from 1 = it is no a barrier for my enterprise to 3 = it is a big barrier for my enterprise).

Other identified barriers for enterprises to engage in competence development activities include the lack of support from the government (i.e. guidance, subsidies) (1.7), lack of information on the possible sources of knowledge/skills (1.6), lack of motivation of employees (1.6) and risk of trained employees being 'poached away' by competitors (1.6). Other less important barriers include the difficulty for the enterprise to assess its own knowledge/skill needs (1.5) and the inadequate availability of sources of skills and knowledge (1.5).

Table 17. Relevance of different barriers for enterprises to engage themselves in competence development activities, by enterprise size

Variables	Enterprise size		
	10-49	50-249	Total
Insufficient budget/costs are too high	1.8	1.7	1.8
Employees' workload makes these activities difficult to organise	1.8	1.8	1.8
Too difficult for the enterprise to assess its own knowledge/skill needs	1.5	1.5	1.5
Lack of information on the possible sources of knowledge/skills	1.7	1.6	1.6
The available sources of skills and knowledge are unsatisfactory	1.5	1.6	1.5
Lack of motivation from the employees	1.6	1.6	1.6
Risk of trained employees being 'poached away' by competitors	1.7	1.6	1.6
Lack of support by the government (guidance, subsidies,...)	1.7	1.5	1.7

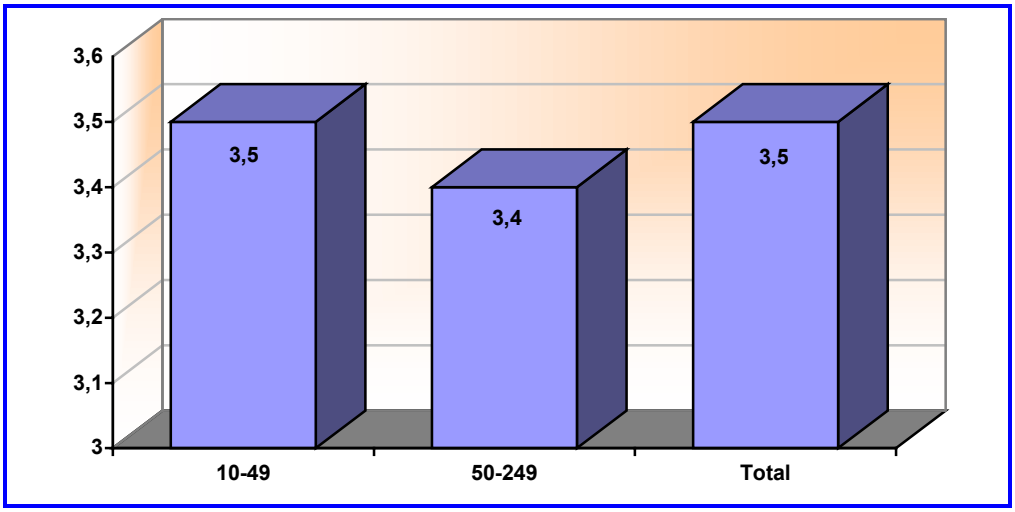
Results from '1'= It is not a barrier for my enterprise to '3'= it is a big barrier for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The enterprise size perspective does not show significant differences related to barriers of competence development activities between the small and medium-sized enterprises. However, it is worth noticing that the small enterprises suffer more from the lack of public support than the medium-sized enterprises.

3.7. ATTITUDES OF THE ENTERPRISES TOWARDS COMPETENCE DEVELOPMENT ACTIVITIES

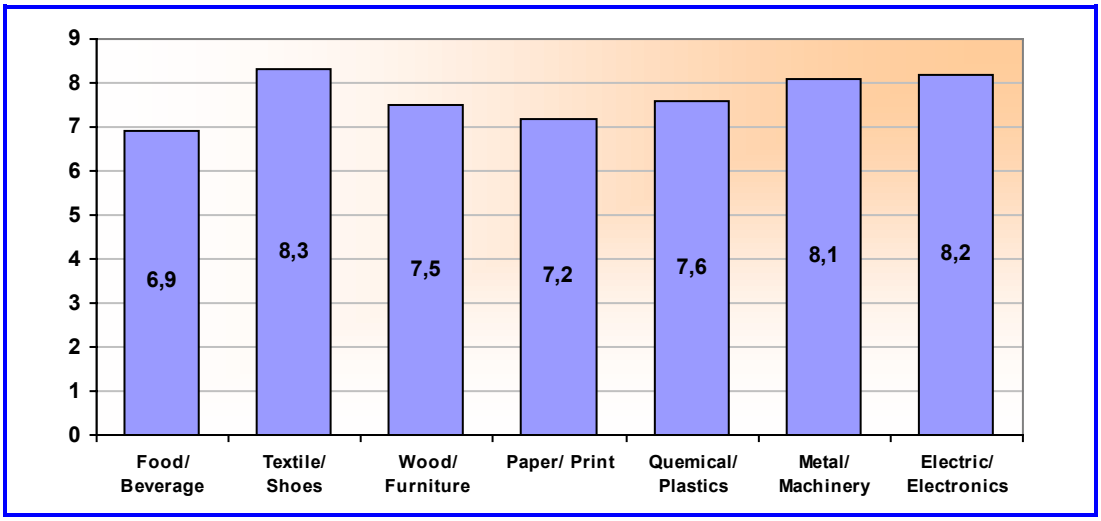
The importance of competence development activities is well reflected in the results obtained by the Leonardo Code Survey. The Finnish manufacturing SMEs attribute a very high importance (3.5 on a scale from 1 = not important to 4 = very important) to activities intended to develop the knowledge and skill base of the enterprise for sustaining their competitiveness (Graph 8). The opinion on competence development activities as a key element for the competitiveness of the enterprise is well shared amongst SMEs irrespective of size. Development activities are viewed as highly important in both, in the small enterprises (3.5) and in the medium-sized ones (3.4).

Graph 8. Importance attributed by enterprises to the competence development activities for sustaining their competitiveness, by enterprise size



Results from '1'= Not important to '4'=very important
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

According to the results of the Leonardo CODE Survey the opinion on competence development activities as a key element for the competitiveness of the enterprise is well shared amongst European manufacturing SMEs irrespective of sector (Graph 9). Development activities are, however, viewed as more important in textile, electronic and metal enterprises compared to other enterprises.



Results from '0'= Not important to '10'=very important
All enterprises
Source: Leonardo CODE Project

Graph 9 **Importance attributed by enterprises to the competence development activities for sustaining their competitiveness, by sector**

3.8. COMPARISON OF NATIONAL VERSUS EUROPEAN RESULTS

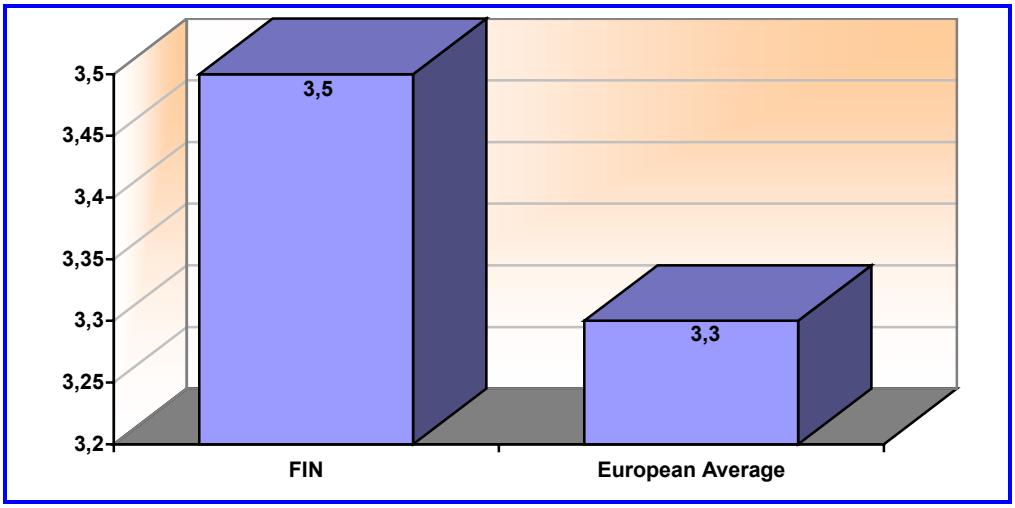
This section deals with the data obtained by the Leonardo CODE Survey in five European countries: Finland, Spain, France, Austria and The Netherlands. The section presents the competence development in the European manufacturing SMEs and makes comparisons between the Finnish results and the European averages.

3.8.1. Attitudes of the enterprises towards competence development activities

The results of the Leonardo CODE Survey show that the European manufacturing SMEs consider competence development activities important for sustaining their competitiveness (Graph 10). The Finnish manufacturing SMEs consider the competence development activities even slightly more important than their European counterparts. The European average for the importance of the competence development activities is 3.3 (on scale from 1 = not important to

4 = very important), whereas the same figure among the Finnish enterprises is 3.5.

Graph 10. Importance attributed by enterprises to the competence development activities for sustaining their competitiveness, comparison between the national and the European average



Results from '1'= Not important to '4'=very important
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

3.8.2. External-to-the-enterprises sources of knowledge and competence

The most important sources of knowledge and competencies for the European manufacturing SMEs are clients and suppliers (Table 18). In Finland the same actors were mentioned as the most relevant. Both Finnish and European manufacturing SMEs, valued the relevance of clients 3.2 and suppliers 2.9 (on a scale from 1 = not relevant for my enterprise to 4 = very relevant for my enterprise).

Table 18. Relevance for the enterprises of different actors as sources of knowledge and competencies, comparison between the national and the European average

Variables	FIN	European Average
Recruitment of new external personnel with required new competencies	2.7	2.5
Suppliers	2.9	2.9
Clients	3.2	3.2
Competitors and business colleagues	2.6	2.6
Consultants and accountants/auditors	2.5	2.6
Universities and training centres	2.3	2.2
R&D centres and technical experts	2.3	2.1
Business and Trade Associations	1.9	2.4
Government & public agencies	1.8	2.0

Results from '1'=not relevant for my enterprise to '4'=very relevant for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Other highly-valued actors among the European manufacturing SMEs are competitors and business colleagues (2.6), consultants and accountants/auditors (2.6) and recruitment of new external personnel with required new competencies (2.5). R&D centres, technical experts (2.1) and government & public agencies were regarded as less relevant. Differences between the Finnish manufacturing SMEs and the European average are mainly quite small. However, business and trade associations seem to be less relevant for the Finnish enterprises compared to the European average. The European average for business and trade associations is 2.4 and the same figure in Finland is only 1.9.

3.8.3. Practices for increasing enterprises' competence levels

For the European manufacturing SMEs visits to expositions/trade fares and reading information available in trade and sector magazines are the most relevant external-to-the-enterprise practices for increasing their competence levels (Table 19). The European average for visits to expositions/trade fairs is 2.7 and for reading information 2.6. Other highly-valued practices include attendance to training courses provided by external-to-the-enterprise personnel (2.5) and reading information available in Internet (websites, databases) (2.5). Analysis of patents and licenses (1.9) and job rotation and exchanges with other enterprises (1.5) were regarded as less relevant practices.

When considering the same figures among the Finnish manufacturing SMEs there seems to be quite a lot of differences compared to the European averages. According to the results the Finnish manufacturing SMEs appear to be considerably more co-operation oriented in increasing their knowledge, competence and skill base than their European counterparts. The Finnish enterprises ranked co-operation with other enterprises as the most relevant practice, and valued it 2.9. The figure is 0.7 units higher than the European average. In addition, the Finnish enterprises valued study visits to other enterprises and institutions 0.3 units higher than their European counterparts (2.3 versus 2.0). The difference confirms the greater orientation of Finnish manufacturing SMEs to co-operation and to learning from others compared to the European average.

Other differences between the Finnish and the European averages are the following: attendance to training courses provided by external personnel was regarded as less relevant by the Finnish enterprises compared to the European average (2.2 versus 2.5). In the same way, analysis of patents and licenses was valued lower in the Finnish enterprises (1.6 versus 1.9).

Table 19. Relevance of different practices for increasing the enterprises' knowledge, competence and skill base, comparison between the national and the European average

Variables	FIN	European Average
External-to-the-enterprise practices		
Visits to expositions/trade fairs	2.6	2.7
Attendance to conferences/seminars provided by external personnel	2.0	2.1
Attendance to training courses provided by external-to-the enterprise personnel	2.2	2.5
Co-operation with other enterprises	2.9	2.2
Study visits to other enterprises/institutions	2.3	2.0
Job rotation and exchanges with other enterprises	1.4	1.5
Reading of information available in trade and sector magazines, publications	2.5	2.6
Reading of information available in Internet (websites, databases, etc)	2.5	2.5
Analysis of patents and licenses	1.6	1.9
Internal-to-the-enterprise practices		
Internal training courses/seminars provided by own personnel	2.5	2.3
Self-study activities during working time	2.2	2.3
On the job learning/learning in the daily work (for current personnel)	3.3	3.0
Job /task rotation (in-house)	2.7	2.7
Coaching/guidance activities for staff by other people in the enterprise	2.7	2.5
Tutor/mentoring systems for new employees	3.1	2.5
Apprenticeship schemes	2.0	2.2
Meetings amongst personnel for knowledge exchange/quality circles	2.8	2.5
Innovation and R+D activities	2.5	2.4

Results from '1'=not relevant for my enterprise to '4'=very relevant for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The European manufacturing SMEs assessed internal-to-the-enterprise practices to be more relevant than the external ones for increasing the in-house knowledge, competence and skill base (Table 19). The most relevant internal practices for the enterprises are on the job learning/learning in the daily work (3.0) and job/task rotation (2.7). Other highly-valued practices are coaching/guidance activities for staff by other people in the enterprise (2.5), tutor/mentoring systems for new employees (2.5) and meetings amongst personnel for knowledge exchange/quality circles (2.5). Internal training courses/seminars provided by own personnel (2.3), self-study activities during working time (2.3) and apprenticeship schemes (2.2) were ranked as the least relevant internal practices.

According to country considerations there are some differences between the Finnish manufacturing SMEs and their European counterparts. Most of the suggested practices are at least slightly more highly-valued in the Finnish

enterprises compared to the European average. The difference is most marked under the tutor/mentoring systems. The Finnish enterprises valued the relevance of tutor/mentoring systems for new employees as much as 0.6 units higher than the European enterprises on average (3.1 versus 2.5).

The Leonardo CODE Survey results show the importance of informal training methods for upgrading the in-house competence base and skills of the European manufacturing SMEs (Table 20). The largest share of the manufacturing SMEs (54.4%) rated both formal and informal methods as equally effective. Almost forty percent of enterprises (38.4%) ranked informal training and knowledge acquired on the job as the most effective, whereas only 5.5 % preferred formal methods.

Table 20. Percentage of enterprises, according to their preference of formal/informal training practices, comparison between the national and the European average

Variables	FIN	European Average
The formal training acquired in a course (external or internal)	2.1	5.5
The informal training and knowledge acquired on the job	49.7	38.9
Both equal	47.6	54.4
Don't Know/ No answer	0.6	1.1
TOTAL	**100.0**	**100.0**

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The Finnish manufacturing SMEs seem to prefer informal training methods even more than the European enterprises on average, as in Finland the largest share (49.7%) of the enterprises ranked the informal training methods as the most effective for them.

3.8.4. Occupational groups benefiting from competence development activities

According to the Leonardo CODE Survey the occupational group benefiting most from competence development activities is 'middle management, technicians' (Table 21). The group was ranked as benefiting the most concerning both external and internal-to-the-enterprise practices. The group

benefiting the second most depends on the specific nature of the development activities. When the external competence development practices are concerned, the second group is 'directors and managers', whereas, when internal competence development activities are taken into account 'manual workers/operators' is the group benefiting the second most. The occupational group 'clerks/administrative personnel' is the group benefiting the least from both external and internal development activities.

Table 21. Percentage of enterprises, according to the occupational groups mainly benefited from enterprises' external and internal competence development activities, comparison between the national and the European average

Variables	FIN	European Average
External-to-the-enterprise practices		
Directors and managers	71.3	67.0
Middle management, technicians	74.8	67.6
Manual workers, operators	28.8	19.3
Clerks, administrative personnel	15.8	14.1
Internal-to-the-enterprise practices		
Directors and managers	42.4	31.0
Middle management, technicians	63.2	74.4
Manual workers, operators	72.2	54.7
Clerks, administrative personnel	17.4	18.4

Vertical totals may sum more than 100% as enterprises were requested to identify the two groups mostly benefited.
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The Finnish results concerning the internal development activities differ from the European average. Instead of the group 'middle management, technicians' the group 'manual workers, operators' was rated by the Finnish enterprises as the group benefiting most.

3.8.5. Formalisation and diffusion of the in-house knowledge

According to the results of the Leonardo CODE Survey most of the European manufacturing SMEs have formalised at least some of the available in-house knowledge (Table 22). Over sixty percent of enterprises apply quality management systems (66.6%), written manuals describing the main tasks and activities of each working post (66.0) and a formal organisation chart (62.4%).

Written manuals describing the productive standards and routines (56.8%), formal strategic plan (48.2%) and ISO certifications (40.5%) are some more rare management tools.

There are some national differences between the Finnish and the European manufacturing SMEs. First, in the Finnish enterprises the use of written manuals, especially the use of manuals describing the productive standards and routines, is considerably wider than in Europe on average (72.5% versus 56.8%). Second, 66 % of the Finnish enterprises apply formal strategic plans, versus the 48% European average. And third, the share of enterprises having ISO certifications is fifteen percent lower in Finland than in Europe on average (25.4% versus 40.5%).

Table 22. Percentage of enterprises with formalised management tools, comparison between the national and the European average

Variables	FIN	European Average
A formal organisation chart	61.3	62.4
A formal strategic plan	66.0	48.2
Written manual(s) describing the main tasks and activities of each working post	73.0	66.0
Written manual(s) describing the productive standards and routines	72.5	56.8
Quality management systems	66.2	66.6
ISO certifications (9000, 14000, others)	25.4	40.5

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

When considering the formalisation of human management tools we can see that most of the European manufacturing SMEs (80.0%) carry out meetings to inform employees on changes/developments about job/enterprise (Table 23). Half of the enterprises (50.7%) have systems for collecting employees' suggestions related to work issues. Other suggested human resource management tools are applied approximately in every third European enterprise. In Finland the application of formalised human resource management tools is at the same level with the European averages. However, all of the suggested tools, except the written training plan, are applied more in the Finnish enterprises than in the European enterprises on average.

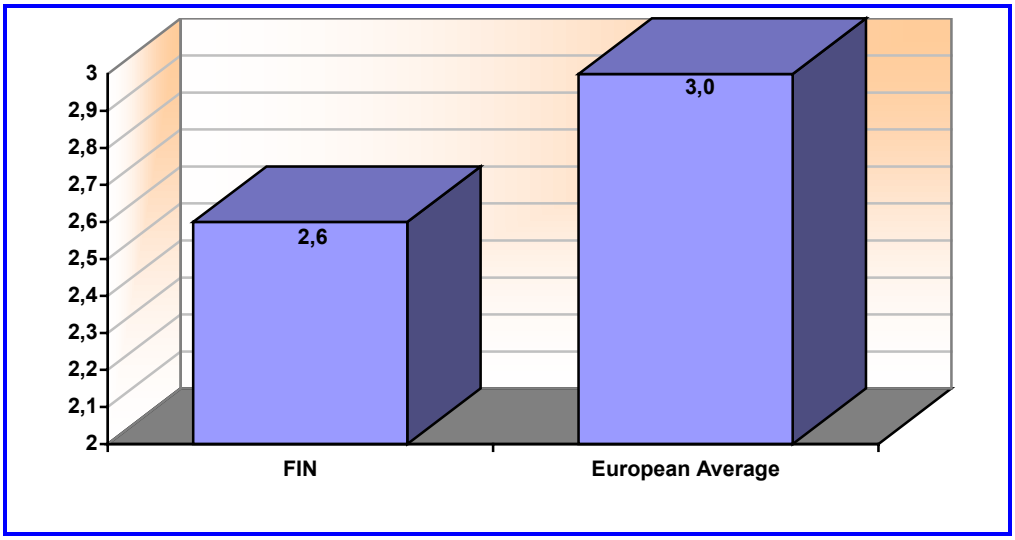
Table 23. Percentage of enterprises with formalised human resources management tools, comparison between the national and the European average

Variables	FIN	European Average
Defined process(es) for the recruitment and selection of personnel	35.0	34.1
Formal system(s) for evaluating the personnel performance	45.5	34.4
Formal system(s) for evaluating the personnel training needs	38.6	32.7
A written training plan	29.4	36.9
System(s) for collecting employees' suggestions related to work issues	57.6	50.7
Meetings to inform employees on changes/developments about job/enterprise	98.8	80.0

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project.

According to the results of the Leonardo CODE Survey relevant knowledge and information are well disseminated through the organisation in the European manufacturing SMEs (Graph 11). The European average of the degree of dissemination is 3.0 (on a scale from 1 = very badly disseminated to 4 = very well disseminated). The Finnish manufacturing SMEs are not as satisfied with the dissemination, as the same figure among Finnish enterprises is 2.6.

Graph 11. Assessment of the degree of dissemination of relevant knowledge and information through the organisation, comparison between the national and the European average



Results from '1'= Very badly disseminated to '4'=Very well disseminated
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The European manufacturing SMEs prefer informal dissemination mechanisms (informal meetings, daily interaction) over formal ones (intranets, manuals, internal newsletters) for disseminating relevant knowledge and information within the organisation (Table 24). Almost every second enterprise (48.3%) prefers informal mechanisms and two out of five (41.8%) both, formal and informal mechanisms, whereas only a tenth of enterprises (9.7%) favour formal mechanisms. The same figures among the Finnish manufacturing SMEs are at the same level. However, the informal mechanisms are even slightly more significant for the Finnish enterprises.

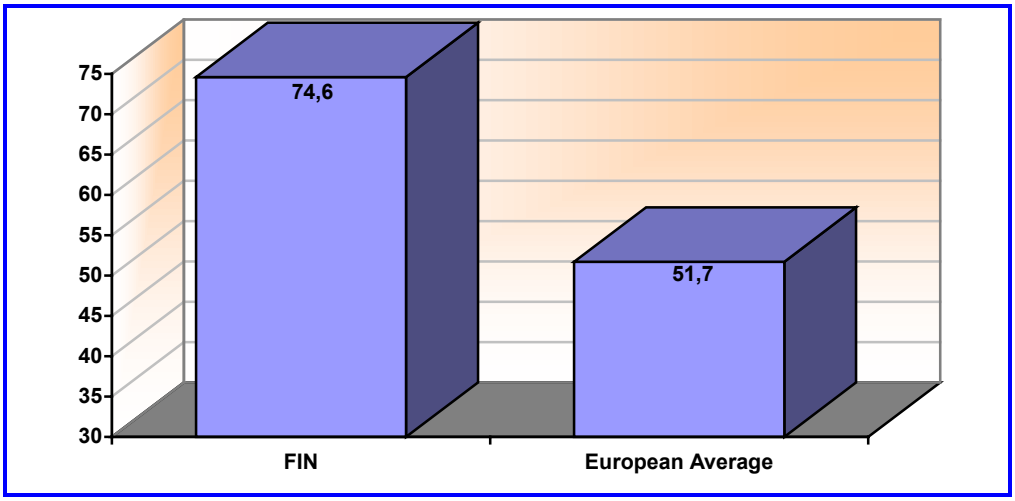
Table 24. Preference of enterprises of formal versus informal tools for disseminating relevant knowledge and information within the organisation, comparison between the national and the European average

Variables	FIN	European Average
Formal mechanisms	5.2	9.7
Informal mechanisms	49.3	48.3
Both equal	45.5	41.8
Don't Know/ No answer	0.0	0.2
Total	**100.0**	**100.0**

All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

On the European level every second manufacturing SME has databases where relevant-to-the-enterprise knowledge, experiences and documents are stored for subsequent use (Graph 12). In Finland the use of databases is clearly more common, as three quarters of the Finnish manufacturing SMEs (74.6%) have databases where relevant information is stored.

Graph 12. Percentage of enterprises that suggest having databases where relevant-to-the-enterprise knowledge, experiences and documents are stored for subsequent use, comparison between the national and the European average



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

Almost all the European manufacturing SMEs (94.2%), having the databases where knowledge, experience and documents are stored, update these databases periodically (Table 25). The databases are accessible through ICT-based systems almost in seven out of ten enterprises (68.7%). Only in a quarter of the enterprises (23.4) the databases are accessible to all the workforce of the company. In most enterprises (64.1) only chosen personnel including the management board has access to the databases.

Table 25. Characterisation (updating and accessibility) of databases available within enterprises, comparison between the national and the European average (% of enterprises)

Variables	FIN	European Average
Databases are periodically updated	94.9	94.2
Databases are accessible through ICT-based systems (i.e. Intranet)	64.8	68.7
These databases are accessible to		
All the enterprise's workforce	25.4	23.4
Only allowed personnel (including management board)	69.3	64.1
Only the management board	5.2	11.7
Don't know/no answer	0.0	0.8

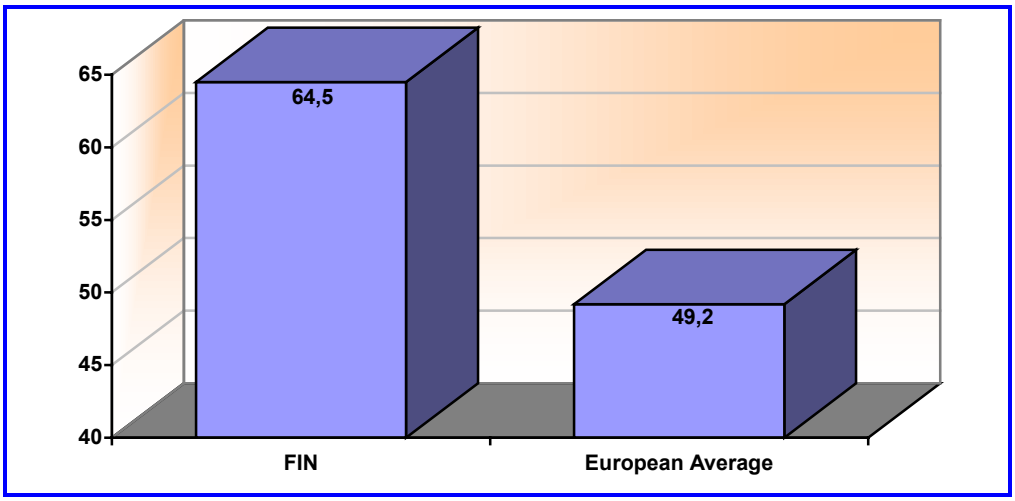
Data referred only to enterprises with databases
Source: Ikei and ENSR partners, CODE Leonardo project

The updating and accessibility figures are quite similar in the Finnish manufacturing SMEs compared to the European averages. However, two small differences can be noted. First, the accessibility through ICT-based systems is about four percentage units lower in the Finnish enterprises than the European average. And second, the accessibility seems to be slightly less centralised in the Finnish enterprises.

3.8.6. Scanning competence development needs

According to the Leonardo CODE Survey half of the European manufacturing SMEs (49.2%) has a special person or group responsible within the enterprise for identifying current or future skill needs (Graph 13). The same figure is considerably higher among the Finnish enterprises. Over sixty percent (64.5%) of the Finnish enterprises have a special person or group responsible for the identification task.

Graph 13. Percentage of enterprises who suggest to have a special person or group responsible within the enterprise for identifying current or future skill needs, comparison between the national and the European average



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The management team is the group most often responsible for the identification of the current or future skill needs in the European manufacturing SMEs (Table 26). Almost forty percent of enterprises (38.7%) reported the management team to have the responsibility. Almost every third enterprise (30.0%) reported the owner/the general manager to be responsible for the identification. Only in less than ten percent of enterprises (7.1%) a group formed by representatives of the management team and employees is responsible for the task.

Table 26. Percentage of enterprises according to the person/group(s) responsible of identifying current or future skill needs, comparison between the national and the European average

Variables	FIN	European Average
The owner/ the general manager	22.4	30.0
The human resources manager/training director (if different from above)	6.2	16.2
The management team	55.1	38.7
A group formed by representatives of the management team and employees	10.9	7.1
Other	5.5	8.1
Total	**100.0**	**100.0**

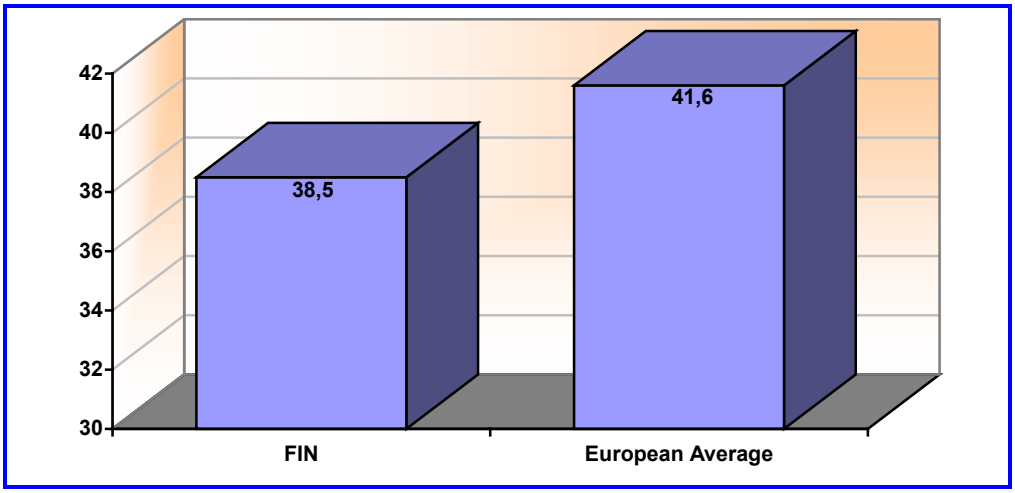
Only enterprises who have a special person or group for this task
Source: Ikei and ENSR partners, CODE Leonardo project.

In the Finnish manufacturing enterprises the identification of current or future skills seems to be more centralized for the responsibility of the management team compared to the European average (55.1% versus 38.7%).

3.8.7. Skill shortages/gaps identified by enterprises

The results of the Leonardo CODE Survey show that about four out of ten European manufacturing SMEs (41.6%) suffer from a lack of skilled labour (Graph 14). According to country considerations the situation is quite similar in the Finnish enterprises compared to the European average, as the same figure among the Finnish enterprises is 38.5%.

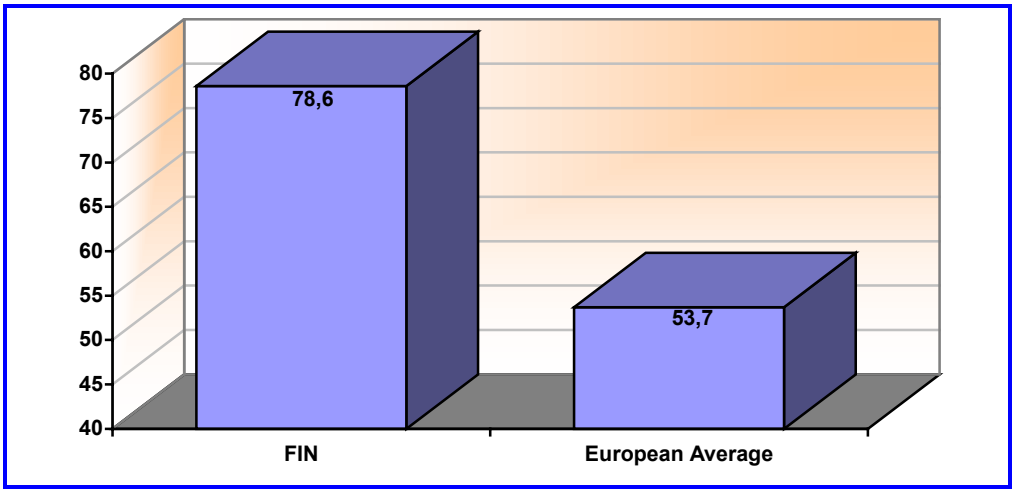
Graph 14. Percentage of enterprises agreeing or totally agreeing with the statement 'My enterprise is currently experiencing a lack (shortage) of skilled labour', comparison between the national and the European average



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

On the European level about half of the manufacturing SMEs (53.7%) have identified the need to upgrade the competencies and skill base of their workforce (Graph 15). In Finnish enterprises the skill gaps seem to be significantly more present compared to the European average. The difference between the Finnish figure and the European average is over 20 percent (70.6 versus 53.7%).

Graph 15. Percentage of enterprises agreeing or totally agreeing with the statement 'My enterprise currently needs to upgrade the competencies and skills base of its workforce', comparison between the national and the European average



All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The European manufacturing SMEs ranked 'sales and marketing' and 'engineering and manufacturing' areas as such the needs for upgrading the knowledge/skill base are the highest (Table 27). Enterprises valued the need for upgrading 'sales and marketing' 2.4 (on a scale from 1 = no need for my enterprise to 4 = very urgent need for my enterprise). The same figure for 'engineering and manufacturing' is 2.2. 'Personal skills' (2.1), 'language abilities' (2.0) and 'health and safety' issues are competence areas where there are only few development needs.

Table 27. Relevance of different competence areas according to the enterprises' identified needs, comparison between the national and the European average

Variables	FIN	European Average
Engineering and manufacturing	2.8	2.2
Sales and Marketing	2.8	2.4
Management, finance	2.4	1.9
ICTs, computers	2.4	1.9
Office work	2.0	1.8
Personal skills	2.7	2.1
Language abilities	2.7	2.0
Environment protection	2.2	1.9
Health and safety issues	2.4	2.0

Results from '1'= no need for my enterprise to '4'= very urgent need for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

When considering the Finnish results compared to the European average the same competence areas seem to come up as the most urgent development fields. However, in the Finnish enterprises the needs for upgrading the knowledge/skill base concerning all of the suggested competence areas are more urgent than in Europe on average. For example, the need for upgrading the 'language abilities' is valued even 0.7 units higher in Finland than in Europe on average.

3.8.8. Barriers for enterprises to engage in competence development activities

According to the Leonardo CODE Survey results the two most important barriers for the European manufacturing SMEs to engage in competence development activities are due to financial and organisational problems (Table 28). Insufficient budget/too high costs prevent the enterprises to carry on competence development activities and due to the workload of their employees enterprises are having difficulties in organising these activities. The European enterprises ranked both statements concerning these problems 2.1 (on a scale from 1 = it is not a barrier for my enterprise to 3 = it is a big barrier for my enterprise). Other barriers hindering the development activities in the European enterprises include lack of motivation of the employees (1.8), lack of support by the government (1.8) and risk of trained employees being 'poached away' by competitors (1.6).

Table 28. Relevance of different barriers for enterprises to engage themselves in competence development activities, comparison between the national and the European average

Variables	FIN	European Average
Insufficient budget/costs are too high	1.8	2.1
Employees' workload makes these activities difficult to organise	1.8	2.1
Too difficult for the enterprise to assess its own knowledge/skill needs	1.5	1.5
Lack of information on the possible sources of knowledge/skills	1.6	1.5
The available sources of skills and knowledge are unsatisfactory	1.5	1.5
Lack of motivation from the employees	1.6	1.8
Risk of trained employees being 'poached away' by competitors	1.6	1.6
Lack of support by the government (guidance, subsidies,...)	1.7	1.8

Results from '1'= It is not a barrier for my enterprise to '3'= it is a big barrier for my enterprise
All enterprises
Source: Ikei and ENSR partners, CODE Leonardo project

The problems ranked by the European enterprises as the most important barriers to engagement in competence development activities seem to be the most difficult problems also in the Finnish manufacturing enterprises. However, the relevance of most of the suggested barriers is slightly lower in the Finnish enterprises compared to the European averages. So, the possibilities of the manufacturing SMEs to engage in competence development activities may be slightly better in Finland than in Europe on average.

3.9. CASE STUDY: DESCRIPTION OF A GOOD-PRACTICE NATIONAL SME IN THE FIELD OF COMPETENCE DEVELOPMENT

The case company is a subcontracting workshop, which designs, markets and manufactures hydraulic cylinders and machined, welded and assembled components for machines and equipment in the metal industry. The company was founded in 1993. Currently it employs about 40 people and the turnover is about four million euros.

Most of the employees (85-90 %) of the company have at least vocational basic education. The employees without vocational education belong to the oldest age group in the enterprise.

The management is committed to the competence development of the employees. The main reason for their involvement in the development activities

is to ensure the competitiveness of the company. Another important motive for the involvement is to increase the meaningfulness of the work.

Like in most SMEs, the identification of their current and future skill gaps has not been very systematic in the company. The skill gaps are identified mainly during the daily work. The identification of skill gaps in the production is based on the observation of the superiors. The skill gaps of the clerks are considered whenever the roles and tasks change. In practice, the starting of a development project has often been based on the contacts and initiatives of external trainers. Different surveys of skill needs and working climate have also been carried out as part of the training project organized by external training and education institutes. In addition, the development needs of a new employee are always identified during the recruitment process.

Attendance to the training courses organised by external training or education organisations is the main method used in the company to improve competencies. However, in the case of new employees on-the-job learning and tutor-mentor systems are the main methods of competence improvement.

Consultants and trainers are the main external sources of competence for the enterprise. The company has close cooperation relations with one further technical training institute and one local adult educational centre. The company is a member of so-called Steelwings group consisting of businesses in the metal industry. The future challenge of the group is to learn to utilize each other in the competence development of personnel.

Employees working in the production are the employment category benefiting the most of the competence development activities. Clerks are trained less. The development of skills and competencies of the production employees is clearly concentrated on the training courses of external training and education organisations. Consultants are used in the company for improving competencies of the clerks.

The two main topic fields covered by the competence development activities in the company are widening the skill base of the production workers and improvement of the quality. The need to continuously widen the skill base of the

production workers is based on the new technologies, working methods and customers.

There are some problems in documenting and disseminating the existing and new knowledge within the company, and especially in the production section of the company. Insufficient systems have been the main reason for the problems. In addition, not infrequently, the unwillingness of employees to share knowledge has also been an obstacle. The enterprise has addressed the problems and at the moment it tries to improve the situation with the aid of a new development project. The aim of the project is to introduce ICT-based systems for storage and dissemination the knowledge.

In spite of recognizing the difficulties in organising the work during the training the management of the company does not see any big barriers to improve competence development strategies.

4. RESULTS FROM THE WORKING SESSIONS

This chapter reports the results of the four Finnish expert interviews carried out in autumn 2004. The experts interviewed are representatives of the main national SME employers association, a public policy-making body and a national trade union and an experienced consultant in the field. Annex 1 includes the description of the experts interviewed.

In the end of the chapter there is also a case study description of a Finnish policy measure, the Finnish Workplace Development Programme, intended to foster competence development activities in enterprises.

4.1. DEGREE AND EXTENT OF INVOLVEMENT OF SMES IN COMPETENCE DEVELOPMENT ACTIVITIES

The satisfaction of SMEs with the competencies of their workers

According to the expert interviews the results of the Finnish survey may indicate rather the positive attitudes of SMEs towards competence development than their dissatisfaction with the skills and competencies of their employees. The interest in development and training activities has increased considerably in SMEs during the last few years. At the same time the appreciation of competence development has increased markedly.

The dissatisfaction in the SMEs with the competencies and skills of their employees is linked less to the occupational basic skills than the ability to learn continuously. Current fast technology developments, shorter product life cycles and more demanding consumers require that employees learn continuously and rapidly, for example, new technologies and new working methods. In addition to the ability to learn continuously the experts mentioned some other areas where there may be dissatisfaction in SMEs. These topics includes motivation, willingness change and marketing and sales skills.

Difficulties in filling job vacancies

The experts interviewed for the study agreed to the results of the survey showing that the lack of skilled labour is common among the Finnish SMEs and especially among the small enterprises. The experts emphasized that small companies have problems in attracting especially highly qualified personnel. The difficulties are partly a consequence of the notion that career and advancement possibilities are lower in the SMEs compared to large companies.

According to the Finnish experts the biggest problem faced by SMEs is not in finding persons with the basic occupational skills. A bigger challenge is to find persons who are willing to commit themselves to the company. Another problem in filling job vacancies is to find new employees sufficiently fast. Recruiting is often hectic, especially in subcontracting companies where it is often difficult to make long-term personnel plans due subcontract periods of only a few weeks.

Due to the fact that SMEs often operate in very specific fields, they have difficulties in finding fully qualified recently graduated young employees. According to the interviews it is more often a rule than an exception that an enterprise has to train the new young employee after the recruitment. It was assumed that as a rule it takes about three years before the new employee is fully trained in the necessary skills.

The experts highlighted also some sectorial and occupational differences. The SMEs in the metal industry are suffering from difficulties in filling job vacancies more than other enterprises due to the unfavourable image of metal work. The SMEs utilising new and expensive production technologies, for example in the printing sector, have difficulties in recruiting newly graduated people. Due to the fact that it is not possible to acquire the expensive machines to the educational institutions the experience of using the newest technology remains low during the student days.

Shortage of labour was linked especially to supervisors of the production work. One reason for the difficulties in finding supervisors is the changes made in the Finnish education system a few years ago. The education of technicians in vocational schools was finished and a corresponding line was started in

polytechnics. At the same time the education changed from practical to more theoretical. The changes have led to the situation that young graduated applicants who have studied in the polytechnics are not interested in and capable of working as supervisors of the production work. They are seeking tasks as experts. Manual workers are another group to which the shortage of labour was linked according to the expert. The image or conditions of many lines of manual work are not attractive and it is difficult to get motivated young people to train for them.

According to the expert interviews good links to training institutes are very important for SMEs. SMEs who have good relation with educational institutes have better possibilities to find new employees. On the other hand, enterprises not having any contacts to training institutes are often forced to trust on the hit-and-miss system when searching for new employees.

The main methods SMEs use for improving their in-house competencies

The Finnish experts agreed with the results of the Finnish survey showing that co-operation with other companies is a very relevant external-to-the-enterprise practice for the Finnish industrial SMEs for increasing their knowledge, competence and skills base. The significance of co-operation has grown considerably during the last few years. Particularly main supplier and subcontractor networks have built up effective and systematic competence development systems for improving the in-house competencies.

The importance of learning in the daily work was emphasised also in the expert interviews. However, the experts pointed out that the effective use of the method requires careful organising of time and settings for the learning.

Part of the results of the Finnish survey concerning the methods SMEs use for improving their in-house competencies aroused confusion among the interviewed experts. The relevance of tutor and mentoring systems for new employees and internal job rotation were ranked higher than the experts expected. The experts supposed that only the most advanced SMEs make use of the tutor and mentoring systems and job rotation in practice. They questioned especially the possibilities and capacity of the small enterprises to make use of

these practices. The experts were also surprised that external and internal training courses were not ranked among the most relevant competence development practices. Experts emphasized that training should always be the basic element even though the company used other practices for developing competencies.

In the interviews came up one added practice, reading of different kind of manuals of machines and tools, to the competence development practices listed in the survey questionnaire. The significance of reading of manuals has increased considerably along with the technological and automation development.

The importance of informal training practices for SMEs

The experts agreed on the survey results that informal training practices are central especially for small enterprises. Experts explained the significance of informal practices by the three following factors: 1) high costs of formal training, 2) difficulties to organise formal development activities and 3) fear of losing qualified employees.

According to the interviews not even the small enterprises should utilize only informal training practices. The experts emphasised the importance of both informal and formal practices. Formal training was presented as a more effective way to increase the commitment of employees to the enterprise and to learn from the experiences of other enterprises.

The typical external-to-the-enterprise sources of knowledge and competence for the SMEs

The Finnish experts agreed on the importance of suppliers and clients as external-to-the-enterprise sources of knowledge and competence for the SMEs. They stressed the point that suppliers and clients are relevant sources especially for the employees.

However, according to the expert interviews the results of the survey may give an inaccurate picture of the typical external sources of knowledge and

competence of the SMEs. It seems that in Finland it would be more explicit to consider the topic from the viewpoint of networks and not from that of separate actors or groups. Experts emphasised that different kind of networks are the most typical and important sources of knowledge and competence for SMEs.

The main supplier - subcontractor networks are an example of a typical network. Another example is enterprise mentor networks. Enterprise-mentor systems are quite new in Finland but the significance of them has been assessed to grow considerably in the near future. In addition, the Finnish entrepreneurs and managers of SMEs are typically very active in organisational and also political activities. Participation in these activities is a good way to get information and contacts vital to the enterprise.

The using of Internet for accessing to external knowledge and competence sources

According to the experts the Internet is not used too extensively for accessing external knowledge and competence sources. However, the sectoral and age differences were underlined in the interviews. In the ICT-sector and other knowledge intensive fields the Internet is broadly used. Young entrepreneurs and employees are also more active in using the Internet than older ones.

In Finland there are a lot of training courses and projects to increase the use of the Internet in SMEs nowadays. However, according to the experts it will take about ten years before the use of the Internet becomes automatic for searching information. It takes time to change behaviour patterns.

The satisfaction with the quality and extent of the existing: a) Training centres/Universities; b) Consultancy/technical services; c) Public agencies; d) Business and Trade Associations

According to the expert interviews the universities and training centres seem too remote and strange for the average industrial SME. However, the SMEs which co-operate with universities or training centres have given positive feedback from the quality and extent of their services. So, there is a need to increase the

co-operation between these institutes and SMEs. Co-operation lowers the threshold to use the services of training centres and universities.

The attitudes towards consultancy and technical services are twofold in the SMEs. In spite of the sceptical attitudes towards consultants their services are intensively used. The active use of consultancy and technical services indicates that despite of the criticism enterprises are satisfied with the quality of the services and the services are easily accessible.

The filed of public support, guidance and training services is confused and incoherent in Finland. According to the interviews there is too much public supply which, in fact, has decreased interest in training services and especially in paid training in SMEs.

The Finnish experts were quite uncertain about the satisfaction with the quality and extent of the services of the Business and Trade Associations in SMEs. It seems that the role and activities of the Finnish Business and Trade Associations have changed during the last few years. Today, public and private sectors handle many of the traditional guidance and support services of associations. So, the role of the Business and Trade Associations has changed from that of the producer to acting as a link between the producers and the SMEs. According to the interviews Business and Trade Associations are still important for the SMEs. It is more comfortable and easy for the SMEs to contact first the Association than an unfamiliar organisation in the public or private sector.

4.2. IDENTIFICATION OF COMPETENCE NEEDS AND PLANNING

The methods SMEs use for identifying current and future skill gaps

The methods the SMEs use for identifying current and future skill gaps are typically not too analytic but rather based on feelings and senses. The experts emphasised that the founders of small enterprises are visionaries. They underlined the ability of entrepreneurs to see and make connections between the enterprise and the surrounding environment. The identification of the current and future skill gaps often happens as a result of the daily interaction and work. A more formalised method is to use development discussions between superior

and employee. Another method is the use of the feedback from customers, co-operation partners and other networks.

According to the experts the methods for identifying skill gaps are based on feelings and senses especially in the small enterprises. However, they pointed out that the more analytic methods are not very common in the medium-sized enterprises either.

The main responsible within SMEs for identifying existing skill gaps

The Finnish experts were surprised that in the survey the management team was ranked as the main responsible group for the identification of existing skill gaps in the SMEs. The experts emphasised the significance of the owner-manager. According to them the owner-manager is the main responsible person especially in the small enterprises. The owner-manager may discuss with key persons (persons responsible for the production, marketing and finances) but makes the decisions him/herself. Regarding the medium-sized enterprises it was considered natural that the role of the management team or, more specifically, the role of key persons increases.

To what extent SMEs have a systematic approach for developing their personnel's skills base?

According to the experts competence development is typically based on ad-hoc decisions in SMEs, especially in the small enterprises. A systematic approach and, for example, written development and training plans are rare. The development of management may, however, be more systematic and better planned than the development of the operative employees.

In spite of the common use of rather unsystematic methods it seems that there is a tendency towards a more systematic approach in competence development in the SMEs. The experts emphasised the fact that the management of SMEs has woken to realise the importance of competence development. At the same time it has become conscious of the need to consider and plan the development activities carefully. The shift towards more systematic methods has been supported by numerous ESF and other publicly funded projects.

4.3. TOPICS AND EMPLOYMENT CATEGORIES BENEFITED BY THE COMPETENCE DEVELOPMENT ACTIVITIES

The main skill gaps identified by SMEs

The experts agreed with the results of the survey on the main topics including skill gaps in SMEs. The topics, 'engineering and production' and 'sales and marketing' which were considered by the experts to include the main skill gaps were ranked the highest also in the survey. However, in addition to these two topics the experts would like to rank very highly also the areas of information technology and management.

According to the experts large development needs in engineering and manufacturing do not mean that there is a lot of skill gaps in the basic occupational skills of engineering and manufacturing employees. Instead, new technology, new production methods and new production management systems are the challenge in the enterprises. In the category of marketing and sales the skill gaps are linked especially to the customer services.

The experts defined only few occupational differences concerning the skill gaps. Managerial and business skills are linked to the management and middle management and substance skills to the lower levels in organisations. Language capabilities are important in all occupational groups. In Finland there is a shortage of people skilled in languages like Russian, Swedish and German.

The main topic fields covered by SMEs in their competence development activities

Experts listed the following topic fields as the main areas covered by SMEs in their competence development activities:

- management skills
- production and manufacturing
- customer orientation

- business capabilities

According to the experts development activities are not always directed at the topics where the highest skill gaps are. The lack of systemic planning of the development and training is one of the main reasons for this situation. One typical example is that a new small enterprise is interested in participating in tax planning training even though their development needs are in sales and marketing.

The main employment categories benefited from competence development activities

The Finnish experts criticised that the categories used in the survey for finding out the division of competence development activities among the different employment groups, are not suitable for the Finnish SMEs. The organisational structure in the Finnish SMEs is typically very flat. The management category is small and typically includes, in addition to the owner-manager or managing director, only a few key persons (persons responsible for the production, marketing and finances). So, leaving aside the largest enterprises, there is not a separate middle management and the administration is also represented in the management group in the SMEs.

Due to the unsuitability of the employment categories used in the survey the results of the survey may be partly misleading according to the experts. They pointed out that the low figures among 'clerks, administrative personnel' may be partly a result of the fact that some respondents of the survey have included person/s responsible for the finances to the management group.

Differences in the methods used for improving competencies by the different job categories

The results of the survey of the differences in the methods used for improving competencies by the different job categories are reasonable according to the experts. It is often easier to organise the work of management so that the managers can participate in training outside the enterprise. In addition to this, the small number of managers causes the situation that it is not worthwhile to

bring the training of managers inside the enterprise except by consulting. Experts described the organising difficulties as the main reason for using internal-to-the-enterprise methods especially in the competence development of operative employees. Training of all operative employees outside the company would often mean the closing of the production line.

4.4. RATIONALE AND BARRIERS FOR SMES TO ENGAGE THEMSELVES IN COMPETENCE DEVELOPMENT ACTIVITIES

The main reasons for SMEs to engage themselves in the competence development activities

According to the experts the main reasons for the SMEs to engage in the competence development activities are linked to their competitiveness and success in the markets. Due to the tightened competition SMEs are forced to competence development. In the most conscious SMEs there are also positive driving forces encouraging competence development. In these enterprises competence development is used, for example, as a way to:

- upgrade the working climate of the enterprise,
- improve the job satisfaction of employees,
- motivate and increase the commitment of current employees and
- attract skilled labour to the company.

The expectations of SMEs

The experts emphasised that SMEs expect to obtain from the competence development activities especially improvements on the effectiveness and profitability of the company. According to experts the expectation of quick financial benefits have often negative effects on the development decisions of the SMEs. It may, for example, shift the focus on inessential development topics and too short-term planning.

Other competence development aims mentioned in the interviews are improvements on quality and customer service. In addition, experts emphasised the importance of a good working climate and good image of the company in the competition of skilled workforce. Due to a good working climate and positive image of the attitudes towards competence development a company has better possibilities to keep its employees and to get skilled new ones. According to experts this will be very important for the SMEs especially in the future when the competition of the skilled labour will intensify.

The main barriers for SMEs to engage themselves in the competence development activities

The experts emphasised the same barriers, organisational and financial problems, as those ranked highest in the survey, to prevent SMEs to engage in the competence development activities. Experts pointed out that the financial problems do not indicate that the actual costs of training are high. Instead, financial problems are consequences of the work arrangements necessary for the participation in the training.

In addition to organisational and financial problems negative attitudes were ranked as the third main barrier in the expert interviews. Besides the employees, mentioned in the survey, lack of motivation as well as negative attitudes towards development may also be linked to the management or middle management of the enterprise.

According to the experts interviewed also previous failures and disappointments may reduce the willingness to engage in development activities. An enterprise may have, for example, selected the wrong trainer or consultant. Other reasons for previous disappointments may be expectations to reach quick financial benefits and inability to see longer-term effects.

4.5. ORGANISATIONAL LEARNING IN SMES

Practices usually used by SMEs to store relevant-to-the-enterprise knowledge in-house

The practices and instruments used in the SMEs to store relevant-to-the-enterprise knowledge in the house are typically elementary and insufficient according to the Finnish experts. At worst, there are no systems for storing the knowledge. In that case all the knowledge is inside the heads of the owner-manager and maybe one or two key persons.

The experts emphasised that the Intranet and other ICT-based systems to store relevant knowledge are rare, except in the ICT-sector and the largest SMEs. At the same time experts pointed out that the problem cannot be solved only by acquiring new machines, instruments and programmes. The biggest challenge is to get people to take the systems into use.

Even though the situation seems quite unsatisfactory at the moment, things are getting better according to the experts. The SMEs have become conscious of the importance of storing relevant knowledge. If the SMEs do not improve the storage systems before the exit of the large post-war age groups from the labour market they will lose a huge amount of knowledge and information with the employees.

Diffusion of knowledge

According to the expert interviews the results of the survey may give a slightly too positive image of the diffusion of knowledge and information in Finnish SMEs even though the figure was not too high in the survey either. However, the importance of the knowledge diffusion has been understood during the last few years in the SMEs and a lot of improvements have been made. According to the interviews there is still, however, much to do to enhance the dissemination of knowledge in enterprises.

There was, however, agreement on the result that the situation is slightly better in the small companies compared to medium-sized ones. In the small enterprises it is often easier than bigger enterprises to disseminate knowledge, due to, for example, flat organisation and familiarity with employees. When the number of employees increases it is more challenging to manage the dissemination of knowledge between different divisions, occupational groups and hierarchic levels.

Practices usually used by SMEs to diffuse relevant-to-the-enterprise knowledge in-house

The experts emphasised the importance of face-to-face practices in disseminating relevant-to-the-enterprise knowledge in SMEs. According to them informal meetings and daily interaction during the work are typical informal practices. E-mail communication was mentioned as a common practice in the ICT and other knowledge intensive enterprises.

Internal briefings were mentioned as a typical formal dissemination practice. Regular weekly meetings were mentioned as an effective way to share and disseminate knowledge in the house. However, according to the experts the use of the weekly meetings is surprisingly rare in the SMEs.

The importance of informal practices of information diffusion compared to the formal ones

The experts interviewed in the study agreed on the results of the survey which show the importance of informal practices in information diffusion in the SMEs and especially in the small enterprises. According to the experts the role of informal practices may, in practice, be even more vital than the results of the survey indicate. The experts also agree that it is natural that the significance of formal practices increases in pace with the number of employees.

In spite of recognising of the importance of the informal information dissemination practices the necessity of formal practices was emphasised in the interviews. Experts pointed out that it is not worth while even in the small enterprises to rely only on informal practices. According to them the effective

diffusion of information requires the use of both informal and formal practices, also in the small enterprises.

The main barriers that prevent knowledge to be diffused within the enterprises

The experts listed the following factors as the main barriers for preventing the dissemination of information and knowledge in the house:

- hurry
- cultural factors
- negative attitudes
- lack of practices and tools

The sharing and dissemination of knowledge and information requires time. In the middle of everyday hurry it may be difficult to find free time from other duties for the dissemination work. Hurry is often the actual reason for failure in the dissemination work. However, in the interviews, hurry was also defined as a commonly used excuse for not to disseminate knowledge. According to the experts it is important to make every employee understand that it is accepted and desired to use time for the dissemination of information and knowledge in spite of the busy circumstances.

In Finland the working culture is typically not very conversational. Due to the culture there is not enough formal and informal interaction between individuals and groups in the SMEs. Thus, the activities to promote and stimulate interaction and communication are especially necessary in the Finnish SMEs. The experts recommended enterprises to utilise the ideas of the learning organisation and co-operative modes of operation (pair and team work) in promoting the interaction.

According to the experts negative attitudes preventing the open and effective dissemination of information and knowledge are still a problem in some SMEs.

Negative attitudes are linked to both the management and the employees. Highlighting the importance and benefits of disseminating information and knowledge was suggested as a way to dispel suspicions.

The lack of practices and tools was also mentioned as a reason for the insufficiency of dissemination of knowledge and information in the SMEs. According to the experts SMEs should, for example, increase the use of weekly meetings and information and communication technology possibilities.

The occupational groups benefiting most from the diffusion activities

According to the experts it is difficult to specify groups benefiting most from the information and knowledge diffusion activities. The experts emphasised that these activities are important and advantageous for every occupational group. However, two groups were mentioned as benefiting the dissemination of information and knowledge most. First, the key persons were mentioned to get information and knowledge the most and also benefiting from it the most. The second group mentioned is the occupational groups whose know-how is based mainly on the skills and competencies acquired through practical experience.

The use of Information and Communication Technologies (ICTs) for diffusing knowledge within SMEs

According to the experts the development of information and communication technologies has improved the diffusing of knowledge more within large companies than SMEs. The lower advantage among the SMEs is a result of the fact that the ICTs are less commonly used in SMEs.

Among the SMEs the utilising of information and communication technology is most common in the largest and in the ICT enterprises. However, many other SMEs have also noticed the possibilities of the ICTs. So, it seems that the situation will change in the SMEs during the next few years.

4.6. PUBLIC INITIATIVES FOR FOSTERING THE DEVELOPMENT OF COMPETENCIES IN SMES

The relevant policy measures intended to foster the competence base of the national SMEs

There are numerous policy measures intended to foster the competence base of the Finnish SMEs. National measures are, for example, the Workplace Development Programme[2] and Entrepreneurship Policy Programme of the Finnish Government, and the Noste programme[3] of the Finnish Ministry of Education and the.

In Finland the Ministry of Trade and Industry, the Ministry of Agriculture and Forestry, and the Ministry of Labour have jointly combined their regional forces in the Employment and Economic Development Centres (T&E Centre). There are many regional measures available for developing the skill base of the SMEs in each of the fifteen centres. The ESF-funding has an important role in the regional development field. At the moment there are dozens of ESF-funded projects aiming at improving the competence and skill base of Finnish SMEs around Finland.

The experts listed the following areas covered by these policy measures:

- development of work organisations
- qualifying the skills and competencies of employees acquired through practical experience
- personal skills of the employees (for example, team work)
- language skills
- sales and marketing

[2] http://www.tykes.fi/
[3] www.noste-ohjelma.fi

- engineering and manufacturing
- quality
- growth
- internationalisation
- use of ITC
- management and leadership
- health and safety issues
- co-operation in subcontracting networks
- co-operation between educational institutions and enterprises
- entrepreneurship and corporate entrepreneurship
- effecting the transfer of business

The adequacy of the current policy measures

It seems that the Finnish policy measures cover the development needs of the SMEs fairly comprehensively. The experts did not name any area not sufficiently dealt with the policy measures.

According to the experts the Finnish SMEs have great possibilities to develop the competence and skill base of their employees by means of the policy measures. So, the problem in Finland is not the lack of possibilities. On the contrary, there is partly even oversupply of the development resources. Thus, the greatest challenge is to get enterprises to utilise these resources.

There are many SMEs which have participated actively to different kind of development projects. However, the number of enterprises which have missed

the possibilities is too high. Two factors lying in the background of the problem were mentioned. First, the information of the policy measures does not reach the SMEs. And second, due to the many players the development field is confusing and fragmented from the point of view of the SMEs.

Example of a successful initiative that have been taken by national or regional policy makers for fostering the competence base of the national SMEs

According to the experts it is difficult to pick out one single initiative over the others. In spite of the evaluations there is not enough information of the benefits of the policy measures to the SMEs. The success of the Workplace Development Programme was, however, applauded in the interviews. There is a lot of money and resources available in the programme and the results of the activities have been complimented.

Examples of an initiative that been taken by national or regional policy makers to facilitate the recognition of knowledge, skills and competencies acquired through practical experience and non-formal training practices

The Noste programme aims to at facilitating the recognition of knowledge, skills and competencies acquired through practical experience and non-formal training practices. The programme was launched in 2003 by the Finnish Ministry of Education in cooperation with the Ministry of Labour and the social partners.

The Noste programme is focused on the poorly trained adults. The aim is that the participants study for achieving vocational qualifications or parts of qualifications. It is also possible to take a competence-based qualification. Adults planning to pursue further studies often have a great deal of experiential knowledge gathered during their work careers. This is why they do not need to start from the scratch but can build their formal training on their prior knowledge and skills.

4.7. CASE STUDY-2: DESCRIPTION OF THE FINNISH WORKPLACE DEVELOPMENT PROGRAMME

Name of the policy measure: The Finnish Workplace Development Programme Tykes (Työelämän kehittämisohjelma)[4]

Name of the responsible organizations: The programme is implemented by the Finnish Ministry of Labour jointly with the labour market organizations, the trade associations and other ministries (Ministry of Social Affairs and Health and Ministry of Trade and Industry)

Rationale/objectives of the policy measure: The aim of the project is to improve the productivity and quality of work life at the Finnish workplaces. The underlying idea is to help organisations to find new ways to rise to the development challenges and thus keep their skilled personnel, recruit new employees and develop their competitiveness.

Time period of the policy measure: The programme is based on the results and experiences of the two previous Workplace development programmes (1995-2003) and the National productivity programme (1993-2003). The Tykes programme was started in 2004 and will be continued until 2009.

Operational description of the policy measure: Type of support and activities supported: The programme participates in the expert costs of implemented projects, and provides information on best practices and cooperation potential. The Tykes programme unites resources and transfers the achievements of working life development into practical use. Also the results of earlier development programmes, practical experiences and innovations add value to the programme and its projects.

The programme pays the expert costs for four types of project:

Basic analysis: to prepare and plan a development project focusing on the themes of Tykes programme (80 % grant up to 10.000 euros)

[4] http://www.tykes.fi/, http://www.mol.fi/tyke/

Development project: to promote change in the mode of operation, to raise productivity and the quality of work life (themes, for example: organizing the work, work processes, working methods, internal co-operation, external networking, superior work, leadership, wage and hours of work systems, work environment) (100 % grant up to 100.000 euros)

Method development project: to create and test new and innovative development practices, methods and tools (discretionary grant)

Learning networks of working life: to build up or develop the operation of learning networks (discretionary grant)

Target groups: Work places of all sizes, from all branches, and from throughout the country can participate in the programme. The programme is focused especially on SMEs and welfare and health communities. The basic prerequisite of the funding is a shared view by management and employees to join forces for workplace development.

Eligibility requirements (national/regional coverage, size aspects, sectoral coverage): The programme is nationwide. Private and public work places of all sizes and sectors are eligible to take part in the programme.

Evaluation of the policy measure: General results and strong/weak points of the measure): The new Tykes programme has started only just in 2004. So the following evaluation results are based on the evaluation study of the previous Workplace Development Programme (1995-2003).

More than 1.300 workplaces and 135,000 employees in about 700 projects took part in the programme in 1996-2003. The most common targets of the projects were work processes, organization of work (incl. teams, groups and cells), interaction and social relations in work communities, human resource management, external networking (incl. partnership), work ability, customer service and work methods.

In terms of funding allocations, the largest sectoral groupings were industry and construction (45%), followed by local authorities (30%), which carry the main

responsibility for basic education, welfare and health care services in Finland. The leading individual sectors were metal and engineering, and municipal welfare and health care. The share of the SMEs of all funding to company projects was about 65 percent in the last years.

The Workplace Development Programme was evaluated in 2003 (Pitkänen et al. 2003). The overall impression of the evaluation study is positive. The study characterizes the programme as a 'small giant' in its own environment. According to the evaluation:

- By focusing on social innovation and with an emphasis on network building and companies' ability for learning and innovation, the programme has followed a 'broad systemic innovation policy approach' in a national context dominated by a technology-oriented view on innovation.

- The goals and the development concept of the programme reflect modern development trends in working-life, workplace and work organization development even in international comparison.

- The programme has kept its actuality and its ability for strategic targeting is still high.

- The programme enjoys a high legitimacy among its stakeholder groups.

- The programme has a sufficiently high profile with respect to its goals, development concept and modes of operation.

A number of weaknesses characteristic of programme and project design was also raised in the evaluation. These included, for instance, the issue whether an individual workplace or company is an appropriate unit of development operations with a view to bringing about lasting and generative project impacts, undeveloped links to and dialogue with regional-level agencies in programme and project activities, the modest role played by scientific and research input in a majority of the projects, and the lack of institutionalised procedures for programme and policy learning. A question whether the profile of workplaces

involved in the projects corresponds with the basic aims of the programme was also posed in the study.

Recent changes (if any) and future prospects (if any) for the policy measure: There are a number of new aspects in the new programme compared to that of previous one.

- The new programme has made a clear distinction between aims of different conceptual level and built up, correspondingly, a comprehensive set of indicators for measuring programme success at all the following four levels: 1) public policy level, 2) programme level, 3) generative level and 4) workplace level. Monitoring and analysing development in the light of these indicators will serve as a mechanism for policy learning in the new programme.

- The new programme lays increasing emphasis on method development besides workplace-initiated development projects. Method development calls for research input, and a special appropriation is earmarked for the planning and trying out new, innovative methods, practices and solutions for workplaces confronting problems in the knowledge-intensive and networked economy.

- The new programme lays increasing emphasis on creating and supporting learning networks, i.e. shared forums for learning for workplaces and different kind of R&D units. The aim of the learning networks, whether topic-, region- or industry-based, is to enhance workplaces' and R&D units' knowledge in workplace development and try out novel forms of development cooperation between different actors of the network. Learning networks will constitute a new form of project activity in the programme with an appropriation of its own.

- The new programme will establish a special forum of scientific experts as an advisory body for the tripartite management group. The forum will consist of members of the leading universities, research institutes and polytechnical institutes in Finland with a view to monitoring the advance

of the programme, ensuring scientific input in the programme activities, and making proposals concerning new forms of activity and the development of the programme concept.

- The new programme will make a determined effort to increase the number of workplace researchers and developers in R&D units with a special focus on polytechnical institutes. The programme aims to help polytechnical institutes strengthen their role in national and regional workplace development and innovation policies.

- The new programme will increasingly network its activities with other actors in workplace development and innovation policy both at national and regional level. At the national level, these actors include e.g. the Ministry of Social Affairs and Health, the Ministry of Trade and Industry, the Ministry of Education, the Centre for Industrial Safety and the National Technology Agency (Tekes). At the regional level special emphasis will be laid on cooperation with the regional Employment and Economic Development Centres, polytechnical institutes and entrepreneurs' regional and local organizations (Alasoini 2003).

5. CONCLUSIONS AND RECOMMENDATIONS FROM THE WHOLE RESEARCH

This Finnish National Final Report is part of a Leonardo project named Competence development in SMEs: Practices and Methods for learning Capacity Building. The results of the report are based on

- A literature review of the existing Finnish competence development literature since 1990
- empirical material
    - a survey of manufacturing SMEs (153 in Finland and 600 in Spain, France, Austria and The Netherlands)
    - interviews of four Finnish experts in the field of competence development
    - two case studies including literature review and an interview of a manager of a small manufacturing enterprise.

The concept of competence is defined in this report as a combination of human knowledge, skills and aptitudes serving productive purposes in SMEs and contributing to their competitiveness. 'Competence development' is therefore defined as the measures taken by an enterprise to develop its competence base.

The results of the study illustrate well the importance of competence development activities in the European SMEs. The results show that manufacturing SMEs consider competence development activities important for sustaining their competitiveness. The Finnish manufacturing SMEs consider the competence development activities even slightly more important than their European counterparts. According to the study almost four out of ten Finnish manufacturing SMEs suffer from lack on skilled labour. The small enterprises suffer from skill shortages more than the medium-sized. The need to upgrade the competencies and skill base of the workforce has also been perceived in the manufacturing enterprises. More than three out of four enterprises have

identified the need to upgrade the competencies of their workforce. For example, new technologies, production methods and production management systems create skill gaps in 'engineering and manufacturing'. Other areas containing common competence gaps in SMEs are 'sales and marketing','information technology' and 'management'.

The most important sources of knowledge and competencies for both the Finnish and European SMEs are clients and suppliers. However, it seems that the Finnish SMEs are considerably more co-operation oriented in increasing their knowledge, competence and skill base. The Finnish SMEs considered the co-operation with other enterprises as the most relevant and remarkably more important external practice than their European counterparts. In spite of the awareness of the possibilities of co-operation and networking for developing competencies in the Finnish SMEs it seems that these possibilities are still inadequately utilised in Finland, too.

The most relevant internal practices in the manufacturing SMEs are on-the-job learning and task rotation. In Finland the relevance of tutor systems for new employees was also considered high and higher than in the other European countries. On the whole, the internal practices were considered more relevant than the external ones.

The results of the study show the importance of informal training methods for upgrading the competences and skills in the manufacturing SMEs. Small enterprises favour informal practices considerably more than the medium-sized, whereas the medium-sized favour equally both informal and formal practices. The Finnish manufacturing SMEs prefer informal training methods even more than their European counterparts.

The central role of directors and managers and other key persons related to the competence development in the Finnish SMEs was addressed in the report. They are the groups benefiting the most from the external competence development activities. In addition, they are the groups responsible for identifying the current and future skill needs in the enterprises.

The use of ICT-based data systems for the storage and dissemination of knowledge and information relevant to the enterprise is not yet obvious in the manufacturing SMEs. In Finland the utilisation of ICT-based systems is even lower than in Europe on an average.

The two most important barriers to the European manufacturing SMEs to engage in competence development activities are 1) organisational and 2) financial problems. The workload of employees makes it difficult to organise competence development activities and enterprises have insufficient competence development budgets or the costs are too high. However, in Finland the possibilities of the manufacturing SMEs to engage in competence development activities are reasonable good and slightly better than in Europe on an average.

According to the results of this study the Finnish policy makers should take into account the following recommendations for developing an environment conducive to the acquisition and development of skills and competencies in SMEs:

- It is important to focus the competence development research more on small and medium sized enterprises and especially the smallest enterprises. The methods, tools and practices used in large companies are not directly applicable in SMEs. SMEs need best practices, for example, for developing their learning in the daily work and knowledge management methods and practices.

- At the same time documentation and dissemination of the best practices related to the competence development of SMEs should be promoted. Utilisation of the experiences and findings of previous competence development projects saves resources and improves the effects of new competence development activities.

- The information on competence development possibilities should be improved. It seems that at the moment only the most active SMEs are aware of the different development possibilities. In addition the field of development should be clarified. At the moment there are too many players and too little coordination in the field. From the SMEs point of

view the situation seems confused and many enterprises have difficulties to know whom to turn to.

- Policy makers should prepare for the changes and decrease of the European Union funding and develop new policy measures for sustaining the good competence development opportunities of the Finnish SMEs. The ESF- funded projects have had a great influence on the positive changes in the attitudes of the SMEs towards competence development. Due to their small resources the SMEs need support to competence activities also in the future.

- The co-operation and networking of SMEs should be supported. The findings of this report show that co-operation with other enterprises is the most relevant external-to-the-enterprise practice for increasing the knowledge, competence and skill base of the Finnish manufacturing SMEs.

- The implementation and utilisation of ICT in competence development in the SMEs should be supported. The potential of ICT is not adequately used in Finnish SMEs. By implementing the ICT-based systems the SMEs could make the development activities and storage and dissemination of knowledge and information more effective.

ANEXO A. DESCRIPTION OF THE EXPERTS PARTICIPATED IN THE WORK SESSIONS

Heljä Hätönen, Managing Director, Educa Institute Ltd.

Anna-Liisa Levonen, Counsellor, Industries Department/Division for Employment and Economic Development Centres, Ministry of Trade and Industry

Christian Bäcklund, Labour Secretary, Media Union

Marita Aho, Training Policy Agent, Confederation of Finnish Industry and Employers

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