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ICT practitioner skills and training:

banking and financial services

EN

ICT practitioner skills and training: banking and financial services

Alessandro Castelli

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Europe 123
GR-57001 Thessaloniki (Pylea)

Postal Address:
PO Box 22427
GR-55102 Thessaloniki

Tel. (30) 23 10 49 01 11
Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

Authors:
Alessandro Castelli

Edited by:

Cedefop
Burkart Sellin, Project manager

Published under the responsibility of:
Johan van Rens, Director
Stavros Stavrou, Deputy Director

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Preface

This study is part of a series of four studies launched by Cedefop in late 2002 under the project ICT platform. A working party, set up to accompany these studies, comprised some 20 eminent experts and expert bodies in the field. This ICT workshop has met three times since its constitution and has the task of advising Cedefop on the approach to, and content of, the surveys and on questions linked to ICT skills supply and curriculum development in general. Links were also established by Cedefop to parallel developments in the European Commission and especially to the e-skills forum and e-Europe action programme launched under the Danish Presidency. The workshop also relates to other important activities of DG Education and Culture on E-Learning. The contractors were invited, on the basis of their former experience and additional surveys, to edit a text of around 50 pages (without annexes) on the subject indicated in the introduction below.

These four studies are now available individually and will be combined in a synthesis report expected to be ready during 2004.

In parallel to the studies, Cedefop cosponsored a workshop in the framework of European standardisation activities (CEN/ISSS). This was intended to validate the outcomes of the work of the Career Space Consortium, published by Cedefop in 2001 and 2002 (www.career-space.com) on ICT profiles and curricula aimed at university level skills and IT practitioner higher education.

Once this validation is concluded (anticipated during 2004) the same procedure will be used to validate the outcomes of these four Cedefop studies (see also the virtual community under http://cedefop.communityzero.com/cen-ict, set up by Cedefop on this issue).

Werner Herrmann, Senior Advisor to the Cedefop Director

Burkart Sellin, Principal Administrator and Project Manager

Executive summary

This work focuses on the situation in the banking and finance industry with particular reference to needs and job profiles in the ICT (information and communications technology) in Italy and France.

The research reflects information and suggestions from companies, associations and training institutions. This knowledge is intended to provide a basis for technical institutions to review and adapt relevant courses. It is hoped that successful implementation of these guidelines will be of mutual benefit to industry, students and academia, enhancing and strengthening them and encouraging more young people and adults to pursue the relative educational and career opportunities.

1. Introduction

1.1. Development and situation of the banking industry in Europe

The European financial services sector has 'traditionally been a sharply segmented sector, with clear distinctions between different types of institutions and the provision of different types of service' (see Webster, 2001). Banking and financial services are provided in many countries by separate types of banking institutions (for example savings banks, commercial banks and cooperative banks), in addition to independent insurance companies and sales channels.

This sector is currently undergoing deregulation, liberalisation, privatisation and concentration that is radically changing its value chain.

Deregulation, liberalisation and privatisation have forced a reshaping of the structures and the attitudes of the sector and its human resources. According to the ECB the main consequences are, first, that the structural boundaries between insurance and banking have been dismantled. Second, some state owned institutions have been privatised in the EU, transforming the sector from one dominated by stable, bureaucratised institutions into one dominated by market relations. Next, boundaries between national markets have been reduced (see ECB, 2000). At European level, mergers and acquisitions have mainly involved cross-national activities in markets dominated by a large number of small players. A fourth consequence has been to encourage a reduction of (geographical and operational) barriers.

In addition, the single European currency and a unified market (characterised by full circulation of capital and means of production) have forced financial institutions to act more internationally. The opportunities presented by deregulation and integration are clearly higher in certain segments (savings) than others (clearing and settlement).

These changes have led to increased competition between financial institutions.

1.2. European banking structure

The European banking industry is experiencing a period of concentration, restructuring, and job loss never seen before. These challenges are directly linked to new technologies that have enhanced the potential for competition.

The number of banks in Europe has decreased from about 12 600 to 8 000 in 12 years. This process has mainly involved savings and cooperative banks, which traditionally have been smaller than private financial institutions.

The bulk of mergers and acquisitions carried out in the EU has been between smaller institutions in the same country. Most (around 80 %) were concentrated in four Member States: Germany, France, Italy, and Austria (see ECB, 2000).

During 2001 and the first half of 2002 some previously planned mergers and acquisitions were suspended due to the worsening of the international and European economic situation.

Table 1: Banks, 1990-02

	1990	1995	2000	2002* (first half)
Austria	1 210	1 041	848	834
Belgium	157	145	118	110
Denmark	124	122	210	198
Finland	529	381	341	370
France	2 027	1 469	1 099	1 024
Germany	4 720	3 785	2 742	2 485
Greece	39	53	57	62
Ireland	48	56	81	86
Italy	1 156	970	861	839
Luxembourg	177	220	202	185
Netherlands	111	102	586	543
Portugal	260	233	218	207
Spain	696	506	368	364
Sweden	704	249	146	214
United Kingdom	624	564	491	447
EU	12 582	9 896	8 368	7 968

Source: ECB

The European Central Bank supports further financial integration because it might have many benefits 'in terms of increased efficiency and competitiveness of the real economy.' (See ECB, 2002)

In the European Union the rate of concentration (calculated on the total amount of banking activities of the five biggest banks in each country) shows an increase of 29 % in the past 10 years. In 2002, Sweden had the highest rate of concentration (89 %) while Germany the lowest (21 %).

Table 2: Bank concentration (1990-2001)

(%)

	1990	1995	2000	2001
Austria	35	39	43	45
Belgium	48	54	75	78
Denmark	76	74	60	68
Finland	53	69	87	80
France	42	41	47	47
Germany	14	17	20	20
Greece	83	76	65	66
Ireland	44	44	41	43
Italy	19	26	23	29
Luxembourg	n.a.	21	26	28
Netherlands	73	76	81	82
Portugal	58	74	59	60
Spain	35	46	54	53
Sweden	70	86	88	n.a.
United Kingdom	n.a.	27	30	30
EU average	50	51	53	52

Source: ECB

The phenomenon of banks expanding outside their home market has increased. This process suggests links across markets and greater integration between countries. In fact, assets of foreign branches of European banks are concentrated in the EU, indicating that there is an increasingly homogenous market with common economic, political, cultural and regulatory systems. It is worth noting that the foreign presence in national banking systems is larger in terms of ownership (20-30 %) than in terms of branch networks (5 %).

According to the governor of the Bank of Italy, this process is not yet concluded (see Banca d'Italia, 2001) Globalisation, the impact of ICT and increasing shareholder pressure on company financial results (see Ferguson, 2001) have yet to finish shaping the market.

During the 1980s the tendency was to have a unique conglomerate or structure (retail, private and investment banks) with common support functions (such as marketing, IT, accounting). The conglomeration ('big is beautiful') was 'intended to diversify the risk and to smooth income volatility'. (see ECB, 2000).

With the move away from the more traditional, or historical, role of the bank, the organisation of banking has undergone a profound change. Strategies such as partnerships and alliances within sectors, across sectors (assurance) or in niche segments focus, on the one hand, on the reduction of cost and, on the other, on the concentration of core business. A bank, particularly from the small and medium-sized sector, cannot do everything internally.

Table 3: Number of bank branches 1990-2001

(per 1 000 inhabitants)

	1990	1995	2000	2001
Austria	0.58	0.58	0.56	0.56
Belgium	0.90	0.76	0.64	0.60
Denmark	0.58	0.42	0.44	0.44
Finland	0.58	0.38	0.23	0.23
France	0.45	0.44	0.43	0.44
Germany	0.63	0.59	0.59	0.66
Greece	0.19	0.23	0.27	0.28
Ireland	0.27	0.29	0.26	n.a
Italy	0.31	0.41	0.49	0.51
Luxembourg	0.78	0.85	0.68	n.a
Netherlands	0.54	0.44	0.37	0.33
Portugal	0.20	0.35	0.55	0.69
Spain	0.83	0.93	0.98	0.97
Sweden	0.38	0.30	n.a.	n.a.
United Kingdom	0.35	0.33	0.24	n.a.
EU average	0.50	0.50	0.49	n.a.

Source: ECB

'Integration has progressed fastest in the areas where professional market participants have the resources to overcome or circumvent the existing obstacles to integration (i.e. in the wholesale and capital market areas). By contrast, retail clients do not usually have such resources, the outcome being a slower pace of integration' (see ECB, 2002).

Table 4: Number of bank employees 1990-2001

(per 1 000 inhabitants)

	1990	1995	2000	2001
Austria	9.86	9.78	9.07	9.19
Belgium	7.94	7.56	7.44	7.41
Denmark	10.60	8.90	9.07	9.07
Finland	10.15	6.31	4.86	n.a.
France	7.63	7.05	n.a.	n.a.
Germany	11.10	9.28	9.85	9.77
Greece	4.61	5.07	5.69	5.65
Ireland	4.99	6.40	n.a.	n.a.
Italy	5.92	6.23	5.95	n.a.
Luxembourg	41.78	44.90	52.20	54.14
Netherlands	7.86	7.13	8.09	7.96
Portugal	6.20	6.09	5.67	5.47
Spain	6.22	6.35	6.46	6.5
Sweden	5.32	4.91	n.a.	n.a.
United Kingdom	8.98	7.98	7.44	n.a.
EU average	8.16	7.48	n.a.	n.a.

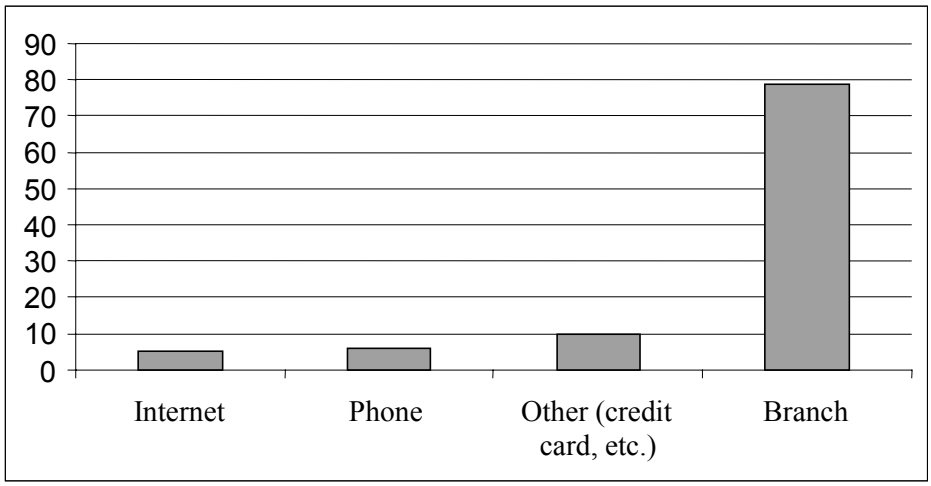
Source: EBC

High operational costs have encouraged the adoption of automated systems and a consequent reduction in employee numbers. For example, 26 000 bank employees in Italy lost their jobs from 1990 to 2001.

Even if the main point of contact between the bank and its clients is the branch office, other sales channels (telephone, Internet, etc.) are increasing. As the complexity of services increases, problems connected to running a distribution channel also increase. Better performance and increased points of contacts mean services require greater security, are faster and available around the clock. The new business model is a multi - channel bank that enhances the integration among its branches, financial advisors, the Internet, phone banking, mobile banking and ATM (automated teller machines). 'The advent of open network architectures and a sharp reduction in costs have made possible computerised transaction between financial institutions and clients' (see OECD, 2001).

Figure 1: Banking channels in Europe, 2001

(%)



Source: Datamonitor, eBanking strategies in Europe, 2001

The structure of the individual banks highlights their transformation from a federal organisation toward a divisional organisation thanks to the implementation of SBU (single business unit) tailored to the needs of customers. This process of reorganisation has led to a concentration of the banks' strategic activities and rationalisation.

Market evolution and the new way in which banks are organised have created a need for new or additional skill components for employees.

Table 5: Trends in banking professional roles

	1980/1990	**1990/2000**	**2000/2010**
Environment	Static	Turbulent	Reactive
Supply	Savings	Product	Service
Sales	Office bank	Company Bank	Virtual and 'real' bank
Client	Personal relationship	Virtual relationship	Personalisation
Job attitude	Repetitive and standardised jobs	Innovation and client orientation	Flexibility and performance
ICT	Opportunity	Opportunity	Imperative
Personal idea	*Faire*	*Savoir faire*	*Savoir être*

Source: Studio Bloom

There has been increasing centralisation of company know-how with four main goals. The first is the reduction of the risks linked with an excessive dispersion of information. The second is to allow cross-validation that might reduce errors. The third is to share best practices. The fourth is to create a richer intellectual environment which satisfies common needs such as integration and varied skills (see Frachot, 2002). According to the Federation

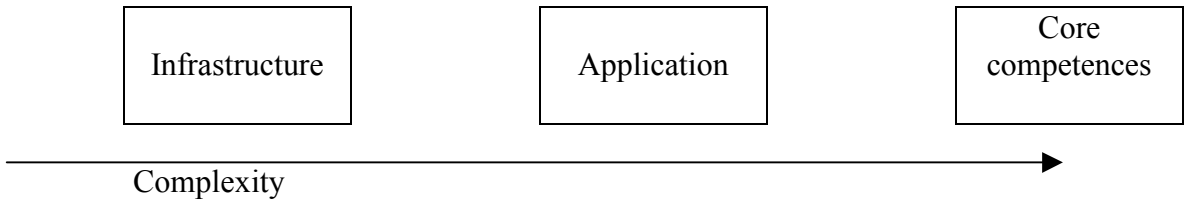
Bancaire Française (FBC) the importance of varied skills such as time management and problem-solving is highlighted by the number of banking jobs with such characteristics (37 out of 60) (see Federation Bancaire Française, 2002).

International banks have enhanced integration and transversatility programmes through a multicultural environment thanks to the establishment of closer links between senior and junior employees and through movement between countries and functions. In particular, international banks have implemented training programmes focused on sharing a common company culture. The guidelines are implemented in daily operations at all levels.

This structure, defined as 'learning organisation' allows labour conditions that enhance the ability of employees to reach their full potential. In this context, ICT might foster the sharing of knowledge between employees .

New technologies have reduced the entry barriers and created new types of financial services organisation, such as online broker, generalist, insurers, retailer, car financing or transportation. Moreover, ICT allows outsourcing of banking employees. Banks concentrate on their core competence and on cost reductions. Outsourcing becomes a strategic decision.

Table 6: Three levels of outsourcing



Infrastructures = data centres, web hosting, network management, help desk, e-business structures
Application = integration of other company systems, ASP (application standard provider), development application
Core competences = multi-channel interface and interaction with clients, human resources

Source: Studio Bloom

Employee training needs are strictly linked to the competitive position of the company.

Generally speaking, a banking institution has to choose between high volumes and standard products or innovative products in a niche market. Employees at retail banks have more standardised skills than workers at investment banks. In fact, in this latter case, the work environment is like a law office where professionals are chosen first of all for their deep knowledge of the sector and second, for their competence with regard to a specific project. For these reasons, a junior employee in an investment bank has a more defined training path than an employee at a retail bank.

1.3. The impact of the ICT on banking and financial services

Banking and financial services have a high concentration of computer literacy and led the way in implementing new technologies on a large scale. Typical of this are magnetic ink character recognition (MICR), bankers' automated clearing services (BACS), automated teller machines (ATM), electronic funds transfer at point of sale (EFTPOS), electronic funds transfer (EFT), and smart cards.

ICT allows banks to achieve four main objectives, starting with cost reductions. There is a shift from labour intensive (55 % of the operational cost is personnel) to capital intensive investments. Second, ICT allows tailor-made services with high added value. Third, it allows banks to meet customers' needs faster and leads to a better flow of information and communication. Finally, better service enlarges the pool of financial products and services that can be offered.

Clients are the focus of the business. They require a personal relationship and demand quicker reaction from their financial service provider; ICT makes this possible. Consequently, new technologies have become a determining factor in the success of financial institutions.

Nevertheless, ICT requires significant investment and implies having a high volume of clients. This is particularly true for 'wholesales and capital market activities when economies of scale are significant and when the proximity requirement is not very compelling' (see ECB, 2002). IT investment in the banking industry is continuously increasing. For example, in Italy in 2001 it represented 14.5 % of operational costs (13.5 % in 2000) (see Banca d'Italia, 2001)

Gartner Group (see Gartner Group, 2002) estimates that about 20 % of IT investment is wasted. The two main reasons are overspending on hardware and networking structures that exceed company needs and overly specialised software. In this context, ICT has accelerated the process of concentration in the banking industry even in the face of national differences. These differences are evident, in particular, 'in the uptake of e-finance as well as in the incidence of unemployment' (see OECD, 2001).

Online services and the implementation of an e-business platform (business-to-business and business-to-client) are the main IT investment for the banking industry. In the last five years, according to Cetelem, European banks have invested EUR 800 million in online services (75 % by retail banks and 25 % by corporate services) (see Cetelem Communication, 2001)

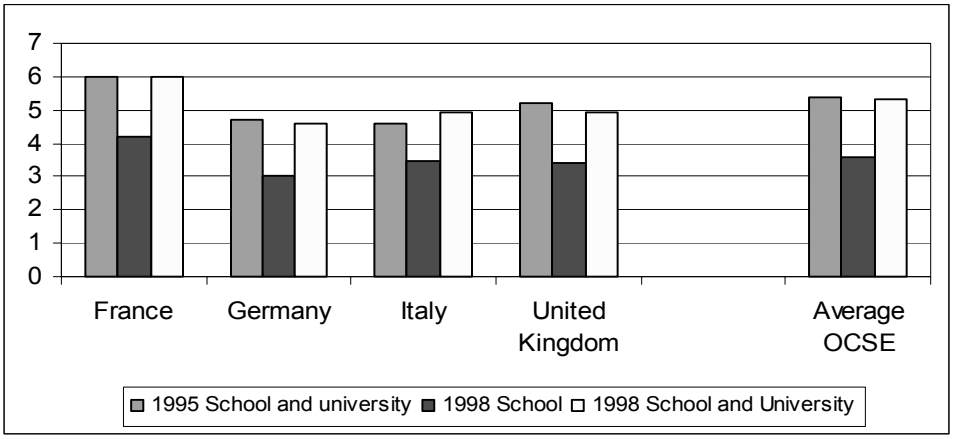
Managing the complexity requires implementation of new procedures, new company routines, a new culture and new internal and external relationships. This new context demands a completely new organisation and new, or at least additional, competences on the part of all members of staff within the organisation.

2. ICT skills and training, vocational education and training (VET) and continuous vocational training (CVT) at sub-degree level in Italy and France

2.1. ICT skills and training: overview

France spends more on education as a percentage of gross domestic product than any other European country. In 1998 the average in the OECD was 5.3 % (school and university), whereas in France it was 6 % of GDP (Italy 4.9 %).

Figure 2: Public expenses on education as percentage of GDP (gross domestic product)



Source: OECD, 2001

Participation in education in Italy is lower than the EU average in all age groups except for the 5-14 year old range. In particular:

(a) the 20-29 year old group (16.8 %) is much lower not only than the Scandinavian average (30 %) but also compared with other Mediterranean countries (23.7 % in Spain and 21.7 % in Portugal);

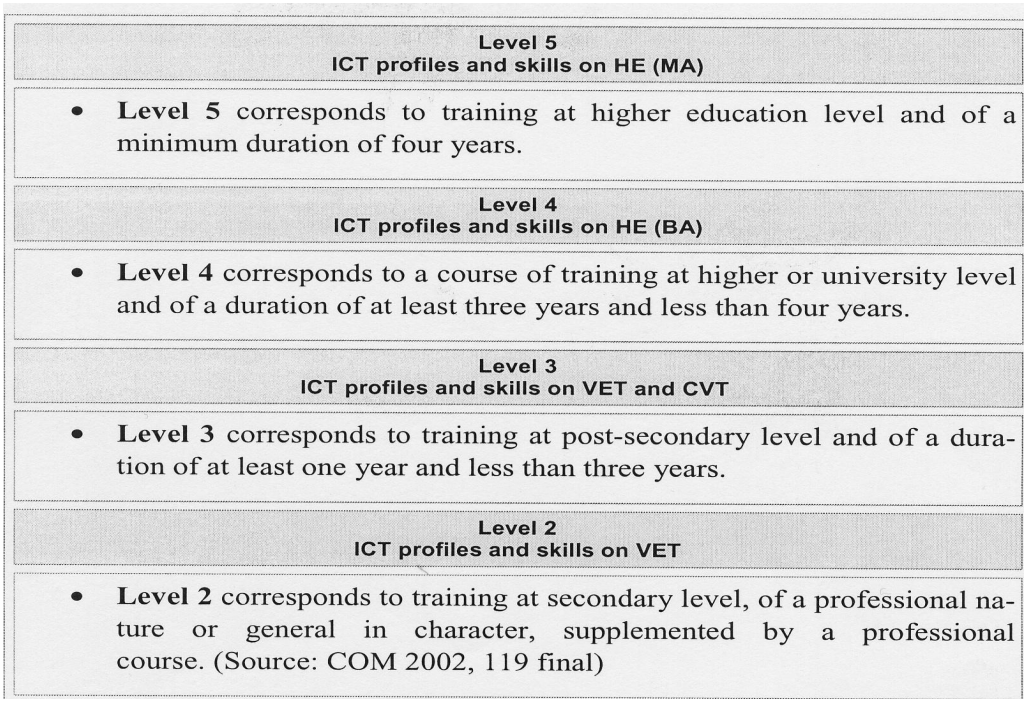
(b) in the older target groups (30-39 and over 40) Italy has the lowest participation level. This shows the lack of commitment to adult education and retraining (see ISFOL, 2001).

In France:

(a) participation in education by the 20-29 age group is 23.7 %;

(b) the figure for adult target groups (30-39 and over 40) is above average.

Figure 3: Split of ICT-Professionals based on the Draft EU Directive (2002): recognition of professional qualifications (article 11 levels of qualification) ([1])



([1]) The denomination of levels is changed in the latest version approved by the Council in spring 2004: Levels A, B, C and D with D being equivalent to level 5 in this overview, publication in the OJ in due course (on behalf of the editor this footnote was inserted by Burkart Sellin)

3. Skills, VET and CVT (lifelong learning: LLL) delivery at schools, colleges and within apprenticeship training in Italy

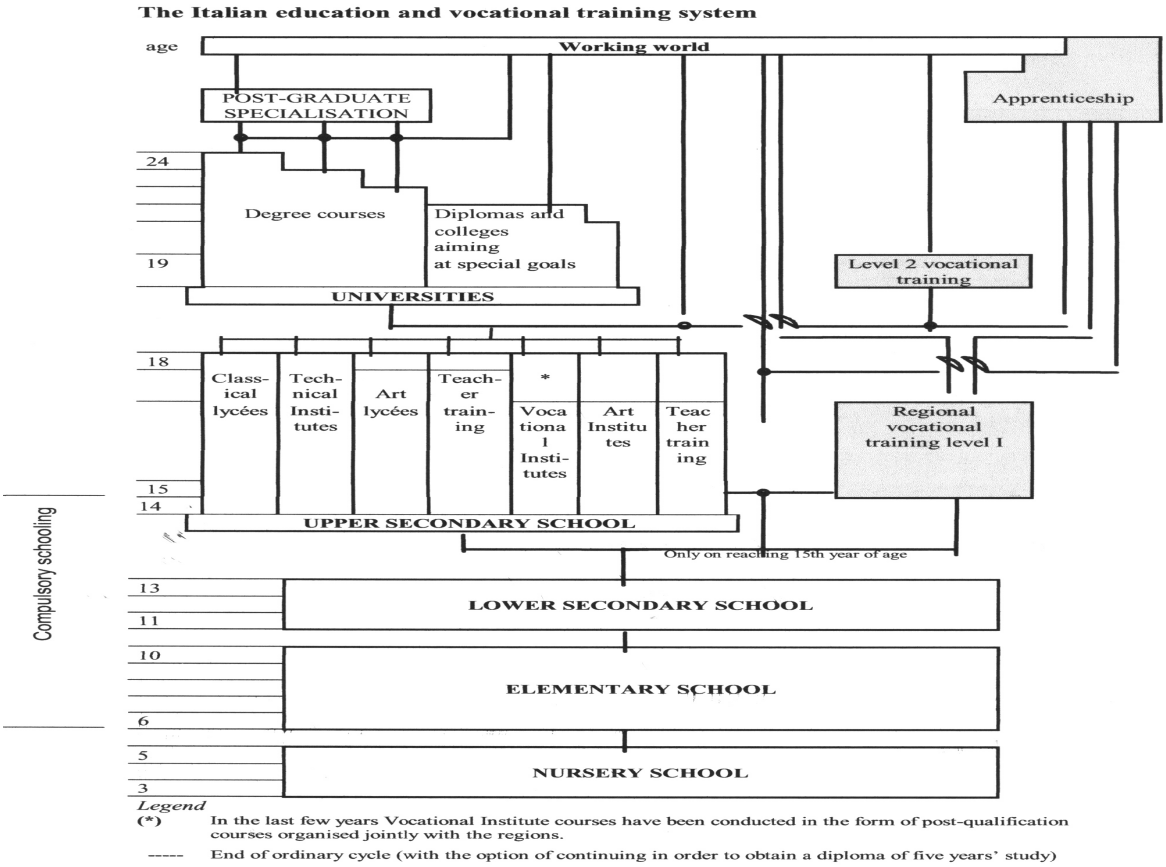
3.1. General education system

Italy's general education system in Italy is structured at three levels, preceded by pre-school education. The three levels are primary education (age 6-10), secondary education (age 11-14) and high school education (age 15-18). After obtaining a post-high school diploma, students can enrol in university. High school education offers a large number of possible paths of study, with various goals and varying duration.

These may be grouped into five main paths: traditional education (*istruzione liceale*), teacher training (*istruzione magistrale*), vocational education (*istruzione professionale*), technical education (*istruzione professionale*) and art education (*istruzione artistica*). Since 1969 any type of diploma obtained from one of the above has allowed access to any university faculty. With the diploma, a person may also start working life or enrol in a level 2 course in the vocational training system administered by the region ([2]).

([2]) www.trainingvillage.gr

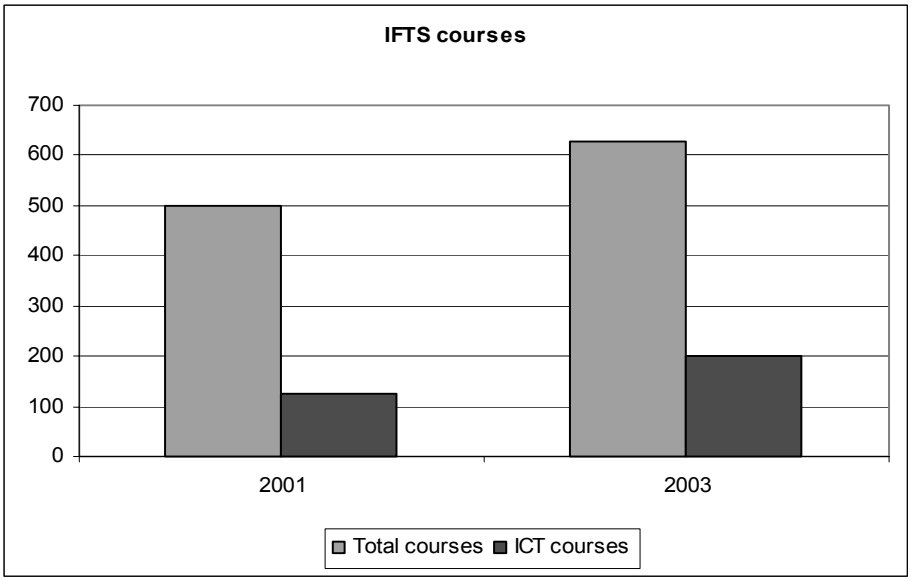
Figure 4: The Italian education and vocational training system



Source: TrainingVillage (www.trainingvillage.gr)

IFTS (*Istruzione e Formazione Tecnica Superiore*) courses deliver a sub-degree diploma. These technical courses are a response to the needs of companies and the banking industry. The main characteristic of the ITFS is to create a pool of stakeholders (potential employer, university, secondary schools, educational centres) with the purpose of identifying, designing and managing courses to satisfy new profiles. Furthermore, the study programme in these courses foresees a high percentage of internships in companies that are recognised as university credit. This formula carries a qualitative objective because it enhances the relationship between education and work in contents and subjects. The courses provided by IFTS are excellent from a qualitative point of view, but lack a quantitative aspect. The ICT courses provided by IFTS are 25 % of the latter's total, but a significant increase in 2003 (to 32 %) is expected (see Rapporto Federcomin, 2000) .

Figure 5: IFTS courses in Italy, 2001 and 2003



3.2. ICT infrastructures in Italian education

The *Libro Bianco* (2001) edited by the Italian Ministry of Education, highlights the gap in public diffusion and utilisation of ICT between Italy and other European countries. Salient figures are:

(a) 20 % of secondary schools have broadband Internet access;

(b) 44 % of secondary schools have a Web site;

(c) secondary schools have one computer for every 15 students;

(d) 3 % of teachers use the Internet as a learning instrument.

To bridge the gap, the recent 'Moratti reform' (named after Italy's Minister of Education) stresses the importance of ICT and foresees the implementation of broadband Internet access (necessary for e-learning) in 85 % of Italian public schools.

The following table illustrates the low level of equipment in Italian schools. For example, only 2 % of Italian schools have Internet and PCs in the classroom, but 44 % have Internet and PCs in multimedia labs.

Table 7: Equipment in schools in Italy

Level of technological infrastructure	**Features**	**% Italian schools**
Few PCs, no Internet	Schools endowed with few of PCs, mainly located in multimedia labs or in administrative offices.	54 %
Internet and PCs in multimedia labs	Schools with a good technological infrastructure, but with PCs located in multimedia labs.	44 %
Internet and PCs in the classroom	Schools with a good level of infrastructure, with a local Intranet and with PCs in the classroom	2 %

Source: Scienter, 2002

Table 8: Sub-degree education: corresponding diploma and job profile related to ICT

Level	**Corresponding diploma**	**Job profile related to ICT**
Level 3 ([3])	*Diploma di Istituto Tecnico* *Diploma di Istituto Professionale* *Diploma di Liceo Classico* *Diploma di Liceo Scientifico* *Diploma di Liceo Psicopedagogico* *Diploma di Liceo Artistico*	Project software application Network technician System specialist in internet IT business consultant Project software architecture Network manager Web system specialist Web master Expert in IT language and multimedia technology ERP expert System specialist in telecommunications Marketing manager and e-business salesman Programmer analyst, object oriented ([4])
Level 2	*Diploma di qualifica professionale*	Electronics assistant Network assistant Informatics assistant Customer care assistant ([5])

Source: elaboration from data and information on Eurotuteur, Federcomin, Anasin, Isfol

([3]) http://eurotuteur.ac-strasbourg.fr

([4]) http://www.federcomin.it

([5]) http:// www.isfol.it

For the first time in Italy, Federcomin and Ansin have classified 13 job profiles related to ICT: 11 correspond to level 3, whereas Isfol (*Istituto per lo Sviluppo della Formazione dei Lavoratori*) has designed two job profiles related to level 2.

4. Skills, VET and CVT (LLL) delivery at schools, colleges and within apprenticeship training in France

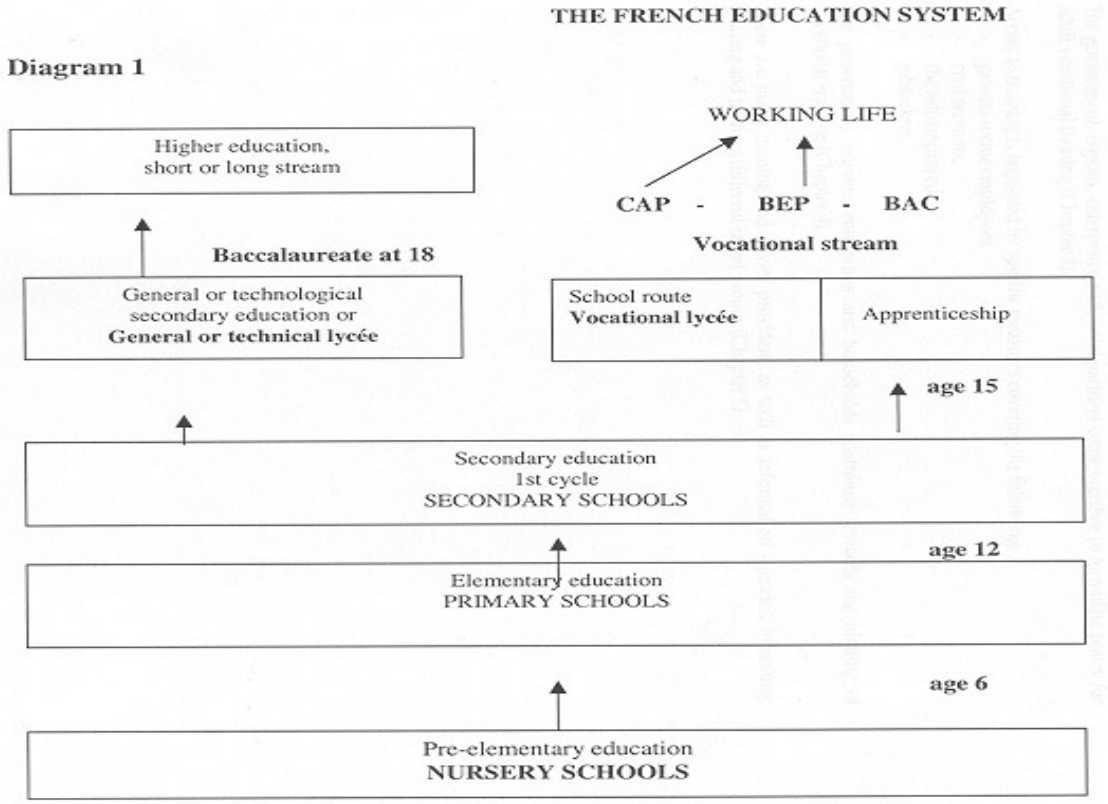
4.1. General education system

The French education system is structured on two levels which are preceded by pre-elementary schools. The first level is elementary education (age 6-11). The second level consists of two cycles: a first cycle (age 12 to 15), attended by all pupils and a second cycle (age 16-18) broken down into general, technological or vocational strands.

The student chooses at age 15 what he wants to do for the second cycle. The choices are between a vocational school lasting three years, which prepares the student to enter the labour market, and a three-year high school diploma that prepares the student for university. Vocational school possibilities are obtaining a CAP (certificate of technical or vocational aptitude), a BEP (diploma of occupational studies) or vocational baccalaureate.

Programmes of study at vocational schools have been modernised to adapt their content to changes in the skills required in the labour market. Work placements are now a fundamental part of vocational schools. At the same time, anyone passing the baccalaureate is entitled to be admitted to university (see Perker, 2000).

Figure 6: The French Education System



Source. TrainingVillage (www.trainingvillage.gr)

The Ministry of Education implemented professional paths in which training courses are linked with companies and their needs. It has classified 250 *certificat d'aptitude professionnelle* (CAP), 50 *brevets d'études professionnelles* (BEP) and at the *bac* level 48 specialists (*bac professionel*).

4.2. ICT infrastructure in the French educational system

The situation in French schools is as follows:

(a) schools providing technological or vocational education have more computers than those which provide general education;

(b) connection to the Internet is spreading in colleges: the proportion of colleges connected to the Internet has increased with the number of students provided with ICT training in the schools;

(c) approximately 85 % of the colleges and the Lycée d'Enseignement Général et Technologique (LEGT) and 81 % of the LP (*lycées professionnelles* - vocational schools)

indicate that a person is designated to teach or to provide services in the field of communication and information technologies.

Maintaining equipment and administration of networks is carried out by teachers in more than 60 % of establishments; the hardware provider intervenes 51 % of the time ([6]).

Table 9: Equipment in schools in France

	Computer	**Internet**
Lycées	1 computer for 6 students	100 % of *lycées*
Collèges	1 computer for 14 students	91 % of colleges
Ecoles	1 computer for 25 students	50 % of schools

Source: Scienter, 2002

Table 10: Sub-degree education: corresponding diploma and job profile related to ICT

Level	**Corresponding diploma**	**Job profile related to ICT**
Level 3	*Baccalauréat technologique* *Brevet de Technicien* *Brevet de Technicien Supérieur (BTS)* *Diplôme Universitaire de Technologie (DUT)*	Network administrator Multimedia designer Local network administrator Telecommunications technician Electrotechnical technician Electronic technician Local network technician Webmaster
Level 2	*Certificat d'Aptitude Professionnelle (CAP)* *Brevet d'Études Professionnelles (BEP)* *Baccalauréat professionnel*	Electromechanic assistant Telecommunications Installer/assistant Network installer/assistant

Source: elaboration from data and information on Eurotuteur, French Ministry of Education, www.education.fr

On the French Education Ministry's Web site ([7]) are 400 job profiles, of which only 11 are simultaneously related to ICT and at education level 3 and 2.

([6]) http://www.educnet.education.fr/secondaire

([7]) http://www.education.fr

5. Banking and financial services skill needs with particular reference to ICT

5.1. Need for sub-degree professionals and skills in comparison with degree level profiles

Banking is an important economic contributor to any national economy. According to IDC (see Rapporto Federcomin, 2001), European banking and financial services has the highest penetration of the Internet and extranet (93 %), compared with industry (41 %) and transport (39 %).

New bank employees are recruited to replace retiring employees and to carry out front office activities related to new branch offices and new sales channels. In the next two years it is expected that there will be a 0.8 % reduction in the number of banking employees both in Italy and in France.

The following table illustrates that the number of banking employees is higher in France than in Italy.

Table 11: Population and banking employees in Italy and France, 2001

	Italy	**France**
Population	57 943 300	59 038 500
Banking employees	341 982	418 468
IT banking employees	30 900*	54 400*
% banking employees	0.59	0.71
% IT banking employees	0.05	0.09

* estimated from data and information from ABI, ABF, Federcomin, ICD

Source: Istat, Insee, ECB

Many personnel managers emphasise the potential of IT/ICT in banking and financial services, in particular in e-business applications and in new sales channels (call centres, Internet banking). Italy and France are suffering from supply problems in relation to job profiles and descriptions. Increases in ICT-employees might be accelerated if applicants have the skills and competences that jobs demand.

Table 12: ICT sub-degree banking employees in comparison with respective degree level employees in Italy and France, 2001

	Italy	**France**
Banking employees (n.)	341 982	418 468
• Degree level (%)	31	26
• Sub-degree level (%)	69	74
• Total (%)	100	100
IT Banking employees	30 900*	54 400*
• Degree level (%)	12	20
• Sub-degree level (%)	88	80
• Total (%)	100	100

* estimates from data and information from ABI, ABF and questionnaires

New banking employees are in a market that offers contracts which are more flexible than in the past. The banking and financial industries, 'coped with the shortfalls through outsourcing, using existing employees and hiring temporary workers' (see Bynum, 2002). New entrants have a higher level of education than the company average employee even though, in most cases, the latter are continuously encouraged to undertake further training. This supplementary education is provided primarily by traditional courses, workshops and seminars and directly on the job through tutorships or mentorships. The education on offer meets the quality and performance needs of employers. The new profile is an employee as an asset conscious of his/her value and who is able to move from one type of job to another.

Table 13: New banking employees entry level in Italy and France, 2001

	Italy	**France**
Degree level (%)	62	59
Sub-degree level (%)	38	41
Total (%)	100	100

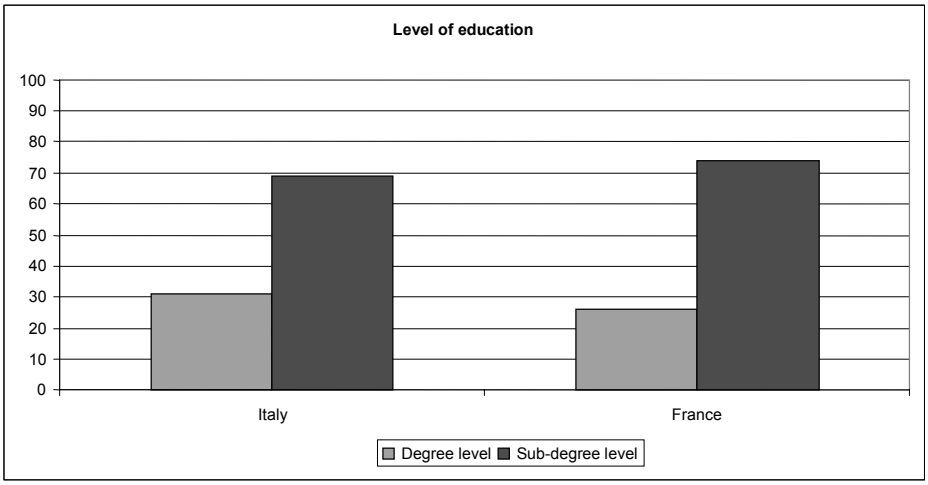
* estimates from questionnaires

In Italy, financial service companies prefer to hire candidates with a university degree. In our study (a total of 18 banks), Italian banking and financial services generally recruit at a higher level of education than France. At the same time, France has a higher percentage of females working in the industry (52 %). New recruits in both countries are usually assigned to front office (sales channel) jobs.

In France, most new bank employees have a degree above the high school diploma (BAC) level. Other jobs (such as assistant to executives, computer experts, bank tellers etc.) require a level of education of at least a BTS (*Brevet de Technicien Supérieur*) plus tailor-made trainee courses provided by banks to cover the specific competences required. It is possible to distinguish three main entry levels for the 'alternance' or qualification contract: postbac level, *bac* plus 2 years (BTS, DUT commercial) level and *bac* plus 4-5 years (IUP, DESS, grandes

écoles) level. This type of contract is used more in services such as banking than in other industries (see OPCA-Banques).

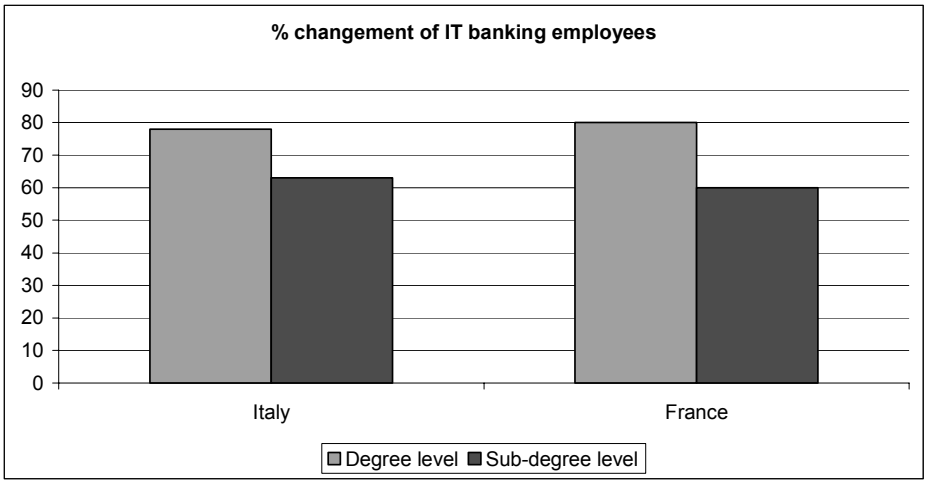
Figure 7: Banking employees by level of education: Italy and France



5.2. Trends in ICT skill needs by skill levels in Italy and France

The Italian and French banking industries present similar trends in ICT skill needs. They expect banking employees to adapt flexibly to meet future needs. They expect degree-level employees to play a different role than in the past, one which is more related to management and strategic skills rather than technical or repetitive performance and abilities.

Figure 8: Expected change in the role of IT banking employees by level of qualification



The table above illustrates that the complex technical skills were only one part of the overall skill needs for IT professionals. Business and interpersonal skills also ranked very highly for senior roles. The key challenges for IT professionals were responding to the business effectively, delivery on time and to adequate quality, an ability to solve problems, and keeping up to date while applying common sense (see Morrogh, 2002).

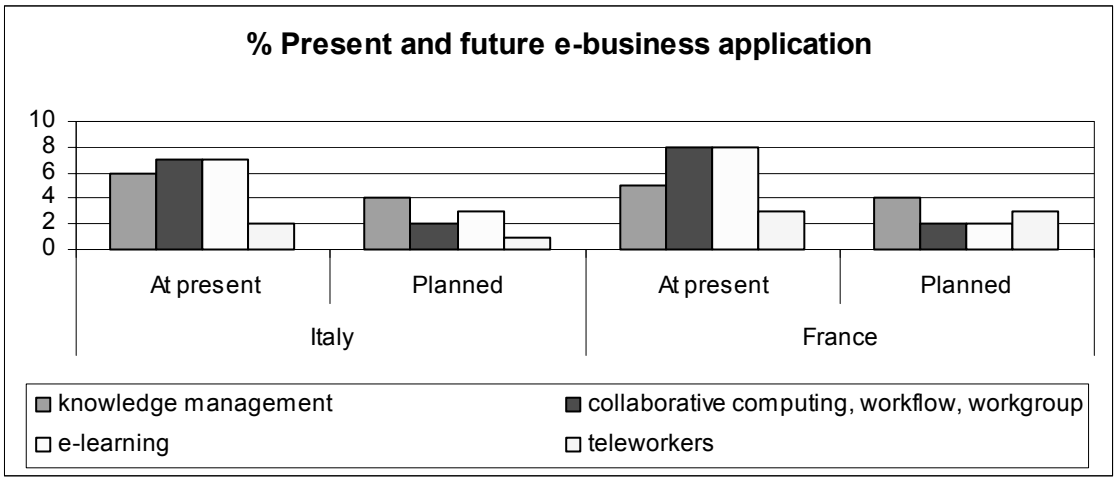
5.3. Evaluation of the supply of ICT professionals in banking

ICT in banking has proved to be most useful and successful in e-business activities and online services. The e-business application can be split into knowledge management, e-learning, collaborative computing and teleworking.

At European level, e-learning and teleworking represent less than 10 % of total e-business spending. E-learning and teleworking are growing by 4 % a year and at a considerable expense.

It is expected that total e-business spending will increase at a lower rate than in the past.

Figure 9: Present and future e-business application, (%): Italy and France



*Planned by 2005

Our survey highlights that banks are satisfied with the entry education level of their employees for traditional jobs (75 % in Italy and 80 % in France), but these percentages are lower for IT professionals (respectively 40 % and 60 %). The French education system seems to comprehend and meet company needs better when hiring IT workers.

The following table underlines satisfaction about the supply of banking employees and ICT banking workers meeting company demands in Italy and France.

Figure 10: Supply of banking employees to meet company demands: Italy and France

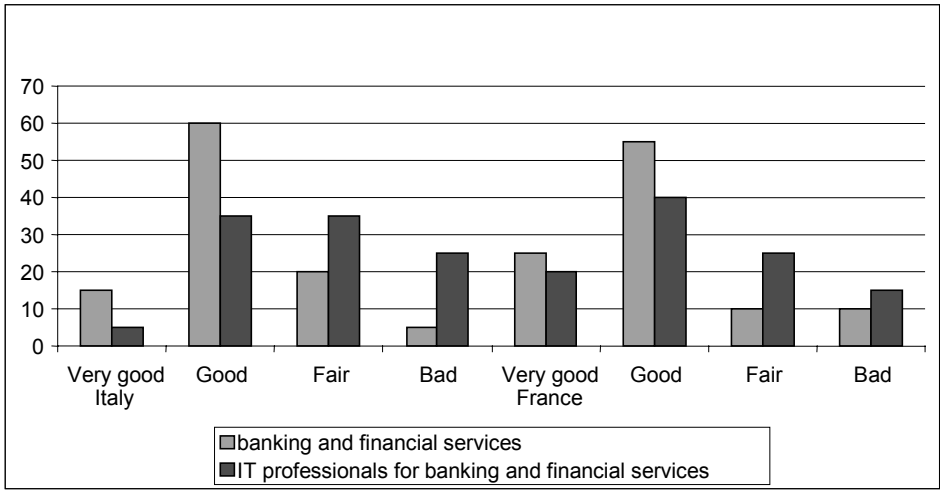
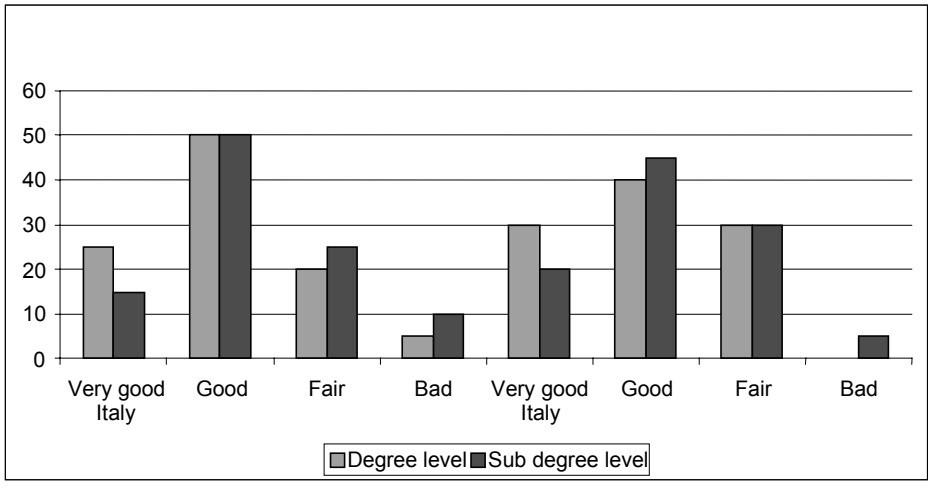
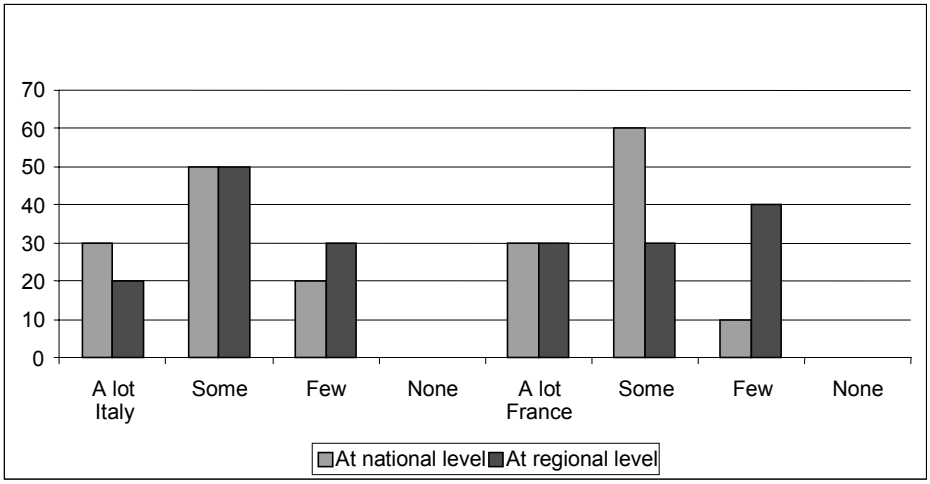


Figure 11: Satisfaction of the IT banking employees for degree and sub-degree level: Italy and France



The rather low satisfaction with the Italian education system in preparing IT professionals seen as a symptom of the poor quality of specific training courses.

Figure 12: Availability of specific training courses in the ICT area: France and Italy



5.4. Types of ICT professionals and skills needed at sub-degree level in Italy and France

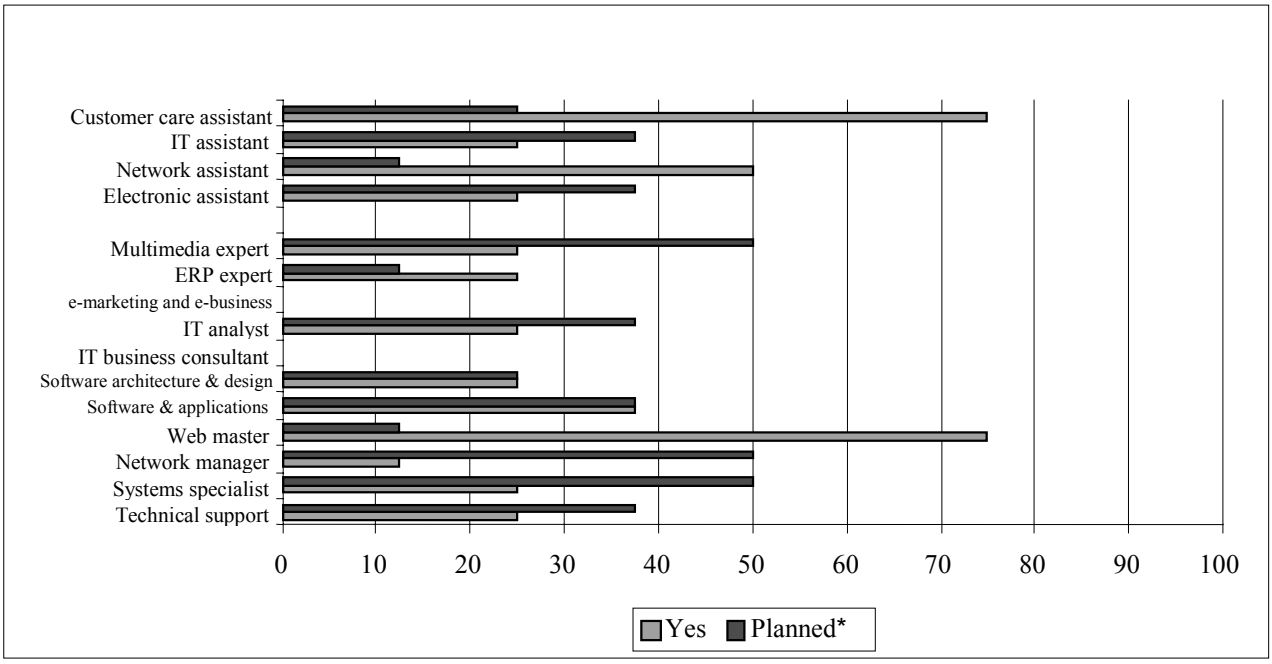
In Italy, the most widespread job profiles related to ICT are customer care assistant, network assistant, network manager, technical support and Web masters. However, the profiles with the highest anticipated increase in the coming years are e-marketing/e-business manager, ICT assistant, ICT analyst.

Our survey includes 12 Italian banks, of which eight are cooperative and savings banks. Italian cooperative banks are a federation of banks at a regional or national level. At regional level there is an IT centre that works for all the cooperative banks in the region (about 20 per region). Therefore some cooperative banks present a low rate of IT employees because this structure is effectively outsourced, though within the organisation.

In France, the most widespread profiles are local and network administrator, telecommunications technician and Web master. In future, an increase in telecommunications technicians and multimedia designers is expected. Our French survey includes six banks, three of which are private banks specialising in asset management.

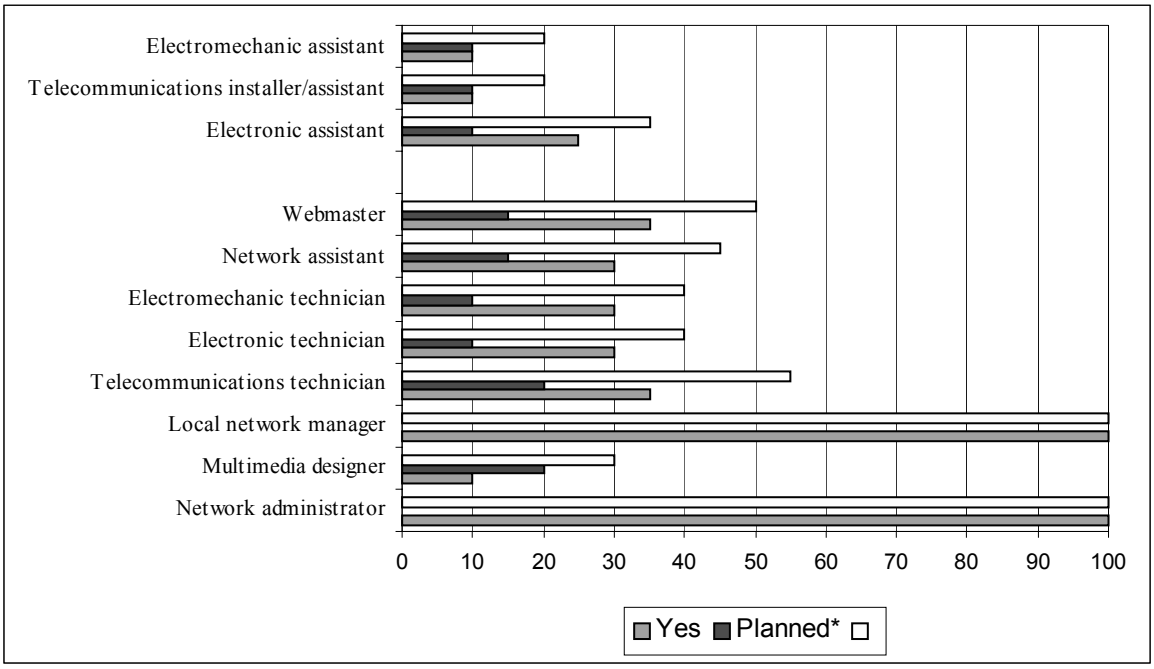
It is worth nothing that most banks answered only whether they had employees in certain positions and not how many employees were doing a particular job. For example, all the companies said they have Web masters, but did not specify how many. Some banks said how many people they have doing each job, but the number of respondents was too small to arrive at any significant data.

Figure 13: Job profiles related to ICT covered by banking and financial services in Italy



* Planned by 2005

Figure 14: Job profiles related to ICT covered by banking and financial services in France



* Planned by 2005

5.5. Deficit in ICT training supply within the sector

The most common subjects taught to employees in the sector are technical procedures, product and services provided by the banks, general support subjects (English, basic and advanced computer courses) and behavioural skills such as team work.

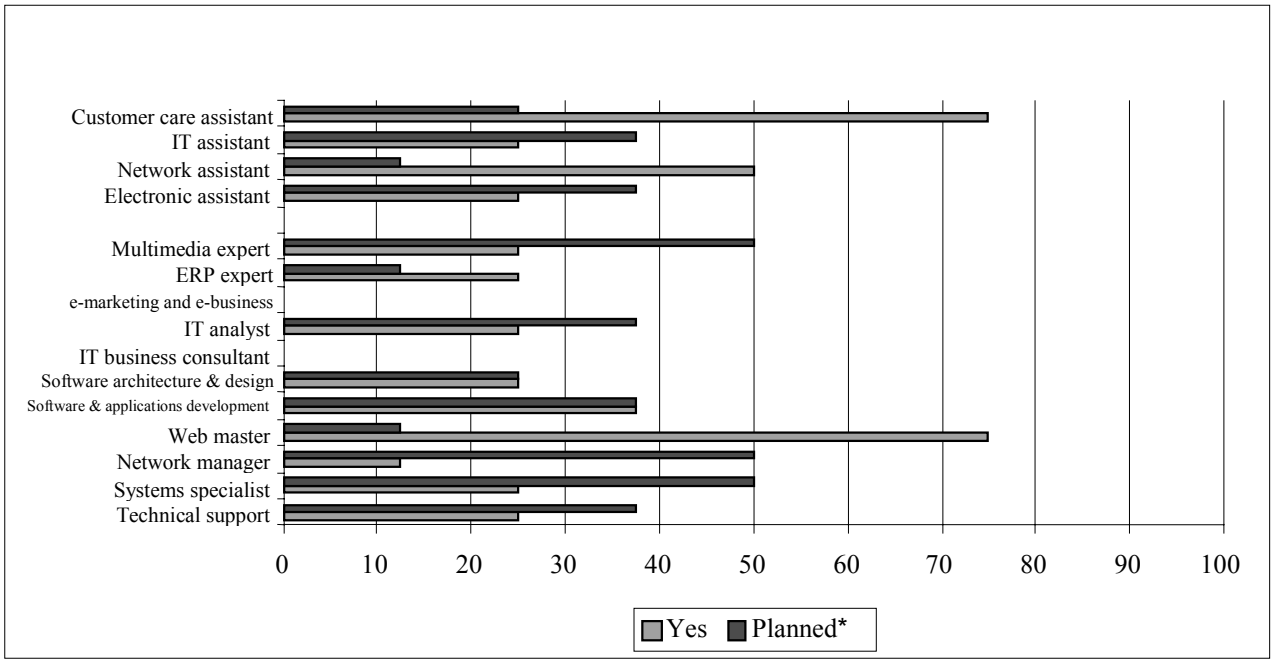
Training courses tend to be designed in line with the company's needs at a particular moment and rarely address long term strategic needs. The goal is to 'requalify' the employees and to enhance the diffusion of ICT utilisation. Cedefop emphasises that 'the engagement of SMEs in CVT lags considerably behind that of large firms' suggesting companies of all sizes share the same problems. Cedefop believes that 'CVT serves the adaptation of skills to short term demand, and is primarily done on-the-job and informally' (see Bjornavold, 2001).

IT courses implemented by training institutions in Italy (public and private schools or training centres) cover all the professional job profiles except e-marketing/e-business manager and IT business consultancy. By contrast, French institutions have planned courses for all ICT job descriptions. The study is based on responses from nine Italian training centres and six French institutions.

5.6. Trends in ICT skill needs by skill levels in Italy and France

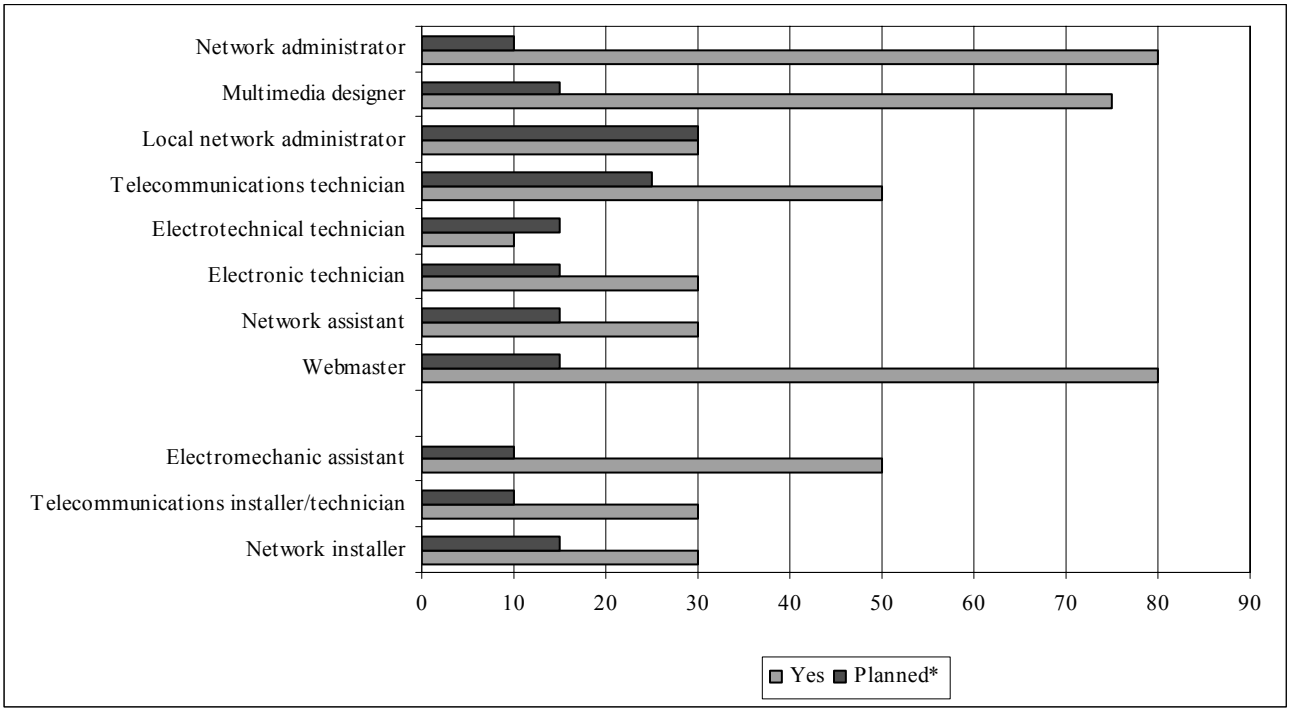
To evaluate the needs of the financial institutions, a study was carried out based on responses from nine such Italian institutions and six in France. For the part of the study dealing with the courses offered, eight Italian training institutions, all of which are located in the northern part of the country, and five based in France were surveyed. All of the training institutions are public.

Figure 15: IT courses implemented or planned by training institutions in Italy



*Planned by 2005

Figure 16: IT courses implemented or planned by training institutions in France



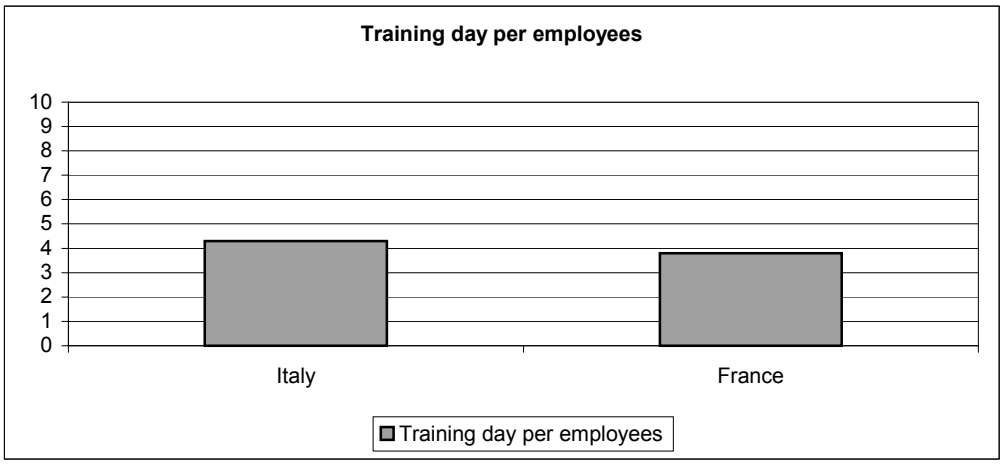
*Planned by 2005

ABI (Associazione Bancaria Italiana) and AFB (Association Francaise des Banques) play an important role in training. The personnel managers interviewed said they actively collaborate

with the banking associations. In addition, banking employees have a minimum amount of training leave fixed by a national law (about three days a year). That number is often exceeded.

In Italy, there is little dialogue between universities and non-university institutions and companies in the sector; in most cases their relationship is limited to internships. At the same time, an ABI research report highlights the persistent gap between banking needs and banking employees' skills (see ABI, 2001). This survey showed that the average computer skills of the non-IT Italian banking employee is the lowest of any European country (see ABI, 2001). In a separate study, Camussone and Occhini explained this specificity by the fact that the Italian client behaviour is quite different from other European countries because they prefer a more sensitive and interpersonal relationship (see Camussone, 2003).

Figure 17: Training day course per employees: Italy and France



In some Italian and French banks (i.e. Banca Mediolanum and Credit Agricole) training is used as a kind of reward for employees performing well, and as a *sine qua non* for further career progression. It is estimated that a bank earns a return on the training it provides employees in one year for high-level workers and three years for the junior level.

Recent studies from Databank and Datamonitor on sales channels in banking and insurance highlight that the number of training days per employee as an intangible asset for higher performance. Even if it is difficult to draw a direct and clear relationship between performance and training, empirical evidence shows human capital as a method for estimating enterprise performance.

5.7. E-learning implementation in banking and financial services (Italy and France)

The most useful instruments in tackling the identified skills shortage are e-learning and the certification of the IT competences. The banking sector has ideal characteristics for implementing e-learning: the need to update market information, laws, distribution of branches and the obligation to train their employees in accordance with the collective agreements.

According to IDC, 34 % of the European e-learning market for companies covers the banking sector. Its importance is confirmed by the fact that almost 30 % of banking employees in Europe use this mode of training (see Miggiani, 2002).

However, e-learning is used by less than 20 % of banks. Small and medium-sized banks mostly outsource their e-learning, while the big banks are more likely to source in-house.

Bank investment in e-learning represents 16 % of total expenses on training compared with the 9.5 % average for industry sector (2001) (see KPMG, 2002).

While personnel managers see e-learning as an efficient solution for employee training, they tend to focus on the fact that it can be done online and assume it relatively inexpensive. There is little focus on the actual content of the courses. In reality, implementing e-learning is a complex project because banks must understand the training needs of their employees and then implement a system to meet these needs ([8]).

Economies of scale can allow bigger banks to have an internal instruction design team (see Cappellini, 2002). In Italy, ABILearning, the ABI training company, and Intesa Formazione are considered benchmarks.

In Italy, the e-learning target group is employees and managers (70 % of the participants). ICT utilisation and specific job content account for 45 % of the material taught, 20 % covers transversal competences and 15 % foreign languages. E-learning seems to be especially useful for the subjects that are not traditionally taught at school.

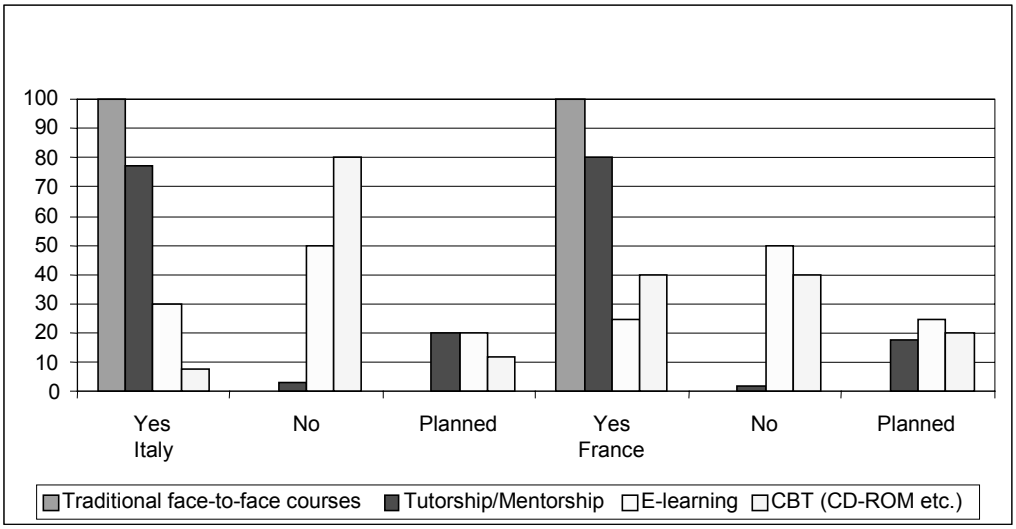
The survey shows that bank employees attend three training days per year (though for sales activities - for example financial planning – this rises to 5.5 days a year) which represents an investment of between EUR 310 and EUR 400 per employee per training day.

E-learning courses in France are linked more to data processing (30 %) and foreign languages (31 %), but there is also a considerable amount of training on subjects more specifically related to users' jobs (31 %) such as marketing. For example, a branch manager may take a course to help him better evaluate when to give loans or a bank teller may have training in how to explain and sell a new mutual fund. Hence e-learning in French enterprises is becoming an important training tool for staff development.

Hence e-learning in French enterprises is becoming an important training tool for staff development.

([8]) ABI Formazione (www.abiformazione.it)

Figure 18: Ways in which training courses are provided: Italy and France

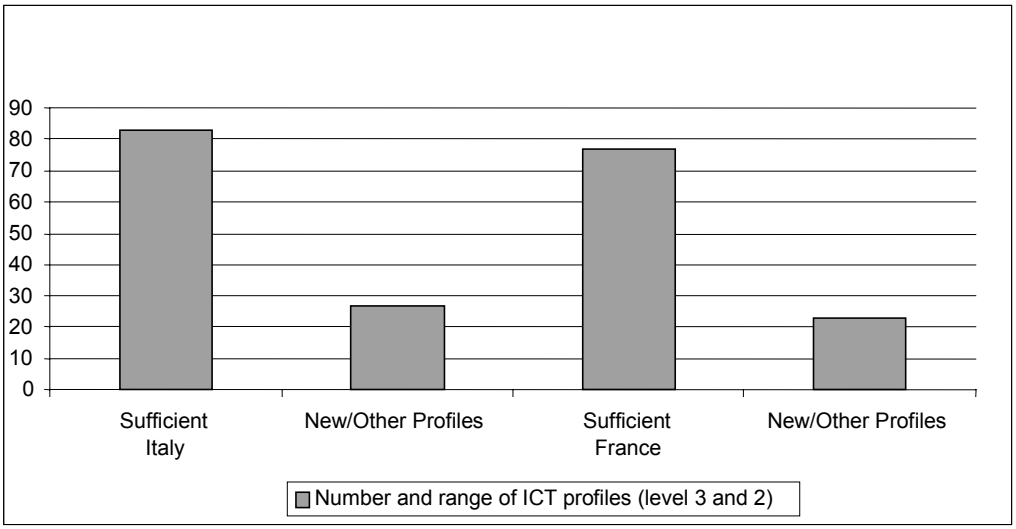


*Planned by 2005

5.8. Number, range and importance of ICT profiles at sub-degree levels

There is no profound difference in reported views between Italy and France. The level of satisfaction is high with about 80 % high regarding the number and range of the ICT profiles.

Figure 19: Number and range of ICT profiles (sub degree level): Italy and France



The importance of a special ICT job profile might be confirmed by the fact that training courses for new recruits and for continuous learning are decided at national level even if the bank is a multinational company. This reflects the different needs, skills and requirements linked with national business customs and culture in different countries.

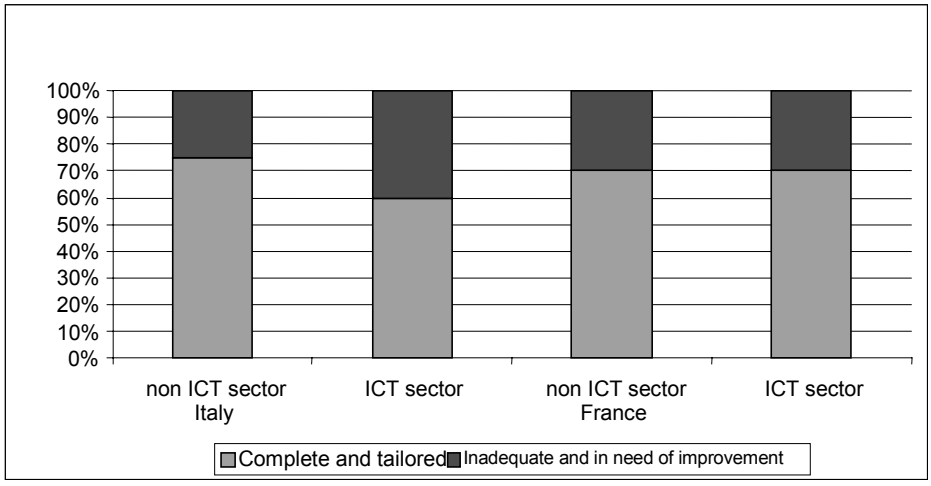
Figure 20: Importance of employee's ICT level: Italy and France

■ ICT level (e.g. when looking for new staff)

5.9. Supply of CVT courses for ICT professionals in banking and financial services

Italian banks indicate a higher satisfaction level with traditional courses than with ICT training. In France there is no distinction between traditional and ICT courses.

Figure 21: Supply of training courses: Italy and France

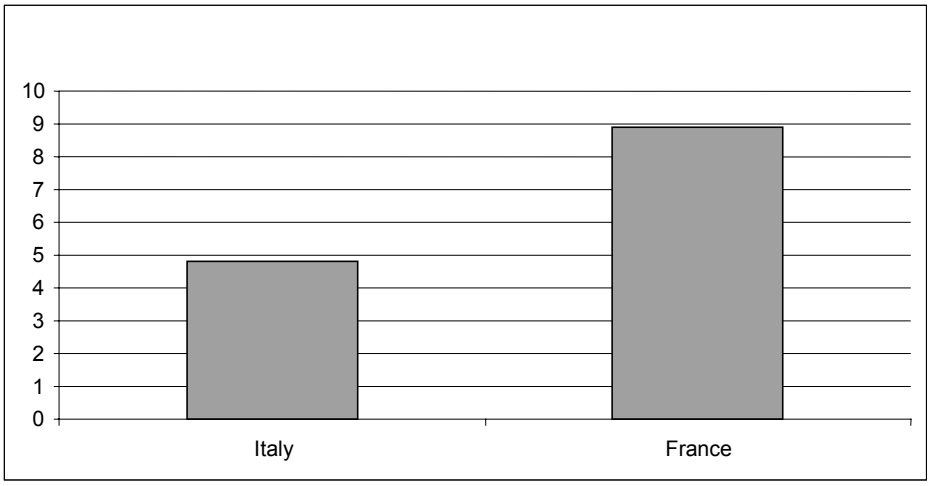


5.10. Special needs of certain target groups

Ten percent of the European population has a handicap or disability. That corresponds to at least 37 million people, about 70 % of whom are more than 60 years old. According to some personnel managers interviewed, ICT could contribute to social inclusion and to reskilling and upgrading the qualifications of the labour force.

In Italy, people with disabilities are the largest special target group while in France it is foreign workers. Workers in these special target groups are employed equally across bank operations, not concentrated in any one function. The spread of teleworking may enhance employment prospects for people with disabilities.

Figure 22: Percentage of special target groups (foreign workers, ethnic minorities and handicapped/disabled): Italy and France



* Foreign workers, ethnic minorities, handicapped/disabled

The problems faced by these special target groups in ICT services are quite similar in Italy and France and might typically be communication, integration and general ability to perform the job. There is a difference in the problems seen by banks and financial companies and those of the training institutions. For banks employability and integration are more important than they are for educational centres.

Figure 23: Problems faced by special target groups in ICT: Italian and French banks

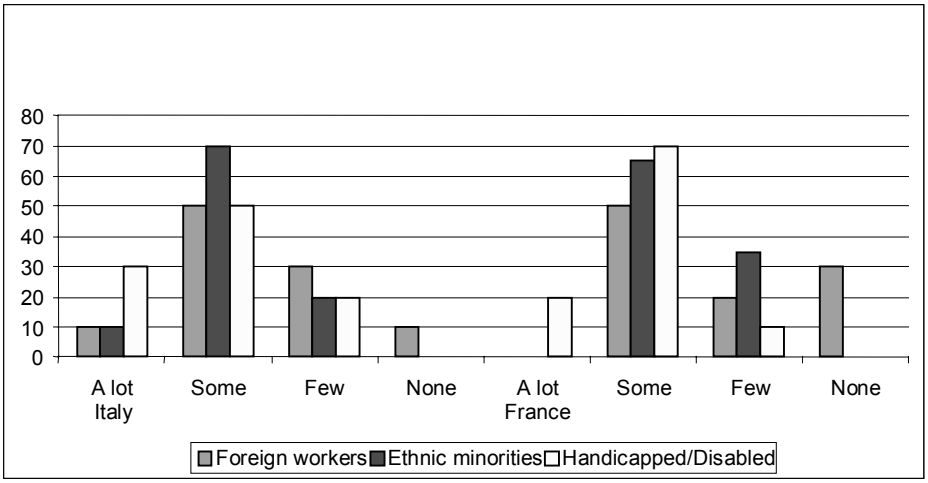
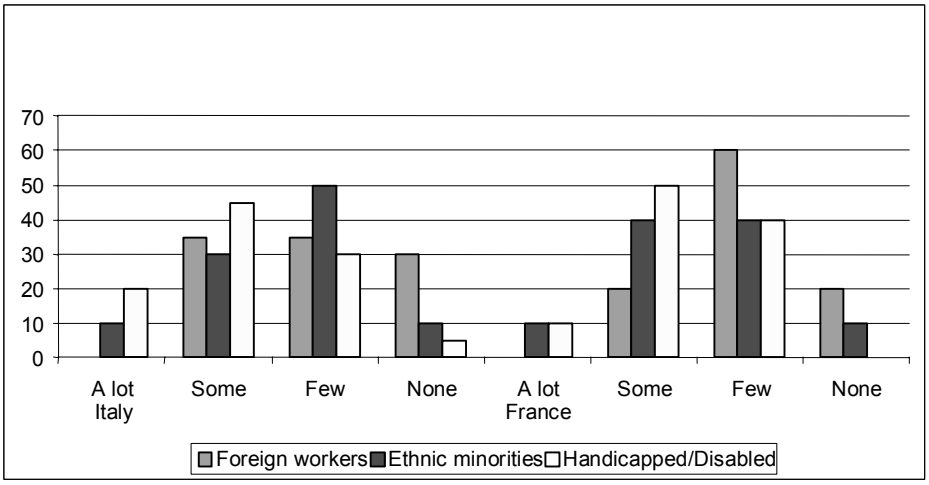


Figure 24: Problems faced by special target groups in ICT: Italian and French training institutions



5.11. Women in ICT and banking

In Italy, the majority of bank employees are male and this percentage is higher in the IT business divisions. There is a lower percentage of female participants in ICT courses than in traditional ones.

In French banks there exists almost an even number of male and female employees in this sector.

Figure 25: Banking and financial employees: Italy and France

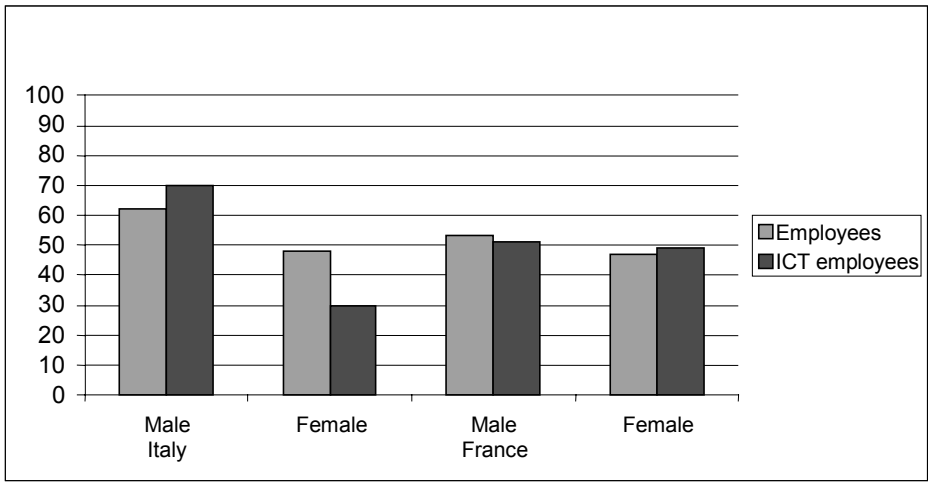
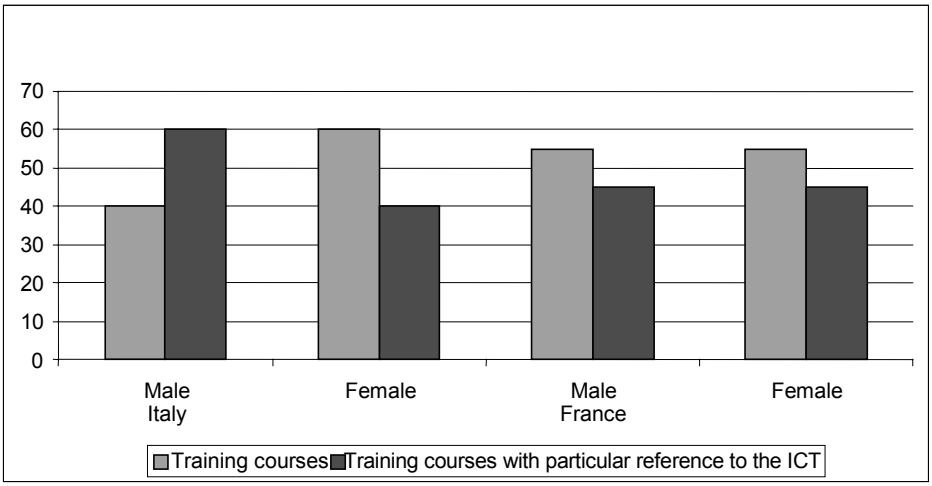


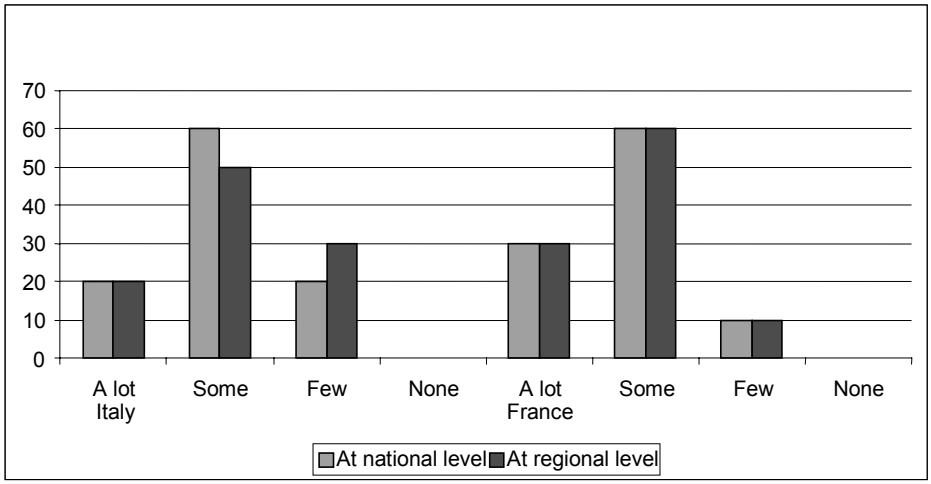
Figure 26: Percentage of females in training courses as participants: Italy and France



Both Italian and French banks express high satisfaction with the availability of specific training courses for attracting females to the ICT area.

In France, there seem to be no difference between regional and national levels.

Figure 27: Availability of specific training courses for placing females in the ICT area: Italy and France



6. Cooperation in initial VET and continuing training at European level

6.1. General overview

Cedefop (see Descy, 2001) has suggested that 'in systems where links between the educational system and the labour market vary in different pathways, upper secondary education needs to be provided with a coherent structure'. Therefore dual qualifications defined as 'a form of qualification that can be used to enter both skilled employment and higher qualification' (Descy, 2001) might be more effective ways of promoting the social standing of VET. The ways in which competences are acquired are less important than a system of certification and a common standard at European level.

Classification and transparency of competences might start with 'the assumption that graduates of vocational training courses of tertiary level, as holders of qualifications of level 2 and 3 will increasingly make more use of their opportunities for international mobility and freedom to settle within the EU in order to gain employment in the labour market' (see Sellin, 2001).

This paper highlights the fact that our sample of banks continue formal training (degree and non-degree level), and to industrial relations with institutional training centres (for example in Italy with ABI or ABI Learning) or internal business units (i.e. Intesa Formazione).

In this context, competences are assessed based on job level, level of education (and eventual further courses), previous job experience, classification in the national (collective) contract and salary.

The main task of the human resources department is to manage human capital efficiently. The department might provide tailor-made training in order to enrich its functions as educators as well as those of the employees.

A company's training approach is different from traditional teaching because in a company the trainer, in most cases, is a mentor or a tutor instead of a professional teacher. In fact, this person might work inside or outside of the company with different functions or tasks.

Closer cooperation between initial VET and CVT at European level might reduce unemployment among young people. The lack of cooperation is higher in Italy (and in general in Mediterranean countries) than in France and especially in the Northern countries. In Europe there is an emerging consensus, 'that the upper secondary level [level 3] has become the minimum needed for a good start in working life' (see Descy, Tessaring, 2001). This is particularly true for some business sectors in the financial industry which are characterised by a prevalence of ICT and highly skilled workers.

Some have suggested different paths of research to enhance the cooperation between VET and CVT (see Descy, Tessaring, 2001):

(a) implementing a strategy of lifelong learning to clarify the vision of VET;

(b) encouraging multidisciplinary research that avoids fragmentation of the vision of VET and CVT;

(c) encouraging the participation of employers in financing and organising training;

(d) encouraging analysis and research to understand the needs of human resources departments;

(e) researching new innovative methods of training teachers and trainers;

(f) fostering a more important role for groups such as professional organisations and unions.

France was a pioneer in facilitating identification, assessment and recognition of non-formal learning (for example the law on *bilan de competence* and the law on the validation of skills acquired by work experience, respectively in 1985 an 1992). 'France has been characterised as an extreme case of certificate fixation. As in the case of Italy … a certificate not only reflects a formal level of attainment, but the qualities of a person and the rank he or she is entitled to.' (see Bjornavold, 2001).

Italy has partly filled the gap thanks to the agreement between the government and the trade unions and other labour organisations (1996) for certification of competences irrespective of the way in which they were acquired.

In Italy, a tighter relationship between the regional and provincial levels and the national level has developed recently, though structural problems continue to exist.

In France regional and sector training courses were created while research capacities and monitoring efforts were strengthened. The decentralisation of competences into regions was not always accompanied by a respective decentralisation of the political and social dialogue on the matters concerned. Therefore, 'it is not productive to draw straight-forward conclusions about the best possible model appropriate for application in and by all the countries on the European level' ([9]).

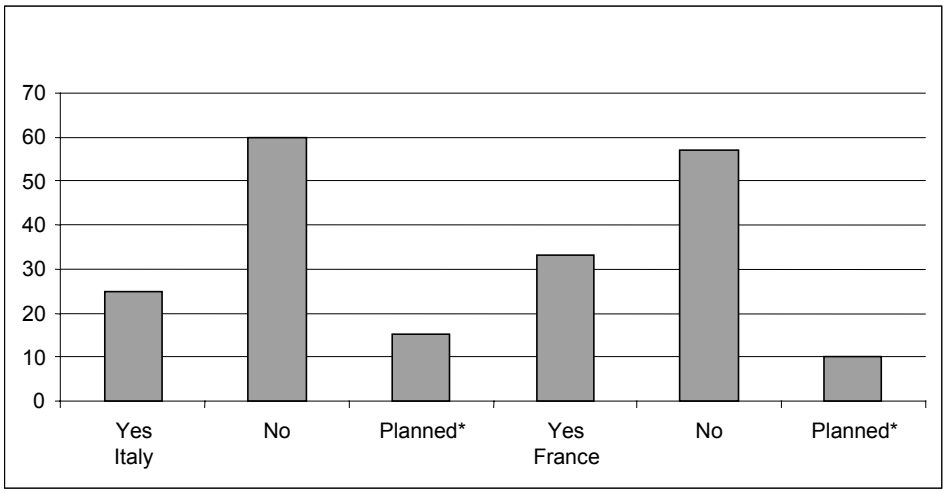
In conclusion 'in every country, VET has complex links with the economy, the labour market and employment. Moreover, its highly fragmented structure and many specialisations make coordination difficult' (see Descy, Tessaring, 2001).

([9]) Sellin, B. (2001) *Anticipating Occupational and Qualificational Developments, Recommendations and* Conclusions based on a review of recent innovations in methods and instruments applied in the European Union, Cedefop.

6.2. Cooperation between ICT training institutions

Italian training institutions are less satisfactory than French counterparts in terms of collaboration with other countries' training institutions. Nevertheless, Italy has a higher percentage of planned EU projects.

Figure 28: Cooperation with other ICT training centres: Italy and France



* planned by 2005

6.3. European standardisation of ICT profiles

Italian and French banks indicate a rather high demand compared with training institutions for more uniform European standards for ICT job profiles. It is worth noting that no one answered 'not necessary'. There are no differences between level 3 and level 2.

Figure 29: Necessity for a European standard for job profiles: Italian and French banks

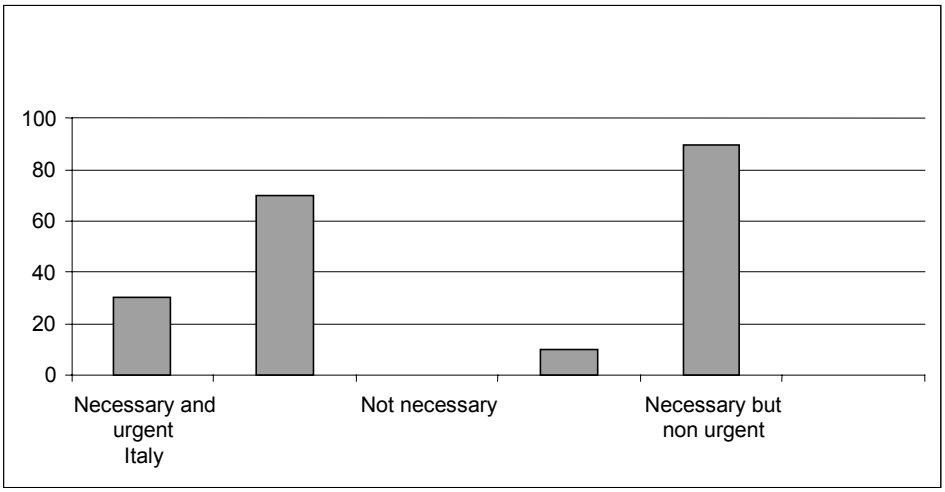
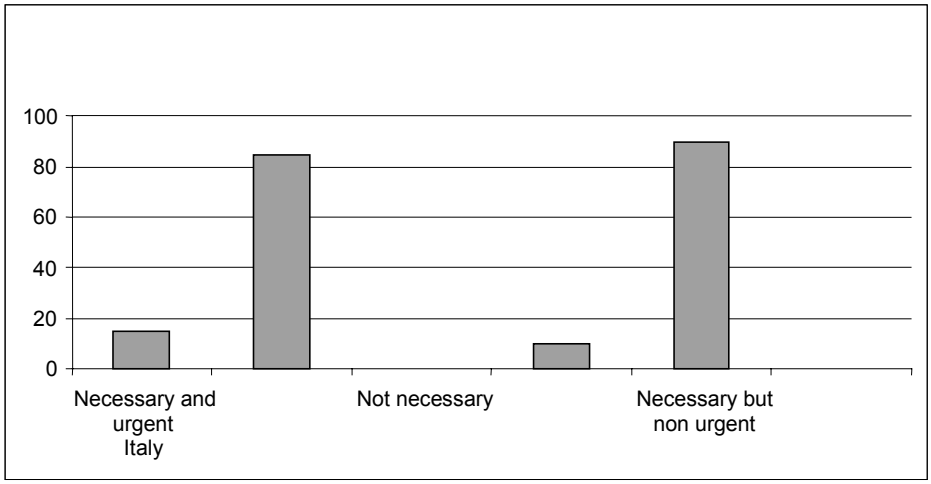


Figure 30: Necessity for a European standard for the job profiles: Italian and French training institutions



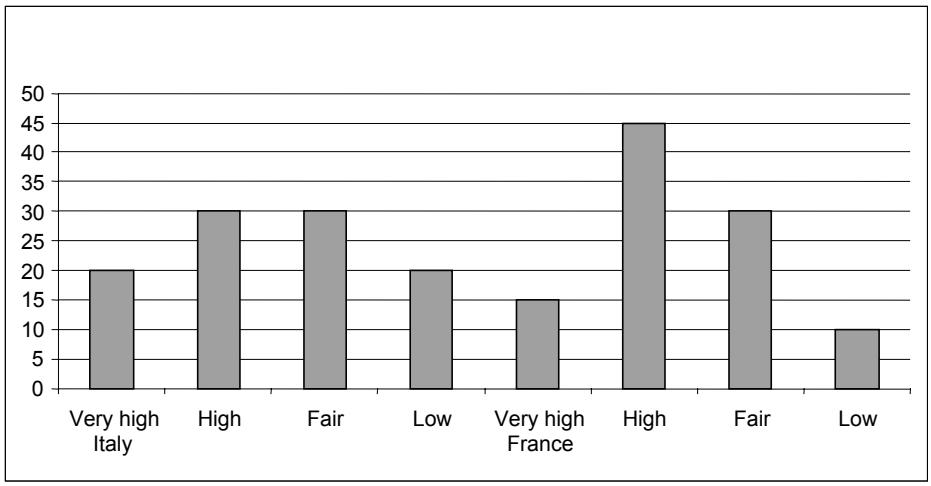
'It is essential to harness the energies and experiences of leaders in computing education around the world to produce a systematic method for comparing and merging curricular efforts and of assessing the potential contributions of proposed programmes of study' (see Cassel, 2002)

7. Guidelines and recommendations for curriculum development and designing courses

7.1. Need for ICT skills and competences for banking and financial services

Satisfaction with entry level skills of new employees in Italy and in France is low because, in most cases, additional training is necessary to bridge the gap between the banks' needs and what is taught in training or education systems.

Figure 31: Entry level satisfaction: Italy and France



7.2. Entry requirements, definition of outcomes, qualifying process, assessment and certification for learning modules

Italian and French banks keep their employees up to date through seminars, conferences, workshops, etc. Links with other companies outside the banking group are not frequent.

The training courses taught by Italian and French banks are fairly uniform. In fact, the institutions in both countries make ample use of seminars, conferences and workshops. These courses are sometimes taught by internal personnel, but more often they are taught by outside specialists in the particular field. It is rare in both countries for banks to use books or other didactic material without an accompanying course. Banks rarely link up to teach the same course.

Nevertheless, in France there seems to be a closer link between banking companies, participants in training courses and trainers than in Italy.

Figure 32: Importance of the training provider: Italian banks

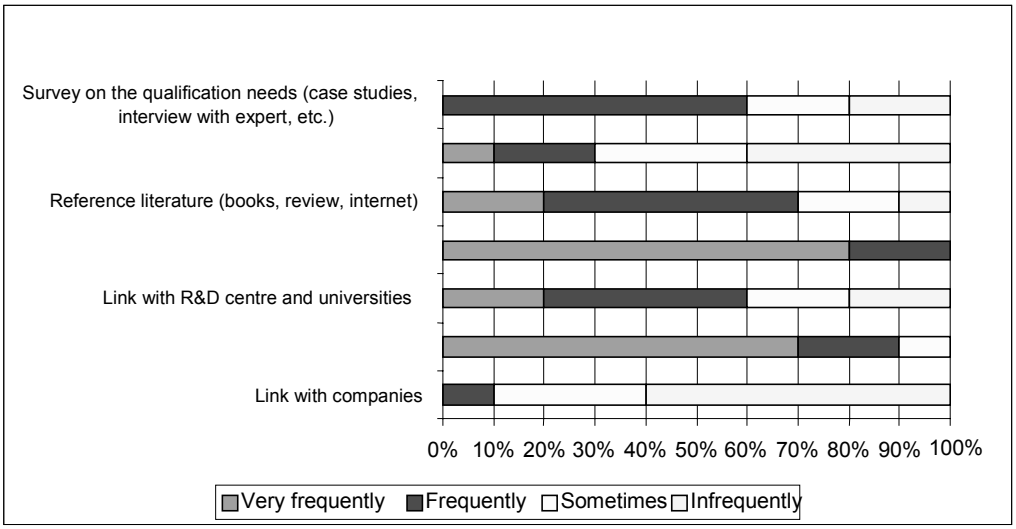
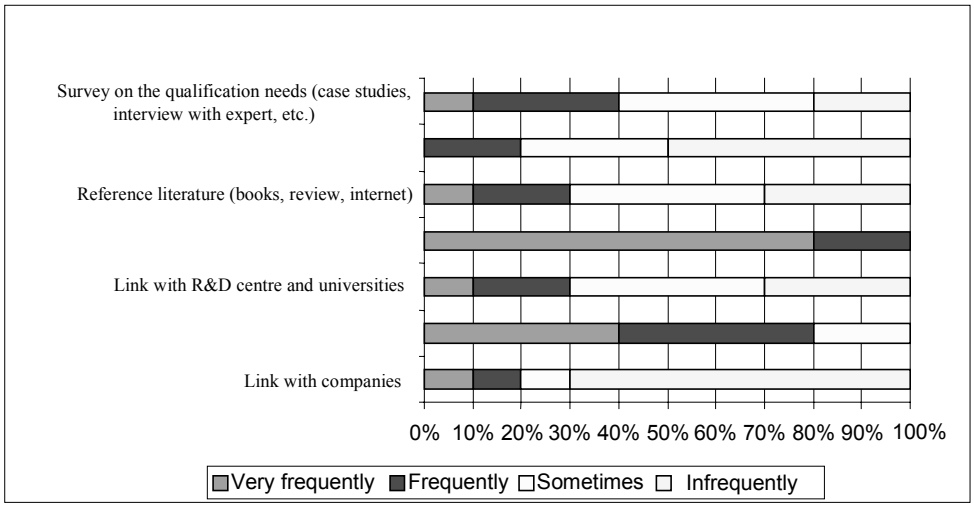


Figure 33: Importance of the training provider: French banks



Trained people have a competitive advantage not only in terms of greater job opportunities, but also in terms of having a higher probability of accessing further training than unskilled people. In addition, updated competences enhance an employee's motivation to accept change (see ISFOL, 2001). This is confirmed by the higher percentage of job placement after IT training courses than after traditional ones.

Every job profile requires technical competences, knowledge and transversal competences (see Federcomin, 2002).

Figure 34: Percentage of job placement after training courses in IT: Italy and France

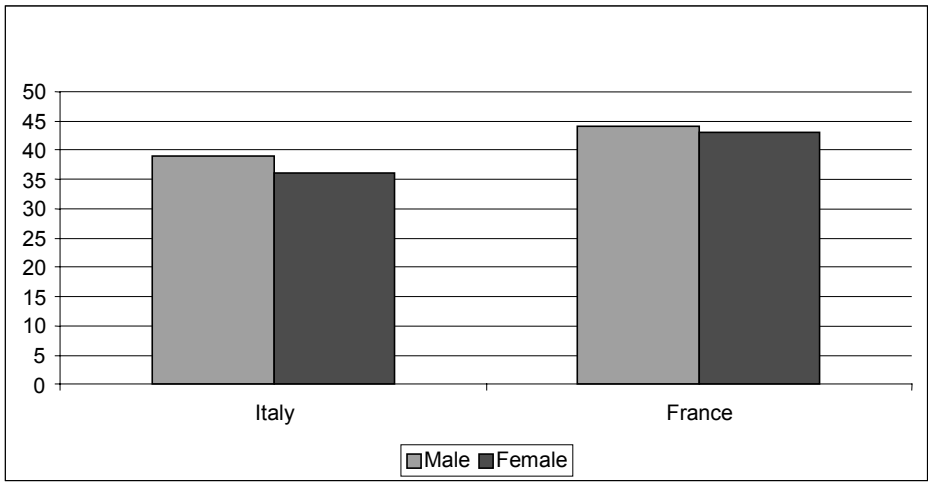
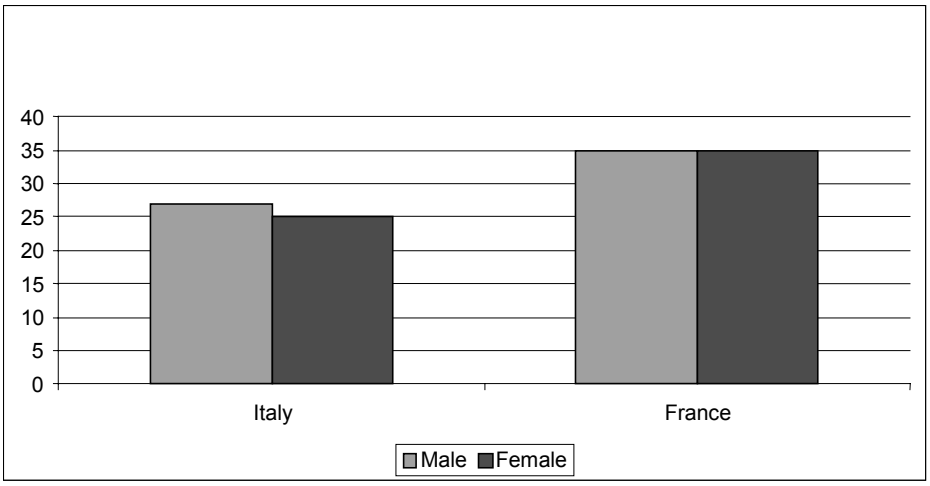


Figure 35: Percentage of job placement after training courses on traditional subjects: Italy and France



8. Recommendations for designing learning modules and new ICT didactics and curricula

The challenges faced by banking and financial services have a great impact, particularly in front office activities. They demand that banks and financial institutions obtain workers, or retrain existing staff, to meet global financial activities (from insurance to tax planning) transforming core business from financial intermediation to financial consultancy. In this context, there is currently a shift of traditional banking activities and competences.

The following figure highlights the consequences of this challenge on the organisational structure of the bank and on the skills of the employees.

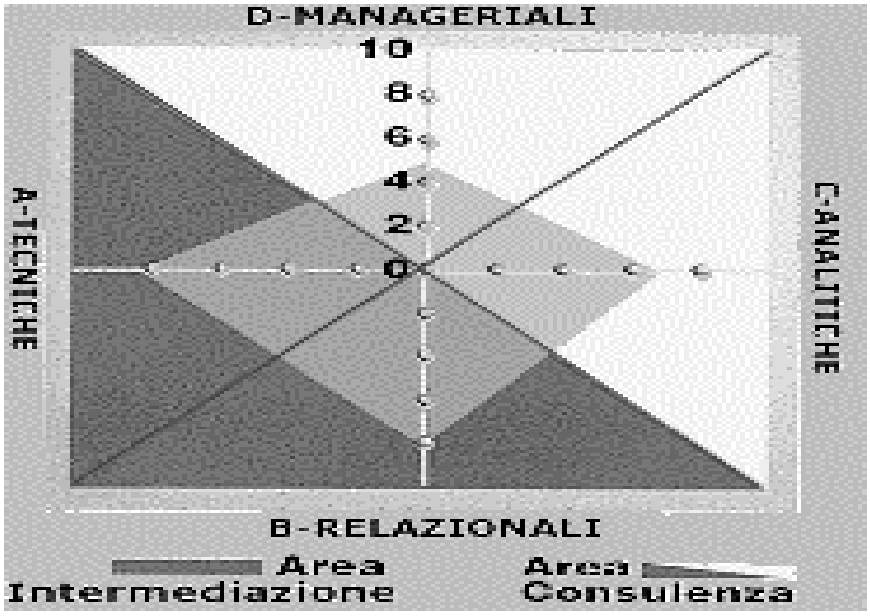
The levels (from 1 to 10) show the requirements expressed by a group of managers in the banking industry.

The blue triangle (defined by sides A and B) includes the distinctive competences of workers involved in intermediation activities. The square (defined by sides A, B, C and D) includes the peculiar competences of financial consultancy.

The areas achieved by the intersection of this data offer not only a holistic vision, but also a comparison between theoretical skill needs and subjective competences for consultancy activities. This comparison lets us identify both the best bank employees for such activity and their training needs.

The rapid evolution towards different sales channels and towards a financial consultancy is the goal. It is essential not only to offer financial products and services ad hoc, but to offer a complex tailor-made solution to clients.

Figure 36: Type and intensity of competences: intermediation activities and financial advisor



Source: Banca Etruria

Competences:
A - Technical: knowledge of product and services, markets, operations and legislation
B - Relational: relationships, reliability and confidence. Ability to offer products/services the needs of the clients
C - Analytical: ability to analyse the whole situation of clients
D - Managerial: ability to manage the financial assets

Gaining competitive advantage depends on a bank's ability to meet all the financial needs of the clients and at the same time to manage the relationship with them.

Italian banks indicate greater difficulties in updating job profiles for customer care assistants, e-marketing/e-business managers and web masters than for IT assistants, IT analysts and telecommunication technician's assistant. French companies indicate greater difficulties in updating job profiles for network administrators and multimedia designers.

Figure 37: Difficulty of updating courses and contents of job profiles: Italian banks

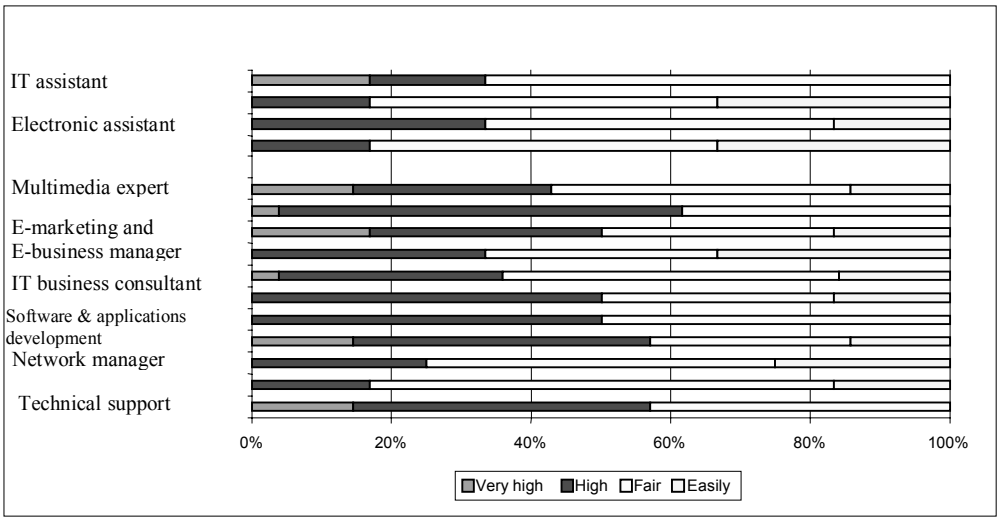
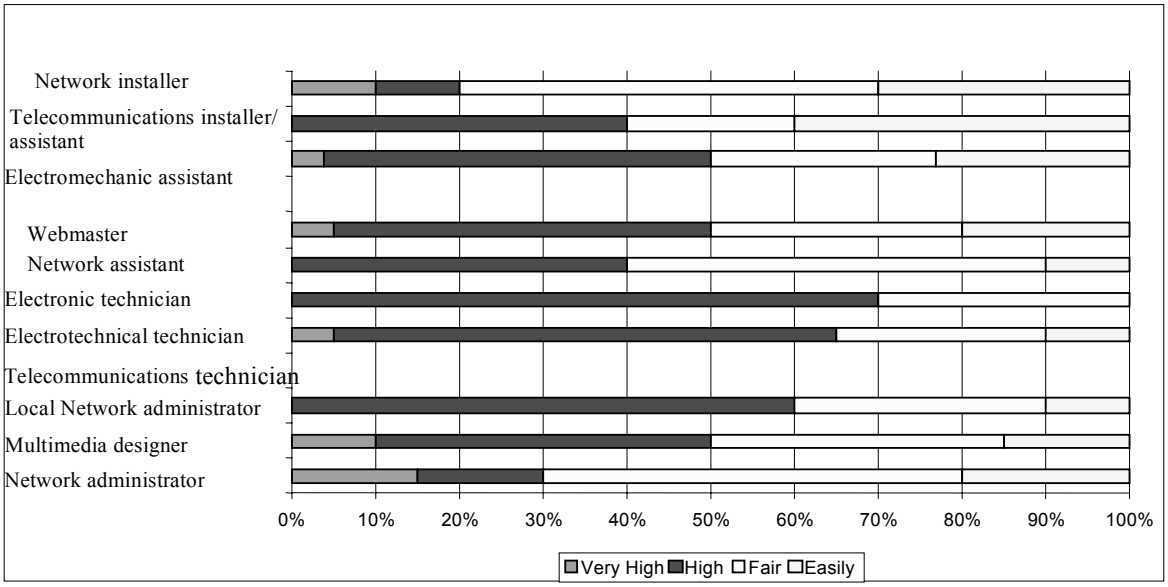
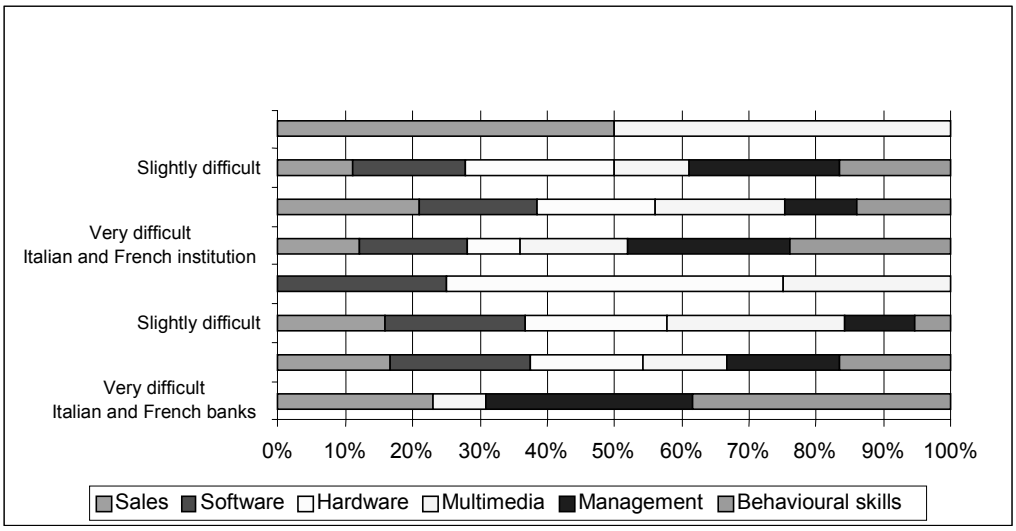


Figure 38: Difficulty of updating courses and contents of job profiles: French banks



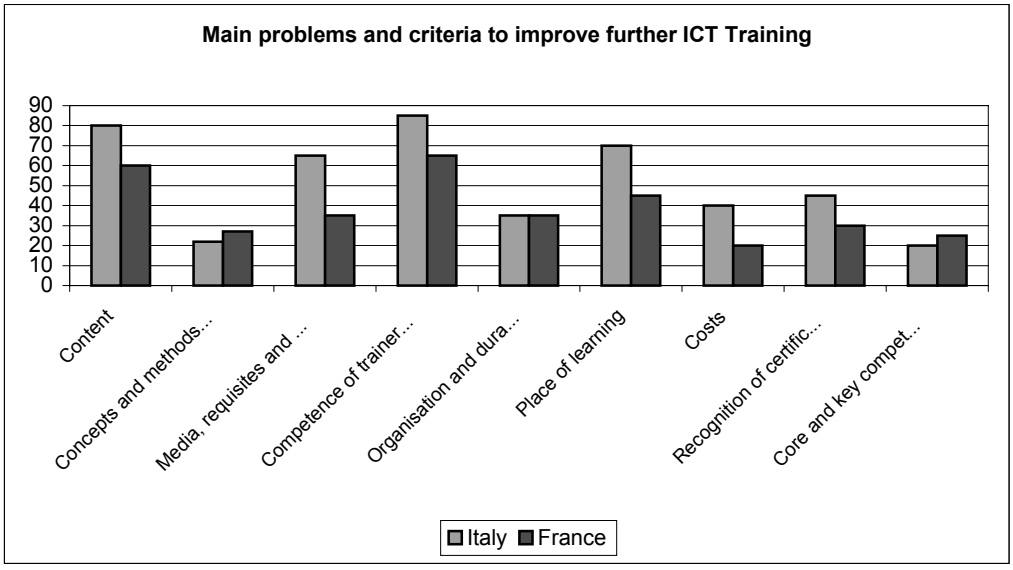
Financial service companies and training institutions both rate behavioural skills as the most difficult subject to update, followed by management and sales. This confirms that transversal skills and competences are not easy to deliver, e.g. social and communication skills, teamworking, etc.

Figure 39: Most difficult content when you have to update a training courses in banking and financial services: Italy and France



Italy has more problems in updating ICT training courses than France. In particular in the criteria of content, competence of trainers and teachers, place of learning, and costs.

Figure 40: Main problems and criteria further improve ICT training: Italy and France



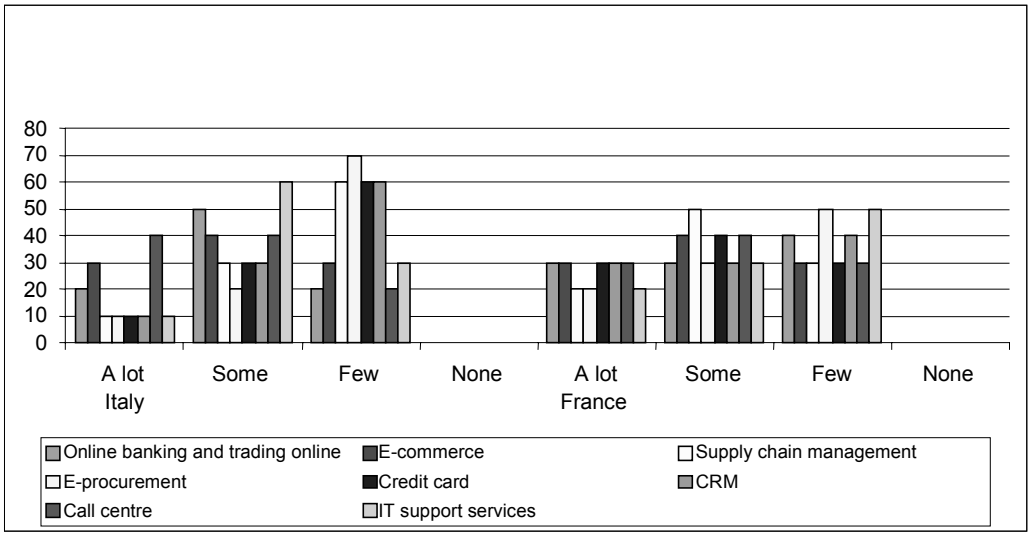
9. Conclusions and recommended actions

9.1. Bridging the gap between demand and supply

Bridging the demand and supply gap between skill shortages and job profiles requires not only specific training courses, but also stronger links between training institutions and companies. This is particularly important with reference to the continuously changing job content and the tasks related to the ICT applications. A few years ago the ICT job profiles most often requested were web designer or web master. Currently, the banking industry is looking for experts in network security, infrastructure technicians, business intelligence/knowledge management, call centre operators and customer relationship management (CRM) managers.

Both Italy and France have higher job opportunities for people with sub-degree level education in ICT, especially in e-business fields of e-commerce and home/corporate banking and as call centre operators.

Figure 41: Opportunity for job placement for people in IT sector, e-business, CRM and call centre: Italy and France



There are many providers of training courses after the conclusion of undergraduate education (for example masters of business administration, courses for specialisation, etc.) promoted by companies in collaboration with training institutions and universities.

The survey highlights many difficulties arising mainly from a lack of a strong relationship between banks and training institutions and educational centres. Satisfaction with the entry skill level of new employees is not very high because they need, in most cases, additional training. It is necessary not only to bridge the gap between banking skill needs and what is

taught, but also to establish permanent relationships especially at regional or local levels and allow for a continuous and closer cooperation between both in respect of curriculum development, content and training provision.

In the long term, it is not possible to identify future competences, but in the short/medium term the best job opportunities for people with sub-degree level education (see table 14) are in the base tasks of banks. The table also shows the change from traditional ways of supply to innovative (online) ones.

While this table reflects responses from interviews with Italian banks, the same conclusions most probably can be applied to the French financial institutions since the banking in both countries are moving in the same direction. For example, the banks are moving towards increased point of contact with clients, more attention is being given to services and the market is being opened to competition from foreign banks.

Table 14: Sub-degree level of employability of the retail banking tasks (related to the ICT)

	Employability
Basic competences	
• Ability to implement and manage computer and software	↔
• Mastery of IT in the product and services	↑
• Ability to transfer the product and service from Minitel (or other tools) to PC banking	↓
• Ability to implement advanced software	↔
• Sharing architecture among branches	↑
• Security transaction	↑
Distinctive competences	
• Multichannel bank	↔
• IT system and CRM	↑
Distinctive competences to credit activities	
• Implement scoring system	↑
• Risk management	↑
Distinctive competences in service activities	
• Internet banking	↔

↑ = high
↔ = same level
↓ = low

Source: the retail banking activities are identified by Lamaque, 1999

Italian training institutions have a less flexible approach ('time to market') than French ones. This leads to comparably more difficulty in updating content and meeting changing needs. In this context, the skills and training of trainers are essential. Trainers have not only to utilise ICT, but also to facilitate ICT applications for supporting training. ICT are an efficient way of teaching and learning. The survey highlights that bank personnel managers are not very interested in, or conscious of, the difference between education levels 3 or 2 or between levels 4 or 5. What they see as important is whether employees have degree or sub-degree level education.

In recent times the sub-degree level of education has been mainly associated with distribution and support activities, while the degree level has been associated with highly skilled activities such as the production of financial products (for example the creation of funds, bonds, etc). The 'over-qualification' phenomenon that is the result of a worker doing a task below his/her qualification level is also evident.

The professional profiles related to ICT classified by Federcomin and Anasim involve the IT department, but there are some job profiles that are connected with other fields of work. Many of these job profiles have been classified for a long time, but now they present new characteristics of competences, while others are completely new (for example, call centre operators, e-marketing managers).

The following two tables (15 and 16) below reflect responses from interviews with Italian banks; for reasons mentioned earlier the conclusion could most probably be applied to French financial institutions too.

Table 15: Type and intensity of competences: profile role related to ICT: Italy

Area	A	B	C	D
	Technical	Relational	Analytical	Management
	(%)	(%)	(%)	(%)
Management of the data and information				
□ Project software application	35	15	35	15
□ Network technician	50	5	35	10
□ System specialist in intranet	55	10	25	10
□ Project software architecture	50	10	30	10
□ IT business consultant	30	20	30	20
□ Network manager	35	15	25	25
□ Web master	50	10	20	20
□ Web system specialist	55	10	25	10
□ Expert in IT language and multimedia technology	50	10	30	10
□ ERP export	45	15	25	15
□ System specialist in telecommunications	55	10	25	10
□ Programmer analyst object oriented	35	10	30	25
□ Electronic assistant	45	10	35	10
□ Informatics assistant	45	10	35	10
□ Network assistant	45	10	35	10
Services				
□ Marketing manager and e-business salesman	15	35	25	25
□ Branch operator	15	30	25	30
□ Financial advisor	20	30	20	30
After sales				
□ Call centre operators	10	40	35	10
□ Customer care assistant	15	35	35	15
□ Customer Relation Manager	15	35	20	30

Competences:

A. Technical: knowledge on product and services, markets, operations and legislation
B. Relational: relationships, affability and confidence. Ability to offer products/services linked with the needs of the clients
C. Analytical: ability to analyse all aspects of a situation or of clients
D. Managerial: time and team management, goal orientation, ability to manage the financial assets

Jobs related to the management of data and information show higher technical core competences than the front office ones. Generally speaking, these profiles are followed by analytical and relational competences. Meanwhile, professional profiles that involve sales and post sales activities present a higher percentage of transversal competences. This implies that, as the points of contact with clients increase, so does the need for ability to manage the relationship.

Table 16: Type and intensity of competences: profile role related to ICT: France

Area	A	B	C	D
	Technical	Relational	Analytical	Management
	(%)	(%)	(%)	(%)
Management of the data and information				
□ Network administrator	35	15	25	25
□ Web master	50	10	30	10
□ Multimedia designer	50	10	30	10
• Local network administrator	50	10	30	10
• Telecommunications technician	45	10	35	10
• Electrotechnical technician	45	10	35	10
• Electronic technician	45	10	35	10
• Electromechanical assistant	45	10	35	10
• Telecommunications installer/assistant				
• Network installer/assistant	50	5	35	10

Competences:

A. Technical: knowledge on product and services, markets, operations and legislation.
B. Relational: relationships, affability and confidence. Ability to offer products/services linked with the needs of the clients
C. Analytical: ability to analyse all aspects of a situation or of clients
D. Managerial: time and team management, goal orientation, ability to manage the financial assets

The results of research led by Lamarque (comparing data from 1995 and 1999) show that asset management and special funds are the banking activities that require constant evolution in competences.

Table 17: Increase in competences banking activities comparing 1995 and 1999

Banking activities	Increase rate of the competences (%)
Retail banking	32
Brokers distribution channel	18.5
Special funding	33.3
Engineering funding	27.7
Asset management	46.1

Source: Lamarque, 1999

Wernerfelt has defined human resources as a 'tangible and intangible asset linked in a semi-permanent time with the company'. This is a profound change from the traditional vision (i.e. Porter) that identified the product/market position as the competitive advantage and not the skills and competences of the workers.

Table 18: Sub-degree level of satisfaction of the ICT in retail banking activities

	Level of satisfaction			
	Very high	High	Fair	Poor
Base competences				
□ Ability to implement and to manage computer software and hardware	30	40	20	10
□ IT Mastery in products and services	25	45	15	15
□ Ability to transfer the product and service from Minitel (or other tools) to PC banking	35	40	15	10
□ Ability to implement the advanced software	20	35	30	15
□ Sharing architecture among branches	15	35	35	15
□ Security transaction	10	30	40	20
Distinctive competences				
□ Mulitchannel bank	20	25	40	15
□ IT system and CRM	15	25	40	20
Distinctive competences to credit activities				
□ Implement Scoring system	10	15	55	20
□ Risk management	5	15	60	20
Distinctive competences on service activities				
□ Internet banking	20	30	30	20

Source: retail banking activities are identified by Lamaque, 1999

A report published in 1999 and led by Moussy with the collaboration of AFB (Association Française Bancaire) highlighted an increase in the entry level of education and the problem of 'overspecialisation'.

Improving the awareness of the actual and future skills and competences needed would benefit many aspects of the economy. Traditional training pathways are not always able to identify

and produce people with skills needed for certain jobs. Even though there is great diversity of skill pattern, the benchmark between Italian and French banking industry might provide a clue as to what will happen in the future.

‘Qualification is an imperative’ (see Federation Bancaire Française, 2002). Skill and competence needs are changing ever more rapidly and require permanent access to new skills and new approaches to teaching and learning.

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Attachement-1

IT practitioner skills and training solutions in financing and banking - Italian questionnaire – financial industry

General Information

Respondent details

Complete firm name			
Number of employees	2002:	2003:	2004:
Name and Department			
Phone		Fax	E-mail

Employees

	%
Male	
Female	
Total	100
Degree	
Sub-degree	
Total	100

Special target groups

What is the percentage of the following target groups in your company?

	%
Foreign workers	
Ethnic minorities	
Handicapped	

Rate the problems faced by the following groups in the ICT with particular reference to the banking and financial services

	4. A lot	3. Some	2. Few	1. None
Foreign workers				
Ethnic minorities				
Handicapped				

Training courses

Ways in which training courses are provided

	(% or no hours)
In-sourcing	
Outsourcing	
Total	

Please, select the different ways of training courses are provided/planned in your company (more than one choice)

	In-house			Outsourcing		
	Yes	No	Planned	Yes	No	Planned
Traditional face-to-face courses						
Tutorship/mentorship						
Seminars and workshop						
E-learning						
CBT (CD-ROM etc.)						

Cost of training courses

	Participant	Investment*	Hours
	(no)	(€)	(no)
Traditional face-to-face courses			
Tutorship/mentorship			
Seminars and workshop			
E-learning			
CBT (CD-ROM etc.)			

* hardware, software, external trainees

Rate the success from the company of view

	4. Very high	3. High	2. Fair	1. Low
Traditional face-to-face courses				
Tutorship/mentorship				
Seminars and workshop				
E-learning				
CBT (CD-ROM, etc.)				

Rate the importance for your company of the following provider

	4. Very high	3. High	2. Fair	1. Low
Private school				
Public school				
Educational and Training Centre				
Chamber of Commerce Training Centre				
ICT Product and services				
Other				

Employees

Rate the availability of specific training courses for placing females in the ICT area in your company

	4. A lot	3. Some	2. Few	1. None
At national level				
At regional level				

IT business unit

	(% or n.)
Male	
Female	

Turnover

	Total
	(no or no)
Company	
IT business unit	

Rate training course necessity for new employees in banks and financial institutions in the ICT area

	4. A lot	3. Some	2. Few	1. None
Level 3				
Level 2				

European Standard Qualification

Rate the necessity of having a unique European standard for the job profiles

	Necessary and urgent	Necessary but non urgent	Not necessary
Job profile with reference to the ICT			

Job placement and suggestions

Which of the following job profiles (non-university level) related to ICT are covered by your company?

	YES*	NO	Planned**
Level 3 (vocational education training and continuous vocational learning)			
Project software applicator			
Network technician			
System specialist in intranet			
IT business consultant			
Project software architecture			
Network manager			
Web system specialist			
Web master			
Expert in IT language and multimedia technology			
ERP expert			
System specialist in telecommunications			
Marketing manager and e-business salesman			
Programmer analyst object oriented			
Level 2 (vocational educational training)			
Electronic assistant			
Network assistant			
Informatics assistant			

* If YES, please specify number of employees

** Planned by 2005

Rate the opportunity for job placement (non-university level) for professional level and job profile in banking and financial services

	4. A lot	3. Some	2. Few	1. None
Level 3 (vocational education training and continuous vocational learning)				
Project software applicator				
Network technician				
System specialist in intranet				
IT business consultant				
Project software architecture				
Network manager				
Web system specialist				
Web master				
Expert in IT language and multimedia technology				
ERP expert				
System specialist in telecommunications				
Marketing manager and e-business salesman				
Programmer analyst object oriented				
Level 2 (vocational educational training)				
Electronic assistant				
Network assistant				
Informatics assistant				

With reference to the educational level mentioned above related to the ICT, could you tell me further needs of professionals in the banking and financial services?

	4. Very high	3. High	2. Fair	1. Low
Level 3				
Level 2				

Rate the opportunity for job placement for people (professional levels 3 and 2) in the following business area in banking and financial services

	4. A lot		3. Some		2. Few		1. None	
	Level 2	Level 3	Level 2	Level 3	Level 2	Level 3	Level 2	Level 3
E-business								
• Online banking and trading online								
• E-commerce								
• Supply chain management								
• E-procurement								
• Credit card								
CRM								
Call centre								
IT support services								

Guidelines

What competences do non-university professionals need in the banking and financial industry?

Could you identify what knowledge is required to achieve the desired competences?

What knowledge should be taught? What are the main sustainable training goals and study objectives with particular reference to ICT in the banking and financial industry?

Attachment-2

IT practitioner skills and training solutions in the financing and banking - French questionnaire – financial industry

General information

Respondent details

Complete firm name			
Number of employees	2002:	2003:	2004:
Name and department			
Phone		Fax	E-mail

Employees

	%
Male	
Female	
Total	100
Degree	
Sub-degree	
Total	100

Special target groups

What is the percentage of the following target groups in your company?

	%
Foreign workers	
Ethnic minorities	
Handicapped	

Rate the problems faced by the following groups in the ICT with particular reference to the banking and financial services

	4. A lot	3. Some	2. Few	1. None
Foreign workers				
Ethnic minorities				
Handicapped				

Training courses

Ways in which training courses are provided

	(% or n. hours)
Insourcing	
Outsourcing	
Total	

Please, select the different ways training courses are provided/planned in your company (more than one choice)

	In-house			Outsourcing		
	Yes	No	Planned	Yes	No	Planned
Traditional face-to-face courses						
Tutorship/mentorship						
Seminars and workshop						
E-learning						
CBT (CD-ROM, etc.)						

Cost of training courses

	Participant	Investment*	Hours
	(no)	(€)	(no)
Traditional face-to-face courses			
Tutorship/mentorship			
Seminars and workshop			
E-learning			
CBT (CD-ROM, etc.)			

* hardware, software, external trainees

Rate the success from the company of view

	4. Very high	3. High	2. Fair	1. Low
Traditional face-to-face courses				
Tutorship/mentorship				
Seminars and workshop				
E-learning				
CBT (CD-ROM, etc.)				

Rate the importance for your company of the following provider

	4. Very high	3. High	2. Fair	1. Low
Private school				
Public school				
Educational and training centre				
Chamber of commerce training centre				
ICT product and services				
Other				

Employees

Rate the availability of specific training courses for placing females in the ICT area in your company

	4. A lot	3. Some	2. Few	1. None
At national level				
At regional level				

IT business unit

	(% or no)
Male	
Female	

Turnover

	Total
	(no or no)
Company	
IT business unit	

Rate training course necessity for new employees in banks and financial institutions in the ICT area

	4. A lot	3. Some	2. Few	1. None
Level 3				
Level 2				

European Standard Qualification

Rate the necessity of having a unique European standard for the job profiles

	Necessary and urgent	Necessary but non urgent	Not necessary
Job profile with reference to the ICT			

Job placement and suggestions

Which of the following job profiles (non-university level) related to ICT are covered by your company?

	YES*	NO	Planned**
Level 3 (vocational education training and continuous vocational learning)			
Network administrator			
Multimedia designer			
Local network administrator			
Telecommunications technician			
Electrotechnical technician			
Electronic technician			
Local network technician			
Web master			
Level 2 (Vocational educational training)			
Electromechanical assistant			
Telecommunications installer/assistant			
Network installer/assistant			

* If YES, please specify number of employees

** Planned by 2005

Rate the opportunity for job placement (non-university level) for professional level and job profile in banking and financial services

	4. A lot	3. Some	2. Few	1. None
Level 3 (vocational education training and continuous vocational learning)				
Network Administrator				
Multimedia Designer				
Local Network administrator				
Telecommunications Technician				
Electrotechnical Technician				
Electronic Technician				
Local Network Technician				
Web Master				
Level 2 (Vocational Educational Training)				
Electromechanical Assistant				
Telecommunications Installer/Assistant				
Network Installer/Assistant				

With reference to the educational level mentioned above related to the ICT, could you tell me further needs of professionals in the banking and financial services?

	4. Very high	3. High	2. Fair	1. Low
Level 3				
Level 2				

Rate the opportunity for job placement for people (professional level 3 and 2) in the following business areas in banking and financial services

	4. A lot		3. Some		2. Few		1. None	
	Level 2	Level 3	Level 2	Level 3	Level 2	Level 3	Level 2	Level 3
E-business								
• Online banking and trading online								
• E-commerce								
• Supply chain management								
• E-procurement								
• Credit card								
CRM								
Call centre								
IT support services								

Guidelines

What competences do non-university professionals need in the banking and financial industry?

Could you identify what knowledge is required to achieve the desired competences?

What knowledge should be taught? What are the main sustainable training goal and study objectives with particular reference to the ICT in the banking and financial industry?

Attachment-3

IT practitioner skills and training solutions in the financing and banking - Italian questionnaire – training institutions

General information

Information on the training institution

Complete firm name		Founded in
Web site		

Kind of institution

Private school	□
Public school	□
Educational and training centre	□
Chamber of commerce training centre	□
Other	□

Teaching staff

	Male	Female	Total
	(n.)	(n.)	(n.)
Internal			
Temporary			

Please, specify the ways in which training courses are provided

	Yes	No	Planned*
Traditional face-to-face courses			
Tutorship/mentorship			
E-learning			
CBT (CD-ROM, etc.)			

* by 2005

Structure and organisation of the training course

	Yes		No		If yes, n. of hours
Training courses are supplied inside the institution		□		□	
Training courses are supplied inside the institution with the 'on the job' experience		□		□	
Training courses are supplied inside the institution and in the company		□		□	
Training courses are supplied inside the institution with e-learning method		□		□	
Training courses supplied inside the company		□		□	

Objectives and contents

Which of the following areas are the most difficult when you have to define and update the contents of the training courses (for professional group linked a sub-degree level) in banking and financial services?

	4. Very difficult	3. Difficult	2. Slightly difficult	1. Not difficult
Sales				
Software				
Hardware				
Multimedia				
Management				
Behavioural skills*				

* such as analytical, attention to detail, commercial awareness, communications, problem solving, etc.

How often does your training institution update its knowledge of ICT?

	4. Very frequently	3. Frequently	2. Sometime	1. Infrequently
Link with companies				
Link with other training institutions				
Link with R&D Centre and Universities				
Seminars, conferences and workshops				
Reference literature (books, reviews, internet)				
Interview participants at the training courses				
Survey on the qualification needs (case studies, interview with expert, etc.)				
Other				

How do your trainers update their knowledge of ICT?

	4. Very Frequently	3. Frequently	2. Sometime	1. Infrequently
Participation in specific training courses				
Training education at university, research group				
Training education in other ICT institution				
Participation in ICT development product				
Working in ICT company				
E-learning				

Special target groups

What is the percentage of participants to ICT training courses belonging to the following target groups?

	%
Foreign workers	
Ethnic minorities	
Handicapped	

Rate the problems faced by the following groups in the ICT with particular reference to the banking and financial services

	4. A lot	3. Some	2. Few	1. None
Foreign workers				
Ethnic minorities				
Handicapped				

European Standard Qualification

Rate the necessity of having a unique European standard for the job profiles with reference to the ICT area

	Necessary and urgent	Necessary but non urgent	Not necessary
Level 3 (Vocational education training and continuous vocational training)			
Level 2 (Vocational educational training)			

Information about VET (Vocational educational training) in the ICT sector

Which of the following job profiles related to ICT are covered by your institution with specific training courses?

	YES*	NO	Planned**
Level 3 (vocational education training and continuous Vocational learning)			
Project software applicator			
Network technician			
System specialist in intranet			
IT business consultant			
Project software architecture			
Network manager			
Web system specialist			
Web master			
Expert in IT language and multimedia technology			
ERP Expert			
System specialist in telecommunications			
Marketing manager and e-business salesman			
Programmer analyst object oriented			
Level 2 (Vocational educational training)			
Electronic assistant			
Network assistant			
Informatics assistant			

* If YES, please specify number of employees
** Planned by 2005

Rate the difficulty of updating the courses and their contents of the following jobs profile:

	4. Very high	3. High	2. Fair	1. Easily
Level 3 (vocational education training and continuous vocational learning)				
Project software applicator				
Network technician				
System specialist in intranet				
IT business consultant				
Project software architecture				
Network manager				
Web system specialist				
Web master				
Expert in IT language and multimedia technology				
ERP expert				
System specialist in telecommunications				
Marketing manager and e-business salesman				
Programmer analyst object oriented				
Level 2 (Vocational educational training)				
Electronic assistant				
Network assistant				
Informatics assistant				

Job placement

What is the percentage of females in your institution as participants?

	%
Training courses	
Training courses with particular reference to ICT	

Rate the availability of specific training courses for placing females in the ICT area

	4. A lot	3. Some	2. Few	1. None
At national level				
At regional level				
Inside your organisation				

Job placement of the participants at your training courses in ICT

	%
Employees (full, part-time or temporary) after 1 year of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	
Employees (full, part-time or temporary) after 6 months of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	
Employees in banking and financial services after 6 months of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	

Rate the opportunity for job placement over the next 3 years for people without a university degree in banking and financial services

	4. A lot	3. Some	2. Few	1. None
Level 3 (VET/CVT)				
Level 2 (VET)				

Rate the opportunity for job placement (for professional level and job profile) in banking and financial services after the diploma/qualification

	4. A lot	3. Some	2. Few	1. None
Level 3 (vocational education training and continuous vocational learning)				
Project software applicator				
Network technician				
System specialist in intranet				
IT business consultant				
Project software architecture				
Network manager				
Web system specialist				
Web master				
Expert in IT language and multimedia technology				
ERP Expert				
System specialist in telecommunications				
Marketing manager and e-business salesman				
Programmer analyst object oriented				
Level 2 (Vocational educational training)				
Electronic assistant				
Network assistant				
Informatics assistant				

Rate the opportunity for job placement for people (professional level 3 and 2) in the following business area in banking and financial services

	4. A lot	3. Some	2. Few	1. None
E-business				
• Online banking and trading online				
• E-commerce				
• Supply chain management				
• E-procurement				
• Credit card				
IT support services				
Sales				
• Branch employees				
• Financial advisor				
• E-marketing/Direct manager				
Post sales				
• Call centre				
• CRM manager				
• Customer care assistant				

Guidelines

Could you anticipate certain occupational/professional profiles and skill levels in comparison and complementary to diploma level profiles?

What competences do non-university professionals need in the banking and financial industry?

What knowledge should be taught? What are the main sustainable training goal and study objectives with particular reference to the ICT in the banking and financial industry?

Could you identify what knowledge is required to achieve the desired competences?

Attachment-4

IT practitioner skills and training solutions in the financing and banking - French questionnaire – training institutions

General Information

Information on the training institution

Complete firm name		Founded in
Web site		

Kind of institution

Private school	□
Public school	□
Educational and training centre	□
Chamber of commerce Training Centre	□
Other	□

Teaching staff

	Male	Female	Total
	(no)	(no)	(no)
Internal			
Temporary			

Please, specify the ways in which training courses are provided

	Yes	No	Planned*
Traditional face-to-face courses			
Tutorship/Mentorship			
E-learning			
CBT (CD-ROM etc.)			

* by 2005

Structure and organisation of the training course

	Yes		No		If yes, no of hours
Training courses are supplied inside the institution					
Training courses are supplied inside the institution with the 'on the job' experience					
Training courses are supplied inside the institution and in the company					
Training courses are supplied inside the institution with e-learning method					
Training courses supplied inside the company					

Objectives and contents

Which of the following areas are the most difficult when you have to define and update the contents of the training courses (for professions group linked a sub-degree level) in banking and financial services?

	4. Very difficult	3. Difficult	2. Slightly difficult	1. Not difficult
Sales				
Software				
Hardware				
Multimedia				
Management				
Behavioural skills*				

* such as analytical, attention to detail, commercial awareness, communications, problem solving, etc.

How often does your training institution update its knowledge of ICT?

	4. Very frequently	3. Frequently	2. Sometimes	1. Infrequently
Link with companies				
Link with other training institutions				
Link with R&D centre and universities				
Seminars, conferences and workshop				
Reference literature (books, reviews, internet)				
Interview to participants at the training courses				
Survey on the qualification needs (case studies, interview with expert, etc.)				
Other				

How often do your trainers update their knowledge of ICT?

	4. Very frequently	3. Frequently	2. Sometimes	1. Infrequently
Participation in specific training courses				
Training education at university, research group				
Training education in other ICT institution				
Participation in ICT development product				
Working in ICT company				
E-learning				

Special target groups

What percentage of participants in your ICT training courses are belonging to the following target groups?

	%
Foreign workers	
Ethnic minorities	
Handicapped	

Rate the problems faced by the following groups in the ICT with particular reference to the banking and financial services

	4. A lot	3. Some	2. Few	1. None
Foreign workers				
Ethnic minorities				
Handicapped				

European Standard Qualification

Rate the necessity of having a unique European standard for the job profiles with reference to the ICT area

	Necessary and urgent	Necessary but non urgent	Not necessary
Level 3 (Vocational education training and Continuous vocational training)			
Level 2 (Vocational educational training)			

Information about VET (Vocational educational training) in the ICT

Which of the following job profiles related to ICT are covered by your institution with specific training courses?

	YES*	NO	Planned**
Level 3 (vocational education training and continuous vocational learning)			
Network administrator			
Multimedia designer			
Local network administrator			
Telecommunications technician			
Electrotechnical technician			
Electronic technician			
Local network technician			
Web master			
Level 2 (Vocational educational training)			
Electromechanical assistant			
Telecommunications installer/assistant			
Network installer/assistant			

* If YES, please specify number of employees
** Planned by 2005

Rate the difficulty of updating the courses and their contents of the following jobs profile:

	4. A lot	3. Some	2. Few	1. None
Level 3 (vocational education training and continuous vocational learning)				
Network administrator				
Multimedia designer				
Local network administrator				
Telecommunications technician				
Electrotechnical technician				
Electronic technician				
Local network technician				
Web master				
Level 2 (Vocational educational training)				
Electromechanical assistant				
Telecommunications installer/assistant				
Network installer/assistant				

Job placement

What is the percentage of females in your institution as participants?

	%
Training courses	
Training courses with particular reference to the ICT	

Rate the availability of specific training courses for placing females in the ICT area

	4. A lot	3. Some	2. Few	1. None
At national level				
At regional level				
Inside your organisation				

Job placement of the participants at your training courses in ICT

	%
Employees (full, part-time or temporary) after 1 year of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	
Employees (full, part-time or temporary) after 6 months of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	
Employees in banking and financial services after 6 months of the end of the training course	
• Level 3 (VET/CVT)	
• Level 2 (VET)	

Rate the opportunity for job placement over the next 3 years for people without a university degree in banking and financial services

	4. A lot	3. Some	2. Few	1. None
Level 3 (VET/CVT)				
Level 2 (VET)				

Rate the opportunity for job placement (for professional level and job profile) in banking and financial services after the diploma/qualification

	4. A lot	3. Some	2. Few	1. None
Level 3 (vocational education training and continuous vocational learning)				
Network administrator				
Multimedia designer				
Local network administrator				
Telecommunications technician				
Electrotechnical technician				
Electronic technician				
Local network technician				
Web master				
Level 2 (Vocational educational training)				
Electromechanical assistant				
Telecommunications installer/assistant				
Network installer/assistant				

Rate the opportunity for job placement for people (professional level 3 and 2) in the following business areas in banking and financial services

	4. A lot	3. Some	2. Few	1. None
E-business				
• Online banking and trading online				
• E-commerce				
• Supply chain management				
• E-procurement				
• Credit card				
IT support services				
Sales				
• Branch employees				
• Financial advisor				
• E-marketing/direct manager				
Post sales				
• Call centre				
• CRM manager				
• Customer care assistant				

Guidelines

Could you anticipate certain occupational/professional profiles and skill levels in comparison and complementary to diploma level profiles?

What competences do non-university professionals need in the banking and financial industry?

What knowledge should be taught? What are the main sustainable training goals and study objectives with particular reference to the ICT in the banking and financial industry?

Could you identify what knowledge is required to achieve the desired competences?

Cedefop (European Centre for the Development of Vocational Training)

ICT practitioner skills and training: banking and financial services

Alessandro Castelli

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In recent years the spread and dynamic of information and communications technologies (ICT) across Europe have been steadily increasing. Today the high importance of ICT for the EU economy and business, services, domestic and leisure activities is obvious. ICT developments have created an 'information society' with consequential new possibilities and challenges in all areas of work and life. This is especially true of ICT work itself.

ICT practitioners - skilled and highly skilled ICT staff - are needed to manage business and work processes in both the core ICT sector and in ICT user industries. To understand, produce and use the new information and communications technology (computers, networks, the Internet, new hard- and software applications, e-commerce, fixed and mobile telecommunications, consumer electronic devices, digital cameras and television, etc.) increasingly demands a wide range of ICT competences and skills. This is one of four studies which Cedefop launched in support of the e-Europe programme and e-skills forum set up by the European Commission in 2003, covering three user industries (automotive, banking and financing, media and graphic arts) and the ICT manufacturing industry. The focus of the last of these is on subdegree level skills and training issues.

PANORAMA

ICT practitioner skills and training:

banking and financial services

CEDEFOP
European Centre for the
Development of Vocational Training

Europe 123, GR-570 01 Thessaloniki (Pylea)
Postal address: PO Box 22427, GR-551 02 Thessaloniki
Tel. (30) 23 10 49 01 11, Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

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