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# The adoption process of corporate e-learning in Italy

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## Keywords

Computer based learning, National cultures

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## Abstract

The diffusion process of e-learning has been, in recent years, at the centre of several studies. These researches focused mainly on the USA case, where there has been an exponential adoption both in the public and private sectors. From this perspective the paper would give a contribution to understand the diffusion process of e-learning in a specific country and it deals with the following questions: are there relevant consistencies in the rate and the model of adoption of e-learning solutions in Italian companies? What are the causes of this process? Building on bandwagon theories and institutional literature, the paper analyses the antecedents of the adoption process in Italy, asking whether it is determined by the rational search for economic benefits, or is it driven by the fear of lost legitimacy or strategic advantage under institutional or competitive bandwagon pressures. The paper also looks into the solutions adopted by the Italian firms, studying their e-learning strategies. To answer the research questions and to test the related propositions, an empirical study has been developed based on a survey, on interviews and document analysis. Since the e-learning diffusion process in Italy is at an early stage, the research has been undertaken in two sectors, pharmaceutical and banking, where e-learning has been adopted to a greater extent than in other sectors.

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## Introduction

The diffusion of information and communication technologies (Meyers and Davis, 1998) has created new opportunities for managing economic activities, helping both the co-ordination processes among organizational units and the co-operative relations among different companies. Most recently, new browser-based HR portal technology is changing the way organisations relate with their employees (Walker, 2001). Among these technological innovations there are corporate e-learning strategies, which are training and competence development activities based on computers and the Internet.

E-learning is spreading not only in the USA but also in Europe and Italy (Anee, 2002; Nacamulli, 2003; Venier, 2002). Part of managerial literature, by analysing the causes and the forms of this diffusion process at a sector and a company level, tends to maintain that the main factors leading a firm to adopt an e-learning solution are the economic benefits it may gain from it (Horton, 2000; Rosenberg, 2001). The corporate added value obtained by reduction of costs, improvements of training quality, by time savings or increased flexibility in delivering courses seem to be considered as the determinant of e-learning adoption.

However, this economic-rational perspective on the adoption process of e-learning does not take into account that there are other significant aspects that could impact on the decision to introduce e-learning, as highlighted by recent researches (Martin *et al.*, 2002).

## Ambiguity of adopting a corporate e-learning innovation

A different model of the diffusion process suggests that organisations adopt an innovation because of bandwagon pressures “rather than their updated assessment of the innovation efficiency or returns” (Abrahamson and Rosenkopf, 1993, p. 491). Organisational theorists (Abrahamson 1991, Granovetter, 1985) argue that adoption decisions increase according to the number of adopters, the greater are such numbers the greater will be the pressure to be innovative. Bandwagon behaviours have been described as “ranging from highly rational behaviours based on positive externalities to conformist behaviours driven by

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social pressures towards isomorphism” (Fiol and O’Connor, 2003, p. 54)

What rational efficiency theories do not take into account is the ambiguity of the decision process, defined as “opaqueness or lack of clarity surrounding an organisational assessment of an innovation” (Abrahamson and Rosenkopf, 1993, p. 494). As a company cannot evaluate the technical efficiency or the returns of an innovation, because of ambiguity of goals, of means–ends relations, and of environment (March and Olsen, 1976) it will rely more on social as opposed to economic factors, in order to decide to adopt an innovation.

Considering the innovation of e-learning we may find that ambiguity matters. Doubtless there is a codification process of best practices going on within the international e-learning market place. It is driven by academic studies, research centres (Astd, Idc, Masie, etc.) and providers, and it is also facilitated by the action of standardising groups (AICC, IEEE Ltsc, EU Ariadne project, ADL) (Rosenberg, 2001) and by the emerging of shareable courseware object reference models (reusable learning objects). This codification process of e-learning best practices seems to make it easier to measure both e-learning technical efficiency and its return. Considering this process, managerial literature and research centres (Astd, Masie; IDC), maintain that a company can rationally identify the best e-learning model and decide which to adopt after evaluating the ROI of this type of investment. But even though the standardisation process seems to help companies to identify some main features of an e-learning solution, it is still rather difficult to relate them with an economic performance.

First of all, it seems that firms are suffering from ambiguity of goals, especially in the early stage adoption. Considering the Italian context as an example of early stage adoptions, a recent research by on e-learning in Italy has highlighted that, while firms seem to be mainly efficiency driven, when they choose an e-learning solution, their decision process is far from being rational. Firms do not plan the adoption of e-learning considering each phase of the introduction process and do not specify the related objectives and measurements of performance. Second, considering the type of innovation e-learning triggers, ambiguity of means–ends relations has an effect. E-HRM policies like e-learning should be considered to be more than a simple technological change of people management tools and more than online delivery of HR services. They can be defined as a business to employee strategy (B2E), which “lets companies satisfy employees’ needs while streamlining formerly time and labour intensive processes”

(Hansen and Deimler, 2001, p. 96). From this point of view e-learning adoption implies not only technological but also organizational changes and, for this reason, their impact on efficiency could be more unclear. Moreover, even though some indicators of efficiency and also of effectiveness of training are widely adopted (Kirkpatrick, 1998), individual learning processes are “soft” issues. Their results have mainly an intangible nature and although a skill or competency development can be achieved and measured, it is rather difficult to isolate its impact on job performance from several other causes. For this reason measurements are not univocally quantifiable, related indicators have an ambiguous meaning and the evaluation process is still time consuming and costly. Thus, the outcomes of e-learning could be difficult to evaluate on a traditional basis (Schank, 2002).

### **Institutional pressures on adopting e-learning**

Under these conditions, companies rely more on information about who has adopted innovation (Abrahamson and Rosenkopf, 1997); moreover, adopters imitate others because of threat of lost legitimacy under institutional bandwagon pressure. Recent studies on the implementation process of managerial best practices (e.g. quality management or team work) (Staw and Epstein, 2000) have demonstrated that what forces the adoption of a new organizational solution is the pursuit of reputation within a social and cultural environment (Granovetter, 1985). According to the neo-institutional approach, the choice of organizational and managerial best-practices is affected by isomorphism (Di Maggio and Powell, 1983). That is a source of political power and legitimacy (Di Maggio and Powell, 1983) and it permits a higher survival capability (Meyer and Rowan, 1977).

E-learning is a particularly relevant innovation from the institutional point of view. For example, it impacts on the issue of life long learning, that is one of the priorities of the EU (European commission, 2003a, b), of national governments, trade unions and training institutions. Furthermore, the flexibility and the connectivity of such solutions facilitate remote learning from home, and this is an important issue for workforce retraining from a trade union point of view.

From this perspective, as e-learning impacts on the investment on human capital and life long learning, it may attract the attention of institutions operating in the labour market like unions, training associations and public institutions. These organisations may support and fund online

training programmes. In this sense they exert coercive isomorphic pressures towards the adoption of e-learning, derived from their political or financial influence (Powell and Di Maggio, 1991). Second, companies might be forced to adopt e-learning by mimetic isomorphic pressures. This means that companies seek standardised responses to cope with uncertainty related to innovation. They do this by imitating those organisations that, thanks to their competitive capabilities or their technological leadership, are considered a reference model (for example, Cisco is often referred to as a benchmark in E-HRM and e-learning in many conferences, studies and consultants' reports) (Haberberg and Binsardi, 2002). Finally, a normative isomorphism is associated to professionalisation of specialised staff that is in charge of the decisions on e-learning. The managers' choice of e-learning is influenced by the professional community with which they share common learning paths and the same social networks (Haberberg and Binsardi, 2002).

These different types of isomorphism, not always distinguishable from one another (Di Maggio and Powell, 1983), determine the co-presence of both formal (control of business processes, control of professions, collective contracts) and informal (conferences and consultants diffusing best practices; networks of professionals) institutional pressures on the adoption of e-learning within a sector[1]. From these considerations it stems that:

*P1.* E-learning solutions in contexts where there are formal and informal institutional pressures towards their adoption will be more diffused than in the contexts where such pressures are less present or do not exist.

A research hypothesis of the institutional model is that organisations, by adopting managerial best practices such as e-learning, do not consider economic factors in their decisional processes, because they "may be able to improve their corporate reputation directly, regardless of economic performance" (Staw and Epstein, 2000, p. 527), thus:

*P2.* In contexts where formal and informal institutional pressures towards e-learning are present, the adoption will be undertaken regardless of whether there is an improvement in training performance.

### Competitive pressures on adoption of e-learning

When the adoption process is uncertain and results are ambiguous, there might also be bandwagon

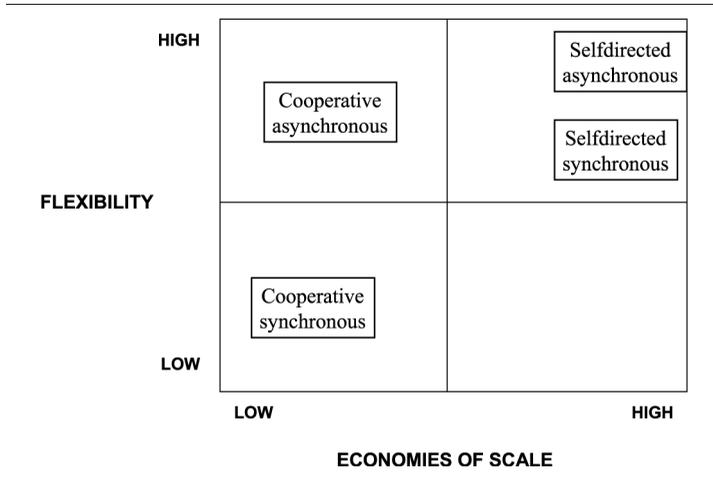
competitive pressures towards the introduction of an e-learning strategy by firms. This theory advanced by Abrahamson and Rosenkopf (1993; 1997) suggests that companies will adopt innovations because of the threat of lost competitive advantage. Bandwagons occur if potential adopters perceive the risk that innovation is a success and that, if they do not adopt it, their performance will fall below the average performance of adopters.

Articles and consultants' reports on e-learning boast two main competitive advantages of an e-learning solution: the gain of flexibility and economies of scale resulting from the repeatability of courses or modules of them. These advantages are gained mainly by training courses focused on job-specific skills rather than programmes of managerial competencies development.

Flexibility (courses provided anytime and anywhere) is gained mainly by asynchronous delivery models by which, regardless of time and place, participants take training courses on their own, using programmed instructions (tutorials are an example) held on company Intranet, CD-ROM or other media. (Greenagel, 2002). They are often built on learning modules (reusable learning objects), which include auto-evaluation questions and tests. Considering economies of scales, e-learning requires high development investments, thus economic advantages are exploitable mainly in the delivery phase and are obtained with those solutions that increase the number of participants (Prandstraller, 2002). Economies of scale are best exploited through modular courses (learning objects) that are reusable in other programmes.

A recent research on e-learning in Italy (Anee, 2002) seems to confirm this focus of e-learning strategies on training of basic and job specific skills, rather than on developing organisational and managerial competencies. The majority of e-learners (53.2 percent out of the total targets of e-learning strategies) are in technical roles like call center operators, sales people in pharmaceutical firms or in the banking sector, and it is trained by standardised and job specific e-learning courses.

From a bandwagon perspective, these arguments about cost cutting and easy of delivery of an increasing number of skill training courses can readily be communicated and they are perceived as a threat of a competitive disadvantage (Figure 1). If this threat, in the utility schema of companies, outweighs the perceived value of an equally large competitive advantage (Abrahamson and Rosenkopf, 1993), bandwagon pressures exceed the firm's adoption threshold, that is, a firm's predisposition against innovations and changes).

**Figure 1** E-learning strategies and economic drivers

Thus:

- P3. Under competitive bandwagon pressures and in the early stage companies tend to adopt e-learning and to choose solutions focused on job specific skill training programmes.

### The empirical research: methodology and sample

The research presented in this paragraph focuses on two specific sectors: pharmaceutical and banking. The choice of these two sectors depends on the following reasons.

First of all, literature on the impact of the institutional factors on human resource management (HRM) strategies has mainly adopted the national level of analysis (Brewster and Hegewish, 1994; Gooderham *et al.*, 1999). Less attention has been devoted to institutional factors relating to a specific sector, even though, from the HRM point of view, at this level there are specific pressures on the adoption of e-learning. This is particularly true in the Italian context, where company associations and trade unions are mainly organised on an industry basis and where the main collective bargaining is held at a sector level.

Second, these two sectors, which were highly protected until a few years back, have both been affected by changes in their competitive environment, by technological innovations and by institutional modifications. These have forced the companies to change their strategies and organisations and this account for the growing attention, paid by them, to the skills of their employees and the consequent decision to invest in training.

Third, the two sectors are characterised by significant institutional contexts and have also

been distinctly classified by Scott and Meyer (1983). The banking one has been defined as a strong institutional sector, whereas the pharmaceutical industry is said to be an intermediate institutional sector. This difference allows a comparison of the effects of such environments on the decision to adopt e-learning.

Finally recent researches on e-learning in Italy are based on case studies and on inter-industry surveys (Nacamulli, 2003; Venier, 2002), while there are no in-depth studies at industry level.

The empirical study has been developed based on a survey, on interviews and document analysis. The survey has been conducted by a structured questionnaire delivered via e-mail to the main companies of both sectors between September and December 2002[2]. Some interviews with HRM managers of leading companies of the two sectors were conducted before and after the survey to prepare the cross-sectional analysis and to assess triangulate sources of data. Finally document analysis has been carried out through collective agreements and on a secondary source of data provided by ABI (Banks association).

The pharmaceutical sample includes 20 organisations[3], both multinational and Italian, and represents both large and medium firms. The average number of employees of the interviewed firms is 886. There are 500 employees in 50 percent of the firms. In 56.3 percent of the Italian companies the turnover exceeds 250 million Euros. Five of the firms interviewed (25 percent) belong to the top ten pharmaceutical companies in Italy.

The banks[4] surveyed include 22 companies both large banking groups and very small banks like co-operative credit institutions. Considering the number of employees as a dimensional parameter we notice that, after leaving out the two banks with the smallest number of employees (85) and the one with the largest number of workers (37,500), the average number in 2001 was 6,515, with a minimum figure of 861 and a maximum figure of 20,300. Six of the firms interviewed (27 percent) belong to the top ten banks in Italy.

The data of the ABI survey on e-learning have been gathered through a questionnaire filled in by 86 banks (9 percent large, 12 percent medium, 77 percent small).

### Data discussion and main results

#### The adoption process and institutional pressures

First of all, the presence of adoption ambiguity has been detected by asking companies about processes and tools they use to assess e-learning investment and performance.

As regards the control systems used in order to assess the results of courses and learning processes, pharmaceutical companies interviewed said that they use more than one indicator. On average they use three different ones. Feedback information of e-learning performance is mainly achieved testing the employees' level of learning and the level of satisfaction with the courses. Other criteria adopted in 15 percent of the cases are the assessments of the satisfaction level of the whole organisation and the level of application in one's job of knowledge acquired through training. Evaluation criteria such as ROI or the improvement of performance are not used.

In the banking sector, in order to measure the effectiveness of an e-learning program, the majority of companies that adopt e-learning assess the level of learning attained; moreover, they compare the aimed targets with the effective level of usage of the training programs and measure the satisfaction level of users. Only a few banks (15 percent) also measure the satisfaction level of the whole organisation. Both the application of knowledge and skills learned on the job and the improvement of performance are measured only in two cases. ROI is definitely not contemplated. It should be noted that banks use more than one indicator. In fact, 75 percent of the banks use at least two measures, 45 percent three, and in two cases five indicators are used.

On summary, on average more than one indicator is used in both sectors, but main adopted are traditional (trainee satisfaction and test of learning level). Less used are monitoring systems that focus on means-ends relations (like improvement of trainees performance) or on returns of this innovation (such as ROI) used. These results seem to suggest that the assessment of e-learning returns is still difficult and ambiguous (Table I).

Ambiguity of adoption seems also demonstrated by the fact that companies of both sectors have indicated among main difficulties of e-learning the problem of measuring its effectiveness and that of proving the benefits of e-learning to management and trainees.

Given ambiguity, the hypothesis of importance of bandwagon institutional pressures towards the adoption of e-learning has been tested, analysing first both policies of trade unions and employers' associations.

In the pharmaceutical sector the latest national collective bargain (CCNL) declared that, by the end of 2002, the bilateral (run by both unions and enterprise association) national organisation for training is to be created in order to invest on life-long training of employees. A section of the collective bargain, even if it does not explicitly take into account e-learning, mentions "the arrangement of remote training modules on subjects dedicated to workers of the pharmaceutical sector". However, considering that the CCNL has only recently been signed by companies and trade unions, it is not yet possible to analyse any effect on e-learning. As regards the activities of the employers' association (Federchimica), which may be considered as informal pressures on associated companies, there are no policies aiming specifically at promoting or studying e-learning. This leads to the consideration that regulatory institutional pressures are rather low in the pharmaceutical industry.

In the banking sector, by contrast, the use of e-learning for continuous training is recognised by the CCNL. The July 1999 collective banks bargain said that continuous training of personnel is an essential tool for developing human capital and it has a strategic role in the transformations of the banking system. For this reason the CCNL conferred on the bilateral national organisation the

Table I Main problems of e-learning strategies<sup>a</sup>

	Pharma experienced (w.a.) <sup>b</sup>	Pharma future (w.a.) <sup>b</sup>	Banking experienced (w.a.) <sup>b</sup>	Banking future (w.a.) <sup>b</sup>
Change the training processes and structure	3.0	3.2	3.3	3.5
Blended learning	4.0	2.8	3.4	3.5
Basic IT knowledge of learners	4.0	2.6	2.3	1.5
Limited co-operation between HR and IT	4.0	2.5	2.2	1.5
Show to the management the benefits of e-learning	3.7	3.3	3.1	2.0
Increasing bandwidth	3.7	2.6	3.2	1.0
e-learning culture	3.6	3.3	3.5	4.0
Show to the trainees the benefits of e-learning	3.4	2.9	3.1	3.5
Measure effectiveness	3.0	2.6	2.9	4.0
RU knowledge	3.0	2.3	2.9	3.5
Platform Choice	2.7	2.8	3.1	2.5
Infrastructure	2.5	2.9	2.8	3.0

Notes: <sup>a</sup> multiple choices; <sup>b</sup> weighted average on a scale 1-4: 4 = very important, 3 = important, 2 = less important, 1 = not important

assignment of promoting training by applying for European, national and regional funds. It also stated that, by 2000, banks should have supplied all employees with not only a fixed amount of training hours during work time but also 26 hours per year in spare time “through self-training using appropriate computing tools”.

Furthermore, the employers' association (ABI) is promoting e-learning adoption through its training company (ABIFormazione), which is also one of the main e-learning providers in the banking sector. ABIFormazione also promotes e-learning awareness in the sector by events like conferences and by researches. For example, during 2002, ABIFormazione carried out two surveys on the state of the art of e-learning in the banking sector.

Finally, Bank of Italy also did a survey, contributing to develop awareness about e-learning in the sector. Moreover, among normative isomorphic pressures in banking sectors several conferences on e-learning can be included. These are opportunities for HR managers to build networks to exchange information and knowledge about this innovation.

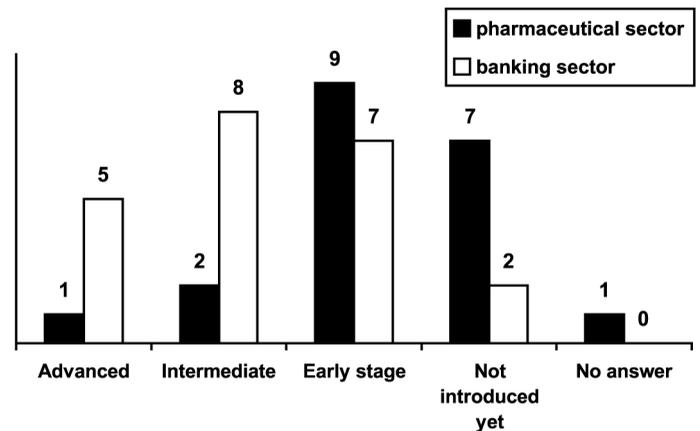
In short, coming back to the institutional pressures and the classification of three types of isomorphism (coercive, mimetic and regulatory), it appears that in the banking sector, where the institutional context is stronger than in the pharmaceutical one, there are both formal and informal pressures towards the adoption of e-learning.

After considering the two different institutional pressures, we analyse the rate of adoption in the two sectors. It has been measured by three indicators: number of companies that have adopted e-learning, length of their experience (number of years) and type of experience (number and kind of courses delivered and employees involved).

The survey results from pharmaceutical sector show that only a few companies have adopted e-learning, and they are still at an initial phase. Figures show that 35 percent of companies have not yet implemented e-learning solutions, while 45 percent of the sample have only recently introduced them (Figure 2). The majority of companies that adopted e-learning have no more than two years experience and the solutions are still at an initial stage. Only one company has a well-established experience of e-learning and two organisations are at an intermediate stage.

In the banking sector, 40 percent of the banks that adopt e-learning have already experienced e-learning solutions for about 1–2 years, 20 percent for about one year; in the remaining 33 percent this training experience started more than three years ago. In 65 percent of the banks that adopted e-learning the application rate is

Figure 2 Level of e-learning adoption



intermediate/high, while 35 percent of companies are still at an initial stage. The ABI sample shows that only 33 percent of banks have not yet started distance training. They are mostly small banks, 50 percent of which have not yet experienced distance learning. In short, the majority of the banks interviewed and analysed by ABI, mostly the larger ones, have experienced distance training which prove to be consolidated due to the high number of courses already supplied and the technologies used, may suggest the presence of bandwagon pressures in this sector.

Data from the survey also allow us to detect the presence of normative isomorphism. The condition for a normative isomorphism is that professionals, like the personnel staff, are in charge of taking the decision to adopt e-learning. In half of the pharmaceutical companies interviewed the adoption of e-learning solutions is decided by a single person who in 70 percent of cases is an HR professional (HR director or training managers). In another 9 companies the responsibility is shared among the personnel management staff or the IT manager. In the banks this decision is mainly made by the training director (18 banks), only in 30 percent of the total sample it is made by both the training director and HR manager.

To summarize, results from both sectors indicate that personnel staff (HR director or training director) manage the budget for e-learning (on average less than 25 percent of the total investment in training) and decide on the adoption of e-learning solutions. There are a few differences between the two sectors. In some pharmaceutical companies top management is responsible and decides on his/her own or together with the personnel manager. Normative isomorphism, operating in professional communities, influences those companies where the decision is mainly taken by human resources professionals and this is more evident in the banking sector.

In order to test the hypothesis of normative pressures, we have also investigated which is the information sources used in order to decide on e-learning adoption and to select the provider, which has a crucial role in helping companies to implement and develop their e-learning platform.

In the pharmaceutical sector companies reply that consultants and the advice of other users are the main information sources. In 45 percent of the cases these two sources are used together. In half the cases companies indicate that conferences are important sources to gather information, together with the advice of other users. This result seems to indicate that on these occasions a social network is activated, helping the exchange and gathering of information necessary for the choice. This evidence of the importance of personal networks confirms how choices or advice from colleagues influence not only the selection of a provider, but also the adoption of an e-learning system.

These outcomes are confirmed in the banking sector. The interviewed HR managers state that the advice given by colleagues in the human resources area is crucial for the adoption of e-learning. Secondly, interviewed state that advices given by ABI or other training or public institutions, have a significant influence on their adoption of e-learning. Another notable influence comes from the pressure exercised by the collective bargain (CCNL) on training. It is interesting to note that ICT providers are the least used source of information from the companies' point of view.

These results appear to confirm the hypothesis of normative isomorphism: in deciding on the adoption of e-learning people rely on the social networks in their own professional community.

The different adoption rates can thus be explained by the different institutional pressures towards the adoption of e-learning found in the two sectors. According to our analysis, the factors enabling processes of coercive and imitative isomorphism are present in different degrees in the two sectors, and so confirming our first proposition.

From the institutional point of view, in order to verify the second proposition, we analysed the level of effectiveness of the experiences already implemented by companies.

In the pharmaceutical sector, 3 companies out of the 9 experimenting with e-learning find this experience non-effective (two of them have a well-established experience of over two years). Furthermore, it has to be underlined that in an evaluation scale from 1 (not effective) to 4 (very effective), none of the companies attributes the maximum score to e-learning.

In the banking sector, only one organisation states that e-learning is a highly effective training tool and other eight (5 percent of the banks that

use e-learning) say it is effective, while six (30 percent of the banks that use e-learning) admit that its effectiveness is limited. Among these last six, one bank is at an initial stage in the application of e-learning, while the other five have a longer established experience (one with an experience of more than three years).

The ABI data also confirm that a portion of the companies do not consider e-learning a positive experience in spite of adopting it. Experiences already activated (well-established in 14 percent of cases and experimental in 39 percent) are considered ineffective by 17 percent of the banks but in the majority of cases it is efficient (56 percent).

It seems that, despite its diffusion, e-learning is not perceived to be very effective. Although these companies keep investing in this innovation. This choice can be considered a partial confirmation of the weight of institutional factors on the decision to adopt e-learning despite its performance.

### **Competitive bandwagon pressures on adoption of e-learning**

During the last few years the competitive environment has changed in both the sectors analysed. Technological changes have influenced the ways key processes are organised within the companies (R&D in the pharmaceutical companies, delivery of services in banking). Boundaries between sectors are now weaker and products are more differentiated (bio-technologies and generic medicines in the pharmaceutical industry, insurance and other financial products in the banking sector). Both types of firms have been forced to manage more efficiently their supply chain processes as well as staff services like human resources policies. These strategic changes induced a modification of organisational solutions and of employees' skills (mostly for those who deal with the final customers), influencing training programmes and tools.

Within these environments economies of scales and flexibility seem to be the most declared competitive gain associated with e-learning.

Data from the survey show that the main benefit expected from e-learning is flexibility of designing and delivering courses (anywhere and anytime) (Table II). A second advantage is connectivity that fosters communication and diffusion of knowledge in the company. In addition to these factors there is cost reduction.

These factors, common to the pharmaceutical and banking sectors, lead to the selection of similar e-learning strategies.

In the pharmaceutical sector, the main trainees are sales people and in a few cases the personnel in charge of production (training on standard

Table II Objectives and results obtained from introduction of e-learning<sup>a</sup>

	Pharma objectives w.a. <sup>b</sup>	Pharma results w.a. <sup>b</sup>	Bank objectives w.a. <sup>b</sup>	Bank results w.a. <sup>b</sup>
Anywhere, training closest to the trainee	3.0	3.4	3.2	3.0
Anytime, when I want, at the right time	3.0	3.1	3.4	2.9
Update rapidly and efficiently training contents	3.1	3.1	3.0	2.7
Foster the diffusion of knowledge within the organisation	3.0	3.0	3.4	2.9
Flexibility, coherence with learning style of trainees	2.9	3.0	2.9	2.8
Cost savings	2.9	2.9	2.7	2.6
Foster communication processes within the firm	3.0	2.8	2.8	2.2
Monitoring the learning level of trainee	3.3	2.8	2.7	2.7
Faster learning than traditional training	2.3	2.6	2.1	2.2
Coherence among training and individual and companies objectives	2.7	2.5	2.9	2.7
Self responsibility of trainee towards training	3.1	2.3	3.1	2.5
Attracting talent people	2.5	1.3	2.2	1.6

Notes: <sup>a</sup> multiple choices; <sup>b</sup> weighted average on a scale 1-4: 4 = very important, 3 = important, 2 = less important, 1 = not important

procedures). In the banking sector, 95 percent of the banks that adopted e-learning use this tool to train tellers. E-learning is also used to train private consultants (80 percent of banks) and corporate consultants (61 percent). Only a few larger companies with a consolidated experience of e-learning also train branch managers and head office personnel. Only 25 percent of the banks state to use e-learning with all their personnel.

Pharmaceutical companies develop technical-operative skills by e-learning courses; they also train knowledge of products and services and provide online courses on computing and foreign languages skills. The majority of companies do not believe that managerial skills could be taught effectively through e-learning.

Training contents delivered mainly by e-learning in the banking sector are programs concerning new products and banking services. E-learning is also considered very important for teaching basic and specialist knowledge (e.g. basic finance, teller operations and credit management), technical-operative skills (anti-money laundering, privacy and security, Lira/Euro conversion procedures), as well as the company's internal systems and processes. E-learning is also considered effective in teaching ICT skills and foreign language skills. It is considered far less effective though as a tool to create managerial skills (selling or project management) or organisational skills like communication capability, and even less important as a distance coaching tool (Table III).

In both sectors e-learning allows firms to deliver courses anywhere and at anytime thanks to modular and asynchronous solutions. It also permits redefinition of courses in order to face regulatory changes or the reduction of time to market of new products.

In the two sectors courses are delivered by different technological tools. In the

pharmaceutical sector, the technological solution considered most effective is the virtual classroom, together with the personalised LMS platform, computer based training and training via mobile phones. In the banking sector, the technological solution mainly used and with high efficacy is the personalised LMS platform, and second there is computer-based training.

In conclusion, data from the survey and interviews seem to confirm proposition three. Competitive bandwagon pressures seem to be present in both sectors although to different extent. Changing strategies and organisations restructuring processes forced the attention of HR departments towards efficiency and flexibility issues together with workforce reskilling. Thus, companies will adopt e-learning despite their resistance to any change and technological innovation (firm's adoption threshold), because of the fear of competitive disadvantages related to the choice of non-adopting e-learning. In other words the investment required by the imitation process is less than the costs required by a traditional "off-line" training programme of a large sales force geographically spread. It should also be considered that, especially in the banking sector, larger groups have been early adopters, thus competitive pressures seem to force firms to adopt e-learning asynchronous "recipes" of well-known "first movers".

#### Managerial implications: e-learning solution and the role of trainees

As stated above, institutional and competitive bandwagon pressures seem to drive companies towards the adoption of e-learning solutions mainly delivering skills training programmes by asynchronous models.

Paradoxically and partially in contradiction with what is stated in managerial literature

Table III Content delivered by e-learning<sup>a</sup>

	Pharma realised w.a. <sup>b</sup>	Pharma future w.a. <sup>b</sup>	Bank realised w.a. <sup>b</sup>	Bank future w.a. <sup>b</sup>
Technical-operative skills needed to perform one's job	3.0	3.5	3.2	3.5
Organisational systems and processes	1.7	3.4	2.9	2.5
Basic and specialist knowledge	2.3	3.2	3.1	2.5
IT training	2.7	3.1	3.2	3.0
Linguistic training	2.8	3.1	2.7	2.5
Distance coaching	1.7	3.0	1.7	1.0
Company's product and services	2.7	2.8	3.5	2.0
Managerial competencies (communication, project management, etc.)	1.0	2.6	2.6	2.5

Notes: <sup>a</sup> multiple choices; <sup>b</sup> weighted average on a scale 1-4: 4 = very important, 3 = important, 2 = less important, 1 = not important

(Hansen and Deimler 2001), the adoption of e-learning can create a conflict of interest between the organisations and their workers (Milgrom and Roberts, 1992; Eisenhardt, 1988). This is due to the fact that e-learning, especially based on self-directed training courses, allows autonomous learning. Indeed, e-learning fosters mass customisation processes that allow a participant to choose the course most useful for his/her purposes and to use a training programme when and in the ways he/she prefers. A recent research on e-learning in Italy has shown that 52 percent of employees of firms interviewed are free to decide on the number of courses they want (quantity) and 26 percent of them select the type of course they prefer (quality).

With these e-learning solutions the responsibilities of the decisions on training are partially transferred from the company to the employee, together with the risks of choice about improvements of skills and job performance. By choosing e-learning courses, people face problems and efforts in terms of isolation, complexity of multimedia tools, slowness in running co-operative tools and technological problems. These are some reasons for the higher drop-out rate of online courses compared with courses held in a traditional classroom (Greenagel, 2002). Employees are required to have the competencies and the interest to take such decisions. He/she is expected to be motivated to act in the company's interest, which means not behaving opportunistically in choosing a course and a time of learning.

The results of the interviews seem to confirm this problem. First of all, in both sectors, the adoption of e-learning led to a reorganisation of training activities (75 percent of the pharmaceutical companies and 80 percent of the banks). The most common impact is the redefinition of training processes by targets (professional families). This suggests that companies are focusing on human resources development and commitment. Second, the

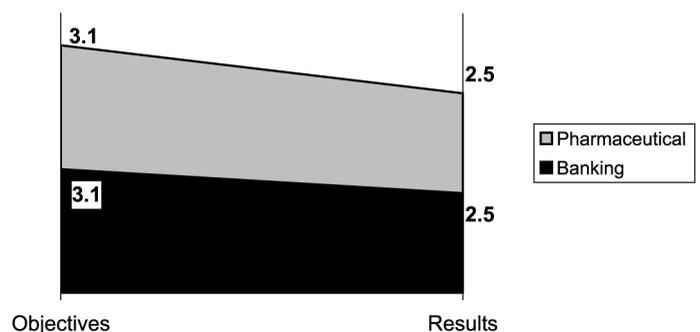
analysis of the main causes that force companies to adopt e-learning indicate greater autonomy to be conferred upon the employees. Third, comparing objectives and results obtained from the introduction of e-learning, data show that even if the self-responsibility of people towards training is one of the main objectives, it is one of the results least obtained by e-learning (Figure 3). This problem is accentuated by the fact that the main trainee is the commercial network, which mainly operates without managerial supervision but deliver high added value to customers (CRM processes, services quality) and constantly need upgrading (Pfeffer and Veiga, 1999).

To foster satisfaction with e-learning and to reduce drop-out rates, and to create an e-learning culture within the organisation, companies are implementing some organisational solutions.

In the pharmaceutical sector, most companies adopt internal tutoring and consider it pivotal in the process of responsabilization of employees about e-learning. Another solution is the support given by unit managers. Tutorship is also the most adopted solution in the banking sector (12 banks and 3.2 ranking): in particular an internal tutor is considered more effective than the external one. The support of unit managers is less common (6 banks) but considered effective.

Tutorship and the support given to trainees by management seem to have both a monitoring and a

Figure 3 Self-responsibility of trainees



motivating function. They aim at reducing training isolation and technological barriers and, to enhance the effectiveness of learning.

Some brief managerial implications can be drawn from the results discussed so far. Given the risk and effort of e-learning a company, in order to motivate their trainees' towards coherent behaviours, needs to provide both intrinsic incentives related to the value of the course and extrinsic ones related to particular personnel policies. Intrinsic incentives depend on courses' contents and delivery means. E-learning courses developing practical generalised skills, e.g. linguistic or computing, might stimulate employees to choose them since they reinforce employability both in the short-term and in the long-term. A company should also pay attention to the ways it delivers its courses. Investments are required to support usage of e-learning courses and in order to prevent technological and individual problems. When both these type of incentives and delivery solutions are not sufficient to reduce employees' opportunism (self-interest), companies must also invest in complementary control systems based on employees' behaviour and training performance.

### Conclusions, limitations of the study and prospects for future research

This research was aimed at identifying the main factors of the decision process of adoption of e-learning in the Italian pharmaceutical and banking sectors.

The analysis of the data seems to support the hypothesis regarding the institutional influence on the adoption process of e-learning, even though partially, given the explorative nature of this study. It is also confirmed that e-learning is more diffused and advanced in the banking sector, where there are more factors inducing institutional and competitive pressures.

Both institutional and competitive pressures seem to drive firms towards adopting e-learning solutions centred on modules that facilitate flexibility and connectivity and which deliver training courses for sales force out in the field.

By analysing the principal e-learning solutions adopted because of bandwagon pressures, the participant motivation has been indicated as a present and future problem of both pharmaceutical and banking management. This problem has been analysed as a conflict of interest between a firm and its employees and some managerial solutions have been discussed.

With respect to our research methodology, it is worthwhile highlighting that, given the explorative nature of the research, we have favoured the

analysis of a small but significant group of companies. For future research, a case study methodology (Yin, 2003) could help to study in-depth the dynamics of the adoption process at a micro-level of analysis. Another line of research could be the extension of the analysis to other sectors characterised by different institutional and competitive bandwagon pressures.

### Notes

- 1 We adopt the definition of sector of Scott and Meyer (1983, p. 117): a societal sector is defined as
  - a collection of organisations operating in the same domain, as identified by the similarity of their services, products or functions,
  - together with those organisations that critically influence the performance of the focal organisations: for example, major suppliers and customers, owners and regulators, funding sources and competitors".
- 2 The collection of data for the survey in the pharmaceutical sector was carried out by Business International with Sfera's sponsorship.
- 3 Companies interviewed in the pharmaceutical sector were: 3M, Air Liquide Sanità, Astrazeneca, BristolMeyers Squibb, Chiesi, Farmaceutici Caber, Farmaceutici Damor, Gsk, Informa, Lilly Italia, Merck&Sharp, Organon, Pfizer, Procter&Gamble, Sanofi Sythelabo, Taked Italia Farmaceutici, Sigma Tau, UCB Pharma, Wyet Lederle, and Zambon.
- 4 Firms interviewed in the banking sector were: Credem, Deutsche Bank Spa; San Paolo IMI S.p.A, Banca Popolare di Milano, Bipielle, Cardine Finanziaria S.p.A., Banca S. Biagio del Veneto Orientale, Banca 121 S.p.A, Banca di credito cooperativo di Cartura, Banca Fideuram S.p.A., Banca delle Marche S.p.A, Banca Carige S.p.A, Banca Popolare dell'Emilia Romagna, Banca Popolare di Verona e Novara, Banca popolare di Vicenza, Banca Antonveneta, BNL, Cassa di risparmio di Trento e Rovereto, Banca Intesa, Banca di Roma, Unicredit and Bancaintesa.

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