

Implementing a Nationwide System for Training Very Small Enterprises for ICT Innovation: the Greek Case

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ABSTRACT

The applications of ICT in enterprises are many and well known. However, many small enterprises do not integrate ICT. So, the Greek government decided to promote the integration of ICT in these businesses. The aim of the present paper is to describe this nation-wide training system for employees of very small enterprises on the uses of ICT, which presents certain peculiarities. The wide dispersion and lack of homogeneity of the enterprises necessitates that the training system must be decentralised as well as flexible. Also, the employees of very small enterprises are obviously adults and in many cases have absolutely no positive attitudes towards ICT. The particular characteristics of very small enterprises, not only the enterprises as organizations but also their staff, have an effect on the instruction of the trainers who must attend a multi-faceted program which satisfies all the above mentioned requirements and equips them with the necessary knowledge in order to be able to deal with a variety of situations which they may meet in the various enterprises.

Keywords

Greek Nation-wide Training System; ICT in SMEs; Training Small Enterprises

Introduction

The applications of ICT in enterprises are many and well known. The economic world has been deeply influenced by ICT, so much so as for the fact to be considered self-evident that every contemporary business must integrate ICT and thus take advantage of the benefits they offer (Buckley et al., 2000; Rae, 2000; Constantelou, 2000). In order for this to happen, certain conditions first have to be satisfied. The ability of training the personnel of the enterprise in the use of new technologies is one such necessary condition. However, it is possible that there are some categories of enterprises for which these conditions are difficult to meet: for example, very small enterprises, which employ less than twenty (20) workers and which many times have neither the economic ability nor the human resources required in order to train their staff.

Of course, ICT, in a general way, actually benefit low-staffed businesses: an example is that of on-line bookshops that generally employ fewer workers than traditional bookshops. The problem, nevertheless, arises for those very small enterprises which do not base the running of their business at all on ICT, do not use ICT, and in fact consider that ICT do not concern them, even though they are the ones who precisely should exploit

the new possibilities that ICT offer them (Ulbrich, 2000; Hesselmann, 2002). In these enterprises, the successful use of ICT must obviously be dealt with in a particular way, as must the problem of staff training.

In the general framework of related European Union programs, the Greek government decided to support the introduction of ICT in SMEs (Small and Medium Enterprises). One of the many actions taken, is the provision of training to the employees of small enterprises. The aim of the present paper is precisely to describe this nation-wide training system for employees of small enterprises on the uses of ICT, to present a few interesting elements, and to attempt to formulate a conclusion on certain results of general interest. Here, we should mention that the research literature, concerning learning in SMEs seems to be very limited (Brink B., Munro J. & Osborne M. 2002) and in most cases does not concern very small enterprises (micro enterprises, according to EU), which are important from an economic point of view in Greece and also in other countries.

The facts stated in the present paper come from official sources on the related subject (Godigital 2001; Go-online 2001). In addition, the statistical data we use come from questionnaires and databases of the program in question. In our study, we used data corresponding to 713 SMEs from northern Greece, whereas the total number of the nation-wide involved SMEs is 3700. We also used data from the trainers, based upon informal interviews.

Our choice of both quantitative and qualitative methods reflects our working hypothesis that one cannot satisfactorily study the operation of an enterprise without taking into consideration both its own (internal) characteristics and the external context of its operation – in a similar manner, one has to study living organisms both in terms of biology and ecology in order to fully understand them.

A General Framework: Prerequisites for the Successful Integration of ICT in Enterprises

It is logical to assume that in modern economies very small businesses have small economic weight and for this reason, from a macroscopic point of view, i.e. as far as the general state of the economy is concerned as a whole, this particular category of enterprises is not an important one. However, even within EU, two-thirds of employees work for an SME. Also, in many countries, the number of very small enterprises may be significant and these enterprises may in fact comprise an important factor in those nations' economic landscape. Greece (Constantelou 2000) is one of these countries. Greece has been a member of the European Union for quite a number of years now and in principle is trying to exploit the possibilities that ICT offer. The integration of ICT in SMEs has been mainly left up to the private initiative, but at a national scale, is supported by a special program that is subsidised by the Greek government and the European Union (Hesselmann, 2002; Electronic Commerce, 2002). The most important component of this support consists in providing information to these enterprises on the benefits of ICT, training their employees on ICT and offering support (economic or other) to any enterprise wishing to integrate ICT. We should mention that similar initiatives have also been taken by other EU nations (Electronic Commerce and SME 2002) because (a) it is recognized that ICT can play an important role in the development of SMEs, and, (b) there do not exist notable educational products in this area – provided by either the educational sector or the private suppliers – probably because this is not an attractive market.

The Greek government and various economic agents in Greece consider the integration of ICT in enterprises as a necessity. However, if large businesses easily recognise the benefits they may gain by integrating ICT, the case is different with small enterprises. The implementation of ICT is adapted to the division of labour and the various departments of each enterprise. A common enterprise integrates ICT by adapting them to the various activities but also by being adapted by them. The enterprise's adaptation to ICT can mean, for example, that the business takes care to exploit the possibilities which ICT open up, reconstructing, to some point, certain departments. Nevertheless, in very small enterprises it is not always possible to exploit the multiple opportunities that ICT offer. For example, the restructuring of a department may not be applicable to a very small enterprise and its range of activity - the clientele it aims at might be geographically limited so that its expansion is practically impossible (within EU, 80% of SMEs address a clientele that is at most 25 miles away). In general, many of the reasons that render the contribution of ICT significant to big enterprises do not apply directly to small ones. The real gains, such as an improvement of business communications with customers and providers, the access to a powerful marketing tool, or the improvement of record keeping and financial management (Duncombe R.; Heeks R. 2001) seem to be less "visible" to the eyes of SME owners. Thus, small enterprises integrate ICT at a very slow pace.

Greece has a relatively satisfactory technological infrastructure but a very low degree of computer usage in general. It appears that this is a significant factor for the success of e-commerce and the integration of ICT in

enterprises (Fleenor C. P. 2000; Raven P. 2000). Also, an important characteristic of the Greek economy is the high number of SMEs and micro enterprises that consider ICT irrelevant to them (Electronic Commerce and SME 2002; Carr J. 1999) because the immediate benefits do not seem to outweigh the investment. As is the case in other countries, the Greek government decided, within the framework of European Union programs for enterprises, to promote the integration of ICT and in fact place emphasis on supporting the networking of those businesses. A significant feature of this support is to supply information to small enterprises on the advantages of ICT through the training of its staff. Staff training of very small businesses under the program we describe, does not only include technical knowledge related to ICT, but also an informative section on the benefits of ICT, which must be specific if they are to be effective: for each type of small enterprise the potential benefits of ICT must be indisputably worthwhile.

The first problem that had to be overcome in the implementation of the training program, was the discovery of a way to make the program known to the SMEs. Even though an informative advertising campaign was launched, there were still a large number of enterprises that received the relevant information through informal channels – such as hearing about it from an acquaintance – and there were other enterprises that never received the relevant information. In general, advertising achieves better results in areas with good infrastructure, such as major urban centers. Although this is a problem that can be attacked with the aid of administrative measures, our statistical data demonstrate that SME participation can be up to four times higher in certain areas due to the effect of imponderable factors, such as an active local sub-contractor that can positively influence the dissemination of information and as a result the participation of local SMEs.

The next problem, related with the above one, was that of convincing small enterprises of the benefits they would gain in using ICT. This problem was dealt with at two levels. At the first level, a site, or more accurately a portal, was created which demonstrates the advantages of ICT for small enterprises by using many relevant examples. But, the most important results in dealing with this problem were achieved at the level of instructing a number of trainers who attended specific seminars on this subject, in order to be in a position to explain the benefits of ICT for every type of small enterprise. In fact, it appears that a major factor in a successful integration of ICT in SMEs is the enthusiasm of the trainee (Levy M.; Powell P.; Yetton P. 2002) and, thus, trainers should be capable of demonstrating the benefits of ICT in each and every type of enterprise.

Staff Training in Very Small Enterprises

In order to successfully conduct staff training program, a strategy is required that takes into account the particular characteristics of the enterprise. In small enterprises the staff that can be trained on ICT is extremely limited and naturally cannot acquire specialized computing knowledge nor can it be easily upgraded. Thus as a consequence, the training program must be carefully designed so that it covers the necessary knowledge within a relatively short period of time.

This however, is not the only limitation of the training program: training must be of short duration for reasons of cost, as we explain below. The limited number of workers in small enterprises makes it almost impossible to replace any staff member and thus allow for them to be absent – therefore, a typical long-term training program is difficult to be implemented since it is next to impossible for the workers of small businesses to attend if they must be absent from the workplace.

Furthermore, an additional problem in organising a staff-training program is the vast geographical dispersal of small enterprises. Although Greece is a very small country, distances can be great (some towns are 800 kilometres from the capital and there are many inhabited islands).

These peculiarities have made it necessary to apply a special training strategy. Due to the wide dispersal and large variety of small enterprises (the 713 SME were categorized in more than 100 categories !), complete decentralisation of the project has had to be adopted. The project had to be given to similar local institutions (so that a code of communication between them and the co-ordinating Centre can exist). These institutions had to be dispersed as well as have access to the relevant technology. The Greek Universities were called on to play this role – since they met all the criteria. Therefore, with central co-ordination, the Greek Universities (which are dispersed throughout Greece) have taken on the job of staff training, each one having its own method in implementing the program.

Decentralisation was also achieved in another way. The impossibility of the workers to travel made it necessary to have a flexible training system. These last years there has been increasing interest in work-based learning and

more generally in learning insight the enterprise. Several systems were proposed, most being web-based instruction or multimedia applications (Brink B., Munro J. & Osborne M. 2002; Morrison D. 2000). But such an approach assumes that the users are already capable in using a computer. Besides, work-based learning within SMEs is problematic because it is difficult to balance the time required by the enterprise and the time needed for instruction (Brink B., Munro J. & Osborne M. 2002). However, the approach of training in situ, seems to be the most efficient strategy. So the training for SMEs was carried out by carefully selected trainers who attended a series of systematic seminars and were afterwards send to the enterprises. In other words, instead of the workers going to them, the trainers went to the workplace during work time and trained the staff. This system, however, as can easily be discerned, came up against various organizational problems that had to be solved. For example, the individual, on-the-job training has a high cost and therefore must be of short duration. This, in combination with the reasons mentioned above, meant the optimization of the syllabus in order to attain the necessary skills in a short period of time (about 21 hours).

Particular Characteristics of Very Small Enterprises

Another category of peculiarities in staff training of very small enterprises is related to the actual target group itself. In very small enterprises the staff (including the actual owner) are very often members of the same family. Thus, from the point of view of training, these people present certain important characteristics: the average age can be quite high and it is not certain if these people have a positive attitude to acquiring new knowledge - and in particular new knowledge related to such a specialised area as new technologies and computing. Often, small enterprises have a more traditional character, meaning that they do not readily adopt new, innovative working methods. It is very likely that the widespread techno-phobia will be present to a high degree amongst the staff of very small businesses that have no connection with new technologies.

A final but no less important problem, is that small enterprises have usually a limited range of business activity, conducted locally, and for this reason both the owners and the employees do not have, because they do not need, a sufficient knowledge of English – a fact that in many cases can act as an inhibiting factor. This problem was likewise dealt with at various levels.

The enterprises that took part in this program were equipped with the same computer systems. The support that they were offered had the overall character of a “complete solution package”. In other words, the enterprises were equipped with the same computing systems (hardware and software), including the same printers and the ability to access the Internet through the same network (ISDN telephone lines through the national telecommunications organization). A uniform training program was part of the “package deal” for small enterprises. Therefore the trainers knew in advance what systems they would find in each enterprise. The syllabus was also uniform – for example the lesson plans were designed by the program’s central coordinating body and were distributed to all trainers. The syllabus was of course designed in such a way as for the program to have the most successful results (taking into account the recipients, their availability and so on). Finally, an important component of the trainers’ instruction was devoted precisely to the recipients’ specific cognitive and social characteristics, in order to enable the trainers to confront this in the most suitable way possible. The specific obstacle of lack of familiarity with the English language was dealt with partly by using Greek words wherever possible (for example in Windows or the content of some sites), whereas certain terms were used (by the trainers) simultaneously and systematically in both languages in order for the trainees to become familiar with some basic computing terminology.

It must nevertheless be stated that the design of the training program did not take one factor into account, which, in the end had a positive result. This factor, clearly of a social character, was the following: a very small number of employees of small enterprises already had some basic computing skills. Also, in the period of time between the acquisition of the computing systems and the start of the training program, a large section of the staff gained some basic knowledge and skills in the use of computers through informal channels based on interpersonal relationships (relatives, friends, colleagues). As is evident from the relevant questionnaires, almost 40% of the enterprises visited by trainers had at least one staff member who had some basic knowledge, most of the time acquired in this interim period. Therefore, the well-known social phenomenon of the gaining of knowledge by a kind of social osmosis, worked positively in this situation.

Conclusions

The implementation of a large-scale program for training SME staff with the goal of integrating ICT in SMEs is a complex problem. Very small enterprises present a number of peculiarities that are related to their actual size, their organization, their range of activity, and the characteristics of their employees. These peculiarities make both the terms and the benefits of integrating ICT in very small enterprises different. The training of the staff in these enterprises also presents certain peculiarities and must take into account not only technical characteristics, but should also provide more general information on the advantages of integrating ICT in SMEs as well as specific pointers on possible advantages for each and every type of small enterprise.

The first problem that has to be addressed is the need for a well-designed advertising campaign for informing the SMEs about the program and the opportunities ICT can offer to them. Even when the number of participating SMEs is high, their geographic distribution may not be desirable, i.e., areas with higher needs in training may have lower participation. The wide dispersion and lack of homogeneity of the enterprises necessitates that the training system that will be carried out must be decentralized as well as flexible. It is very probable that this training will take place on the work premises rather than at training centres and as a consequence should take the form of an intensive course. This naturally requires that the trainers be specially prepared, that the syllabus has the best possible organization, and the teaching time is optimally used.

In the case of Greece, a first evaluation based on data coming from the SMEs is encouraging: more than 95% of the answers express positive remarks for the program and the role of the trainers. Of course, it must be noted that the actual impact of the program will be revealed by a later evaluation. Only then, we will be able to ascertain the actual number of SMEs that embraced ICT. Our informal interviews with the trainers confirm the general hypotheses that: (a) the enthusiasm of the trainees is an important factor for the integration of ICT in an SME, (b) the general penetration of ICT in our society is the major incentive for an SME to embrace ICT. This latter factor has indirectly influenced the Greek training program, since a significant percentage of the employees in SMEs already possessed basic computer skills.

Although in situ training appears to be the best approach, it poses certain difficulties regarding the time limitations and in most cases the training took place during non-working hours. Its cost is also very high and makes it inappropriate for long term training. Nonetheless, the acquisition of basic computer skills by the trainees allows for further training using methods that are based on ICT (such as web-based learning or multimedia stand-alone applications).

The language problem is also very important. The English language poses an obstacle in the training process. An even more important obstacle is the communication with neighboring countries that use languages (Turkish, various Balkan languages) that are not very well spread in Greece – and we believe that this problem applies to countries with similar geopolitical position.

A last but equally important problem that was pointed out by the trainees was that neither the computer user interfaces nor the existing applications suit the needs of SMEs. Computers seem to operate in an unnatural manner and it is not always feasible for an employee to spend a considerable amount of time and mental effort in order to learn how to use them. Also, SMEs cannot easily follow the latest advances in hardware and software. Even applications that are specifically designed for use by SMEs do not appear to cover many important parts of their current activities. They also do not take advantage of their communication and computation capabilities in order to generate new potentiality for the SMEs. Here, we should stress the need for better infrastructure at both a national and an international level so that ICT reveal their full communicational potential.

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