

MANAGERS' TRAINING AS PROMOTORS AND USERS OF MODERN INFORMATION SYSTEMS

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Abstract: In the Information Age managers have to face complex and radical changes, many of those being related to the new information technology (IT) proliferation. The ability to transform the information technology in a threat or an opportunity, in a challenge or an impediment, greatly depends on the managers' professional training in the field of IT. In order to find out the usage level of the tools provided by IT and to point out the managers' attitude towards these, a survey was realized. By analyzing the results we can notice that the marks obtained by managers for the knowledge in the computer science field are rather unsatisfactory. Taking into consideration the fact that in the new age the information technology will be available in all industries and in all activities, enterprises should focus more on training the users – managers and employees.

Key words: information technology, informatics, information system, manager, training

General aspects regarding the training of managers in information technology field

The managers of information age have no other choice but face complex and radical changes. Many of these are related – directly or indirectly, more or less – to the new information technology proliferation. The spectacular development of information technology can be both a threat as well as an opportunity; it can be a challenge or an impediment for managers and their organizations. The ability to transform the information technology in a threat or opportunity, in a challenge or impediment depends greatly on managers training in IT field.

This paper focuses on several aspects related to the managers training as users of information systems and information technology and it is based not only on the market research results, but also on my experience as IT consultant and authorized trainer for developing, implementing and using modern information systems, based on the information and communication technology..

In the context of the challenges emerging from the information technology, we should understand and admit the fact that the success or failure of an information system greatly depends on the **managers' training** not only as final users, but also as supporters of modern information systems. Within this context, the organizations must focus on the adequate IT training of managers, realized by various *methods* and *adapted to the basic education* and *to the types of applications they are supposed to be aware of currently and in the future*.

Managers and employees can appeal for training to various **methods**: outsourcing – respectively courses, seminars, laboratories taught by experts and organized within the enterprise (on-site of the enterprise requiring this training) as well as off-site (at the enterprise providing training services); specialized training realized by the enterprises' own experts; e-learning; Computer Assisted Training – interactive training manuals which combine practice and seminars with Computer Assisted Training; HELP components of the software; interactive television, multimedia systems etc.

Maybe one of the most adequate training methods is to appeal on a well-known training company with experience in this field. Why? In such a company the trainers are not endowed only with hardware and software knowledge, but also with important **pedagogic abilities**. Are the pedagogic abilities important? Obviously! An expert, no matter of his training and experience in the informatics field, will not be able to completely pass on the information if he lacks pedagogic skills, respectively if he does not know how information and knowledge should be transmitted or how to make the trainees „to feel” the informatics. It is well known that some people have informatics “in their blood”, while others must be very well guided and stimulated in order to understand it and accept it. As a consequence, the person who transmits informatics knowledge – hardware or software – must be a good pedagogue and psychologist – „able to be in the trainee's shoes”. Only in this manner, the process of transmitting knowledge as well as the process of acquiring knowledge will end successfully.

Specific aspects related to the managers' training in informatics in Romanian enterprises, as resulted from the market research

As previously mentioned, within the context of the challenges emerging in the information age, the success and failure of an information system and of the organizational performances greatly depends on the managers' training in informatics field, as they should be supporters and catalysts of the changes generated by IT.

In order to find out the usage level of the IT tools and to highlight the managers' attitude towards the IT challenges, a selective survey was realized by way of a questionnaire directly administered by managers. The survey was realized on a sample size of 150 managers coming from enterprises (commerce, services, production) that develop their activity in the Sibiu County. In order to realize a successful survey I focused on: respecting a certain level of data representation; getting stable and reliable results; using efficiently the resources respectively ensuring a good ratio between the value of obtained information and the involved costs (financial and time).

Main goals of the survey:

- Highlighting the managers' opinion regarding the role of IT within the organizational change.
- Identifying managers' opinion regarding the advantages generated by IT.
- Identifying the influencing factors considered by managers when purchasing a Computer Based Information System or its components.
- Awareness of the managers' position towards Internet.
- Identifying the managers' knowledge in the field of informatics.

Out of the goals related to the survey just one makes the object of the present paper, namely: "Identifying the managers' knowledge in the field of informatics." (respectively the mark that managers consider to deserve for their level of knowledge regarding each type of informatics system). In order to reach this goal, the focus was on different application systems software: *Office Automation; Graphics Applications; Transaction Processing Systems – TPS; DataBase and Database Management Systems; Enterprise Resource Planning – ERP; Programming*. For each system one was supposed to determine the following: usage level; average of the marks given by managers and for more details the assessment of knowledge acquired on age categories.

From the results obtained after the processing of the data collected from the questionnaires I have chosen to be presented in this paper a synthesis referring to the marks given by managers and grouped on application category and on age category (figure 1).

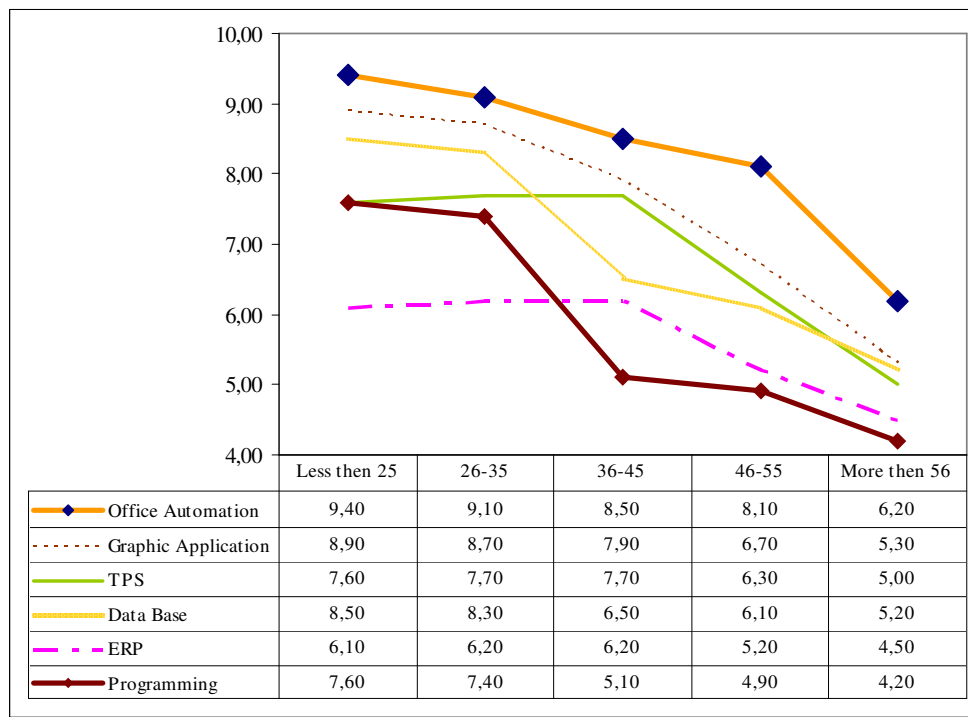


Figure 1 Marks given by managers – classification according to Application System Software and age category

Office Automation. As presented in figure 1, the highest mark was obtained by managers who are below 25 years old (9,40). Next, the average marks tend to decrease with the advanced age (9,10 for the age category 26-35 years old; 8,50 for age category 36-45 years old and 8,10 for age category 46-45 years old). Unfortunately, managers who are over 56 years old can be found on the last place (6,20), at a rather big distance (approximately two points) as the second last place. The applications referring to Office work Automation are *easy to learn and use*. Many of them (for example Microsoft Office: Word, Excel) *can be found also in Romanian version* (inclusively Help components) and consequently each manager and employee has the opportunity to acquire them by self-teaching. In the last 8-10 years, the applications of this type *can be studied generally at all universities, no matter of the specialized field* (especially Word Processing). Moreover, on the market there are many specialized enterprises that offer, at reasonable prices, *trainings* in the field of Word Processing and Spreadsheets. Any manager of the 21st century should be able to edit a word document with inserted images, to make various computerized calculations, to create different graphics, to make a Power Point presentation, and to draw up his own work scenarios etc. These could be the explanations related to a large scale knowledge regarding these applications. However, we should emphasize the fact that the managers over 56 years are still living in the past as they only got the average mark of 6,20. The explanation could be that most of these managers did not study informatics in school and more than that, many of them are not prone to invest time and energy for computer science training.

Graphics Application. As we can notice, the highest average mark was obtained by the managers who are under 25 years old (8,90), closely followed by those belonging to the age category 26-35 years old (8,70). Next, the marks tend to decrease with advanced age (7,90 for age category 36-45 years old and 6,70 for age category of 46-55 years old). As this aspect is concerned, the managers over 56 years are still on the last position, the mark being unsatisfactory, even very close to the test passing level (5,30). The explanation for these results could be that the young managers had to *use graphic applications even from school years* because that was required by their projects, so that they acquired abilities in this field of graphic application.

Transaction Processing Systems – TPS. In the field of TPS (salary, inventory and accounting application, customers and suppliers management, production, marketing, sales etc.) the managers belonging to the age groups of 26-35 and 36-45 years old are the best trained ones (average 7,70), followed by those who are

under 25 years old (7,60). The last positions are occupied by the persons belonging to the age category of 46-55 years old (6,30), respectively who are over 56 years old (5,00). The explanation for this lower mark obtained by the young questioned managers (under 25 year) could be that usually these programs are not the object of high education courses. The ability to use these programs is acquired in time, as the person applies them for his work or as the person takes part in training stages led by the enterprises that develop and supply these applications. The argument for the lower marks obtained for the managers over 56 years old could be the fact that the automation and the development of these programs emerged when the respective managers found them selves at a certain age so that many of them are not willing to learn how to use them.

DataBase and DataBase Management Systems. As we can notice, the data base system is best handled by the managers who are under 25 years old (average 8,50), closely followed by those of the age category 26-35 years old (8,30). The knowledge level of data base decreases with the managers' advanced age. Thus, the average of 6,50 was obtained for the age category 36-45 years old; average 6,10 for those of the age category 46-55 years old and again the lowest average (5,20) for the managers over 56 years old. As resulted from another survey realized with the goal of determining the usage level of informatics tools related to DataBase Management Systems and Data Mining, the enterprise frequently use DataBases. The managers that graduated an economic or technical university have studied „DataBase” during high education years. Moreover, in the present there are a lot of specialized enterprises on the market, which offer professional training in this field. Thus, we can explain the fact that a rather high percentage of the questioned managers claim that they know how to work with these tools. Nevertheless, the average mark is rather low (6,92). This aspect can be justified by the fact that DataBase Management Systems are taught in universities generally in the first two years, so that if they are not used in the meantime, they could be largely forgotten. The same thing is going on with the managers who attended various trainings, but then never really used the respective applications.

Enterprise Resource Planning – ERP. It is obvious that the average of individual marks given by managers for their knowledge in the field of ERP are very low, namely 5,60. ERP Systems have recently emerged and their development involves considerable financial resources. Due to the total high costs – also caused by the development, implementation and usage of these systems – very few organizations can afford to purchase them even if their usage generates many advantages. As we can notice, in this field the best trained managers are those belonging to the age groups 26-35 and 36-45 years old (6,20). These are followed by young managers under 25 years old (average 6,10). The managers belonging to the age group of 46-55 years old got 5,00 while the managers over 56 years old got only a average mark below the test passing one (4,50). The initial learning of ERP Systems has been available in universities for several years and unfortunately only in few universities (those who have signed agreements with developer enterprises in order to use – freely or with low expenses – the educational licence). After graduating, if the companies they work for do not have such an information system, the young employees are not able to acquire the usage ability anymore, as there are no professional enterprises to offer trainings in this field. The training is offered only by the enterprises that develop such systems, especially for the organizations that purchase these systems. As a consequence, the managers of the enterprises that do not use such systems are hardly to know these systems (maybe only if they previously worked in an enterprise that had such a system or if they had the chance to study them at the university). Thus, the little knowledge in this field can be explained.

Computers Programming. As we can notice, that in the field of programming abilities the best trained managers are those below 25 years old (average 7,60), closely followed by the age category 26-35 years old (7,40). The other age groups have very low average marks. However, managers from the age category 36-45 years old obtained the average mark of passing the test (5,10). Still, the managers from the age category 46-55 years old and those over 56 years old got average marks below the test passing one (4,90 respectively 4,20). The explanation could be similar to that given in the case of the other types of applications, namely that most managers belonging to this category are not willing to invest time and energy in computer programming training. Probably, the managers that graduated computer science faculties acquired the programming abilities due to *analyst-programmer trainings* or due to *self-teaching*. It is true that lately, the economic and technical faculties have focused on *programming concepts*, but the course lasts only one semester and generally consists of basic notions which cannot be a real basis for those interested in programming, if not subsequently developed. These are also the reasons for which such a low

percentage of managers have programming knowledge and the cause of the low average mark obtained by managers (5,84). The young managers are an exception as their knowledge acquired at the university is still available and not forgotten. An interesting aspect, underlined by the discussions with the managers, is that most of them consider there is no use „in wasting” their time studying programming notions as the market has specialized enterprises which offer performing application. However, this point of view should be reconsidered as all the enterprises belonging to economic developed countries focus on the development, even by the computing end-users, of the more simple programs – self-sourcing. The new programming environments (respectively Fourth Generation Languages – 4thGL) are radically different from the old generations as they are easy to learn and use even by the persons without professional experience.

As we can notice, the usage level for all types of computer applications is dominated by the highest average marks obtained by the interviewee below 25 years old (8,02), these being followed by the persons from the age category 26-32 years old (7,90). This average decreases as the age increases, namely: 6,98 for the age category 36-45 years and 6,22 for age group 46-55 years old. The least trained managers belong to the group over 56 years and they got only the average mark 5,07.

Conclusions

The research points out the fact that, in general, as the informatics knowledge is concerned the results are rather unsatisfactory – the general average mark being 6,84. The general conclusion is that young generations are better trained in the informatics field. This conclusion can be explained by the fact that the young managers had a greater chance to study and acquire informatics knowledge at university and high school. Moreover, the experience acquired as an IT consultant gives me the opportunity to state that the younger persons are more willing to acquire knowledge in this field, while the older persons are more reluctant in investing time and energy towards this direction. However, these statements cannot be turned into general ones and as a proof; the research emphasis that there are older managers who have informatics knowledge.

In Romania many managers claim that they **do not have the necessary time** for a specialized training in computer field, as there are **other problems more stressful and critical** than „wasting time” in studying informatics. For many of them these not even are real reasons. A lot of older managers are afraid not only of getting close to the computer, but also to attend specialized trainings. Why? Because they are afraid to face new technologies, they are afraid of not being able to acquire knowledge and so „to be taken as fool” by lecturers and colleagues. Obviously there is no general statement regarding this aspect and we have to admit that there are managers very well trained in computer science field, experience that they acquired by attending specialized trainings or by self-teaching – as autodidact.

The problems related to managers and employees’ training, the acceptance or rejection of the IT challenges, and in general the success or failure of the informatics system greatly depends on the **organizational culture**. The implementation of Communication and Information Technology and the changes within information system can lead to **formal and informal transformations in the entire organization**. The formal changes can influence the department boundaries and the relations between managers and subordinates. The informal standards can affect the work and social relations among employees, the work standards and their statute. Consequently, those who develop informatics systems must permanently collaborate with future users in order to find out their requests or needs and their possible reaction to changes. Any informatics system, no matter how performing or not, will turn up to be a failure if is not supported by the management and if is avoided, rejected and/or sabotaged by users.

To conclude, taking into consideration the fact that in the new age the information technology will be available in all fields of activity, ideally would be that the enterprises should focus more on an adequate training – realized by different methods – for the users of modern Computer based Information Systems. The managers training, as well as of the employees training must be adjusted to their basic education but also to the types of applications they should be able to handle in the present and in the future. Moreover, any enterprise that intends to have a success regarding the implementation of new information technology should firstly have a **pro-informatics organizational and managerial culture**. The organization should have managers and employees who support the computer based information systems not only formally, but also out of their belief and intention to really want the informatics become part of their work and life.

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