

ICT ADOPTION by small and medium sized enterprises.

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Information communication technology (ICT) in small and medium sized enterprises (SMEs) has been identified by managers as a patient that is suffering from five different diseases, is under five different treatments that will cure the patient. The SME dies due to the shock caused by these various treatments. This thesis is an attempt to show the importance of ICT adoption by SMEs as well as to identify the possible reasons as to why it is undervalued by SMEs. With the help of a real life case study conducted in three medium sized enterprises located in Northern Greece, SWOT and PEST analysis, as well as interviews with SME management, we have both direct readout from businesses that will tie with literature, in an effort to explain why ICT adoption in an SME can become a drawback. Main findings include managerial pitfalls, a general disenchantment to change and lack of proactive thinking. Several ideas of how to prevent them are suggested and put forward as areas of possible future research.

KEY WORDS AND TERMS: SMEs, ICT, adoption.

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1. Introduction

In the 1980's Carlo de Benedetti was the most famous European businessman. As President of "Olivetti", despite four years spent in prison as a result of a economic scandal, he is still considered as a leader. According to him, major managerial mistakes occur when managers do not realize the era that they are now in. They have to approach this reality with an open mind and realize what is happening in order to preempt these oversights. Time and speed are keys to success [Naftemporiki, 2008].

The lessons gained from de Benedetti's managerial actions are that despite a scientific approach to management, it is very important to be aware of different aspects of the environment in which the enterprise is operating. Information technology is part of a technical environment which characterizes up to a point this era. It is not easy to separate ICT adoption from management, as it reveals the speed at which organizations are willing and able to adjust. Speed is not only used as a technical term involving information technology crew, it also refers to managerial attitudes and their ability to adapt to upcoming changes.

SMEs are the backbone of European economy [European commission, 2008]. With regards to Greece, they are very much the leading type of businesses that are operating in the country. Still, despite their importance, they face numerous problems concerning their business environment, human resources, financial and information technology issues [EOMMEX, 2008].

The scope of this thesis is ICT adoption by SMEs and therefore, it is an attempt to identify the nature, as well as the outcome of this relationship. The main research question here is whether SMEs are ready and willing to adopt ICT, and within that, why they hesitate to do so? This topic is diverse and so in this document, research and conclusions are narrowed down in terms of geography to the area of Greece, since it is easier to gather more meaningful data, due to both personal working experience and personal contacts.

Research tools which have been used to answer these questions in parallel with a literature review are the following:

- a real life case study conducted in three SMEs located in northern Greece, studying both their attitude towards a possible change and when the need for a change in software arose,
- a collection of answered questionnaires distributed to top level managers working for SMEs in different locations, including Athens,
- PEST and SWOT analysis.

Main findings include a hesitation from management towards change, an unwillingness implement new methods and, what I feel is the most important outcome of this research, is the critical impact that the level of education of high level management can have on

such organizations. Barriers to ICT adoption include the fear of a new way of working, losing the comfortable solution of letting things roll the way they do, and, of course, the potential cost that a change would require. By cost I mean not only monetary value but also the additional time and effort.

We begin with a literature review, in order to give a broad understanding of these enterprises and ICT in general. Then analysis, interviews and the case study follow. From both the literature and data collected directly for this thesis we draw conclusions as well as suggest areas for future research. Briefly, this work could be further extended with a new research question like, what could ICT representatives do or change in order to convince SMEs management to adopt ICT.

2. Enterprises

SMEs are enterprises and in order to start the discussion, we need a good background idea of what this term includes and what relationship with information technology SMEs have. In the computer industry, an enterprise is defined as an organization that utilizes computers. A word was required that would encompass corporations, small businesses, non-profit organizations, government bodies and other possible forms of organizations. This term seems to do just that and in practice it has been applied to large organizations. The model adopted to describe the activities and the structure of an enterprise in this thesis, is the eight main functions model of an organization according to Kerola and Järvinen [1975]. Although this source may seem outdated it is still preferable compared with newer models, as it is clear, complete and will give the reader a view of internal enterprise relationships which are needed for later understanding and reasoning of the actions taken by the case study participants. This model is being used, in order to define management and its functions both supporting and operating ones.

According to this model, γ is the management function, financial (φ), employees (ε), physical (λ), and information (ι) functions are the supporting functions and acquisition (α), production (π) and marketing (μ) functions are the operational ones. The framework of these eight main functions is presented in Figure 1.

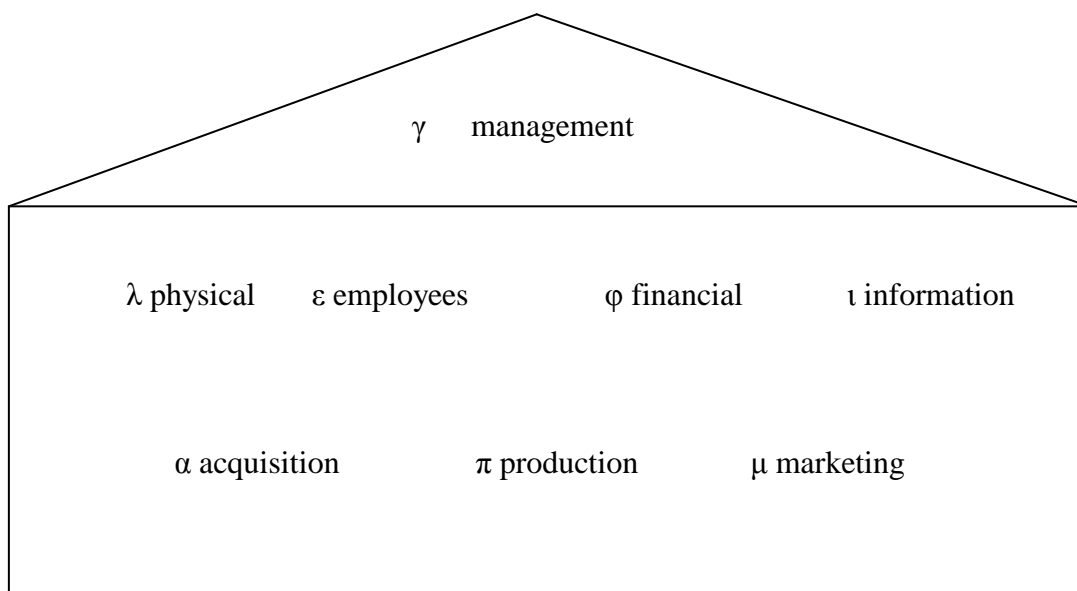


Figure 1: The eight main functions of an organization [Kerola and Järvinen, 1975].

Kerola and Järvinen define the above functions as a set of management activities and that each of them specializes in a certain field and takes care of different parameters.

The Kerola and Järvinen model that includes management and organizations supporting resources is used as a basis for outlining the overall management perspective as well as the four supporting resources. In other words they include:

- *Management function*: basis for an overall management perspective, achieving competitiveness in the context of global information society.
- *Financial function*: basis for a financial perspective, like financial assets, capital from different sources, retained earnings.
- *Employees function*: basis for human perspective, like staff, organizational structures, human resources management, social networking and in between organizations cooperation.
- *Physical function*: basis for a technology perspective, like acquisition, attendance, maintenance and development of ICT.
- *Information function*: basis for an informative perspective like ICT resources management, software, databases and information issues, and
- *Acquisition, production, and marketing*: are not seen as actual resources by this model since they do not generally apply to any enterprise.

Enterprise is like a house. The management is the roof. It controls everything and stands above all the other functions. Supporting beams to this are the four supporting functions: physical, employees, financial and information. This model is in agreement with the basic managerial theory that the four main assets of an organization are: land, labor, capital and information [Chase et.al, 2005].

Kerola and Järvinen [1975] claim that acquisition, production and marketing cannot be considered as actual resources since they do not apply to every type of enterprise. From my point of view, however, these functions, even if they are not always clear in any company type, do exist in one form or another and therefore should be at least considered as secondary ones. SMEs are also enterprises and therefore these functions as well as their importance will be later identified when analyzing various parts of an SME.

2.1 SMEs

Defining SMEs is not an easy task and various definitions have been given according to size, financial data, or operational rules used to run these enterprises. Despite these numerous definitions, there are also frequent updates of these definitions which, only serves to further complicate the task. For the purpose of this thesis we will narrow this down to three definitions which, when combined, will provide a clear picture of what these businesses are all about. South West Ventures Fund [<http://www.southwestventuresfund.co.uk>, 2008] defines SMEs as companies which:

- have fewer than 250 employees

- have either an annual turnover not exceeding 50 million euro or annual balance sheet total not exceeding 27 million euro, and
- 25% or more of the capital or the voting rights are not owned by one enterprise, or jointly by several falling outside this definition of an SME.

The department for Business, Enterprise and Regulatory Reform [BERR, 2008] uses the following two definitions:

According to size:

- micro firm: 0-9 employees
- small firm: 0-49 employees (includes micro)
- medium firm: 50-249 employees,
- Large firm: over 250 employees,

and according to financial achievements:

Enterprise Category	Headcount	Turnover	Balance Sheet Total
Medium size	<250	≤ €50 million (1996-€40 million)	≤ €43 million (1996-€27 million)
Small	<50	≤ €10 million (1996- €7 million)	≤ €10 million (1996- €5 million)
Micro	<10	≤ €2 million	≤ €2 million

Figure 2: SMEs categories according to financial achievements. [BERR, 2008]

At first glance we observe that SMEs are characterized by minor resources, a limited number of employees and collective management. SMEs seem organizations with limited power. A more careful look though, reveals a different picture. Due to private ownership, entrepreneurial spirit, flexibility, adaptability and a potential to rise to challenges SMEs are able contribute to a sustainable growth and employment generation. In the European Union, 23 million SMEs provide 75 million jobs and represent 99% of all enterprises [BERR, 2008].

Interestingly, the subcategory of micro enterprises which is relatively new since it was first introduced in 2007. BERR provides a pie chart (see Figure 3) for the employment by firm size in encore: micro enterprises occupy 30%, second to large enterprises who take the 32% of the overall share.

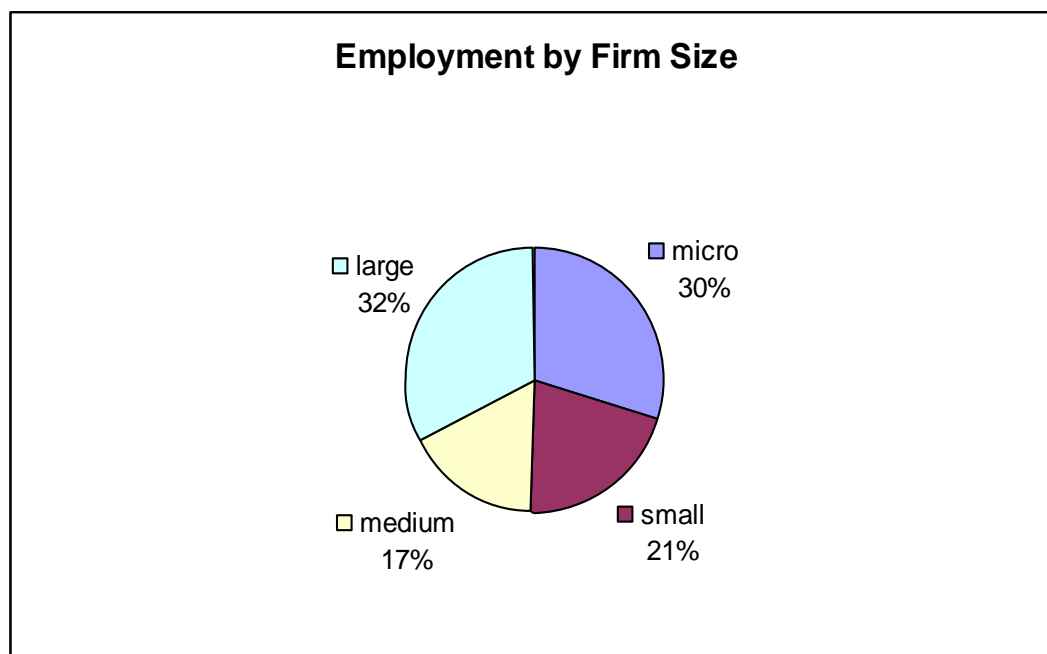


Figure 3. Employment by firm size [BERR, 2008].

This new definition aims to promote micro enterprises, prevent the abuse of their status, improve access to capital research and development as well as promote innovation. Finally, this new definition takes into account the different relationships among enterprises.

Figure 2 shows the accounting numbers an enterprise has to reach in order to be categorized, and we can observe the increase in those numbers from 1996 to 2008. In 12 years the standards in order for an organization to be called small, or large has increased by 3 and 10 million € in annual turnover, respectively. This shows an excellent financial, performance and enterprises with much potential.

Summing up, SMEs are organizations whose turnover falls under certain limits, whose employees can be up to a specific number and whose prospects are many.

2.2 Facing SME Issues

SMEs are the backbone of the European economy and the most important creators of new jobs and therefore economic growth. They are regarded both as a both dynamic and flexible element of the European economy. At the same time though, they have been characterized as heterogeneous communities which are poorly resourced and are therefore confronted by many limitations [European council for small business, 2008]. They face a variety of problems, which are caused by the very nature of these enterprises. For the purpose of this thesis, these drawbacks will be placed into four categories with an emphasis on IT related aspects. These categories are adopted from Raymond Yap for Hutex management consulting, 2008, and are as follows:

- Business Environment

- Financial Environment
- Human Resources issues,
- IT issues.

Having a deeper look into each category separately, starting from business environment, we observe that together with their limited size, these enterprises experience limitations in other sectors, too. They face a lack of concrete managerial skills and this is a conclusion made after a look into their operations. Starting with procedures, they are not formal or clearly stated and most of the time not even documented. They have the tendency to change frequently together with their previous characteristics and from here it becomes difficult for a third party to understand or follow them. One third of SMEs have never performed a risk assessment which is one of the most important steps in management as it determines the qualitative and quantitative value of risk related to a concrete situation. The diagram in Figure 4, starting from enterprises with 0-9 employees and ending with those with more than 500 people personnel, shows the percentage of organizations that have never undertaken such a process.

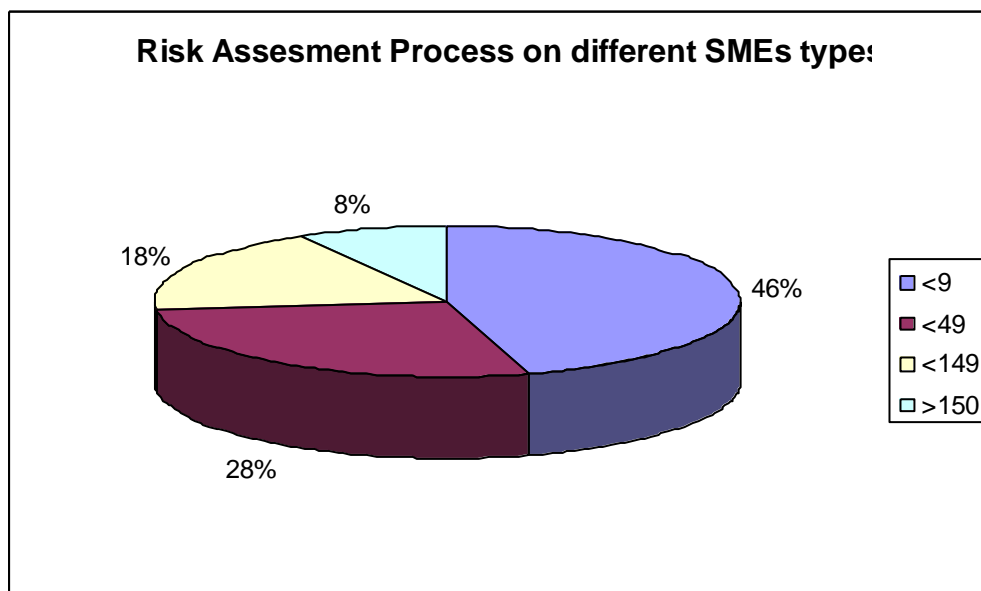


Figure 4: Percentage of SMEs that have never performed risk assessment process [Hutex management consulting, 2008].

From the data presented in Figure 4, it is clear that there is no continuity in management and gaps starting from an upper level and moving down to the rest of the employees. With respect to the financial environment, resources are limited and therefore drive management to select solutions that initially appear cheap, no matter what the hidden cost behind them could be. Such situations lead organizations to abandon projects already started or to enter a crisis. In summary, they face financial constraints for current and future investments due to both lacks of resources as well as

their mismanagement. SMEs appear to be neither a non-growth orientated or 'sustainable', form of business. It has also been said that the nature in which external funds are used will be determined by personal characteristics of top management and not the nature of the organization which leads to negative results in the long run.

It is common for top management to ignore communicating their intentions to staff and assume that the rest of the company will follow the same idea as they consider it common sense. A high turnover of the staff is also common place, that is, employees of that organization have a shorter tenure than those of other companies in the same industry.

Finally, let's focus on IT issues with respect to this category of enterprise. According to global information security budget constraints and availability of skilled staff are two of the most important obstacles. Around 89% of employees do not have formal qualification and of those that do only 58% have a qualified IT background. Additionally 56% of SMEs do not even have documented procedures [Hutex management consulting, 2008].

The majorities of employees start from the bottom of the company and move upwards after working in the organization for many years. Some of them, despite the fact that they hold supervisory or managerial positions, are not IT literate and have a high resistance to change in working progress, since they are comfortable with situation. This becomes a great disadvantage when a need for change is growing and implementation of a big scale IT project is required as the issue of hiring consultants or experts arises as the staff required for this task is not available within the company. The lack of knowledge in the IT field makes it difficult for SMEs to identify good consultants. A good consultant saves time, effort and resources but lack of experience, makes management feel that consultants cost too much, and they decide to handle it with their own staff, avoiding external help. Such a decision eventually costs more than hiring an expert. On the other hand, from an expert's point of view, since it is a high demand occupation, larger companies as well as multinational organizations are more attractive to them, so SMEs not the first choice in a flooded market.

2.3 Overcoming possible areas of problems within SMEs

According to Hutex consultant group [2008], there are five suggestions on how SMEs can overcome the issues discussed above. These suggestions are:

- Clear Vision and Purpose

Set a clear vision for the company and pre-determine its future. Within that set the vision of the project, what is its purpose? What it intends to solve.

- Build up a Strong Management Team

The definition of a strong management team differs from one organization to another. It depends on the background, preference and managerial knowledge of the CEO that

builds this team. It is important to specify the company's vision. Such a team with leadership skills and the ability to appreciate technology will make implementation of information technology easier.

- Culture of Learning and Sharing

To survive and be successful, an organization must continue to improve and learn. A culture of willingness to learn and share knowledge will make the organizations transformation much easier. Investments in training of the management team and staff are necessary. This will open windows for other alternatives in operating the business in a more efficient and profitable way. A resistance to changes is one of the biggest obstacles in any information technology implementation or organization improvement. Having a culture of learning and sharing of knowledge will help to minimize the effect. Top management has to be lead by example and show both a motivation and a positive attitude towards change.

- Communication

It is common for top management to ignore communicating their intentions to staff. They assume that rest of the company follows the same ideas as they do; they believe it is common sense. But in the case? Not really when it comes to business practises. The leaders should not assume but continue to communicate and re-communicate so that the direction and ethos of the company are often reinforced.

- Get External Help

We have already outlined the reasons behind the absence of consultancy in SMEs when implementing IT. However one way to overcome this is to engage external advisors or consultants on contract basis to guide and improve specific business concerns. This also offers existing staff a chance to learn during this process. External financial assistance schemes are also available. Coming either from government agencies or hardware/ software vendors and SMEs can take advantage of them to minimize any cash flow issues that may arise as a result of new IT project implementations.

2.4 Chapter Summary

This chapter deals with SMEs in general. An overall discussion on what they are, and why they have been chosen to be the research area of this thesis. It is a brief and general introduction on the issues they face and how they deal with them on a theoretical basis. This part will be useful with regards to upcoming chapters, where research findings will be woven with literature reviewed and therefore allows to make more informed conclusions.

3. ICT Adoption

Information Communication Technology is an umbrella term that includes any communication device or application this encompasses: radio, television, cellular phones, computer and network hardware/software, satellite systems etc, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

Information is a very important tool in sustaining existing business and supporting the desire to create new enterprise. It can be seen as the fourth business resource along with land, labour and capital. Ability to utilize and apply information is a significant factor in developing business and succeeding against competition. SMEs are traditionally not seen as proactive in acquisition of external information. For entrepreneurs, information can be seen as problem solving tool for the company. It has no actual value unless it can solve their problems and this is where ICT comes in to the equation. According to the European Commission, the importance of ICT lies less in the technology itself but rather in its ability to create greater access to information and communication in underserved populations, which is part of enterprises in our case, that have not had the chance or the knowledge to demand equal information service compared to other enterprises, operating in same field but under different conditions, usually political and economical ones.

ICT adoption, as in the case of any technology, is the result of a series of individual decisions. Adoption of technology is a decision influenced by individual choice and results of comparison of certain costs and benefits associated with the adoption. It is critical to improve the competitiveness of industry and meet the demand of society and economy. It has a catalytic impact on productivity, innovation and modernization. Finally it advances technology by supporting cooperation and access to information.

SMEs are often the main driving force behind a nation's economic growth. In accordance with this their numbers are constantly increasing and with that competition. Profits as well as the motivation to start up such a business have decreased. Pressure coupled with a lack of resources to counter competition results in a cancellation of any profit made and eventually an exit of the market.

In this business background, there are firms that add further pressure by reacting faster to challenges, improving products, processes, promotion or distribution channels. Here ICT can really make the difference. While firms in developed countries adopt ICT, firms in developing ones loose out to the competition. This in turn can slow the growing rate of small and medium sized enterprises and hurt the economy as a whole. ICT can play a very important role because it can help SMEs create business

opportunities and combat pressures from promoting to distributing their products through an online presence.

In fact, ICT has the potential to improve the core business of SMEs in every area of the business process. How is that so? We model the firm as chain of value creating activities and analyze those activities which can create a competitive advantage. This is the value chain, and in this thesis, we take as a basis Michael Porter's [1985] value chain and enhance it with the benefits of information communication technology tools. In countries where SMEs are only starting to adopt basic ICT, obtaining a fixed or mobile phone line can help their business. It can replace the time and costs necessary for face-to-face communication. In countries where SMEs already have basic ICT, adopting more advanced ICT still brings enormous benefits. Beyond cost savings, information communication technology can also help increase productivity, efficiency of inventory controls, increase sales through closer relationships and faster delivery times. Technologies like this try to integrate several data sources and processes of an organization into a unified system and can decrease costs in various areas of the company.

Inbound Logistics	Operations/ Manufacturing	Outbound Logistics	Marketing and Sales	After-sale Service	Margins	
<ul style="list-style-type: none"> Cheaper and faster communication with suppliers through Supply Chain Management 	<ul style="list-style-type: none"> Improve Inventory Management systems Enterprise Resource Planning software Rapid Prototyping and Manufacturing programmes 	<ul style="list-style-type: none"> Easier to link to global supply chains and outsourcing opportunities 	<ul style="list-style-type: none"> e-Commerce e-Marketing through websites 	<ul style="list-style-type: none"> Customer Relationship Management software 		
Firm Infrastructure (Finance, Planning) <ul style="list-style-type: none"> Better accounting and financial management practices Improved communication between different departments through the intranet Better grasp of business trends and market prices through easier access to information Use models to enhance business planning capabilities 						
Human Resource Management <ul style="list-style-type: none"> e-Learning for employee training 						
Technology Development <ul style="list-style-type: none"> Better Knowledge Management within the firm Integrate different software platforms through Enterprise Application Integration 						
Procurement <ul style="list-style-type: none"> Use e-procurement for cheaper and faster communication with suppliers 						

Figure 5: ICT benefits on Porter's [1985] value chain.

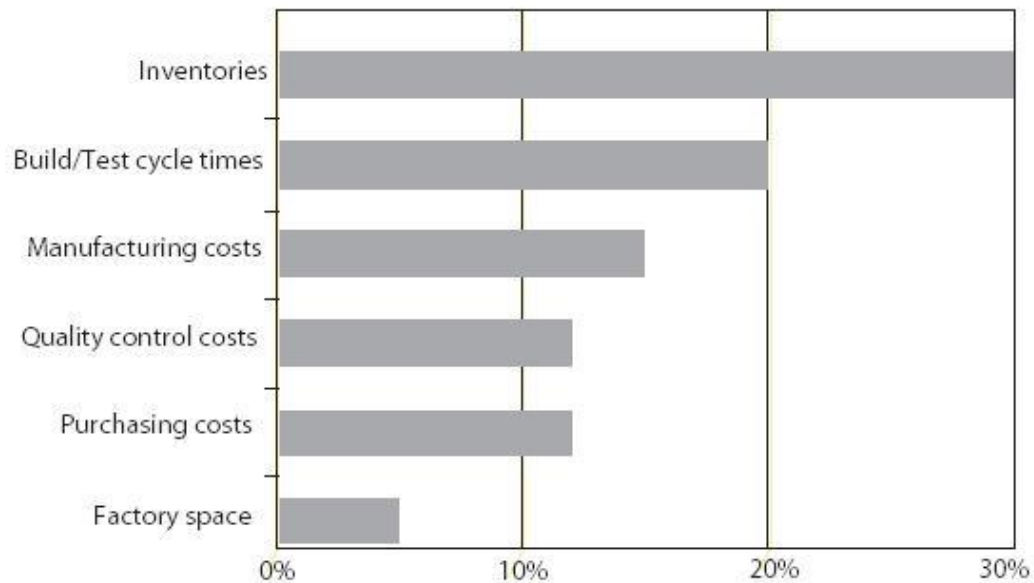


Figure 6: Cost reduction from ICT adoption [Wikipedia].

From Figures 5 and 6 we can point out the following observations:

- ICT adoption is not only involved in areas that exclusively deal with technology. From these two figures we can see that operations like logistics, marketing or after sales service, which of course require specific software but are mostly based on human effort and capabilities, have shown after adoption a decrease in costs and an increase in performance.
- New areas have developed. In enterprise marketing is one of the most fundamental departments, through ICT adoption e-marketing and e-commerce sections have been created, while the inventory costs are decreased. Benefits for an organization are twofold, not only do you have the opportunity to create and run new departments, but you can do this by for equal or reduced cost,
- If ICT adoption is the key solution to increasing the competitiveness of an organization, why are there still so few SMEs which have adopted information technology? As above, there are two categories to examine supply and demand.

From a supply point of view there are two common answers when asking why so many SMEs have not adopted ICT. Firstly, there is poor communication. Many developing countries still have a poor communications infrastructure. Outdated equipment and state-owned monopolies often result in expensive charges and limited coverage especially in rural areas. This discourages SMEs from adopting even basic ICT like fixed lines or mobile phones. Secondly, there is the issue of size. Most advanced ICT products are designed and developed for larger firms. This is because ICT firms target their products to larger enterprises as they will have a larger budget and therefore willing to pay for more complex services. But this complexity is sometimes more than an SME requires and is able to pay for.

From a demand point of view there are five common reasons not adopting ICT. SME owners have a limited ICT literacy which can result in bad choice of technology and a lack of understanding of potential benefits which the appropriate technology can bring to their organization. Many of them are not familiar with technology and have the stereotypical view that ICT is only for larger companies. Even if they want to and have the financial resources to integrate ICT into their own business, SME owners are often at a loss when choosing the most appropriate and cost-efficient product. This is further reinforced at the employee level where limited ICT literacy will hinder any attempt at technology implementation. Even with a strategic understanding of why they should adopt ICT, their staff is often untrained and that costs both time and money – resources that SMEs usually lack.

Adopting ICT is a difficult task for companies of all sizes, whether they are in developed or developing countries. In fact, a lot of management literature focuses on the organizational changes that firms must go through in order to effectively adopt ICT because this will change the way firms do their business. While the changes may be beneficial in the long run, they can often damage one department while strengthening another. Thus, SME owners are reluctant to push their firms' through a process that may be difficult and costly.

Last but not least are the financial issues. SMEs have limited budgets and therefore a limited ability to acquire ICT. According to Ricupero [UNCTAD, 2008], lack of financing and appropriate technology is clearly a major handicap for producers and exporters in developing countries and it serves to inhibit these countries from deriving the full benefits from their trade rights. SMEs usually have a limited ability to make larger investments in their firm due to the lack of financing options. Given this financial pressure, IT budgets are usually small or nonexistent. In addition, adopting ICT is not a one-time cost as there are ongoing costs of maintenance, upgrading, and human capacity building. Finally, SMEs may still be hesitant to engage in e-commerce due to undeveloped legal policy for electronic payment and security issues. In other words, there is a lack of financial and legal infrastructure. In the end, the definite costs of identifying the right goods and/or service, finding staff to manage it, taking the company up the learning curve, and obtaining financial resources are not perceived to justify benefits.

According to a recent study of an economic commission both government and public institutions should provide information communication technologies in order to:

- Improve SMEs competitiveness and develop industrial clusters.
- Promote partnerships between large firms and SMEs and among SMEs.
- Reduce costs related to trade procedures for both private and public sector
- Increased productivity and transparency of the public sector
- Facilitate the implementation of trade promotion policy and trade agreements.

These actions would compensate SMEs hesitation and could strengthen their market position.

4. A study on how ICT can transform organizations

Information engines can have an impact on businesses similar to that of the steam engine on the industrial revolution. In fact, the impact is much greater because it is a technology that allows a step back from physical reality to be taken when manipulating issues. Starting from telegraph and telephone, information technology became the lifeblood of organizations. It affects both production and coordination. All dimensions of a firm have to be examined as a result. To prove this statement, I present a study done by Morton [1991] and his major findings that information communication technology can transform organization, as well as the Feuerlicht and Vorisek model (to be introduced in Section 4.4), which looks at the outcomes of ICT adoption at different business level.

4.1 Enabling fundamental changes

The degree to which a person's job can change as a result of information technology depends on how much of his/her work is based on information. For example, information on what product to make or what service to deliver, how to deliver it as well as when to do it and in conjunction with whom. The three kinds of information described above, production, coordination and management are about to change.

The impact of information technology on production is considerable and encapsulates physical, information and knowledge production. Physical production is affected by robotics; information production can be affected by data processing and knowledge production by designer and computer aided software tools. When it comes though to the case of knowledge work, organizations seem to be slow in utilizing technology to increase effectiveness.

Information technology is permitting a change in the economics and functionality of the coordination process. This can be seen in three areas: distance, time and organizational memory. Distance is shrunk to zero becoming irrelevant as far as information flow is concerned. The same applies to time as organizations can be located in different time zones and still work together. Finally, organizational memory is now available to wide variety of users. As far as an organization's structure is determined by its coordinative tasks, it is subject to potential change.

The third IT enabled change in the workplace is at management level. Direction, which is sensing changes in external environment and staying in touch with it, as well as in control, the act of measuring an organization's performance can be fundamentally changed by increasing availability of information communication technology.

4.2 Enabling business integration

The ability to electronically connect people and tasks within and between firms is steadily increasing. This integration is represented in four forms. Within the value chain, this means that there is no part of the organization that is excluded from team concept. A value chain between organizations is one which speeds up the flow of goods among different firms. It can be via an alliance, which is when one firm subcontracts a specific task or a whole stage to another. Finally, an electronic market is a new form of open market and the top tier of electronic integration.

As these representations shrink time and distance, the need to have people and other assets tied up as unproductive buffers is removed.

4.3 Enabling changes in structure

Organizations have always managed some form of matrix structure, a matrix involving functions, products, markets and geography in some combination. With new information technology, unit costs of coordination are decreasing significantly. In addition, IT is changing economies of scale, which is the cost advantages firms expect as a result of expansion.

Management has the challenging task of changing the organizational structure and methods of operation to keep itself competitive in a dynamically changing world. Research has shown that information technology provides one set of tools that can enable these changes. However, to think through the new systems and processes so that they can be exploited effectively is a major challenge for management.

The ultimate goal of this process is to give all employees a sense of empowerment. They need to feel that they can make a difference and that their efforts directly affect the organization's performance.

4.4 Feuerlicht and Vorisek model

Business goals and decisions are divided into three levels, strategic: tactical, and operational [Appendix A]. ICT adoption has a different effect on each of the business goals, depending of course on which level they exist. These are presented in the Figure 7. It seems that in all levels from operational which is at the bottom of the pyramid, to strategic, importance is crucial. What cannot be said for sure is whether management is aware of this. Feuerlicht and Vorisek [2004] had dealt with the potential effects after ICT integration at different decision levels. Their findings are presented in figure 7.

STRATEGIC GOALS

- New business opportunities
- Exclusive partner relationships

OUTCOME

- Changes in partner relationships
- Integration of goal and vision of organization

TACTICAL GOALS

- Enhancement of business processes efficiency
- Flexibility in services
- Competitive advantage

OUTCOME

- On-time evaluation of insufficient business performance
- Problem and change management
- Flexibility

OPERATIONAL GOALS

- Service delivery
- Resource and service cost evaluation

OUTCOME

- Service delivery management
- Cost evaluation

Figure 7: Adoption outcomes on different level of business goals [Feuerlicht and Vorisek, 2004].

4.5 Criticism

This chapter deals with organizational transformation and how ICT is involved in this process. Case studies conducted as well as more than enough papers have been written on this topic. Conferences like the 2007 SQM and INSPIRE held in Tampere, Finland, where suggestions were presented on how software can improve business life. I chose to present Morton's case [1991], and Feuerlicht and Vorisek model [2004]. As Morton's work was published in 1991, it could be viewed as outdated. However, I would characterise it as a paper that could be utilized as a kind of tutorial as the author does not focus on his era's existing technologies, but generalises on technological innovations, their rapid progress and an organizations' ability and to keep up with them. The actual case study is larger in terms of size and includes more findings, but I excluded those that do not have an immediate relationship with the case study presented later and the main theme of this work. This does not in any case mean that the findings excluded are not equally important as those presented.

5. SMEs and ICT. The research (1).

Up to this point, we have defined SMEs and ICT along with presenting a study on how ICT impacts on organizations. In order to put the following research into context, I preempt it with a review of the current relevant literature with notes on its limitations. The research area has been narrowed down to Greece as a result of easier access to valid data which fulfilled the research criteria.

SMEs are important for the Greek economy. According to data taken from the Hellenic Organization of SMES and handicraft, firms employing 50 persons and below form about 99, 55% [EOMMEX, 2008] of the total number of enterprises and they employ 74% of the work force in the private sector. They provide 70% of the new jobs and consequently reinforce the regional development, financial balance of the regions and make it part of a cohesive financial and social link in Greek society. Figure 8 shows the percentage of firms according to number of employees in Greece. 55.6% of firms belong to micro enterprises and only 13% of them are medium sized ones.

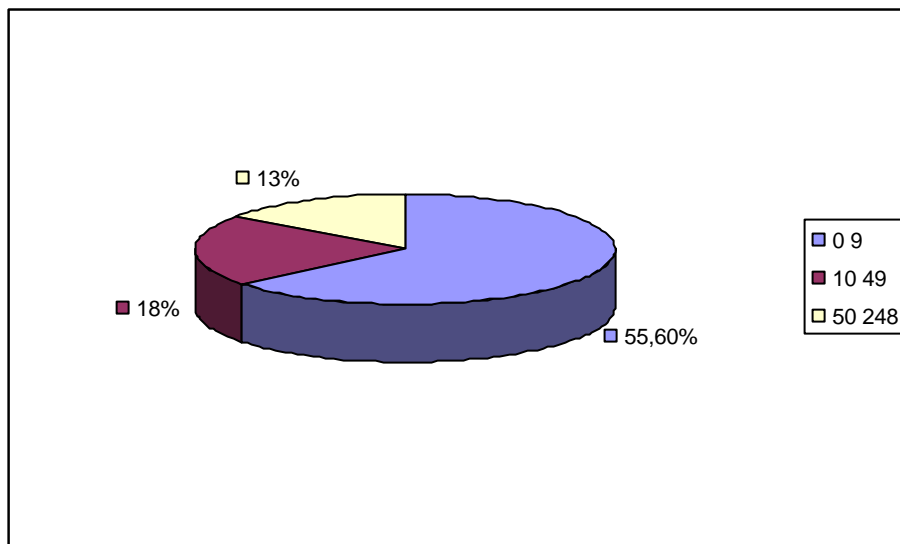


Figure 8: Percentage of firms according to number of employees. [EOMMEX, 2008].

To establish a platform for discussion we will first look at the environment using PEST and SWOT analysis as well as excerpts from interviews with SMEs managers. The reason for this order is that the analysis tools together with sample interviews can provide a framework of information, where we can later look for explanations of behaviours while proceeding with the case study.

5.1 PEST analysis

PEST stands for "Political, Economic, Social, and Technological analysis" and it describes a framework of macro environmental factors used in the environmental scanning component of strategic management. It is a part of external analysis carried out

when conducting a strategic analysis or doing market research and gives a certain overview of the different macro environmental factors that the company has to take into consideration. It is a useful strategic tool for understanding both market growth and decline, business position; potential and direction for operations as well as providing a clear picture of the environment these enterprises are operating in.

Political analysis in this thesis includes the following five sections:

- **Trading policies:** In Greece, ministry for trade does not recognize wholesalers as having an official occupation; therefore enterprises like those are included in trading policies that have been created for import/export trading, or those for retailers. Taking into consideration that both financial outlook and business size of these two types of occupations, places wholesalers in the middle and it is up to management to decide how to declare their business and be influenced by trading policies created for them. In a long term time frame it can be beneficial depending on the decision made by management. Relative importance is critical because a proper selection of policies to follow can either promote business activities or not.
- **Funding grants and initiatives:** The Greek government used to be not well known for its funding record, but as a member of European Union, it used to receive grants that are to be invested in business. Yet, Greece is under IMF inspection and new government's orders concerning SMEs and business organizations in general, promote entrepreneurship and give the opportunity to managers, through a more flexible taxation program, doubled firing percentage (from 2% to 4% per month) and more economical hiring laws, to invest and make their organizations stronger to come out of the present crisis.
- **Wars and conflicts:** Fortunately, this section does not apply in this case as there is no current war or conflict. There are, of course, diplomatic cases running in the background, like the Greece-Turkey international relations as well as the Greece-Fyrom negotiations on the name of "Macedonia". The impact seems unimportant since they are discussions and the probability of war is very low if not zero. The relative importance is basically unknown but as Greece is under the European Union umbrella, managers estimate that there will be no difference in their businesses whatever the result of the negotiations.
- **Government policies:** In Greece there are policies regarding the environment, internet society and information society. Specific programs are found that promote research and development, venture financing, technology diffusion, business environment and intellectual property rights. More details on each program can be found at ministry of trade's website. Generally, these policies are frequently updated and provide opportunities for enterprises that can be taken into account in different time ranges with critical importance.

- Political trends: The political situation in Greece can be characterized as stable, elections are held every four years as set down by the constitution, the form of government is democracy. This stable situation politically filters into a stable economic and business environment.

Economic analysis is formed by four sections:

- Home economic situations: The European commission publishes annually documents regarding the financial situation of each union member. In this report, details are included about the home economic situation of the country. In recent years, Greece has emerged as one of the strongest growing economies in the euro area. However, growing current account deficits, persistent high inflation, the prospect of temporary factors conducive to growth petering out and a progressively loosening fiscal stance have heightened concerns about macroeconomic imbalances. In the short term, like 6-12 months, SMEs may face stability but in long term, managers have to be able to adapt. Needless to say that relative importance is critical.
- Overseas economies and trends: The worldwide economy is flexible and the world's stock markets face a serious crisis and even countries like Germany, well known for their economic stability, are also influenced. In this difficult economic climate, Greece is affected but due to a small role in the world's economy this is not to a large degree. The effect of on SMEs is similar, they are totally dependent on the way facts are formed.
- General taxation issues: Taxation depends on type of SMEs. For instance if it is an organization of limited or unlimited responsibility, if it is a public or private entity and so on. Details on taxation can be found at the ministry of economy website.
- Cash flow: Despite the non stable economic situation, internal cash flow is a common phenomenon. Greek as well as European Union programs, fund SMEs mainly for educational reasons, as well as for research and development, and management cannot turn down such offers.

Social analysis includes six sections, but for the reason explained below, five of them have the same potential impact on the SMEs presented in this work, so they are combined:

- Buying trends, lifestyle changes, education, occupation, leisure activities: Buying trends in Greece change frequently, following international style changes, but since the business area of the enterprises of this thesis is in food area, the only potential change or maybe new trend that can appear is shift to some delicatessen products, that managers can easily predict and arrange their orders. So, the relative impact of such a factor is unimportant.

- Ethic and religious factors: Greece is a conservative country with the majority of the population being religious. The dominant religion is Christian orthodox. SMEs have to take this culture and religious practise into account when arranging their supplies in accordance with the holidays and eating habits of those days. For example the pre-Easter and pre-Christmas period were vegetables are consumed more than meat and fish. This does not have a large impact as these are habits that are left unchanged over the years.

To conclude the PEST analysis we will look at technological factors. Factors like maturity of technology, software changes and communication changes could be mentioned here, but this would be repetition of previous chapters that dealt with SMEs and technology. However one thing that should be reiterated is the fear and hesitation surrounding implementation of new technology.

Summing up, I believe this analysis gives a clear picture of the environment these enterprises are operating in and will be a useful tool when trying to understand the reasons why management of SMEs participating in this case study acted they way they did.

5.2 SWOT analysis for peripheral areas

SWOT analysis stands for Strengths, Weaknesses, Opportunities, and Threats. It provides a scan of the internal and external environment, and helps to find the best match between environmental trends and internal capabilities. According to the Institute of Manufacturing [www.imf.eng.cam.ac.uk, 2008] which belongs to University of Cambridge, SWOT components are defined as follows:

- Strength is a resource or capacity the organization can use effectively to achieve its objectives.
- Weakness is a limitation, fault, or defect in the organization that will keep it from achieving its objectives.
- Opportunity is any favorable situation in the organization's environment. It is usually a trend or change of some kind or an overlooked need that increases demand for a product or service and permits the firm to enhance its position by supplying it, and
- Threat is any unfavorable situation in the organization's environment that is potentially damaging to its strategy. The threat may be a barrier, a constraint, or anything external that might cause problems, damage or injury.

SWOT analysis summarizes the internal factors as a list of strengths and weaknesses, as well as defining the external environmental factors as opportunities and threats. The following diagram is a general analysis for rural and peripheral areas, created by Noronha, et.al. [2006].

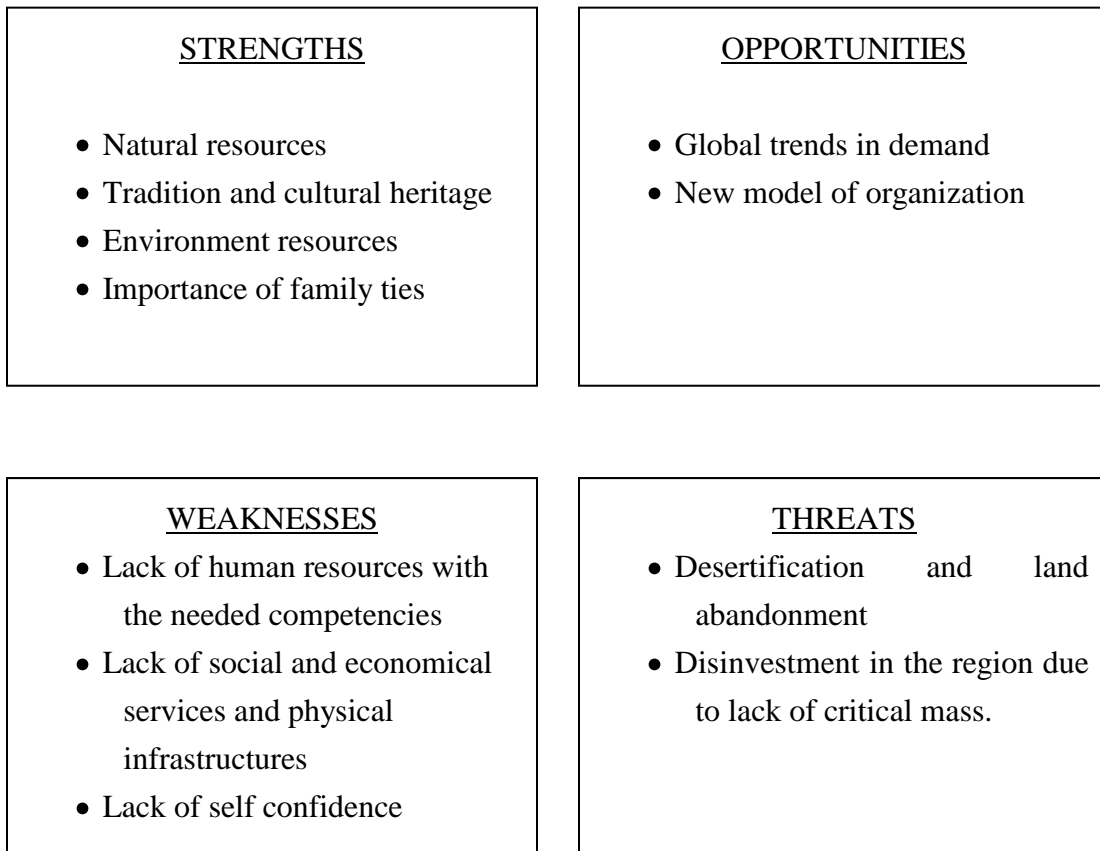


Figure 9: SWOT analysis of rural and peripheral areas [2006].

This SWOT deals with elements like human resources skills, strong ties and lack of infrastructure, characteristics we have met while analyzing SMEs and that we will most probably meet again while analyzing the case study. From my point of view, these factors play a deterministic role, since they are not only participating in chances or threats created, but also, as we will see in further chapters, in problem solving and decision making processes. Their relative importance is high and they are some of the determinants that influence ICT adoption in these enterprises.

5.3 Upper level management viewpoint

After PEST and SWOT analysis, I believe that opinions from people that work in a SME environment can help us reach more valid conclusions on the issues discussed. Questionnaires have been distributed to upper level management employees from SMEs in different cities in Greece, among which Athens, Thessaloniki and Heraklion are included. Only four were returned. However, they are from different locations and companies. So, despite the small sample size, they are diverse enough for valid conclusions to be drawn.

Appendix B has participant information, questions and exact answers of the participants. In this section though, I present my findings, after comparing and contrasting the received answers.

5.3.1. The readiness of SMEs

First question concerned the readiness of SMEs. Opinions do not really differ, as generally, participants agreed that readiness is not high. Reasons for this are taxes, high levels of bureaucracy, complicated and unstable laws and the financial situation of the companies. From my point of view, readiness of Greek SMEs is not high at all but, it is there, and what is needed is a proper way to activate it. The external environment does not really help. Barriers include:

- High taxation
- A public sector which instead of promoting business activities seems to block SMEs, with unstable laws and tiring bureaucracy,
- The economic crisis makes management more conservative in relation to new investments.
- The personal attitude of owners on organizational decisions, which is very common in SMEs. Due to private ownership, it has been observed that the decisions taken by SMEs management, in most cases reveal the character of the owner instead of the character of the organizations. It happens that those people keep working the same way as before, because in previous times it has proven efficient, without taking into account the era in which they are now operating.

On the other hand though, like participant D mentions, entrance of multinational corporations into the market, has made SMEs think about the way in which they operate and I believe this could be the trigger to initiate change, together with a possible tax reduction or special programs to support money flow into the organizations.

5.3.2. The communication gap between management and employees

The participants came to a consensus on the question on the communication gap between management and employees. They all admitted that a gap exists and mentioned various factors, like low salaries, lack of communication regarding the vision or targets of the company between these two groups, employee idea of their occupation and low level of education. The important issue that must be dealt with is how to bridge this gap effectively. Participant C explained how communication between two teams can be maintained successfully. He claimed that this can happen only when a) the basic needs of each group are satisfied and b) if a disagreement between results in an agreement that serves to satisfy both.

5.3.3. ICT adoption in SMEs

With respect to the adoption of ICT in SMEs participants felt that ICT adoption was possible but, unfortunately, there has been so far low uptake. This is in agreement with the findings of this thesis and the factors such as cost, profit increase or productivity improvements which can only be enhanced by this.

5.3.4. Role of employee training

The importance of human aspects as well as the importance of education was underlined by the participants. Personally, I totally agree with all the replies given and I would like to underline one sentence provided by the first participant it is not possible for a company that wants to achieve development, employment of new technologies and innovations, to do so without trained personnel.”

5.3.5. SMEs and their lack of motivation to change

Firstly, we addressed the readiness of SMEs and concluded that this was at a low level. This lack of readiness also impacts on the relative motivation level of the company to implement new technology. In most cases SMEs are open to change, under certain circumstances. Generally, though, management wants to be sure of the results of such a change before taking it on. This however, contrasts with the basic profit rule, which says: high risk, high profit. The message that all this is giving us is that as long as the company's main goals are achieved, high risk moves even in the interests of expansions are not a main priority. I have found that to be very much with SMEs at the moment. This means that through an avoidance of investments the SMEs remain static and so, despite the superficial positive outlook to change they are really not open to changes.

5.3.6. ICT as the fourth business resource

Managers admit that ICT is important, but they do not agree with the claim that ICT is, indeed, the fourth barriers resource. As they put workforce first, it is easy to assume they believe deeply in the human factor and that this is why ICT does not convince them of its performance. Since they cannot accept its importance at the same level of capital land and labour, we can conclude that they treat ICT as a way to improve a few things but not as a resource that could change profit, productivity and development. As long as ICT is not a resource for upper level management, we cannot expect adoption to happen often and without problems.

5.4 Chapter summary

In this chapter, PEST, SWOT analysis and questionnaires have been presented. From what has already been shown we can make some preliminary conclusions, which will be further validated through analysis of the case study presented in the next chapter.

6. SMEs and ICT. The research (2).

The second part of the research includes the case study, which was conducted in three SMEs in northern Greece. The importance of SMEs in Greece as well as why Greece has been selected have been discussed in Chapter 5.

The case study conducted for this thesis has been done on small size companies. What were the criteria used to select companies suitable for the case study? According to Stålhane and Sivertsen [2003] the main points to look for are the following:

- Make sure the company knows you. This is important in order to achieve a good relationship between the writer and the company employees as well as good communication. This is known as getting a good start.
- Know the company. This includes the company's history why they are the way they are- and their strong and weak points. This is important if we want to be able to change the culture and contribute up to a point.

Following these points mentioned above, I chose the three enterprises that took part in my case study. I will refer to them as companies A, B and C. The case includes three medium sized enterprises that specialize in product import and distribution. They are wholesale companies in Kavala's industrial zone, which supply products from their producers to third parties such as retailers. The products vary from foodstuffs to cosmetics and they cover the needs of supermarkets or mini markets in the area. Special categories of products such as spirits, wine or beauty products are also supplied to alcohol stores with drinks and beverages and cosmetics to supermarkets and beauty/cosmetics stores. Those included in the case study are three of the strongest organizations in the area, since they are among the best five in the region and one in the top hundred in the country [Naftemporiki, 2007]. They share many common characteristics, all of them have their own facilities, work with four or five departments and the number of employees varies from 29 to 35 persons. They do not operate online and only one out of three imports goods from abroad. These data show that the assets, liquid or not are at the same level for all of the three enterprises, but the way they take advantage of them is different, and this is shown by the fact that only one of them takes the risk to invest in business with foreign countries.

6.1 Case study description

In a rapidly changing business environment, companies need to stay competitive. Participants of the case study, companies A, B and C, faced a challenge. Their financial statements revealed the problem. Incomes were still high but the percentage of profit increase from year to year was decreasing. This statement translated from economic terms to lamens means that despite the fact the work is being done and the main operation is working properly, there is a need for an organizational change that will stabilise first this percentage and then increase it. The heads of the managerial departments of all three companies, together with shareholders had planned changes and transformations of company departments to face this situation. Their plan for change included observation of department operations, identification of malfunctions or the limited use of assets available and a study on the results obtained. The physical, managerial and marketing departments have been able to put this into practice much easier since their operations are closer to the nature of the management studies. According to this it seemed like a more advanced task than everyday planning. Their challenge appeared when then the information technology issue came into play. They were aware that they possess quality software with the potential to cover their business needs. Still, something was wrong and they had to find out what. The first thought was to change the existing software, and the second, to upgrade it to the next version of same package. My study deals with what happened before they decided what to do, what influenced their choice, what they decided and finally how they evaluate their decision today.

The firms' representatives had meeting upon meeting on what to do with software, whether to upgrade to another version of existing capital release that they are using or transfer their business activities to a new sharper one? Due to limited funds available and even more limited knowledge on the technology, they looked for external help. They met with Altek, which is the company of capital release software as well as Sharp representatives' and asked for their opinions and suggestions.

6.2 The challenge

Each company had two representatives, one from the managerial and one from the accounting department. The choice of departments was not random, since these are the two groups that would be immediately affected by a change in software. Thus, their opinion as well as experience was held in high regard. These six people had meetings with Altek and Sharp representatives separately. They explained their operations, their departments and how they are related inside the organization, as well as the staff capabilities and their attitude towards this potential change. This phase lasted three

weeks. After one week each company turned in their proposal. The companies then took two more weeks before arriving at a decision.

6.2.1 Altek proposal

Altek representatives had an advantage over Sharp that could have been used to win this battle, or it could backfire. This is the fact that the three organizations have been using Altek capital release 3 for the many years. To be more precise, Altek has been their only vendor since the time they adopted information technology; they have been using only Altek software for their main processes. So, there is already a strong relationship between them. It is totally up to the vendor to exploit it to his own advantage and this is exactly what they did. They suggested an update of existing software to capital release 4, and their arguments to support this change were as follows:

- Similarities in user interface and procedures with capital release 3. This reduces training time for users, and increases their confidence in the new product, since in the face of software change, panic and hesitation are the first feelings, and this fact could eliminate them.
- Past cooperation, their trust relationship that has been created during time as well as the service, technical support and immediate response to problems, issues that have been bothering managers. They also referred to personal relationships created with the employees and the fact that they feel confident to approach technical support with any problems.
- The success they have had when in past they did not change vendor but updated the version of the same software. They remind them in a very strategic way, how easy adoption has been and the staff reaction which has been satisfactory to upper level management. Basically using the success of the previous installation as a way to assure the company that the right move would be to follow their recommendations.

These were the three main arguments Altek used to convince the firms to continue using their software.

6.2.2 Sharp proposal

Sharp looked at this from a different view point. It took advantage of the lack of a past cooperation and tried to highlight any shortcomings of the current installation. Their main arguments were as follows:

- It is time to try something new. In the case they have been satisfied with capital release software, they would not think of changing it. However, as the idea of change is on the table, it means there must be some gaps that the old software is not covering that new software would be able to satisfy their needs properly.

- They offered free training to employees and reduced service package prices. They also were negotiating to agree on three persons, one for each firm that for the first month of usage after the initial change would be available in the organization for any question, problem or issue coming up.
- They supported their product by pointing out its dimensions and enhanced their thesis by providing the McCall's framework of software quality factors [1978]. They discussed correctness, reliability, efficiency, integrity and usability, their existence in sharp software as well as their importance for business operations.

6.3 The decision

Despite the fact that their high level positions allowed them to be confident, they were hesitant, and a decision was not easily taken. This was because whatever they decided, there would be many consequences. What they were aiming for was to limit these consequences.

Numerous hours were spent on analyzing the vendors' proposals. They were trying to reach a consensus but it did not work out. Companies A and B decided to stay with Altek and move to a capital release upgrade. On the other hand, company C changed its software vendor and adopted Sharp technology. It is worth repeating that the people who took this decision included representatives from all three companies, and none of them in the IT department. This is important to note with regard to result analysis and explanation.

6.4 The point of view of the vendor

In order to have a complete view of the results, we need to include both points of view, that of the firms and the vendors. From the vendor's point of view none of companies had achieved total success as Altek lost one client however Sharp convinced only one out of three potential clients.

Still, if we want to denote one as the winner, then this would be Altek. It managed to keep two out of three customers, kept their trust, proved that the past cooperation has been successful enough, since they refused to change partner and as company had 66.6% success. Sharp on the contrary, had the chance to bring in three new clients and managed only one.

6.5 The point of view of the clients

From the other side, enterprises A and B took advantage of the new offer and decided to upgrade from capital release 3 to 4 and were later proven right compared with firm C which switched to Sharp software. The result of taking on each software program and the effect on each company's outlook are analyzed further on.

Company A did not have crucial issues to face. Employees found capital release 4 quite similar to the previous version. Added to that, the presence of an Altek employee on a daily basis in their work place, made them more confident to experiment with the functions of the new software and get the most out of it. They said that they liked the new user interface more, they found it easier to use since they could do tasks faster than before and that due to the similarities, training felt like a reminder of old knowledge instead of learning new things. Managers were also satisfied with employee attitudes. They ordered Altek to do a statistical analysis of how much of the software's abilities is now used compared to in the past. Results confirmed that 72% of capital release 4 capabilities are now used compared with 64% used with version 3. This increase also revealed the positive attitude of staff towards adoption generally. Statistics are taken from the company report. It was a successful decision, which resulted in a positive move forward for the organization generally.

Company B acted similarly to A, in terms of taking the same decision, but implementation was completely different. Outwith the main training, they did not request an external partner from Altek for onsite technical support and as a result the employees did not increase their familiarity with information technology. Enthusiasm was also lower and looked at the implementation of upgrade as something new to learn and not as a tool for them to do their jobs better. Management was happy that they could return to company operations quite fast. They would have liked to have the excitement of company A, but were not interested in further understanding why this had not happened in their case.

Finally company C, which was the sole company to switch to a new software vendor, Sharp. Sharp kept their promise, provided training courses and tried to make adjustment as easy as possible for the employees, but it did not work out as planned. Employees could not adapt to the new software environment, training time had to be extended and therefore the company operations held back. This was not much of an issue at first, but had to be repeatedly extended and after two months the company was still not fully operational. There was no single day that staff could deliver their work without the help of a Sharp professional. Management realized that something was wrong, but could not find out if it was a lack of interest or capabilities of their employees, or just their wrong decision to change the software environment. They asked for the help of an external entity to research why they could not bring their organization back to its former stage. The results showed that according to the educational level of its employees, this change in software was not suitable. They should consider that people who had to carry out the daily tasks, had already tried hard to get acquainted with Altek software, and their computer-oriented education was not proficient enough to let them accept and adapt to a totally new environment. They also said that management should have investigated this before moving on to drastic changes. Summing up, this information technology change

can be characterized as fatal for the company, since they needed more than five months to be able to carry out their daily operations and during this time, efficiency decreased which in turn decreased the reputation of the organization.

6.6 Level of readiness

The process of identifying the problem, as well as the choice of solution and its deployment reveals that management did not go through deep research to find an answer to the situation. Had it done so, they would have taken into consideration the four questions from Chapter 2 that help identify organizational readiness for adoption, and maybe the outcome would have been different.

Turning theory into action, I will try to answer these questions for them, based on the information I have regarding this case and find out the level of readiness these organizations were at, at the point they decided to change.

For all the three organizations, the answer to the question if business processes and procedures keep on changing, is no. Processes and procedures are fixed; they basically stay the same since the companies' founding. What has changed though is the way that these processes and procedures are carried out. As technology has progressed, they have been simplified and become easier to follow. Still, the way they were conducted at the time of the study was the same for approximately the last ten years. This means that changes have not been frequent, so employees should welcome a new project, since they have been experiencing stability for a long time. This answer gives a positive reply to the general question and to whether the company is ready to proceed with adoption.

Consider now the second question, "Are business processes and policies standardised and well documented?" Once again, the answer is both common and negative. But I think this is a two side coin situation. The lack of documentation makes the work of an external consultant harder, but it is also a chance for a new business era, a more organised one with all the necessary documentation, that will strengthen the company in competition. Despite the fact that companies' policies and procedures are not documented, they are practised by staff and deviation is a very small and is caused by an absence of documentation.

The last question was "Is the use of computers common in the company?" Yes, it is, but a small percentage of its potential. After personal interviews with a sample of employees, from different departments that use IT from all three companies, findings show that less than 20% can explicitly take advantage of its capabilities [Appendix C]. So, despite the positive reply, to the question, the reality is much different and, therefore, the final answer is no.

From the above data, it is clear that these organizations have experienced stability through the last years. However they function using only a percentage of their

capabilities and in some cases less or close to 50% of it and they don't have the correct documentation.

6.7 Criticism

We started with three similar companies with a common problem but after implementation of either updated or completely new software we had some divergent outcomes.

Managers were troubled when deciding between upgrade or change software options. What they did not think about was the training that would be required. Effective training of your workforce is cost effective, time saving and, most importantly, it allows a company to take total advantage of its assets.

Starting from the very beginning, when a company is faced with the challenge of changing their information technology and asking for external help. Identifying a lack of knowledge is positive step, but recognising who is more eligible to help you is even more important. From my point of view, help from an external source outside the two vendors should be sought, so that a objective opinion for both solutions can also be put forward. Considering the two software vendors' proposals as external help was tricky and maybe one of the reasons company C did not succeed. At the same time, they should have investigated through their employees and conducted research like that of company C after adoption. As managers they should have been more proactive, this would have helped them avoid unwelcome results.

Getting to know your employees is very important. The fact that organization A was surprised by the positive attitude of personnel towards new software, and company C faced serious issue with it, both are caused by the same factor. Management should have known their people better. They, according to my opinion, could have conducted interviews, questionnaires, care about their feelings and capabilities before they moved into action. This would decrease risk and avoid surprises, which may have been pleasant for organization A, but I am not sure organization C appreciated them. And let just not ignore the fact that in this case firm A has just been lucky, not more careful.

I strongly believe management is not the only one to blame. I totally understand the lack of knowledge or limited education, as well as the fact that usually in organizations of this sizes, employees work for many years, staff are with the company for nearly their entire working lives and this gives them a feeling of safety. But I cannot accept that they are not willing to improve. This can maybe happen due to fear of something new, the fear of change or maybe lack of motivation to change their working style. Maybe management should try to inspire their workforce to want to gain knowledge and transferable skills. But also staff themselves should be open-minded, as much as it is possible for them.

Finally, I think that like company A conducted research on the positive attitude of their employees, company C should have done so also. Actually maybe it would have been more crucial to identify the reason behind the lack of enthusiasm instead of its source. This would be important information for future decision making.

6.8 Chapter summary

The primary aim of this study is to contrast and identify differences in the ways by which SMEs' have attempted to adopt ICT, in order to cope with the challenges and the competition they face in the environment in which they are operating. Using survey data collected from three medium size enterprises, the study is an attempt to show the determinants that influence ICT adoption. Results show that not only the decision taken but also its implementation is critical for SME operation, success and future development. Size and staff related disadvantages, prohibit changes and proper implementations, causing issues for SMEs, and only proactive management actions or fast reactive thinking managed enterprises succeed in the end.

7. Research outcomes

SMEs and ICT adoption are two terms that could be two pieces of one puzzle, which if management puts together properly can lead their organization to success. Easy as it may sound, it is not, because it is mostly dependant on the management philosophy under which each company operates. The two research questions posed had to do with willingness of SMEs to adopt and the factors that prevent it to happen.

The main finding has been about management attitude and behaviour. Proactive managers accept technology easier and are more positive towards change. The need for change and ICT adoption is recognized by both types of management but how they deal with this and what importance the place on IT is divergent. Another factor, which causes hesitation, is employees. Company management feels the resistance of employees to changing their current working habits and putting effort into learning something new.

Finally, cost is a critical factor. It is not only the monetary investment required to adopt ICT, which can in many cases be covered up to 60% from government funds, especially for member states of European Union through special programs for business enhancement but cost also includes the working hours needed for training as well as the slower working rhythms associated with the first period of time after adoption. Management has to calculate whether the new working environment after adoption will make up for the lost production, and then it is up to management to make the final decision.

Summing up, despite calculations, offers and objective facts that can make the decision of whether to adopt or not easier again the working attitude of management will have the largest effect.

8. Conclusion

SMEs are more than important to the European economy. Organizations, economical institutions as well as individuals have studied their potential, opportunities, threads, and various analyses have been conducted in order to make them stronger, more profitable as well as in order to increase their competitiveness. ICT has played an important role, since with its adoption SMEs are increasing their business activities while reducing their operating costs.

With respect to Greece, where SME is the most common type of organization, and contributes a very high percentage to the whole country's economical statue, then it is becoming lifeblood. Due to flexible nature of such organizations, an openness to adopt new technologies and strengthen their businesses would be expected. Still, as mentioned by theories around ICT adoption on such enterprises, and like was proven by the case study presented, management face issues regarding their enterprises but they do not take into consideration solutions proposed by experts. Management's hesitation and fear of change has been proven to be a major holdback on ICT adoption and further on to SMEs welfare. Worth to be mentioned is also the fact that this fear is moving to the rest of enterprises' levels, making employees unwilling to change existing situations even if the new one, promises higher productivity, which is more outcome in the same or less time than before.

ICT adoption importance is not questionable. Especially when it deals with SMEs is it becoming vital for them to sustain their existing level of work, to improve their operations and functions as well as to be more established to future opportunities or threats? The fastest an enterprise's management realizes that, then backbone of Greek economy, as SMEs are characterised to be, will be strengthened and expansion potentials will be revealed together with a stabilized economy as a whole. One phrase to remember is: "always keep in mind the era you are leading"

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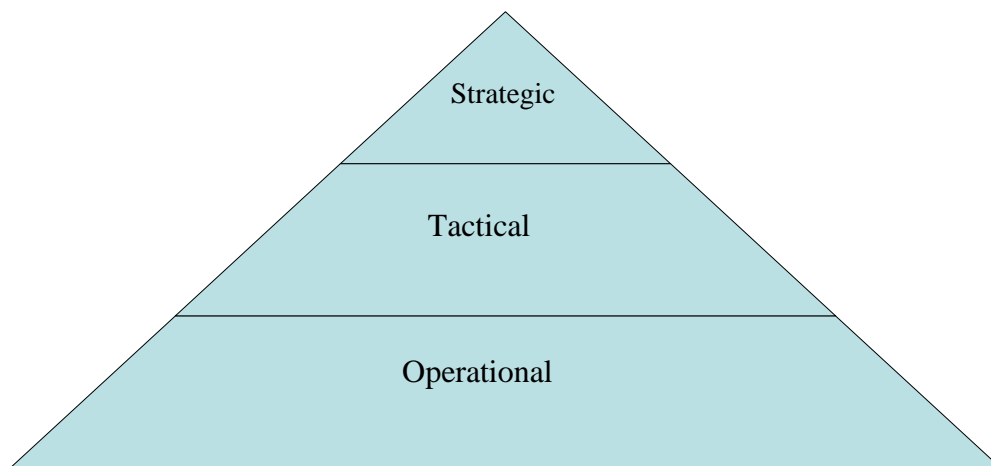
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Appendix A:

Management decisions are made at several levels in an organization, showing their hierarchy. Starting at the bottom, *operational decisions* are day-to-day decisions needed in the operation of the organization. These decisions affect the organization for a short period of time, such as several days or weeks.

The next level of decisions is *tactical decisions*, which are those that involve implementing policies of the organization. They affect the organization for a longer period of time than operational decisions, usually for several months or a few years, and are made by middle-level managers.

At highest level of decisions are *strategic decisions*, which are made by top-level managers. These decisions involve setting organization policies, goals and long term plans, and they affect the organization for many years.



Appendix B:

PARTICIPANTS INFORMATION

ID	AGE	JOB TITLE	STUDIES	WORK EXPERIENCE (in years)
A	62	SME CEO	Bachelor in business administration	25
B	58	Sales manager	Bachelor in	23

C	34	Area manager	business administration Master in management science and operational research	8
D	34	Sales manager	Bachelor in business administration	11

QUESTIONS/ΕΡΩΤΗΣΕΙΣ

1. "The readiness of Greek SMEs is not very high". Please comment on this statement. / «Η ετοιμότητα των μικρομεσαίων επιχειρήσεων στην Ελλάδα δεν είναι υψηλή». Παρακαλώ δώστε μου την άποψη σας επάνω σε αυτό.

PARTICIPANT A

The readiness of SMEs in Greece is not high for various reasons. Some of them are the following:

- Unstable legal and tax environment. Laws keep changing frequently and many times in between the same fiscal year.
- Huge bureaucracy in transactions with public sector which cost a lot in money time and effort.
- Big business projects are taking place in cooperation with public sector, which is unorganised and usually unfair since corruption exists in high degree.
- High taxation and insurance fees have been added the last months together with global financial crisis, creating an unsecure environment for businesses, and uncertainty for the future.

Η ετοιμότητα των ΜΜΣ επιχειρήσεων στη Ελλάδα δεν είναι υψηλή για πολλούς λόγους. Μερικοί από αυτούς είναι:

- Το ασταθές νομικό και φορολογικό περιβάλλον. Οι νόμοι αλλάζουν πολλές φορές μέσα στο ίδιο οικονομικό έτος.
- Η μεγάλη γραφειοκρατία στις συναλλαγές με το δημόσιο τομέα. Είναι χρονοβόρες και κοστίζουν πολλά- κοστοβόρες
- Οι μεγαλύτερες δουλειές γίνονται με το δημόσιο το οποίο είναι ανοργάνωτο και όχι πάντα δίκαιο- ατασθαλίες, λαδώματα.
- Υψηλή φορολογική και ασφαλιστική επιβάρυνση τους τελευταίους μήνες προστέθηκε και η παγκόσμια οικονομική κρίση που κάνει τους ανθρώπους να αισθάνονται αβέβαιοι για το μέλλον.

PARTICIPANT B

In order to estimate the level of readiness of SMEs in Greece, we have to make estimations about this level during the previous years. It is a fact, that after Greek entrance in EU, SMEs, in their effort to defend themselves to multinational corporations attack, they had to introduce changes in their management and organization, without though a specific strategic plan. Software and hardware purchase, advertisement have been some of them, and the result was to improve their situation compared to their previous one. After that though, this change has not been continued, SMEs remained static, without investment or strategic plans, unable to keep track or follow the fast growing rhythms of the rest of the market.

Για να αξιολογήσουμε τον βαθμό ετοιμότητας των μικρομεσαίων επιχειρήσεων στην Ελλάδα, είναι χρήσιμο να εξετάσουμε κατ' αρχήν την πορεία που είχαν τα προηγούμενα χρόνια.

Είναι γεγονός ότι μετά με την ένταξη της Ελλάδας στην Ευρωπαϊκή αγορά, οι μικρομεσαίες επιχειρήσεις στην προσπάθειά τους να αντισταθούν στην επίθεση των πολυεθνικών ομίλων, υποχρεώθηκαν να πραγματοποιήσουν αλλαγές στην μέχρι τότε οργάνωσή τους, χωρίς όμως να υπάρχει κάποιο στρατηγικό πλάνο. Ορισμένες από τις κινήσεις που πραγματοποίησαν ήταν να εφοδιαστούν με μηχανογραφικό εξοπλισμό, ανανέωσαν τις επιχειρήσεις τους σε πάγια, δαπάνησαν ποσά για να διαφημίσουν τις επιχειρήσεις τους. Το αποτέλεσμα των κινήσεων αυτών ήταν να βελτιώσουν την κατάσταση τους σε σχέση με αυτή που βρισκόταν τα προηγούμενα χρόνια.

Η συνέχεια όμως δεν ήταν ανάλογη, αφού παρέμειναν στάσιμες μη έχοντας επενδυτικά πλάνα και στρατηγική με σκοπό να αδυνατούν πλέον να παρακολουθούν τους ταχύτατους ρυθμούς ανάπτυξης της ευρύτερης αγοράς.

PARTICIPANT C

Readiness of SMEs is not high at all, indeed. This is easy to claim, after observing the big number of SMEs that went out of business during the last years, as well as the number of those who have been bought by larger firms. Big as well is the personnel decrease in such companies, since they cannot afford to pay those wages, due to the fact that the buying force of Greek consumer has been also decreased. From my point of view, this is basically caused to the feeling of relaxation SMEs have, according to previous years that job was easier to be done and profits easier to make. Due to this, I believe that they are heading to narrowing down their business activities and finally terminate them.

Η ετοιμότητα των μικρομεσαίων επιχειρήσεων είναι όντως χαμηλή. Αυτό εύκολα συμπεραίνεται από το υψηλό αριθμό μικρομεσαίων επιχειρήσεων που έχουν κλείσει τα τελευταία χρόνια καθώς και από αυτά που έχουν εξαγοραστεί από μεγαλύτερες επιχειρήσεις.

Μεγάλη είναι επίσης η μείωση του προσωπικού στις επιχειρήσεις αυτές, καθώς δεν μπορούν να αντεπεξέλθουν οικονομικά λόγω του μεγάλου ανταγωνισμού και της μείωσης της αγοραστικής δύναμης του μέσου Έλληνα.

Κατά την άποψή μου, μεγάλο ρόλο παίζει στα παραπάνω ο εφησυχασμός των επιχειρηματιών στις προηγούμενες «καλές» εποχές, όπου είχαν πολύ μεγάλο κύκλο εργασιών, καθώς και υψηλά ποσοστά κέρδους. Σε συνδυασμό με το πιστεύω ότι «το λουκέτο» είναι αναπόφευκτο οδηγούνται γρήγορα σε σμίκρυνση και τελικά στο κλείσιμο.

PARTICIPANT D

In previous years I would have totally supported the expressed opinion. Lately though, with the entrance of multinational corporations in Greece, and due to their transactions with Greek enterprises or due to Greek enterprises located abroad, SMEs have started stepping on the steps of enterprises abroad, or at least they have started observing how the rest of the businesses is operation. I am not sure if readiness of such enterprises abroad is caused by the organization itself, or it happens due to the general business environment, even on the rules, or things the state gives, so an enterprise is created with some frame, and simultaneously with a readiness for sure better than the one of most Greek enterprises.

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2. After research conducted, a gap in communication between upper management and the rest of employees is noticed. Why do you think this gap exist, how has it been created and do you have any idea on how to bridge it? / Μετά από έρευνα, παρατηρήθηκε κενό στην επικοινωνία ανάμεσα στην διοίκηση και τους υπαλλήλους. Γιατί πιστεύετε αυτό το κενό υπάρχει, πως δημιουργήθηκε, και ποιες είναι οι ιδέες σας για να γεφυρωθεί?

PARTICIPANT A

There is a gap indeed. This gap has not been created, it has always been there. It is caused by deficiency of administration to communicate to its employees, target and vision of the company, as well as by the low education level of management and employees.

Many employees of SMEs treat their job as temporary, since their desire is a job in public sector.

To bridge the gap, management has to communicate in clear and simple terms the goal of the company, way of working, the organizational chart and then check and control the follow up of it. Simultaneously, employees have to be educated through seminars or sessions on their work.

Πράγματι υπάρχει κενό. Το κενό δεν δημιουργήθηκε, πάντα υπήρχε.

Οφείλεται στην αδυναμία της διοίκησης να μεταφέρει στους υπαλλήλους, τους στόχους και τα οράματα της επιχείρησης, στο χαμηλό βαθμό μορφώσεως της διοίκησης και των υπαλλήλων.

Πολλοί υπάλληλοι ΜΜΣ επιχειρήσεων βλέπουν την δουλειά τους προσωρινή γιατί θέλουν να μεταπηδήσουν στον δημόσιο τομέα.

Για την γεφύρωση του κενού πρέπει η διοίκηση να μεταφέρει με σαφείς και απλούς τρόπους τους σκοπούς της επιχείρησης, τον τρόπο εργασίας, επικοινωνίας, το οργανόγραμμα στους υπαλλήλους και στη συνέχεια να ελέγχει αν τηρείται, αλλά και follow up. Παράλληλα οι υπάλληλοι πρέπει να επιμορφώνονται σε διάφορα σεμινάρια ή ημερίδες στο αντικείμενο τους.

PARTICIPANT B

This gap is due to the fact that management used to apply and unfortunately still do until today, concentration management, by not allowing employees the possibility to express their opinions and participate in solutions that would improve the company's operations. What I mean is, with their tactics, they have transformed their organizations to a public sector business form, where employees' only motive is when the working hours will be over.

As a result, management does not invest, as they should to human resources, which is the main factor of a company. What I mean is that, most of them do not train employees

accordingly, do not give those motives for better work results and avoid discussing with them company issues or even personal ones.

To bridge the distance between management and employees, it is required from the organizations to apply participation management, operate under team spirit, which will be based on trust, open minds, mutual respect and research of improvement in every sector.

Το συγκεκριμένο κενό οφείλεται στο γεγονός ότι οι Διοικήσεις εφαρμόζαν και δυστυχώς συνεχίζουν να εφαρμόζουν μέχρι και σήμερα συγκεντρωτικό Management, μη δίνοντας στους υπαλλήλους την δυνατότητα να καταθέσουν απόψεις και να συμμετάσχουν σε λύσεις που θα βοηθούσαν στην καλύτερη λειτουργία των επιχειρήσεων. Δηλαδή με την τακτική τους μετέτρεψαν τις επιχειρήσεις τους σε μορφή Δημοσίου όπου ο υπάλληλος το μόνο του βασικό κίνητρο είναι τότε θα περάσει η ώρα της εργασίας του.

Κατά συνέπεια οι Διοικήσεις δεν επενδύουν όπως θα όφειλαν στο ανθρώπινο δυναμικό τους, που είναι και το κύριο στοιχείο των επιχειρήσεων. Δηλαδή οι περισσότερες από αυτές δεν τους εκπαιδεύουν κατάλληλα, δεν τους δίνουν κίνητρα για καλύτερα αποτελέσματα της εργασίας τους και αποφεύγουν να συζητούν μαζί τους θέματα της επιχείρησης ή ακόμη και προσωπικά τους θέματα.

Για να γεφυρωθούν οι αποστάσεις μεταξύ Διοίκησης και υπαλλήλων χρειάζεται η επιχείρηση να εφαρμόζει πλέον πολυμετοχικό Management και να λειτουργεί με φιλοσοφία ομάδας, η οποία θα στηρίζεται στην εμπιστοσύνη, στην ευρύτητα πνεύματος, στον αμοιβαίο σεβασμό και στην αναζήτηση βελτίωσης σε κάθε τομέα.

PARTICIPANT C

Communication between two teams can be successful only when, firstly their basic need are satisfied and second, when disagreements among them end up in agreements that satisfy both.

Low salary of employees in many cases is not enough to cover their and their families' basic needs. Combined with financial difficulties of businessmen disagreements are created among the two teams and the communication gap is not avoided.

Even in cases of middle or high level salaries, businessmen demands are bigger than expected. So, there are employees without will and businessmen that are not satisfied from low productivity of their staff.

I believe that management has to pay attention in fulfilling the financial needs (to the degrees this is possible) and also pay even more attention to show it cares about employees by doing quality movements. Such movements could be parties, value added gifts, awards and so on. Such actions create a feeling of security to them and they are more open to the idea of working more hours, with more quality and convince them that when business is flourishing, so is he.

Η επικοινωνία μεταξύ δύο ομάδων μπορεί να είναι επιτυχημένη μόνο όταν κατά πρώτον οι βασικές τους ανάγκες είναι ικανοποιημένες, και κατά δεύτερον οι μεταξύ τους διαμάχες καταλήγουν σε συμφωνίες που ικανοποιούν και τους δύο.

Ο χαμηλός μισθός των υπαλλήλων σε πολλές περιπτώσεις δεν είναι ικανός να καλύψει τις βασικές ανάγκες του καθώς και τις οικογένειάς του. Σε συνδυασμό με τις οικονομικές δυσκολίες των επιχειρηματιών δημιουργούνται προστριβές ανάμεσα στις δύο ομάδες και έτσι το κενό επικοινωνίας είναι αναπόφευκτο.

Ακόμη και στις περιπτώσεις μέσης ή και υψηλής μισθοδοσίας οι απαιτήσεις των επιχειρηματιών είναι δυσανάλογα μεγάλες. Έτσι έχουμε υπαλλήλους χωρίς φιλότιμο και επιχειρηματίες που δεν είναι ευχαριστημένοι από την χαμηλή απόδοση των υπαλλήλων τους.

Πιστεύω πως η διοίκηση πρέπει να δώσει βάρος στην πλήρωση των οικονομικών αναγκών (όσο αυτό είναι δυνατό) αλλά ακόμη πιο σημαντικό είναι να δείξει ότι νοιάζεται για τους υπαλλήλους κάνοντας ποιοτικές κινήσεις. Τέτοιες είναι οι κοινωνικές εκδηλώσεις, δώρα ηθικής αξίας, βραβεύσεις υπαλλήλων και άλλες. Αυτού του είδους οι ενέργειες δημιουργούν κλίμα ασφάλειας στο υπάλληλο που έτσι γίνεται πιο δεκτικός στην ιδέα να δουλέψει περισσότερο και πιο ποιοτικά, καθώς μπορεί να πεισθεί ότι ο ευημερία της επιχείρησης είναι δρόμος και για τη δική του.

PARTICIPANT D

The gap created in communication between management and employees is due to the quality of communication from upper level positions to lower ones, how they transfer information and opinions as well as to the capability of them to bridge this gap. On the other hand it is caused by administration itself, and to the degree it wishes this gap to exist or wants to bridge it. It is for sure though; that it is huge success for an enterprise to have as less gaps as possible because then a team of high standards is created.

People that act as linkages between management and lower level positions are the only ones who can bridge those gaps through frequent sessions so that each part understands the other's behavior even in difficult situations and discussion helps to smoother transition, system or decision.

ΤΟ ΚΕΝΟ ΠΟΥ ΔΗΜΙΟΥΡΓΕΙΤΑΙ ΣΤΗΝ ΕΠΙΚΟΙΝΩΝΙΑ ΜΕΤΑΞΥ ΤΗΣ ΔΙΟΙΚΗΣΗΣ ΚΑΙ ΤΩΝ ΥΠΑΛΛΗΛΩΝ ΟΦΕΙΛΕΤΑΙ ΣΤΟ ΚΑΤΑ ΠΟΣΟ ΤΑ ΣΤΕΛΕΧΗ ΤΗΣ ΕΠΙΧΕΙΡΗΣΗΣ ΣΕ ΘΕΣΕΙΣ ΚΛΕΙΔΙΑ ΜΕΤΑΒΙΒΑΖΟΥΝ ΠΛΗΡΟΦΟΡΙΕΣ ΚΑΙ ΑΠΟΨΕΙΣ ΑΠΟ ΠΑΝΩ ΠΡΟΣ ΤΑ ΚΑΤΩ ΚΑΙ ΑΝΤΙΣΤΡΟΦΑ ΚΑΙ ΚΑΤΑ ΠΟΣΟ ΕΙΝΑΙ ΙΚΑΝΟΙ ΑΥΤΟΙ ΟΙ ΑΝΘΡΩΠΟΙ ΝΑ ΓΕΦΥΡΩΣΟΥΝ ΑΥΤΟ ΤΟ ΚΕΝΟ .ΑΦΕΤΕΡΟΥ ΟΦΕΙΛΕΤΑΙ ΚΑΙ ΣΤΗΝ ΙΔΙΑ ΤΗΝ ΔΙΟΙΚΗΣΗ ΚΑΤΑ ΠΟΣΟ ΘΕΛΕΙ ΝΑ ΥΠΑΡΧΟΥΝ ΑΥΤΑ ΤΑ ΚΕΝΑ Η ΑΝ ΚΑΤΑΝΟΕΙ ΤΙ ΣΗΜΑΙΝΕΙ ΤΟ ΚΕΝΟ ΠΟΥ ΔΗΜΙΟΥΡΓΕΙΤΑΙ. ΣΙΓΟΥΡΑ ΠΑΝΤΩΣ ΕΙΝΑΙ ΜΕΓΑΛΗ ΕΠΙΤΥΧΙΑ ΝΑ ΜΠΟΡΕΙ Η ΕΠΙΧΕΙΡΗΣΗ ΝΑ ΕΧΕΙ ΤΑ ΛΙΓΟΤΕΡΑ ΔΥΝΑΤΑ ΚΕΝΑ ΔΙΟΤΙ ΕΤΣΙ Η ΟΜΑΔΑ ΠΟΥ ΔΗΜΙΟΥΡΓΕΙΤΑΙ ΕΙΝΑΙ ΠΟΛΥ ΥΨΗΛΩΝ ΠΡΟΔΙΑΓΡΑΦΩΝ.

ΟΙ ΑΝΘΡΩΠΟΙ ΠΟΥ ΒΡΙΣΚΟΝΤΑΙ ΣΑΝ ΕΝΔΙΑΜΕΣΟΙ ΚΡΙΚΟΙ ΜΕΤΑΞΥ ΤΗΣ ΔΙΟΙΚΗΣΗΣ ΚΑΙ ΤΩΝ ΥΠΑΛΛΗΛΩΝ (ΔΙΕΥΘΥΝΤΕΣ-ΠΡΟΪΣΤΑΜΕΝΟΙ) ΕΙΝΑΙ ΑΥΤΟΙ ΚΑΙ ΜΟΝΟ ΠΟΥ ΜΠΟΡΟΥΝ ΝΑ ΓΕΦΥΡΩΣΟΥΝ ΤΑ ΚΕΝΑ ΜΕΣΑ ΑΠΟ ΤΗΝ ΤΑΚΤΙΚΗ ΕΝΗΜΕΡΩΣΗ – ΠΛΗΡΟΦΟΡΗΣΗ ΩΣΤΕ ΚΑΘΕ ΜΕΡΟΣ ΝΑ ΚΑΤΑΝΟΕΙ ΤΗΝ ΣΥΜΠΕΡΙΦΟΡΑ ΤΟΥ ΑΛΛΟΥ ΑΚΟΜΗ ΚΑΙ ΣΕ ΔΥΣΚΟΛΕΣ ΠΕΡΙΠΤΩΣΕΙΣ Η ΣΥΖΗΤΗΣΗ ΘΑ ΒΟΗΘΗΣΕΙ ΣΤΟ ΝΑ ΓΙΝΕΙ ΠΙΟ ΕΥΠΕΠΤΟ Η(ΑΛΛΑΓΗ-ΑΠΟΦΑΣΗ-ΣΥΣΤΗΜΑ) .

3."ICT adoption in SMEs." Do you think it is possible? / «Υιοθέτηση τεχνολογίας επικοινωνιών από τις μικρομεσαίες επιχειρήσεις.» Πιστεύετε είναι δυνατόν?

PARTICIPANT A

Yes, it is possible to adopt ICT as long as the cost is not blocking the operation and profit of the company.

Ναι, βέβαια είναι δυνατή η υιοθέτηση τεχνολογιών, αρκεί το κόστος να μην είναι απαγορευτικό για την λειτουργία και την κερδοφορία της επιχείρησης.

PARTICIPANT B

I believe there is the possibility to overcome the obstacles, as long as there is a certain plan of action. What I mean is to record the needs, the cost and the expected result.

Πιστεύω ότι υπάρχουν οι δυνατότητες να ξεπεραστούν τα όποια εμπόδια, αρκεί βέβαια να υπάρχει συγκεκριμένο πλάνο εφαρμογής. Δηλαδή να καταγραφούν οι ανάγκες, το κόστος και τι αποτέλεσμα θα μας δώσουν.

PARTICIPANT C

ICT is an issue that sooner or later companies have to invest to. It is a step on which improvement and welfare can step on. Of course, depended on size and kind of the company, it is more or less needed. For sure though, no enterprise can have future unless it invests on this area.

Summing up the information above, ICT adoption has to be possible by SMEs.

Η τεχνολογία επικοινωνιών είναι ένα κεφάλαιο που η κάθε επιχείρηση θα πρέπει να επενδύσει αργά ή γρήγορα. Είναι ένα βάθρο πάνω στο οποίο μπορεί να χτιστεί η ανάπτυξη και η ευημερία. Φυσικά ανάλογα με το είδος και το μέγεθος της επιχείρησης είναι λιγότερο ή περισσότερο αναγκαία. Το σίγουρο είναι ότι καμία επιχείρηση δεν έχει μέλλον αν δεν επενδύσει στον τομέα αυτό.

Έχοντας πει τα παραπάνω, η «ιοθέτηση τεχνολογίας επικοινωνιών από τις μικρομεσαίες επιχειρήσεις» πρέπει να γίνει δυνατή.

PARTICIPANT D

Of course ICT adoption by SMEs is possible, and necessary. There is no single person that is not involved in technology, especially young people for whom it is easy to accept and work in ay system adopted by the company.

The hard task is businesses whose owners are older in age or generation, where adopting ICT is hard for the owner himself.

ΦΥΣΙΚΑ ΚΑΙ ΕΙΝΑΙ ΔΥΝΑΤΟΝ Η ΥΙΟΘΕΤΗΣΗ ΤΕΧΝΟΛΟΓΙΑΣ ΕΠΙΚΟΙΝΩΝΙΩΝ ΑΠΟ ΤΙΣ ΜΙΚΡΟΜΕΣΑΙΕΣ ΕΠΙΧΕΙΡΗΣΕΙΣ ΚΑΙ ΜΑΛΙΣΤΑ ΕΙΝΑΙ ΑΠΑΡΑΙΤΗΤΟ. ΠΛΕΟΝ ΔΕΝ ΥΠΑΡΧΕΙ ΑΝΘΡΩΠΟΣ ΠΟΥ ΝΑ ΜΗΝ ΑΣΧΟΛΕΙΤΑΙ ΜΕ ΤΗΝ ΤΕΧΝΟΛΟΓΙΑ ΕΙΔΙΚΟΤΕΡΑ ΓΙΑ ΤΟΥΣ ΝΕΟΤΕΡΟΥΣ ΑΝΘΡΩΠΟΥΣ ΕΙΝΑΙ ΚΑΙ ΕΥΚΟΛΟ ΝΑ ΤΟ ΑΠΟΔΕΧΤΟΥΝ ΚΑΙ ΝΑ ΛΕΙΤΟΥΡΓΗΣΟΥΝ ΤΟ ΟΠΟΙΟ ΣΥΣΤΗΜΑ ΕΙΣΑΧΘΕΙ ΣΤΗΝ ΕΠΙΧΕΙΡΗΣΗ.

ΤΟ ΔΥΣΚΟΛΟ ΕΙΝΑΙ Ότι Η ΕΠΙΧΕΙΡΗΣΕΙΣ ΤΙΣ ΠΡΟΗΓΟΥΜΕΝΗΣ ΓΕΝΙΑΣ ΚΑΙ ΟΙ ΙΔΙΟΚΤΗΤΕΣ ΠΟΥ ΔΕΝ ΕΙΝΑΙ ΤΗΣ ΝΕΑΣ ΓΕΝΙΑΣ ΕΚΕΙ ΥΠΑΡΧΕΙ ΔΥΣΚΟΛΙΑ ΩΣΤΕ Ο ΙΔΙΟΣ Ο ΕΠΙΧΕΙΡΗΜΑΤΙΑΣ ΝΑ ΕΙΣΑΓΕΙ ΚΑΙ ΝΑ ΥΙΟΘΕΤΗΣΗ ΤΗΝ ΤΕΧΝΟΛΟΓΙΑ ΤΩΝ ΕΠΙΚΟΙΝΩΝΙΩΝ.

4. Employee training. What is your position towards this statement? / Εκπαίδευση προσωπικού. Ποια είναι η θέση σας σε αυτή τη πρόταση?

PARTICIPANT A

Personnel should always be trained. Training helps in adopting new technologies, ways of working and increases personnel's confidence.

Of course, subjects, way of training and time is a hard task that should be handled with extra care.

It is not possible for a company that wants to achieve development, deployment of new ideas, technologies, and innovations without trained personnel.

Το προσωπικό πρέπει πάντα να εκπαιδεύεται. Η εκπαίδευση συντελεί στην αφομοίωση νέων τεχνολογιών, νέων μεθόδων και ανεβάζει το ηθικό των υπαλλήλων.

Βεβαίως τα θέματα, ο τρόπος εκπαίδευσης και ο χρόνος, είναι ένα δύσκολο κομμάτι που πρέπει να γίνεται με πολύ μεγάλη προσοχή και μελέτη.

Δεν είναι δυνατό μια επιχείρηση να θέλει να αναπτυχθεί, να εφαρμόσει νέες μεθόδους, τεχνολογίες, καινοτομίες χωρίς εκπαιδευμένο προσωπικό.

PARTICIPANT B

From the moment human factor is the most determining one in evolution of each company; I believe it is necessary requirement to have trained employees.

In this way, it will develop employees' talent and will be able to look forward to better work results. Also people will realize easier company's efforts for his own improvement and will get the feeling of working in a healthy business environment.

Από την στιγμή που ο ανθρώπινος παράγοντας είναι και ο πιο καθοριστικός στην εξέλιξη της κάθε επιχείρησης, πιστεύω ότι είναι απαραίτητη προϋπόθεση να διαθέτει εκπαιδευμένους υπαλλήλους.

Με τον τρόπο αυτό θα αναπτύξει το ταλέντο των υπαλλήλων και θα προσβλέπει σε καλύτερα αποτελέσματα της εργασίας του. Επίσης ο άνθρωπος θα αντιληφθεί πιο εύκολα τις προσπάθειες της επιχείρησης για την βελτίωση του και ότι εργάζεται σε ένα υγιές επαγγελματικό περιβάλλον

PARTICIPANT C

There is nothing more important at productivity than employees training. Company owes to train its personnel not just to show to employees how a job is being done, but also to be sure that he will perceive philosophy and strategy of the company exactly the way it is. In many cases, the same task can have different impact in different companies. This should be completely understood by each employee and the most proper and fast way to perceive it, is training.

Δεν υπάρχει τίποτα πιο σημαντικό από την εκπαίδευση του προσωπικού στην αποτελεσματικότητά του. Η κάθε εταιρία οφείλει να εκπαιδεύσει τους υπαλλήλους της, όχι μόνο για να δείξει στον εργαζόμενο το πώς γίνεται μία δουλειά, αλλά για να είναι σίγουρο ότι θα περαστεί ατόφια η φιλοσοφία και η στρατηγική της εταιρίας. Σε πολλές περιπτώσεις η εργασία είναι ίδια σε μία επιχείρηση ή σε μία άλλη, η σημαντικότητα της εργασίας αυτής είναι διαφορετική. Αυτό πρέπει να είναι κατανοητό από τον κάθε υπάλληλο και ο πιο σωστός και γρήγορος τρόπος να το αντιληφθεί είναι η εκπαίδευση.

PARTICIPANT D

It is the beginning and the end. In an enterprise, employee training is the factor that will distinguish it from the competition.

Any company can produce or sell products or services. At the point that human factor enters this game, the best trained one is the winner (philosophy, culture, and training).

Training has many aspects besides learning technical characteristics, which still, is a big part of basic training. Development of emotional intelligence is the part that has many aspects to be developed and can give to management the added value of each employee.

ΤΟ Α ΚΑΙ ΤΟ Ω . ΣΕ ΜΙΑ ΕΠΙΧΕΙΡΗΣΗ ΕΙΝΑΙ Η ΕΚΠΑΙΔΕΥΣΗ ΤΟΥ ΠΡΟΣΩΠΙΚΟΥ .ΤΟ ΠΡΟΣΩΠΙΚΟ ΕΙΝΑΙ Ο ΠΑΡΑΓΟΝΤΑΣ ΠΟΥ ΘΑ ΚΑΝΕΙ ΤΗΝ ΔΙΑΦΟΡΑ ΣΕ ΜΙΑ ΕΠΙΧΕΙΡΗΣΗ ΣΕ ΣΧΕΣΗ ΜΕ ΜΙΑ ΑΛΛΗ .

ΟΛΕΣ ΟΙ ΕΠΙΧΕΙΡΗΣΕΙΣ ΠΑΡΑΓΟΥΝ Η ΠΟΥΛΟΥΝ ΠΡΟΪΟΝΤΑ -ΥΠΗΡΕΣΙΕΣ , ΣΕ ΟΠΟΙΟ ΚΟΜΜΑΤΙ ΕΜΠΛΕΚΕΤΑΙ Ο ΑΝΘΡΩΠΙΝΟΣ ΠΑΡΑΓΟΝΤΑΣ ΕΚΕΙ ΕΡΧΕΤΑΙ ΤΟ ΠΟΙΟΣ ΕΙΝΑΙ ΚΑΛΥΤΕΡΑ ΕΚΠΑΙΔΕΥΜΕΝΟΣ (ΦΙΛΟΣΟΦΙΑ – ΚΟΥΛΤΟΥΡΑ – ΕΚΠΑΙΔΕΥΣΗ) .

Η ΕΚΠΑΙΔΕΥΣΗ ΕΧΕΙ ΠΟΛΛΑ ΚΟΜΜΑΤΙΑ ΠΕΡΑ ΤΗΣ ΜΑΘΗΣΗΣ ΤΩΝ ΤΕΧΝΙΚΩΝ ΧΑΡΑΚΤΗΡΙΣΤΙΚΩΝ ΤΟΥ ΚΑΘΕ ΕΚΠΑΙΔΕΥΟΜΕΝΟΥ ΕΝΑ ΜΕΓΑΛΟ ΚΑΙ ΒΑΣΙΚΟ ΚΟΜΜΑΤΙ ΠΕΡΑΝ ΤΗΣ ΒΑΣΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ Είναι Η ΑΝΑΠΤΥΞΗ ΤΗΣ ΣΥΝΑΙΣΘΗΜΑΤΙΚΗΣ ΝΟΗΜΟΣΥΝΗΣ ΠΟΥ ΑΥΤΟ ΤΟ ΚΟΜΜΑΤΙ ΠΙΣΤΕΥΩ ΟΤΙ ΕΧΕΙ ΑΠΕΙΡΑ ΣΗΜΕΙΑ ΝΑ ΚΑΛΛΙΕΡΓΗΣΟΥΜΕ – ΕΚΠΑΙΔΕΥΣΟΥΜΕ ΚΑΙ ΑΠΟ ΑΥΤΟ ΜΠΟΡΟΥΜΕ ΝΑ ΠΑΡΟΥΜΕ ΤΗΝ

ΠΡΟΣΤΙΘΕΜΕΝΗ ΑΞΙΑ ΠΟΥ ΜΠΟΡΕΙ ΝΑ ΑΠΟΔΩΣΕΙ Ο ΚΑΘΕ ΕΡΓΑΖΟΜΕΝΟΣ .

5. SMEs are not open to change. Do you agree or disagree and case you agree, why do you think this is happening? / Οι μικρομεσαίες επιχειρήσεις δεν είναι «ανοιχτές» στην αλλαγή. Συμφωνείτε ή διαφωνείτε και εάν πιστεύετε το ίδιο, γιατί νομίζετε συμβαίνει αυτό? :

PARTICIPANT A

SMEs are open to change.

Οι ΜΜΣ επιχειρήσεις είναι ανοιχτές στην αλλαγή.

PARTICIPANT B

I totally agree, and I would say this is the rule with few exceptions.

I believe that two are the main reasons SMEs do not dare to change.

Specifically:

- Since a company achieves its goals, it is hesitating to perform changes because it has to make decisions that probably include risk.
- Changes require cost that they are not willing to pay.

In any case, I believe that each company, in order to ask for success that will last in time, should examine on time the existing conditions and take decisions that will bring the expected benefits. It should, in frequent time gaps, reconsider company's route, set the next target, calculate the cost required and predict the benefits.

Συμφωνώ απόλυτα και αυτός θα έλεγα είναι και ο κανόνας που περιέχει ελάχιστες δυστυχώς εξαιρέσεις.

Πιστεύω ότι δυο είναι οι κύριες αιτίες που οι μικρομεσαίες δεν τολμούν αλλαγές. Συγκεκριμένα:

- Από την στιγμή που μια επιχείρηση πετυχαίνει τους στόχους της, δεν τολμά να πραγματοποιήσει αλλαγές, γιατί καλείται να πάρει αποφάσεις που ενδεχομένως να περιέχουν ρίσκο
- Οι αλλαγές τις περισσότερες φορές προϋποθέτουν και υλικό κόστος το οποίο δεν είναι διατεθειμένες να επενδύσουν.

Σε κάθε περίπτωση πιστεύω ότι η κάθε επιχείρηση για να προσδοκά σε διαχρονικές επιτυχίες, χρειάζεται να εξετάζει εγκαίρως τις συνθήκες που επικρατούν και να παίρνει αποφάσεις για αλλαγές που θα στηρίζονται σε ανταποδοτικά οφέλη. Δηλαδή πρέπει σε τακτικά διαστήματα να επανεξετάζεται η πορεία της εταιρείας, να τίθεται ο επόμενος στόχος, να υπολογίζεται το κόστος που χρειάζεται για να επιτευχθεί και να προβλέπονται τα οφέλη.

PARTICIPANT C

I agree that most SMEs are not open to change. In most of the cases founders of them are responsible for this. They support the idea “this is the way it was done until now” or “it has been efficient up to now, why not continue to be?” Most of the owners have studied the business in practice instead of universities. This means that they have not come across different management styles and technology applications. So they face each kind of change with hesitance or fear.

On the other hand there are businessmen who search for investments at any chance(in solid things or human resources) to evolve their companies, increase the growth and make it more productive.

Είμαι σύμφωνος ότι οι περισσότερες μικρομεσαίες επιχειρήσεις δεν είναι ανοιχτές στις αλλαγές. Αυτό στις περισσότερες περιπτώσεις οφείλεται στο γεγονός ότι οι

περισσότερες από αυτές διοικούνται από τους ιδρυτές των. Αυτό σημαίνει ότι είναι υπερασπιστές της άποψης «αυτό έτσι γίνεται» ή «τόσα χρόνια έτσι το κάνω» ή ακόμη «μέχρι τώρα ήταν αποδοτικό, γιατί να μην συνεχίσει να είναι;». Οι περισσότεροι από τους ιδρυτές δεν έχουν σπουδάσει στα πανεπιστήμια αλλά στην αγορά. Αυτό σημαίνει ότι δεν έχουν έρθει σε επαφή με άλλους τρόπους διοίκησης και εφαρμογής της τεχνολογίας. Έτσι αντιμετωπίζουν κάθε είδους αλλαγή με επιφυλακτικότητα ή ακόμη και φόβο.

Από την άλλη μεριά υπάρχουν επιχειρηματίες που ανά πάσα στιγμή αναζητούν τρόπους επένδυσης (σε έμψυχο και άψυχο υλικό) στην εταιρία τους ώστε να την εξελίσσουν, να την αναπτύξουν και την κάνουν πιο αποτελεσματική.

PARTICIPANT D

In all enterprises changes have difficulties, the biggest the company the most frequent is to meet the idea of self decide and command, change is happening due to pending needs where in SMEs issues are easier to discuss resulting in each change to be questioned whether it fits to the company or not.

ΣΕ ΟΛΕΣ ΤΙΣ ΕΠΙΧΕΙΡΗΣΕΙΣ ΟΙ ΑΛΛΑΓΕΣ ΕΧΟΥΝ ΚΑΠΟΙΕΣ ΔΥΣΚΟΛΙΕΣ .

ΟΣΟ ΜΕΓΑΛΥΤΕΡΗ ΕΙΝΑΙ ΜΙΑ ΕΠΙΧΕΙΡΗΣΗ ΤΟΣΟ ΠΕΡΙΣΣΟΤΕΡΟ ΕΠΙΚΡΑΤΕΙ ΚΑΙ ΤΟ (ΑΠΟΦΑΣΙΣΜΟ ΚΑΙ ΔΙΑΤΑΞΗ) ΚΑΙ Η ΑΛΛΑΓΗ ΓΙΝΕΤΑΙ ΕΞ ΑΝΑΓΚΗΣ ΠΙΟ ΓΡΗΓΟΡΑ ΑΠΟΔΕΚΤΗ ΕΝΩ ΣΕ ΜΙΑ ΜΙΚΡΟΜΕΣΑΙΑ ΕΠΙΧΕΙΡΗΣΗ ΤΑ ΠΡΑΓΜΑΤΑ ΕΙΝΑΙ ΛΙΓΟ ΠΙΟ ΣΥΖΗΤΗΣΙΜΑ ΜΕ ΑΠΟΤΕΛΕΣΜΑ Η ΚΑΘΕ ΑΛΛΑΓΗ ΝΑ ΑΜΦΙΤΑΛΑΝΤΕΥΕΤΑΙ ΝΑ ΠΡΟΣΑΡΜΟΣΤΕΙ ΣΤΗΝ ΕΠΙΧΕΙΡΗΣΗ.

6. There is a claim that ICT is the fourth business resource along with land capital and labour. What do you think? / Υποστηρίζουν ότι η τεχνολογία επικοινωνιών είναι το τέταρτο βασικό στοιχείο μιας επιχείρησης μαζί με τη γη, το κεφάλαιο και το εργατικό δυναμικό. Εσείς τι πιστεύετε? :

PARTICIPANT A

ICT is a basic element of an enterprise.

No company can operate without it. The point is thought to go together with company's growth.

During the last years, ICT has been extremely developed but with very high costs.

When ICT benefits go together with company's growth this is a basic element.

Η τεχνολογία επικοινωνιών είναι βασικό στοιχείο μιας επιχείρησης.

Σίγουρα καμία επιχείρηση δεν μπορεί να λειτουργήσει χωρίς αυτή. Το θέμα όμως είναι να συμβαδίζουν με την ανάπτυξη της επιχείρησης.

Τα τελευταία χρόνια η τεχνολογία αυτή έχει κάνει άλματα αλλά τα κόστη είναι πολύ υψηλά.

Όταν συμβαδίζουν οι αποδόσεις της τεχνολογίας επικοινωνιών με την ανάπτυξη της εταιρείας είναι βασικό στοιχείο.

PARTICIPANT B

The way today's business environment is formed, I believe ICT is having a very important role. I am still thinking if it really is the fourth basic resource to company's development. My position is that only human factor is dominant in a company and the rest are combination of things. So, if there is trained personnel, it can manage capital and land accordingly, as well as manipulate properly technology general and ICT too.

Όπως έχει διαμορφωθεί σήμερα το επαγγελματικό περιβάλλον, πιστεύω ότι η τεχνολογία των επικοινωνιών διαδραματίζει αρκετά σημαντικό ρόλο. Είμαι όμως

αρκετά προβληματισμένος αν πραγματικά είναι το τέταρτο βασικό στοιχείο στην εξέλιξη της επιχείρησης. Η θέση μου είναι ότι μόνο το ανθρώπινο δυναμικό είναι το κυρίαρχο στοιχείο σε μια επιχείρηση, τα υπόλοιπα είναι συνδυασμός πραγμάτων. Επομένως αν υπάρχει κατάλληλα εκπαιδευμένο προσωπικό, μπορεί να διαχειριστεί κατάλληλα το κεφάλαιο, την γη, και να χειρίζεται κατάλληλα γενικά την τεχνολογία και ειδικότερα της επικοινωνίας.

PARTICIPANT C

Importance of ICT was mentioned in the third question. What I want to add here is that in certain cases, it is more important than land and labor. Of course, in order to have communication and its technology, it has to be labor.

Τη σημαντικότητα της τεχνολογίας επικοινωνιών την τόνισα στην τρίτη ερώτηση. Αυτό που θα προσθέσω στην ερώτηση αυτή είναι ότι σε κάποιες περιπτώσεις είναι πιο σημαντική από την γη και το κεφάλαιο. Βέβαια για να υπάρξει επικοινωνία και άρα η τεχνολογία αυτής, πρέπει να υπάρχει εργατικό δυναμικό.

PARTICIPANT D

For sure technology is the medium- tool that participates in all operation of a company. It is the basic element and companies have to invest on it to all departments, either production or sales, since it makes the procedures more accurate, faster in any part of it.

I do not know if it is the fourth element and if it should be placed after land, capital and labor, maybe in scientific companies it really is. Maybe in the next decade since technology increase is going to be out of control and maybe becomes “smarter” it finally is the fourth element.

ΣΙΓΟΥΡΑ Η ΤΕΧΝΟΛΟΓΙΑ ΕΙΝΑΙ ΤΟ ΜΕΣΩ – ΕΡΓΑΛΕΙΟ ΤΟ ΟΠΟΙΟ ΣΥΜΜΕΤΕΧΕΙ ΣΕ ΟΛΕΣ ΠΛΕΟΝ ΤΙΣ ΔΙΑΔΙΚΑΣΙΕΣ ΜΙΑΣ ΕΠΙΧΕΙΡΗΣΗΣ .ΕΙΝΑΙ(ΒΑΣΙΚΟ ΣΤΟΙΧΕΙΟ) ΚΑΙ ΠΡΕΠΕΙ Η ΕΠΙΧΕΙΡΗΣΕΙΣ ΝΑ ΕΠΕΝΔΥΟΥΝ ΠΑΝΩΣ ΣΕ ΑΥΤΟ ΤΟ ΣΤΟΙΧΕΙΟ ΣΕ ΟΛΑ ΤΑ ΤΜΗΜΑΤΑ ΕΙΤΕ ΠΑΡΑΓΩΓΙΚΑ ΕΙΤΕ ΕΜΠΟΡΙΚΑ ΑΦΟΥ ΘΑ ΔΙΕΥΚΟΛΥΝΕΙ ΣΤΟ ΝΑ ΥΠΑΡΧΕΙ ΚΑΛΥΤΕΡΗ ΑΚΡΙΒΕΣΤΕΡΗ ΚΑΙ ΓΡΗΓΟΡΟΤΕΡΗ ΔΙΑΔΙΚΑΣΙΑ ΣΕ ΟΠΟΙΟ ΚΟΜΜΑΤΙ ΚΑΙ ΝΑ ΧΡΗΣΙΜΟΠΟΙΗΘΕΙ .

ΔΕΝ ΞΕΡΩ ΕΑΝ ΑΥΤΗ ΤΗ ΣΤΙΓΜΗ ΕΙΝΑΙ ΤΟ ΤΕΤΑΡΤΟ ΒΑΣΙΚΟ ΣΤΟΙΧΕΙΟ ΚΑΙ ΕΑΝ ΠΡΕΠΕΙ ΝΑ ΜΠΕΙ ΜΕΤΑ ΤΗ ΓΗ ΤΟ ΚΕΦΑΛΑΙΟ ΚΑΙ ΤΟ ΕΡΓΑΤΙΚΟ ΔΥΝΑΜΙΚΟ ΙΣΩΣ ΣΕ ΚΑΠΟΙΕΣ ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΕΠΙΧΕΙΡΗΣΕΙΣ ΠΛΕΟΝ ΝΑ ΕΙΝΑΙ ΤΟ 4 ΒΑΣΙΚΟ ΣΤΟΙΧΕΙΟ. ΚΑΙ ΙΣΩΣ ΤΗΝ ΕΠΟΜΕΝΗ ΔΕΚΑΕΤΙΑ ΕΦΟΣΟΝ Η ΤΕΧΝΟΛΟΓΙΑ ΞΕΦΥΓΕΙ ΚΑΙ ΑΛΛΟ ΚΑΙ ΕΝΔΕΧΟΜΕΝΩΣ ΝΑ ΕΙΝΑΙ ΑΚΟΜΗ ΠΙΟ (ΕΞΥΠΝΗ) ΤΟΤΕ ΝΑ ΕΙΝΑΙ ΓΙΑ ΟΛΕΣ ΤΙΣ ΕΠΙΧΕΙΡΗΣΕΙΣ ΤΟ 4 ΣΤΟΙΧΕΙΟ .

Appendix C:

The following table summarizes implementation of decision that companies A and B have taken. Having a closer look at it, becomes clear why the same decision had different effect on the two organizations, and provides example of the importance execution carries in each decision.

COMPANY A

- Asked external help, cooperated with an Altek representative to help employees get used to new software
- Knowledge of staff was enhanced so their knowledge level higher
- Self confidence increased
- Productivity increased, in the quest of employees for operations and capabilities of new software
- Managers asked from Altek report showing their employees' progress

COMPANY B

- Remained to the basic training
- Knowledge level remained the same
- Self confidence decreased, since difficulties using new software release, reduced employees trust to their capabilities
- Productivity remained the same and slowed a bit down, until employees managed to perform same activities as before, with the new software
- Managers observed difference in results with company A, but did not bother to look what they had done differently and did not have the same success

COMPANY C

- Needed a SHARP consultant on a daily basis, since employees were unable to work with the new software.
- Knowledge level remained the same, still it could not be used, because it was only theoretical and in practice they could not carry out the tasks they had to.
- Self confidence became absolutely low.
- Productivity was crucially decreased
- Managers observed difference in results with company A, and B and were thoughtful about the cost implied to go back to previous software package.

Appendix D:

Employee sample was taken from accounting, sales and management department, one for each of the three organizations participated in the case study. In the following list are described the tasks they were asked to perform and the number in second column shows how many out of five people managed to accomplish them.

TASKS TO DO	Company A	Company B	Company C
Open a text editor and write a memo	5	2	4
Open calendar to check a date	3	0	0
Open capital release and search for a customer	5	5	5
Open capital release and create a sales graph	3	1	1
Make a new folder on desktop	5	5	5
Make a new folder in your hard disc	4	4	3
Make a new folder in the network disc	3	3	3
Connect to the internet	5	5	5
Open your email account and sent an email	5	5	5
Open a web browser	5	5	5
Find an online economical newspaper	2	0	0
Find your horoscope	3	2	3

Tasks asked to be carried out may seem random, but the logic goes like this.

Everyday tasks like memo, calendar, folder management, email use, basic internet use, are tasks performed by the majority of people working on computers generally.

Tasks like horoscope reading are entertainment employees may have using the internet and is used to be compared with the online economical newspaper, which is a more job related task.

Finally, capital release tasks are work required duties.

From a first glance, we observe that general computer tasks are more or less carried out by most of them, where capital release ones, are carried out in a better range by company A compared to B and C.

A closer look though, shows that browsing the internet to find horoscope predictions seem easier to most of them in all three companies, whereas doing the same activity to find economical news seems harder for people working in companies B and C. This

comparison is important, because it shows that for a task that requires the same steps, nature of it plays important role.

Summing up, this table shows that it is not only the knowledge or the training that helps employees adopt ICT, crucial is their willing to do so.