

ICT AND ERP APPLICATIONS CHALLENGES IN ROMANIAN SMEs

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Abstract

Small and Medium-Size Enterprises represent the spinal cord of most European Union countries' economies. In Romania, the SME "Cinderella" has been increasingly attracting the attention of SMEs specialists and agencies because, after Romania has joined the EU, this sector needs consolidation so as to add value to the national economy. The new information technologies can function as drivers to increase SMEs' efficiency and productivity in the current global economy. The grand players in the IT industry have been increasingly considered SMEs. "Heavy" names such as IBM, Oracle, Compaq or Microsoft are developing SMEs projects, both for equipment (servers, flexible technological architectures), and for integrated solutions (ERP, CRM, BI, SCM), solutions which were initially targeting large businesses only. Small Business is already becoming an important segment that the whole IT industry is targeting. Romanian SMEs must consider this trend and be prepared for the "technological fashion". The heavy survival test cannot be passed without this support.

Key words: SMEs, ERP, CRM, ICT, e-commerce, electronic business, integrated solutions

1 Introduction

In a knowledge-based economy, Romanian enterprises' competitiveness, irrespective of their size, increasingly depends on their capacity to provide products of high added value, at attractive prices. Globalization, on the one hand, and the liberalization of trade, on the other hand, force Romanian enterprises, both large and small, to acquire high levels of performance at international level, even when they only operate on the Romanian market.

In order to be competitive, Romanian SMEs need a strategy that should ensure the steady increase of business efficiency, production costs reduction and product quality improvement. Since the financial power of small organisations is limited, compromise solutions must be found, that should satisfy technological needs with the resources available.

Because we live in the age when literally every aspect of businesses, life and society [Fotache, 2004, 37-63], it is certain that the new information and communication technologies (ICT) are radically changing the nature of businesses. These technologies open new productive perspectives (information integration), opportunities for innovation (the introduction of informational services), as well as new organisational and business opportunities (electronic trade, e-business platforms, inter-organisational networks).

In a process of continuous development, ICT have fundamentally modified the nature of global relations, sources of advantage in competition, and opportunities for economic and

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social development. Technologies such as the Internet, personal computers or mobile telephones have changed the whole world in a global network of persons, companies, schools and governments, which communicate and interact via a large variety of channels. The explosion of this technologically mediated global network has produced a world in which anyone can, virtually, benefit from the advantages of Digital Integration.

According to Networked Readiness Index from 2006 [Global Information Technology Report 2005-2006] which evaluates how well prepared a country is to participate in the network economy by benefiting from the ICT advantages, Romania ranks the 58th in the world, among a total of 115 countries, with -0,23 points. The study is made yearly by the Swiss organisation called World Economic Forum. In 2005, Romania ranked the 53rd, with -0,15 points, but the study had comprised 104 countries. The index of each country is formed by points awarded for the telecommunication infrastructure, national field regulations and the degree to which Information Technologies have been adopted by users, companies, as well as State institutions and organisations.

Romania's place, in the lower half of the hierarchy, is mainly due to the lack of a legal framework (although efforts are being made to remedy this situation), enterprise immaturity and insufficiently developed infrastructure. So, although there are resources at national level, SMEs are not competitive mainly because of problems connected to infrastructure (the extent to which they are equipped with computers and have Internet access). In other words, they "ignore" the advantages involved by the use of technology and how to promote products and services via the Internet. In addition, the impact of the new technologies on sales still represents an insignificant percentage [INS, Statistica Informațiilor, 2004]. Romanian SMEs have not managed to develop a culture that could exploit opportunities offered by the new information technologies. In fact, ICT must be used so as to change the type of organisation and communication with business partners, customers, suppliers and employees.

Yet, mention should be made of the fact that the state of the art is not much better at European level either, because in the EU member states, approximately 80% of SMEs use applications of low complexity (e-mail, www access), 30% exploit the Internet and on-line trade (medium complexity) and less than 10% use applications of high or very high complexity (e-marketplaces, inter-organisation collaborative networks, supply chains). Although they are not as developed as other regions of the world (we are mainly referring to the USA), however, the EU member states' advantage as compared to our country, force Romanian SMEs to be more reactive.

In addition, we aim for the development of the e-business environment via the creation, at national and local level, of portals to promote electronic trade, and of e-business networks.

The current Romanian SMEs portal was developed via a *Technical Assistance PHARE Project* that aimed to develop electronic governance solutions, to create databases for SMEs, and to design benchmarking solutions. The development of local portals is part of the *Knowledge-Based Economy* project and it aims to stimulate even small and medium-sized enterprises to use the new technologies so as to develop businesses by promoting electronic trade and e-business networks.

2 E-Business and Romanian SMEs

If we consider the international context, in 1994, there was nothing of what we now understand by electronic trade and business. The years between 1995 and 2000 were the e-business boom, and the year 2001 marked the beginning of a new stage of consolidation and reorientation after the crash perceived by numerous on-line businesses (the so-called dot.com companies). The main change is given by the passage from the technological to the economic approach, in the context in which companies that were initially aiming to increase

the volume of their business are now focusing on profit. Thus, we have come to talk about *e-business* in the case of SME-s as well.

At national level these historical data did not exist (Romania did not have a dot.com period), so that now we are on ground zero in this field. SMEs cannot enter the “e-business” game (in full swing at global level) without a solid process of ICT implementation. The complexity of the business environment has made Internet access and a simple website that attracts customers or suppliers insufficient, if on-line orders cannot be satisfied. To be successful, it is very important that the enterprise should have an integrated business system, and that the new environment should be used in as many operations inside the company as possible.

Furthermore, beyond the infrastructure and integrated business solutions, SMEs need a positive, “innovative” attitude towards employees’ mentalities and skills. Investments are necessary for the training of personnel (managers included) and the development of electronic relations with business partners. Euro Info Centres, as well as national and regional SME Development Centres are very important in counseling managers who are interested to invest in technology and who wish to have a successful start-off in the European e-business sector.

In this context, it is compulsory to share information, on a large scale, to promote the advantages offered by the electronic business media, to encourage entrance in the global technological arena, as well as to create institutions, professional centres that promote specialists qualified to set up an SMEs platform and e-business networks in Romania.

A PHARE study [Phare, 2004] demonstrates that in all countries, successful small and medium sized enterprises, irrespective of their technologic level, are the ones that function according to the “laboratory organisation” model that implements work “by projects” and not only by “number of work hours”. This “laboratory organisation” of an enterprise is comparable to structures dedicated to research and development (R&D) and it can be similar to a technological centre, a research hub or a department. The increasing importance, noticed in the curricula of economics departments in our country, of “Project Management” courses, fully matches this reality. Managers must either train themselves for project work, or they must invest in specialists and create professional teams. These teams can then store knowledge that will generate the best practices, the “best practices” in the IT industry. In Romania’s case, the problem is that new knowledge is created by people who, most often, cannot synthesise and transmit to others what they have discovered or learnt. Thus, the transformation of knowledge into experience depends on collaboration among specialists. At this level, information centres and business hubs, specialised national agencies, have a primordial role and it would be necessary to develop competences for:

- The creation of data bases that should store the practice of SMEs businesses in our country;
- The design and implementation of systems of evaluation and self-evaluation of SMEs’ innovative potential at local level for the evaluation of the current knowledge potential and of ambitions and development projects of business enterprisers;
- The set-up of information and assistance centres that would support the writing of projects to access European funds. Thus, an SME will know if it is worth it or not to invest in a project, what opportunities it has and what will be the efforts necessary to complete it;
- The Romanian SMEs penetration and success in existing networks and alliances at European level. The exploitation of opportunities offered by portals that promote the best business practices.

In this context, in order to survive in the European world, Romanian SMEs must adopt and implement integrated platforms from the ERP category, that, via the ensuing

information coherence, represent a genuine warranty both for investors, and for business partners.

3 Romanian SMEs facing ERP applications challenges

At this level we can talk about numerous challenges that are connected to success on a market that is already saturated with competitive products, so that problems connected to the increase of entrepreneurial culture, the finding of the necessary resources, the attraction of foreign investment, the absorption of funds available via European programmes, the observance of European legislation, the ways to attract and keep valuable employees loyal, can be solved.

Products from the Enterprise Resource Planning (ERP) category are application packages that cover, as a single “umbrella” product, all departments of an enterprise. Their implementation aims, first of all, to eliminate “information islands” and reunite all functions of an enterprise in a single system. Considered initially as grand scale applications for large and medium sized companies, *Enterprise Resource Planning* suites are now addressed to small and medium-sized enterprises as well. Consequently, due to the increasingly consistent enterprise offer, we can notice that SMEs themselves have started implementing platforms of this kind. The implementation decision is motivated by the following advantages [Fotache, 2004, 37-63]: full planning of the enterprise’s resources, increased reactivity to the enterprise’s demands, the reduction of production and stock costs, the elimination of waiting time, the increase in product and service quality and global improvement of productivity. If we analyse all these advantages, the conclusion is clear: for the near future, the implementation of applications of this kind can be the “breath of oxygen” that is so necessary for SMEs’ survival in the context of Romania’s integration in the European Union.

From the study of ERP systems we have realised that beyond theoretical research, understanding the phenomenon depends on experience. However, if, further on, experience itself is shared and discussed with those who have tradition in the field, we can talk about success.

The weight of integrated applications is very small when we consider all Romanian SMEs (we have in mind actual implementations) although it is obvious that big software producers (Microsoft, SAP, Oracle) have the tendency to offer products that mainly target the special SMEs segment market. On the one hand, we can notice the “governmental concern” that preaches support via the application of national and European programmes and, on the other hand, we cannot help noticing that this field (despite all support), cannot stand the “terror” of implementing new technologies. In comparison with businesses from the large-medium size segment, the decision to implement an ERP solution is quite difficult, because the costs involved are very hard to cover. The risks that the organisation must take are not to be neglected: the very large volume of initial investment, uncertainties connected to software adaptability, increased responsibilities given to personnel and hidden significant costs, especially those connected to employees training, to professional re-specialisation and to the application’s localisation in agreement with business specificity. At the level of funds, between 2007 and 2013, Romanian SMEs can access structural funds to support projects in the ICT field. According to the European integration bulletin, EU-RO Newsletter, the value of these funds rises to 336 million Euros. The strategy to use these funds must include, among other things, operations such as SMEs connection to the Internet, the construction of tele-centres in underprivileged areas, the support of electronic business applications, the introduction of electronic bidding systems, and the increase of the degree of security of electronic transactions. If integrated applications constitute the access key to inter-

organisational networks, European funds represent the financial answer to many problems. Thus, the offer can be covered by demand.

At the level of offer, the Romanian SMEs software market is covered both by famous companies (Microsoft, SAP, Oracle, Scala) and by 100% Romanian offers (Crisoft, Transart, Bit Software, TotalSoft, WizRom, ASIS, EXMAN etc.). Analysts consider that this market is continuously developing, because our country is at the stage where it is only beginning to become ERP literate, especially in the field of SMEs.

4 Conclusions

Romanian SMEs have not managed to develop a culture that could exploit the opportunities offered by NIT. Most SMEs apply only a thin IT “film” oriented towards the customer, over an obsolete business organisation and mentality, and they do not use the opportunities offered by these technologies to the maximum. In fact, ICT represents the vector of a new business philosophy that preaches the organisations’ radical restructuring and redesign. This process is particularly difficult and the most important support is offered by integrated business solutions that simplify and facilitate internal processes and ensure flexibility and agility on an increasingly “picky” global market.

To sum up, in order to benefit from all the opportunities provided by the integration in the EU, the optimum framework must be created at the level of the Romanian SMEs for:

- **Information and consultancy.** SMEs must be informed about the European framework programmes that support technological development and offer consistent financial support for informatisation. At the same time, business centres or hubs must ensure SMEs counselling in writing projects that could absolve European funds. Consultancy must also cover the training of specialists capable to write and manage eligible projects. It is very important to know the possibilities to create public-private business partnerships that should allow entrance in business networks. We make a note here of the importance of project management and the provision of training to managers;
- **Investment in latest generation technologies.** The facilitation of information technology use, both at the level of equipment and at the level of the adoption of business management integrated systems, to prepare SMEs for e-Business. To support SMEs, IDG Romania periodically organises Forums in which prestigious companies in the IT field participate: IBM, Oracle, Orange, Microsoft, CRIssoft etc. The events popularise the best ways to implement integrated solutions (best practices) and present case studies;
- **Innovation and creativity.** The frequent environmental modifications and especially technological evolutions, which are often very complex, involve innovative reactions from the organisational environment. Innovation and creativity can be facilitated by integrated applications that manage businesses and customer relations (Enterprise Resource Planning, Customer Relationship Management) and that offer, in addition, flexibility to survive as businesses. SMEs innovate in a different way to larger firms. They command fewer resources, have less R&D, and they generally face more uncertainties and barriers to innovation. These weaknesses could partly be overcome by their integration into networks and innovation systems [Tödting, Kaufmann, 2001] ;
- **Human resource training and development.** Courses in business training and human resource development hubs are also important. Furthermore, the involvement of managers and skilled SMEs staff in University Master’s programmes facilitate the connection between higher education institutions and the business environment. The managers’ continuous professional training is very important, and the quality of the graduates increases;

- **Strategic networks formation.** By resorting to this type of organisation, long-term arrangements/connections/collaborations are set up between two or more SMEs and between them and the other business players, at local, regional, national and international level. Alliances are formed on the network principle, each player (supplier-producer-client-various business partners), having a well defined importance, so that the ensemble could be especially advantageous for everybody. Networks can be formed via business hubs and product outsourcing and distribution networks [DeBresson, Walker, 1991] [Cooke, Morgan, 1993];
- **Client-centred business.** A client-focused company relies on supporting customer loyalty, anticipating their wishes and personalising their offer, quickly responding to their requests and providing very high-quality solutions. Commercial web sites have transformed the Internet into a strategic opportunity for organisations that can offer products and services of the adequate quality, and very shortly. More precisely, Customer Relationship Management technologies have allowed companies to automate, integrate and optimally use internal resources, by supplying the functionalities of the highest performance, which are personalised via portal applications.

Technology offers SMEs creativity, possibilities to hierarchically rank the important information load, and to create business networks. The innovation capacity is especially important, and the capacity for lifelong learning is primordial. The support offered to this process of informational integration of ERP and CRM applications is especially important.

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