

IMPLEMENTING THE E-MANAGEMENT WITHIN THE SMALL AND MEDIUM ENTERPRISES IN ROMANIA - A PREMISE FOR ENSURING A DURABLE DEVELOPMENT

Dan Ilie Morega¹
Corneliu Gârjoabă²

Abstract

The present article introduces the ways and advantages of implementing the e-Management systems, based on decision assistance software, within the Romanian small and medium enterprises that have set as main goal for the near future the durable development, considering the more and more turbulent and dynamic business environment.

Key words: SMEs, opportunities, informational society, knowledge society, E-Management, E-Business, Management, performance, durable development.

1. The E-Business & E-Management Context As An Opportunity For The Business Environment Of Smes In Romania

At present Romania is in an intense convergence process towards the economic structures that characterizes the business environment of the developed countries all over the world, therefore it is extremely necessary to invest in entrepreneurial development, given the high contribution of this field within the business environment performance, to the flexibility, dynamism and the adaptability of the Small and Medium Enterprises to change, thus reducing the existing economic, technological, social, etc. cleavages.

A direction worthy of attention is investing in businesses that have proven viable within the business environment that characterizes the informational society (information based society). In Romania, capitalizing the opportunity brought on by Internet, the Small and Medium enterprises understood to make the shift from the "classical type" of business to the „e-business" type (electronic business), taking into account the fact that these businesses represent a way of "*secured, flexible and integrated access, for developing various businesses by combining processes and systems that execute basic operations of the businesses with those that make possible the search of information on the Internet*" (Bill Inmon)³.

Thus, the business environment enjoys multiple advantages among which the most important are considered to be:

1. The opportunity to sale and promote globally your own products;
2. Communication with suppliers and clients of the company involves a reduced level of costs and is more efficient;

¹ Dan Ilie Morega, is Professor at the Academy of Economic Studies Chişinău, E-mail: d.morega02@yahoo.com

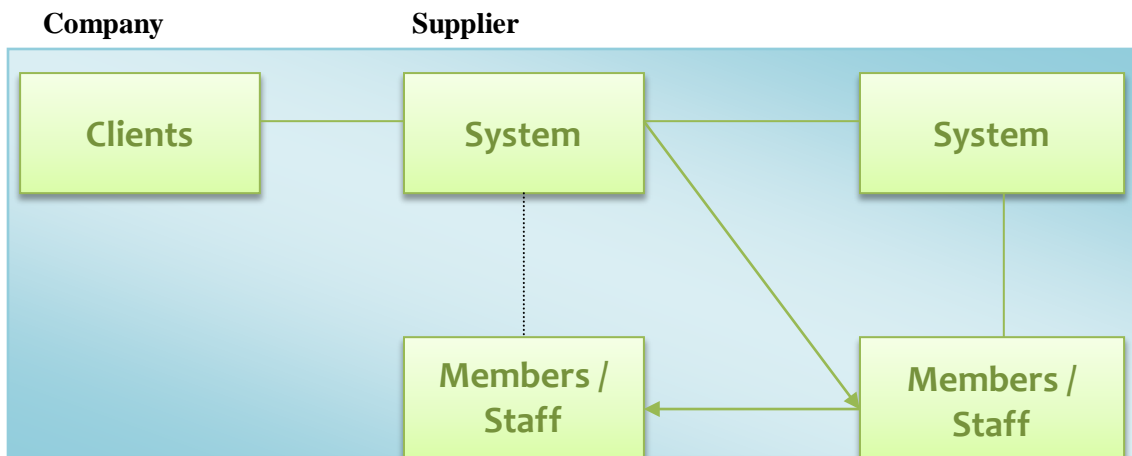
² Corneliu Gârjoabă PhD at the Academy of Economic Studies Chişinău, E-mail: corneliu garjoaba@yahoo.com

³ In the book "DW 2.0: The Architecture for the Next Generation of Data Warehousing" (2008).

3. In order to start a successful online business, compared to the traditional one, a minimum investment is required;

The e-Business represents more of a strategy concerned with the way to do business, its most important component being the e-commerce (electronic commerce), which is nothing less than the sale of products and / or services through the Internet.

We must not understand that the online businesses are limited to the sale of products and / or services through the Internet. An electronic business means so much more; it implies maintaining contact with your suppliers, with possible business partners, but also with your clients, promoting your products and / or services, etc.



E-mail, phone, fax, letters

Fig. No. 1 The B2B Business System

This aspect proves to be difficult to achieve by using the classical management techniques, therefore it is required an update of the business management methods, shifting from a classical management to e-Management.

Applied properly, the e-Management is the solution for multiple issues that the majority of organizations are being confronted with. It is not a simple methodology, since it creates a slight dependence of the managers towards the IT system, but it certainly is a methodology that brings success and ensures a long term development.

During 2010-2015 we can no longer discuss of a successful e-Business without a performing e-Management. The need for the e-Management is even greater as, due to the use of the Internet and the shift to operating on the virtual market, more than 80 % of the world wide Small and medium Enterprises have been facing a series of issues such as:

- The repeated occurrence of low performance;
- The desire to use speed as a differentiating element;
- A supplier complains about the poor performance;

- The occurrence of a daily overload in the suppliers' system around 17.00 hours;
- Increase and sophistication of connectivity, etc.

The e-Management represents an ensemble of techniques based on advanced software that offers a full set of resources e-Management and of basic services evaluation in a fast way of increased efficiency.

Moreover, the e-Management involves modeling techniques according to the type and need of the organization where it is being implemented.

The e-Management System transforms a classic management System in a system of: *availability, performance, capability, change solutions, security, disaster management, etc*⁴.

2. Arguments In Favor Of Applying E-Management

In order to implement an e-Management system within a Small and Medium Enterprise we must know firstly the necessity of its implementation. Without rigorous planning the new system may become an obstacle for the development of the Small and Medium Enterprise producing within the enterprise true economic disasters.

Arguments in favor of applying an e-Management System:

- The company has more internal processes (manufacturing, transport, clients' assistance).
- Communication between internal processes is effectuated with the basic instruments (phone, letters).
- There are many situations when production is delayed due to the lack of stocks.
- There is no control (or a weak one) of the product's cycle of life (number of manufactured products, number of tested products, number of packed products, etc.)
- Management cannot identify the source of customers' complaints.
- Partners and clients are situated in different geographical regions or use different languages.
- There is a clear image of all the processes and necessary measures for each process;
- There is a budget for managing the e-application (time costs, training, equipment, development frame, etc.).
- Employees, partners and clients have an acceptable IT technical level.
- Arguments against applying or delaying the implementation of an e-Management system.
- The company has a limited number of clients, or one client's feedback is not vital.
- Clients and partner are situated in the nearby area of the company and have close relationships.
- There are only a few processes and they are simple and straightforward.

⁴Abordation of the **Information Systems (IS)** who is an academic/professional discipline bridging the business field and the well-defined computer science field that is evolving toward a new scientific area of study

- There is already an applied simple process for recording the production flux that has acceptable results.
- There is no budget for applying a new E-Management system, including the staff that deals with training the application of the new system.

3. The Steps Of Implementing An E-Management System

- 1) Implementing an e-Management system implies following several essential steps such as: Documentation of all processes – all internal and external processes must be documented. For each process included in the system all the effectuated actions will be described, with the responsible for each action indicated, all the information used (from other connected processes), as well as the information supplied on the following processes. A definition of measurements and performance indexes is also necessary.

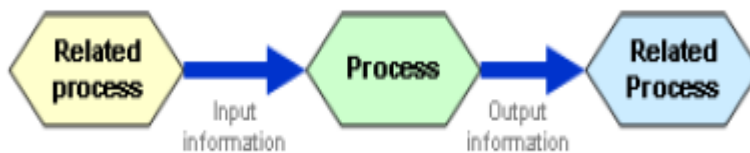


Fig. No. 2 The input and output process

- 2) Defining requirements – what are the expectations of the Small and Medium enterprises' management from the new E-Management system; what results of the system's global indicators should be calculated; etc. A detailed description of all capabilities will also be defined. For a more precise description it is better to approach what the system should not do, as well (in order to avoid future confusions). The requirement will describe where and how the data is going to be presented (in a computer application, on the internet, by e-mail, etc.).
- 3) The selection supplier: usually there are two main options - buy an instrument (software) that fulfils requirements or contact another company in order to develop an instrument (software) according to the requirements.

The adopted decision must take into account several factors, besides costs, such as:

- How many key requirements can be fulfilled by the products on the shelves – most of these products fulfill certain general requirements, but are not able to fulfill some key requirements which leads to their disqualification.
 - What support can the supplier offer to its clients and what are the conditions of services offers. The training for the entire personnel of the company will be necessary and this aspect should be carefully treated, especially if the system is implemented and personalized by another company.
 - If there are options to develop and apply the system in more stages, for a flexible Small and Medium Enterprise that is in a less favorable development stage.
- 1) Supply /development – if the "shelf" products are going to be used for the e-Management solution, they will be purchased in a personalized configuration (if possible), with the respective documentation and training programs. A contract for extended support is useful. In case e-Management instruments are designed by

another company it is better to maintain close relations with the development team. For a successful final product, intermediary products can be tested during the development cycle, thus being able to make the necessary adjustments as early as possible.

- 2) Testing period – according to the complexity of the e-Management process, there will be a testing period for the new system. During this period for all processes old management methods as well as the new method are going to be used, in order to ensure the continuity of the production process and to check whether the indicators supplied by the e-Management systems are according to expectations. This stage should be concluded after the entire personnel is familiarized with the new management system and the company has followed all the possible cases (including year end, backup and reports), all requirements being successfully tested. The e-Management solution should be changed in case discrepancies occur.
- 3) Upgrading and maintenance. During the period of use of the new management method (E-Management) a series of other opportunities will be opened, at a certain moment, the E-Management system should be improved; therefore the application process will be repeated following the same steps, with the amendment that the supplier can be the same, ensuring continuity, a reduced effort and much lower costs.

The above mentioned steps are a general description of implementing e-Management that allows the Small and Medium Enterprises on an already established structure to define more easily the objectives and requirements for the personalized e-Management system. Applying an e-Management system within a relatively short period of time, without major costs and delays in production, is materialized in a true challenge for the Romanian Small and Medium Enterprises.

The system must be implemented according to their size and complexity. For the newly created Small and Medium Enterprises it is going to be easier to apply an e-Management system conceived from scratch, the precise requirements set, the indicators and the existing processes can be difficult, not being able to form a certain management performance. The lessons learned from other similar companies as well as various case studies can help preventing future disasters. In case requirements are wrongly defined, the e-Management system will slow the development of the Small and Medium Enterprise.

The services offered by the e-Management help improving the Small and Medium Enterprises' activity, the organization, facilitate communication on work fluxes in order to have the possibility of taking more informed decisions on management collection, on costs reduction as well as on improving entrepreneurial experiences.

Any Romanian entrepreneur and not only must know the necessity of this new management method, considering the fact that the targeted success must be obtained in a society characterized by the "little e" whose evolution involved:

- *"Business as usual but much faster"*- managing businesses that have as fundament the use of e-technologies such as the e-mail, web sites, online research, e-technologies that actively participate to the increase of productivity by a simple office supply upgrade.

- *Some businesses, new channels* – opening the cyber market has created new channels for business, communication and distribution towards clients which involves the evolution of the business towards new aspects such as: e-commerce, markets, internet marketing and intranets.
- *The e-Management Revolution*. Welcome to the e-revolution (Mlellan) - explores the way the Web inventors' dreams lead to a constant flux of applications based on the Web and how these, once absorbed by the market, change the business image as we know it until now.
- Therefore, the option to implement the e-Management brings a plus value to the present day entrepreneurship.

4. Case Studies

Following there are several case studies of SME which implemented e-Management systems.

Textile Company Case Study

This company produces textile subassemblies in outsourcing mode for its German partners, has around 15 employees and 12 production machines. The company manufactures several types of products, and the average number of pieces manufactured monthly is around 30.000 pieces.

One of the main management's challenges is to keep track of all products, which is a strong requirement of the German partners, which is an ISO certified company. All defects must be tracked and an archive of 5 years of all production must be kept. In order to integrate with the partners e-Management system, the company has to provide monthly reports in a fixed electronic format with all production records (around 15 items for each product).

The other major challenge was stock management, especially handling different wire coil colors. The same color can have different shades which cannot be mixed for the same product, so precise management is required.

To keep up with those demands this company implemented a basic paper tracking system, which afterwards was manually translated to electronically format, send and archived manually. This system introduced many errors and the final reports were not accurate which caused a lot of complaints from the German partners. The stock management was poor, using some basic worksheets and manual operations, causing frequent chaos and production delays. The company management contacted a software development company to implement a custom emanagement system, which had to overtake all manually work.

The main requirements were:

- 1) All production data to be centralized into a single electronic database, accessible from several production units and from management offices;
- 2) All data inputs to be automated into a user-friendly software tool, with very strong proof (most human operators didn't have any computer-usage knowledge). The manual human inputs should be minimized, so inputs from weighting machine and bar codes will be automated.

- 3) Stock will be handled automatically – the only inputs will be just entries. Warnings will be issued when items are below thresholds and data aggregation with reporting features for the management.
- 4) Several reports and data aggregation will be available to the management, which will provide manufacturing status and times per machine and per human operator, number of defects, wire color usage, packed products and products ready to be shipped.
- 5) The data will be automatically exported to the format required by the German partners, and all information and reports will be automatically archived for future usage.
- 6) The system was developed and implemented in three months time, with two weeks of trial period. After several month since the implementation, the management feedback stated total control of stock with huge improvements in production times, a speed-up of the production and no delays or errors. Due to defectorientated reports, the management could easily identify machines with high defect rates and replace the part in time to minimize losses. The German partners are also pleased with the accuracy of the data provided.

The company made a step further and implemented a production calculation feature to enhance short-term planning and future company strategy. The e-Management system will be also the platform the ISO 9001 certification process.

Visual Effects Studio Case Study

This is a small company with 5 employees which provides visual effects and video animation services. The team works in the same time at multiple projects, and the challenge is to keep track of the time spend for each project, because there are many last-minute requests and changes from the customers.

The job specific requires a lot of customer reviews before the final delivery, so a team member must met the customer and spend some time for reviewing and recording comments. This implies a lot of production time lost with meetings and travel. Customer communication was done by phone and by email, and after several communication sessions the track of customer requests is lost or misunderstood.

They contacted a company to develop an online e-Management system with the following requirements:

- 1) Every team member will use an online website interface (for mobility) to keep track of all actions performed on a specific project (time spend, modification of requests, comments, prices offered, etc).
- 2) The team and the management will have access to visual reports for deadlines, resources load, total time spend for each project and other related information.
- 3) Customers will have a dedicated client area on the website, and they will be able to visualize their products online, with the ability to post comments. The team members will address those comments and will be able to respond, also online.

After the implementation of this e-Management system the company management was able to invoice correctly for each project, according to the time spend for each project. The mobility

and productivity of the team increased, since they didn't have to travel so much, and they could see from any location the status of the project and customers demands or comments.

Negative Case Studies

As stated in the previous chapter, not any form of E-Management system is successful: a auto garage management wanted to implement a form of system for keeping track of employees time spend on each operation and to generate an invoice automatically. Because the garage management didn't contract a support service as well, the employees weren't able to handle the new system and it was soon abandoned because generated more delays than before.

Another SME from the logistics segment acquired an "off the shelf" system for an E-Management implementation. But the system didn't meet an important requirement: accepting data input formats from partners, so without this key-feature it was soon abandoned.

Conclusions:

At present Romania is in an intense convergence process towards the economic structures that characterizes the business environment of the developed countries all over the world.

Capitalizing the opportunity brought on by Internet, the Small and Medium enterprises understood to make the shift from the "classical type" of business to the „e-business" type, considering the multiple advantages among which the most important are considered to be:

- 1) The opportunity to sale and promote globally your own products;
- 2) Communication with suppliers and clients of the company involves a reduced level of costs and is more efficient;
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During 2010-2015 we can no longer discuss of a successful e-Business without a performing e-Management. The e-Management System transforms a classic management system in a system of: *availability, performance, capability, change solutions, security, disaster management, etc.*

Implementing an e-Management system within a Small and Medium Enterprise requires rigorous planning with regard to a series of factors and indexes. Otherwise the new system can become an obstacle for the development of The Small and Medium Enterprise, producing within the enterprise true economic disasters.

The services offered by the e-Management help to improve the activity of the Small and Medium Enterprises, to organize, to facilitate communication on work fluxes thus giving the opportunity to take better informed decisions on management collection, on cost reduction, as well as on improving the entrepreneurs' experiences.

Applying an E-Management system within a relatively short period of time, without major costs and delays in production, is materialized in a true challenge for the Romanian Small and Medium Enterprises.

E-Management is not rocket science and in the following years will become a requirement for any SME which aims for the European market and success. It will be something imposed both by the competition and by the customers.

Any SME management just has to realize that it needs an e-Management system.

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