

# ASSESSMENT OF THE IMPLEMENTATION'S IMPACT OF COLLABORATIVE WORKING ENVIRONMENTS IN SMALL AND MEDIUM ENTERPRISES

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## ABSTRACT

*Providing a proper performance level for the SMEs represents a constant concern for all the involved „actors”. One of the alternatives that can assure coherence with the new requirements of the socio-economical environment refers to extending the implementation of collaborative working systems. In this paper the stages of implementing such a system in a SME are presented and also, the potential impact of the process, analyzed through the estimated benefits and the transformation degree of the business.*

Considered in a period of history to be a real burden for the economical macro-systems, small and medium business have proved to be the most active and involved entities in the progress advancement sphere, in developing and enlarging to all the social and human activities.

This state actually represents the consequence of complex causes, based on a series of relevant features such as flexibility, dynamism in relation with the market's evolution, proximity in relation to the place where the request manifests, high mobilization capacity in short intervals of time, relatively small volume of the required capital in the initial phases of the business etc.

The importance and major role of the SMEs have been emphasized in the Lisbon Strategy in the year 2000, through which the European Union has established as an ambitious objective, that of becoming the most competitive knowledge based society in the world by the year 2015, that being possible only by a major involvement from all the entities of the socio-economical space.<sup>1</sup>

Because of the fact that, at present, there are approximately 19 million SMEs within the European Union, which represent a significant percentage out of all the enterprises of the E.U. states, it is clear that they signify the main source for creating work places, generating new ideas or glorifying some opportunities on a medium or long term.<sup>2</sup>

In the entirety of the global market, strongly dominated by the need of change and competitiveness, SMEs play a primary role because they exert a strong influence over the economical systems, which is dependent on their capacity to innovate new products and processes that may lead to the implementation and usage of results from scientific research and technological progress.

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<sup>1</sup> Communication to the spring European Council, *Working together for growth and jobs. A new start for the Lisbon Strategy*.

<sup>2</sup> Institute of Management (IOM), 2000. *Does Technology Mean Business*. IoM Report.

The influences of the globalisation process have been felt during recent years also on the level of the SMEs' activities through the appearance of some phenomena related to the limitation of access to financial resources, growing competitive pressure, inability to extend on the market or diversification of client demands. On the background of these problems, one of the surviving and development solutions of the SMEs' was to shift their whole activity in relation to the new coordinates of the environment and the involvement in the innovation process.

According to international definitions<sup>1</sup>, innovation is represented by all the scientific, organizational, financial and commercial steps that lead, deliberately or not, to the implementation of some new or improved products / processes. Innovation is based on the results of new technological developments, of combinations between the existing technologies or other acquired knowledge by a certain organization.

Therefore product or process innovation can be the result of the activity of an enterprise, innovating, integrative, and also obtained through another company, case in which we can speak of merchandising the innovations or the research results from a field of activity.

Innovation is considered, by some authors, even more important for the SMEs than large enterprises because it is considered, that the SMEs use innovations as a primary mean of becoming more competitive.<sup>2</sup> It is unanimously accepted the fact that, both "internal innovation" and "cooperation innovation" inquire that the SMEs use information and communication technologies.

Actually, a look over the fifth edition of the European Innovation Scoreboard (EIS<sup>3</sup>) reveals that there is a big difference in the innovation plan between Europe and USA, which deserves to be analyzed.<sup>4</sup> The EIS includes innovation indicators and evolution analysis for all the 27 states of the European Union (EU), but also for Turkey, Iceland, Norway, Switzerland, United States and Japan. In this document the five key dimensions of innovation are evaluated: determining factors of innovation, knowledge creation, innovation and entrepreneurial spirit, usability capacity of the innovation's results and intellectual propriety.

Innovation and the dimensions of the entrepreneurial spirit of innovation are supported by six indicators, which are mainly tied to the performances in innovation of the SMEs'. From them we have selected 3 indicators that are relevant for the present paper, namely:

- the "internal" innovative SMEs: indicator that measures the degree in which the SMEs have introduced new or significantly improved products or production processes during the period, as a result of the innovating processes held only within the organization;
- the innovative SMEs that have worked together with others: indicator that measures the degree in which the SMEs are involved in cooperation activities on the innovative plan. The complex innovations, especially the ones from the ICT domain, often depend on the entity's capacity to attract, in the form of partnerships for the common glorification of the individual competences. This indicator measures the knowledge flow between the public research institutions and companies, as well as between companies with other companies;
- the expenses made in the ICT area: this technology represents a fundamental characteristic of knowledge-based economies and the determining factor of annual and future productivity improvement. An indicator of ICT investments is essential in simulating innovation in an economy based on knowledge, especially because of the new technology and information broadcasting through equipments, services and software.

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<sup>1</sup> [http://ec.europa.eu/enterprise/policies/innovation/glossary/index\\_en.htm](http://ec.europa.eu/enterprise/policies/innovation/glossary/index_en.htm)

<sup>2</sup> European Commission, Enterprise and Industry, *Enterprise Industry Magazine*, 5 september 2009.

<sup>3</sup> [http://ec.europa.eu/enterprise/e\\_i/news/article\\_8836\\_en.htm](http://ec.europa.eu/enterprise/e_i/news/article_8836_en.htm)

<sup>4</sup> <http://crossroadsmag.eu/2006/10/unu-merit-report-are-new-eu-members-more-innovative-in-services-sector/>

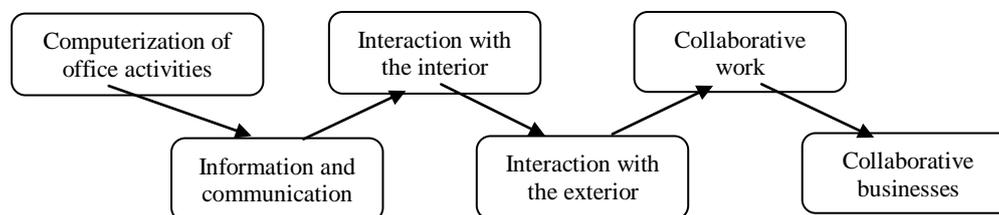
Conclusions of the analyses carried out have highlighted a major gap of the innovative processes for all the SMEs in Europe, as opposed to the ones in USA and Japan. The causes of such a situation are tied to the availability of the financial resources, the access to information and an assured framework that favours and stimulates the involvement of SMEs' in innovation. One of the restrictive factors for the innovation process, in line of the SMEs, is based on the specific competence disparity of all the human resources involved in this type of organizations, correlated with the high level of associated costs.

The collaborative working environments, through the assured facilities at the strategic and operational level, represent a solution with relevant results on a short term. Focused exclusively on the ICT technology, the collaborative environment provides for the initiating organization a better resource control, an appropriate management of the entirety of relations with the interest holders, in order to achieve the goal and proposed objectives.

The most difficult question is related to the types of ICT and collaborative working environments that should be used and how they must be introduced in the specific activities of all the SMEs.

The answer to such a challenge cannot be one that is unanimously accepted because of the diversity, the fields of activity, the characteristics of the pressure the SMEs' is subjected to, and also the increase and progress rates of the economies.

The speciality literature identifies a series of specific stages for the integration of collaborative environments and ICT technologies in all the SMEs.<sup>1</sup>



**Figure 1 The stages of introducing collaborative environments in the SMEs**

The first stage is the computerization of office activities, secretarial activities, characterised by the usage of computers at an individual level for exclusive office automation and primary data processing. The second stage, oriented on information and communication, has in sight the additional use of computers for management programs in accounting, remuneration, patrimony administration etc. Specific to this stage is the fact that it has generated the use of the Internet in the informing and communicating sphere, and the organization designs its own image so that it can be available on the internet.

The third stage is oriented on interior interaction, mainly founded on the fact that employees use electronic mail, internet or intranet as a measure of internal communication and information exchange. This allows the dissemination of the client's internal information with the help of databases and the administration or management of cooperation relations with the client. All the employees must use electronic mail and search engines, and the various used applications are integrated by planning the resources of the enterprise with the help of ERP<sup>2</sup> type systems.

<sup>1</sup> Judith Redolia, Rafael Momo, Javier Garcia Diez, Miguel Lopez Coronado, *A model for the assessment and development of Internet-based information and communication services in small and medium enterprises*. Disponibil la adresa: [www.elsevier.com/locate/technovation](http://www.elsevier.com/locate/technovation)

<sup>2</sup> **Sistemul ERP (Enterprise Resource Planning)** este instrumentul software care facilitează integrarea tuturor informațiilor dintr-o organizație într-o platformă unică. Scopul ERP este să asigure transparența datelor în cadrul unei organizații și să faciliteze accesul la orice tip de informație utilă în desfășurarea activității.

Interaction with companies from outside the organization, considered the fourth stage, has in view three major objectives: direct communication with the client in the electronic environment (business to consumer B2C); managing different integrated application and the organization's staff from distance, or a data exchange between the branches; the correlation with the client's needs and demands by harmonizing the databases and the resource management systems.

The collaborative work stage, through which the clients find the way to directly interact with the company due to a simple data communication system, represents the next step made in the model. The organization's information systems are open for the main partners (subcontractors, suppliers, distributors, etc.) direct connections and information exchange between the different hierarchical levels being possible. Significant facilities in this respect assure the Customer Relationship Systems (CRM)<sup>1</sup>, which can ensure the needed infrastructure for this stage.

The final stage of the model implies the running of businesses in partnerships, structuring collaborative systems in relation to the needs of the clients, blending from the perspective of the used databases, introducing an exclusively electronic relationship culture with the subcontractors, suppliers and distributors, and also the complete integration of the value chain through electronic means. This implies training the employees and corporations to collaborate in the matter of activity impact on the company's final results, as well as placing them in application through the CRM systems, which allow an analysis of the commercial and marketing information.

The proposed stages, in the presented succession, generate a series of major benefits for all the SMEs, all of these being however conditioned by the time necessary for the differential attending of every stage, and also resources involved.

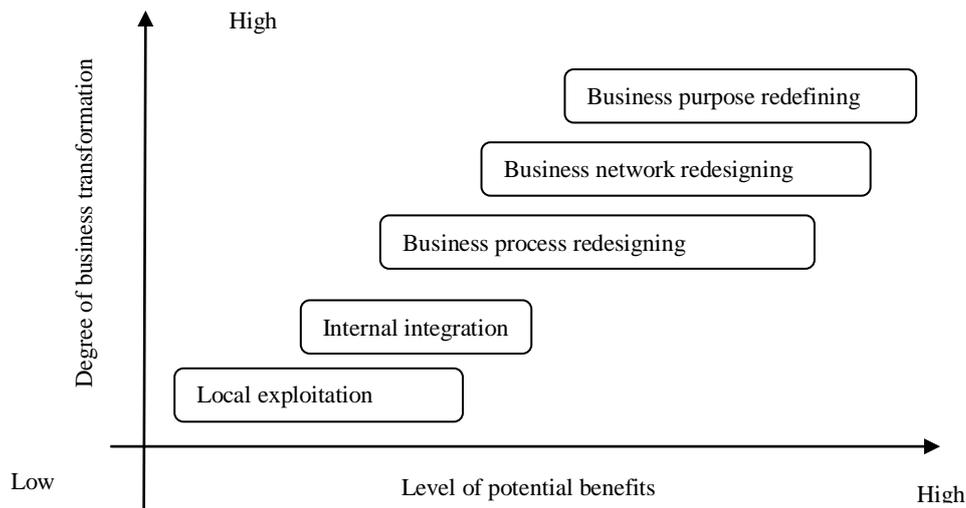
The impact of integrating collaborative environments within the SMEs can be differentiated in terms of potential benefits on 5 distinct stages, analyzed two-dimensional, and based on the transformation degree of the business correlated with the level of potential benefits.

The starting point is represented by the localized and independent functioning, most often that being the case of small business which glorify a certain local opportunity. The market's conditions, taxes and fees, and the competitive pressure temporarily borders such an activity, aspect that requires, in a first phase, integrating the different internal ongoing processes in order to make activities efficient. Virtually this also represents the second stage, the major advantages of the collaborative environments being more in the cost saving sphere.

Depending on the field of activity of the SMEs, the next stage implies redesigning the business process, here a new approach of the internal process and customer relations being necessary. The weight centre moves from the interior of the SMEs to the clients and market, and the relations with them become a priority. Redesigning the business at this level also implies complying with some market criteria, in terms of quality, price, proximity in reference to the place of consumption, availability, associated services etc., all of these generating additional costs for the SMEs. Unfortunately, in this stage because of the efforts needed a great number of SMEs are lost, the percentage being different depending on the field of activity. If we refer here to the organizations in the service providing area, the transfer can be assured easier, but the more customized the field of activity is and the more dynamic the market, the higher the abandon rate is.

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<sup>1</sup> **Managementul relațiilor cu clienții (CRM)**, sunt metode pe care companiile le folosesc pentru a interacționa cu clienții. Metodele includ instruirea angajaților și software-ul CRM cu destinație specială



**Figure 2 Business reconfiguration of the SMEs by introducing collaborative environments**

Success chances, in terms of potential benefits, have the SMEs that with the advantages of collaborative environments pass to redesigning the business network, process that represents a detailed analysis of all the relations with the suppliers and clients, and proper optimization in relation with the new dimensions of the business. This implies redefining the entirety of relations with all the interested factors and promoting collaborative systems as a solution to reduce resource consumption for the different processes and activities, and also facilitating two-dimensional communication in real time in order to assure the needed performance. The proposed stage can be considered the hardest one because it implies transferring from a classical organization to one oriented strictly on electronic support, aspect that requires besides financial efforts, the existence of specialised human resources, capable of such a process. In the same context we can also mention the social impact of this stage, materialized most often in dismissals or career reorientations. Another difficult part of the stage is related to the position on the market or in the field of activity that the SMEs in the process of transformation have, specifically the force and power that they hold in attracting partners and beneficiaries on the new grounds of the business.

The final stage of the process implies redefining the goal of the business in accordance with the sectoral performance level, field or geographic space, but also the demands of the market on a medium or long term. Redefining does not imply integral change, but only identifying the new business alternatives, proper glorification of the new opportunities by extending them, acquisitions, unifications, priority analysis in terms of the effects and efforts on different time horizons. Browsing through such a stage, is still reserved to an increasingly small number of SMEs, because of the needed efforts and the capacity to coordinate the entire business, in terms of permanent change on the whole market.

The reason is also related to the fact that the offer from the big operators or suppliers is very custom, and the personalization or configuration is only possible at a pure technical level, but not at a business level. There are not many businesses, industries or company dimension models, company structures or client typologies for which the ICT solutions should necessarily be adapted by a consultant.

In this background, it must be said that implementing collaborative environments within the SMEs must not be approached as being a simple process, restricted from a

financial or temporal point of view. Transiting such a succession represent actually a solution for ensuring an appropriate performance level within the SMEs, in terms of numerous intervened changes in the socio-economical environment and of the pressure that the globalization phenomenon imposes.

Given the consequences of systems development at a macro-economical level, the possibilities of the SMEs in terms of resources, experience and competences are currently low, and the short and medium term perspectives don't highlight major changes in this respect.

However, solutions must be identified and some of them, even if not the most complex, can form, in a related approach, a major support for this process. An example can come from the sphere of outsourcing specialized services such as the design and maintenance of collaborative systems, proper training of human resources, preliminary and final assessment of the contribution of such a system in the SME's. Whether the reference is made to a consulting contract with a specialized firm, or to an association with appropriately qualified staff, this can confer SMEs the necessary degree of confidence and professionalism for engaging in such a process, with favourable consequences on a medium and long term.

Transferring the SME's to a specific organization system of the information society, and the approach in terms of economic profitability and ICT investments, through the benefits of the company, is more an art than engineering. Obviously, a consultant in the ICT domain, as an artist, must master colours, but undoubtedly the final image is a result of a profound understanding of the landscape based a ninety percent technical knowledge and ten percent inspiration.

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