FAILURE OF CASE STUDY IN IMPLEMENTATION OF AN ENTERPRISE RESOURCE PLANNING (ERP) IN A DISTRIBUTION OF AGRICULTURAL INPUTS

Daniel Antunes Bastos Capucho, daniel.antunes94@hotmail.com
Guery Augusto Echeverria Martínez, guerym@gmail.com

Centro Universitário Salesiano de São Paulo, Rua Dom Bosco, Centro, Lorena-SP
Centro Universitário Salesiano de São Paulo, Rua Dom Bosco, Centro, Lorena-SP

Abstract. This article gives an insight into Enterprise Resource Planning - ERP and the importance of it in any kind of organization. The method adopted was case studies of the ERP system implementation in a distribution of agricultural inputs situated in the Vale do Paraiba, pointing out the system guidelines, features and modules. The results show how each employee is important to collaborate with the system, entering information for them to be worked and analyzed by management. It is concluded that the implementation of an ERP should be done cautiously, applying training and be patience on the part of each employee to adapt to changes in the workplace.

Keywords: ERP; User satisfaction; Small businesses; Organizational culture

1. INTRODUCTION

Nowadays, the necessity of information to be processed, sended and quantified with higher speed, many companies look for innovate and invest in information systems that help to manage their activities, reduce costs, improving its product and process and, for that, the majority use the Integrated Information System (IIS's).

With these possibilities of simultaneous results, the IIS has vital importance factors during its implementation process, being concretized in an excellent way or in a disastrous way, like in this case study.

To be well-succeed, it is necessary to observe the following factors: Mainly the involvement of the user with the new work plataform; Support to the direction staff; Clear definition of the goals that the IIS will be applied in the company; suitable planning; realistic expectations showing mainly how hard it will be the implementation and the time that this will take to operate in the higher capacity of the features; professional staff; Commitment; point of view and clear goals; infrastructure and motivation for the implementation and even the constant update of the staff to be always capable of new updates and installed modules.

2. THEORICAL REFERENCES

According to Padillha (2005), the system Enterprise Resource Planning – ERP is one of the most completed management and organizational tools for contemplate the most important enterprise modules, such as: finances, production, logistics, human resources, etc. It shows that is possible a system integrate all the information in real time.

The definition of an ERP is basically an Integrate management system that process the information of the organization in only one database, therefore the information is update simultaneously and because of this feature, it is valued by the organizations.

Its capacity of data flow in real time makes possible the elimination of many redundant process and nowadays it is considered one instrument to improve the business process, such as production, shopping or distribution, with online information and in real time.

In a conclusion, the system ERP is capable of visualize in a total perspective the company's transactions, drawing a huge scenery of business. (SOUZA, 2014).

To represent a system that include many modules, and to be a management support system , the ERP contains among several characteristics and unique mentioned below according Chopra e Meindl (2003).

Unified Database: The integration of the information that are processed; This makes the speed of answer processing faster and the information would be processed in only one time, connecting all the sectors that makes use of that information.

Customization: Capacity of adapting to the relative necessities of each company. This adaptability of ERP offered by some companies has the function of becoming more flexible and adaptable to the companies' processes.

Simple Architecture: The way how the information are prepared in its software architecture which makes easier the information flow and, as a consequence, make easier the solutions (implementation).

According to Goh (2006), among your main advantages, there is the elimination of the use of manual interface, the optimization of the information flow, the quality increase of information inside of the organization, the optimization of a " taking-a-decision" process, the elimination of redundant activities and repetitive job, the reduction of time answer limits to the marketplace, besides the reduction of uncertainty of lead time, the incorporation of the best practices (coded in ERP) to the intern process of the company, the reduction of time in management process and inventory reduction.

To have a database which are saved the real information of the company, the system ERP deliver an actual scenery of the company's status, being possible to make any decision with trustable and actual data.

The implementation process brings other benefits too, like the business practice with the functionality base of the system, resulting in major productivity and higher capacity of the organization feedback.

According to Davenport ,1998, the functionality of an ERP system are divided in internal functions, composed by Manufacture, Finances, Human Resources and external functions, composed by Selling and Services modules. Those functions are demonstrated below in picture 1.

Picture 1. Functions of ERP system – Davenport (1998 apud PADILHA; MARINS, 2005)
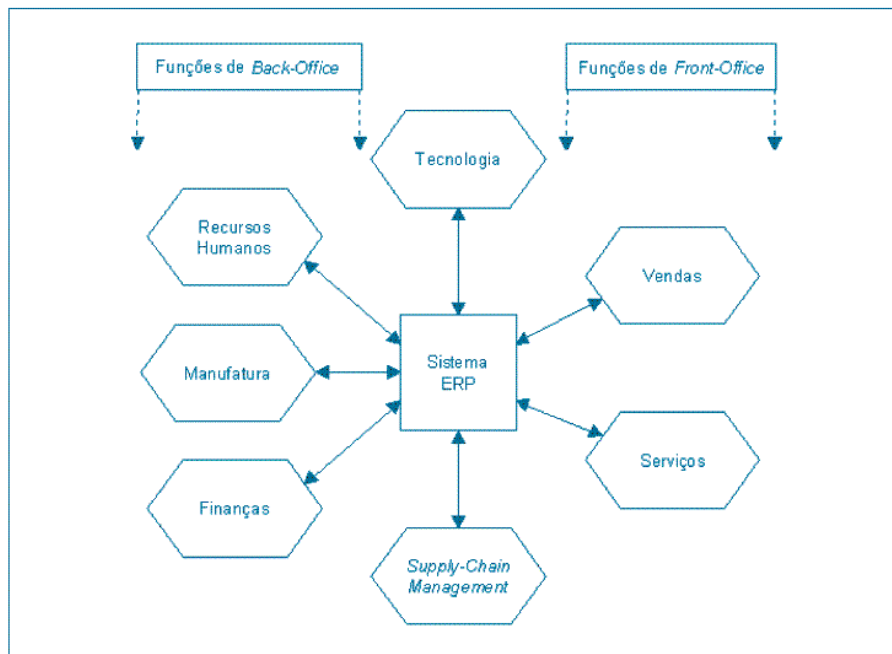
Besides the external and internal functions, there are technological and management modules of the Supply Chains. These modules are the most frequent in ERP systems, however, some of them still offer Project Management Modules , Quality, Maintenance, etc. (SOUZA, 2014).

The systems ERP, being high level management tools to attend the client in a efficient and effective way, Goh (2006) says that the ERP means the three main activities of the company: Operational, tactics and estrategic. Many organizations choose to insert that tool in their processes, always with the goal to increase the productivity and reduce costs.

3. METHOD

During the implementation of ERP in the company, it was possible to perceive the contributors behavior which were being trained to the new tool, finding agility and capacity to interact easier to those younger contributors, and the human resistence and difficulty of interaction with so many information by those older contributors.

This difficulty with the technological limit have interposed straightly in the learning and implementation performance results.

Some organizations, with the intention to reverse or reduce this phenomenon, make higher investments in training. However, what was noticed in these organization was that the contributors were not simple system users, the contributors are the middle and the source of informations to the implementation.

Due the system ERP be molded according to the company necessities, being provided with information and data the contributor will be the source of all the information, because it has the knowledge and details of all the company process.

The subject of this cientific article came from a necessity of achieve the reason of failure of the system ERP implementation in the company Hummus after 10 months of use, being used approximately 70% of all the functions that the system provided.

We observed and verified that the human factor owing to the resistence to the main decisive facor to the success or failure of this process, because in it, the psychological aspect of each person changes according to their operational limits and of learning, making this block to the new challenges of learning.

We also can say that the high direction must be the biggest encouraging to the idea, because it has no use to acquire an ERP system, if this is from a high aggregated value and does not have the necessary support.

4. DEVELOPMENT

### Company – Hummus Commerce and Forest Services LTDA –ME

The Hummus Forest Services is a company located in Cachoeira Paulista-SP, with its activities related to forest consultancy concerning the plantation and support of eucalyptus forest, native seedlings and chemical treatment of wood with autoclave.

In the year of 2012, its activities also have concentrated in a prevention chemical product commerce, treatment and fight of urban pests and venomous animals control.

To control buying and selling, stock of materials and supplies, it had been created their own spreadsheets control, along the emission of electronic invoice by Serasa NF-e and payment duplicates by Bradesco Netbank System.

Those controls were efficient just to a certain limit, as with the selling volume increasing exponentially, and controls having the necessity of being updated constantly, it had been lost payment control datas in an amount of approximately R$ 5.400,00, outdated stock, relation of the necessity of materials to future purchases, etc, as it showed in picture 2.

Picture 2 – Monthly injury and sum Hummus before the implantation of Alterdata Shop System
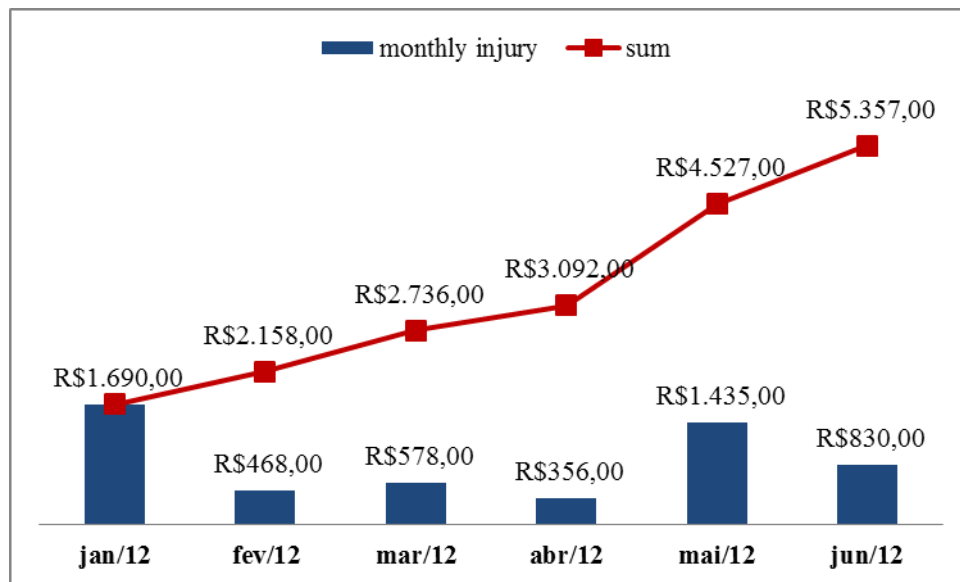
With the necessity, it was acquired the Alterdata Shop Software by Hummus. A system ERP to control all the activities of the company, from the emission of slips to products budgets.

During the implementation of ERP in the company, it was possible to perceive the contributors behavior which were being trained to the new tool, finding agility and capacity to interact easier to those younger contributors, and the human resistence and difficulty of interaction with so many information by those older contributors.

This difficulty with the technological limit have interposed straightly in the learning and implementation performance results.

Some organizations, with the intention to reverse or reduce this phenomenon, make higher investments in training. However, what was noticed in these organization was that the contributors were not simple system users, the contributors are the middle and the source of informations to the implementation.

Due the system ERP be molded according to the company necessities, being provided with information and data the contributor will be the source of all the information, because it has the knowledge and details of all the company process.

The subject of this cientific article came from a necessity of achieve the reason of failure of the system ERP implementation in the company Hummus after 10 months of use, being used approximately 70% of all the functions that the system provided.

We observed and verified that the human factor owing to the resistence to the main decisive facor to the success or failure of this process, because in it, the psychological aspect of each person changes according to their operational limits and of learning, making this block to the new challenges of learning.

We also can say that the high direction must be the biggest encouraging to the idea, because it has no use to acquire an ERP system, if this is from a high aggregated value and does not have the necessary support.

Then, companies must prepare tranings full of support and be different to the implementation.

The ERP System

The data below listed were removed from the site http://www.alterdata.com.br/Shop/Comercios, which are indicated all the modules of the ERP Alterdata Shop modules, this system that was acquired by Hummus company.

Alterdata Shop

The software Alterdata Shop comes from a dinamic graphic interface, showing in its initial screen the critical points to make a decision: Made Selling graphics daily, fortnightly or monthly indicating the possibility of comparing selling between two periods; Historic of most sold products and the best salesman of its company; and detailing of the cashier flow (with bills to pay and receive) in the period.

Stock

The Stock analyzes the moviment of each product available in the stock – if they are for consume, raw material, or done products. Based on this constant analysis fulfilled by the system, It is capable of indicate exactly the maxium, minimum, or critical point from each stored commodity – considering the percent up or down the ideal point that you judge secure to your business.

Electronic Manager: The electronic manager works as a stock manager inside the system. When the commodity stock gets the minimum, it will alert the responsible person, avoiding possible shortages in the stock.

ABC Curve: The ABC Curve of Products indicate which are the products that represent 70%,20% and 10% of the billing, that can priorize the ones which reflects in the global result.

Ranking: It Considers the benefit, the commodity flow and its selling volumm in the principal product.

Seasonality: The system ajusts the quantities, also considering the periods of major request during the year.

Financial

It controls the payments and receivements flow, the banking moviments, the cashier, others.

The financial eliminates the paralel control in various spreadsheets by the sectors of the company, the retyping of data and the possible frequent mistakes of this process.

Bills to pay: It manages all the titles of the company to pay, being outgoing already done or preview.

Bills to receive: The titles are made in "bills-to-receive" automatically as the selling happens. Then, the company eliminates the manual digitation of the values to be received by the clients, it gains creativity and avoid mistakes that brings injuries to the business.

Charging: It controls automatically the open titles, indicating all the documents that won and were not paid. It is enough to consult this module to know all the clients that need to be charged.

Law: Alterdata Shop is adapted to attend the new fiscal Law and to garantee more security.

5. RESULTS

As acquired to software in June of 2012, the company Alterdata begun the supply process to the client, informing the activities to be followed according to the implementation schedule, installation, mandatory training and adding training that could be branded by Hummus.

These activities were carefully controlled and listed by Hummus company according to the chart below, indicating the general events of the implementation, since its bought to its cancelling of the software:

Chart 1. Schedule of events to the implementation of ERP system in Hummus company

Month / Week	Jun 1	2	3	4	Jul 1	2	3	4	Aug 1	2	3	4	Sep 1	2	3	4	Oct 1	2	3	4	Nov 1	2	3	4	Dec 1	2	3	4	Jan 1	2	3	4	Feb 1	2	3	4	Mar 1	2	3	4	Apr 1	2	3	4
Buy	■																																											
Software delivery					■																																							
Installation							■																																					
Implantation								■																																				
Settings									■		■		■				■		■		■																							
Mandatory training									■	■	■	■	■	■	■	■	■	■																										
Customer support	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Additional training. Requested by the company Hummus																												■			■													
Cancellation																																												■

With the implementation of Alterdata software, it was possible to notice some changes like: Speed and fluidity in the activities of entries and updating of products to sell; Changing and reformulation of the selling price according to the shopping price of the provider and the profit border stipulated; Exact stock control starting from each realized sell and each invoice inserted in the system; Control of bills to receive and to pay; Graphical índex of the results per day/week/month/year; Comission of selling to accredited salesman; Others.

The injuries with the previous controls were around R$ 5.400,00, situation that did not have problems anymore with the ERP system implemented in Hummus, because with each selling, it did not have the preocupation to be launched the received duplicates from the client, Just because in the selling act, it was automatically launched the titles and it was already made a shopping report necessairly to make to replace the exit stock.

The main change with the company routine was the accuracy of how the information inserted that the software measured, creating reports and graphics with the actual situation of the company, these information that did not have formely with the personal controls.

On the other hand, with a negative point, was the lack of effort by the contributors, according to what was said in the article. It was left all the insertion of information, controls, shopping invoices, selling, salesman commission, payment of bills, lifting of physical stock comparing to what the system informed, etc. Pratically,all the controls with just two contributors and that makes the big part out of the total training of the software, like showed in Chart 1, it was requested in Alterdata, four weeks more of training for all the contributors can envolve themselves more activelly in the system. That situation which was not solved in the same way.

The failure was that each person did not attend to the new plataform of controlling the routine of the company, because the only task was the learning about the ERP system that can be planned the information in it, that situation which the old contributors did not have patience enough.

The total quality of the ERP system does not own only to the system and yes to each contributor, because who is going insert the information is the contributor.

6. FINAL CONTRIBUTION

The Integrated Management System, the ERP, is a software that nowadays we could not even say that would be a different tool to the company, but the essential to all and each type of organization, being a selling, finantial controller, vehicles agency, E-commerce products selling, distributors, like Hummus.

The company that apply an ERP system, that have potencially the optimization and increase of the process, fortifying and keeping the marketplace so competitive.

We saw that each change in the service environment provoque advantegous and disadvantageous situations and one of them is connected to the implementation of ERP system.

The tool brought the agility and the reliability of the data, however as a desadvantage, I bounced that the human factor like the principal cause of the failure of the implementation, because the system must be refueled constantly with updates of information and be in the learning daily, then, for that contributors with more age this was practically the "thing" to delay more the service, blocking one tool of excelence that would optimize all the work hereafter to come back the controls that were made previously.

The mistake verified that is not only in the implementation of the software, but also in the adaptation of the contributors with the interface, with the new routine to be followed, etc.

In a conclusion, there is a strong relation not with the cost/benefit that all the mundial marketplace knows this relation, but with the change of organizational culture and implementation of an ERP system, because it depends on another, the contributors depends of the system to find a success in the question "satisfaction of the client" and the well-being of the company.

7. REFERÊNCIAS

BRESSAN, F. **O método do estudo de caso e seu uso em administração**. Revista ANGRAD, Salvador, v.5, n.1, p. 24-40, jan-mar 2004.

CHOPRA, S.; MEINDL, P. **Gerenciamento da Cadeia de Suprimentos**: Estratégia, Planejamento e Operação. São Paulo: Prentice Hall, 2003.

DE CASTRO MARTINS, Douglas; NUNES, Danilo M.; LIMA, Joselice Ferreira. **Uma abordagem sobre Sistema de Planejamento de Recursos Empresariais (ERP) para pequenas empresas**. Anais dos Simpósios de Informática do IFNMG-Câmpus Januária, 2014.

GARCIA, F. L. **Introdução crítica ao conhecimento**. Campinas: Papirus, 1988.

GOH, B. H. **Creating Intellingent enterprises in the Singapore construction industry to support a knowledge economy**. Building and Environment, Singapura, v. 41, n. 3, p. 367-379. 2006.

GOODE, W. J. & HATT, P. K. - **Métodos em pesquisa social. Cia Editora Nacional**, SP, 19969, 3ª ed

MARCONI, M. de A.; LAKATOS E. M. **Fundamentos da metodologia científica**. São Paulo: Atlas, 2003.

PADILHA, T. C. C.; MARINS, F. A. S. **Sistemas ERP: características, curtos e tendências**. Revista Produção, São Paulo, v. 15, n. 1, p. 102-113, jan./abr. 2005.

SILVA, Ludmila Oliveira dos Anjos; MÉXAS, Mirian Picinini; NETO, Júlio Vieira. **Fatores críticos de sucesso na implantação de um Sistema Integrado de Gestão:** uma abordagem no mercado de seguros. SBIJOURNAL, n. 49, 2015.

SOUZA JUNIOR, Alcineu Mont Serrato de et al. **Cultura Organizacional:** O Fator chave para o sucesso da implantação de um Sistema ERP. 2015.

TELES, Francismilton; SILVA, Ricardo Moreira. **Avaliação da satisfação dos usuários de sistemas ERP nas médias empresas de confecção do vestuário de Fortaleza**. Revista Produção Online, v. 14, n. 2, p. 533-559, 2014.

TULL, D. S. & HAWKINS, D. I. - **Marketing research, meaning, measurement and method.** Macmillan Publishing Co., Inc., London, 1976.

YIN, Robert K. - **Case study research - design and methods. Sage Publications** Inc., USA, 1989.

Alterdata Software Bimer – Sistema ERP. Disponível em: <http://www.alterdata.com.br/Shop/Comercios >. Acesso em: 17/10/2015

I