

University of Wales Trinity Saint David

Service logistic

Assignment 1

Critically evaluate based on a case study the application of technology to support innovation for competitive advantage in global logistics

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Abstract

This report will deal with the development of the utilisation of technology to support innovation for competitive advantages. In a first part, we will talk about ERP, a technology use in many companies, about its history and we will give a definition. Then, we are going to talk about MIE, Mesfin Industrial Enterprise where ERP has been implemented. After this, we will talk about the many advantages and the few inconvenient of ERP. We will finish to deal with the future of ERP.

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1) Introduction

Nowadays, every company, from hospital to the market place by going through the events company, need a good logistic to have the possibility to develop and improve but also, to organise the company the better way possible or to identify any problem and fix it. And because of our days, information travel faster and faster without any obstacles, companies need to learn to treat this information the better way possible. The information is a big part of a good logistic, but it needs to be well treated to be efficient. If it's not, this can have consequences as: loss of information, misunderstanding, duplicates, etc... For this information to be efficient, it's necessary to have a good operating system which is going to facilitate the relationship between the human and the machine.

Therefore, was created management systems. The most advanced one is ERP II, Enterprise Resource Planning. It's a software that coordinates all the activities of a company in one and only place and simplify the exchange of information. This permit to coordinate every part of the company easier and faster. Companies need to, either buy and adapt an ERP from ERP companies, or develop their own ERP. In every case, the company need to work on it because every company is different and have different needs.

The treatment of information is moreover important when the actual trend is the continual growing demands of consumers. This demand needs to be answered so companies trended to extend in new areas of expertise and trend to innovate to gain market shares. The question is: How, ERP, can be a technology to support innovation for competitive advantage in global logistics?

2) Enterprise Response Planning

a) History

The first management system was created in 1960s, it was called Inventory Management & Control (IME). This management system was a combination of information technology and business processes. It was used to maintain the good level of stock in the warehouse and everything in link with the inventory: requirements, setting targets, reporting inventory etc...

Then appeared Material Requirement Planning (MRP) in 1970s, in addition to manage stocks and inventory, this permit to scheduling production processes. MRP generates schedules for: the operations and raw material purchases based on the production requirements of finished goods, the structure of the production system, the current inventories levels and the lot sizing procedure for each operation.

In 1980s, MRP II was born, it permits coordinate the manufacturing processes in addition of its previous capacity, like product panning, parts purchasing, inventory control to product distribution.

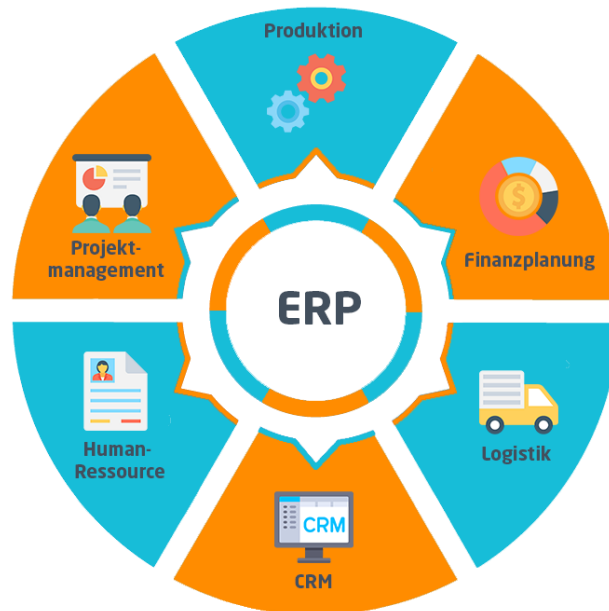
In 1990s, ERP appeared, it covers every area of the company: the management of purchases, sales and commercial management, accounting management, management control and inventory management: logistics, transport, ... By going throw all these areas, the ERP permit to group every information in one and only place. This allows a global management, coherent and simplified.

In 2000s, ERP II saw the light, compared to the previous one, ERP II is connected to Internet and mobile devices were made possible.

Ten years ago, the Cloud-based ERP was created. Android, iOS and browser applications have been developed to facilitate its utilisation.

b) Definition

The particularity of ERP is to be able to use, in a single software and database, the functionalities necessary for the management of every activity of the company: accounting management, commercial management, inventory management, etc.



For a management system to be qualified as Enterprise Response Planning, it has to have 2 basic principles:

- Build an informatic software with independent modules but perfectly compatible in a unique common database,
- Usage of a Workflow software permit to define all the tasks from a process and to manage the realisation in every system's modules which need it.

One of the objectives of ERP is to homogenize information system by using one and only software for every area of the company. This permit also to have an update of every information in real time for everyone. Furthermore, ERP thins communication, it's possible to automate task assignment thanks to this.

ERP become indispensable for companies which tried, it became the preferred driving system for the SME, Small and Medium Enterprise.

c) Numbers

Companies implement ERP to: improve business performance at 64%, to reinforce company growth at 57%, to reduce working capital at 57%, to improve customer service at 54% and to simplify workload at 49%.

95% of companies improve their processes following ERP implementation and 31% of businesses that exceed their ERP budgets are very satisfied with their implementation results.

On average, ERP reduces operational costs by 23%, administration costs by 22% and increase on-time deliveries by 24%.

ERP software accumulates over \$25 billion each year and continues to grow by around 10% to 20% yearly.

3) Case study: Mesfin Industrial Engineering Pvt. Ltd.

Mesfin Industrial Engineering (MIE) was created in 1991 and based in Ethiopia. This company is a metal manufacturing company. This engaged transportation, energy sector, steel structure etc. MIE is considerate as a SME, Small to Medium Enterprise. The company employs between 501 and 1000 workers. MIE extends into 5 areas of expertise: construction industry, electromechanical construction, industrial projects, energy sector and transport industry. Their customers are industrial companies for example automotive companies.

Before ERP project, the company used 5 systems over the last decade. These 5 systems were not appropriate to the company, they didn't lend themselves fully to a modern manufacturing environment. The mains issues were: the lack of communication between there multiple individual production's site; systems had difficulties to interfacing between each other because of different databases and file format; impossibility to establish direct, on-line communication with customers, partners and suppliers. This is when they decided to adopt ERP system.

They did some research based on financial situations, history, success/failure cases and people to find the ERP company who can provide the best ERP system for them. They choose Syscorp, created in 1988 by Ugandan professionals. MIE choose this company because of their previous experience within manufacturing industries and their expertise un Microsoft Dynamics SL which is the processor they wanted to adopt.

Before the beginning of the system's creation, they have encountered some issues in business, cultural and technical areas due to the size of the company (SME).

In business area, the issue was the quite rigid business structure that Microsoft Dynamics SL requires in order to work successfully. They achieved this problem by using a process which help them understand where potential problems can happen and by modified the process.

In cultural area, the issue comes from the employees because the implementation of the ERP might not get all tools than the legacy systems had. Also, employees were afraid by changing their software because of the fear of change. They resolved this problem by showing workers the improvements made to the company as a whole. This ERP implementation attempt to address training and cultural changes.

In technical area, the problem was the different file's format using in the legacy systems. To use the ERP properly, they need the old data and for the ERP to understand these data, they need to be normalized, screened and stored in a sensible data format.

After these issues resolved, MIE have been able to implement the ERP in their company. After that, they did a CAM, Characteristics Analysis Method, to find areas where the ERP was too succinct and need to be more developed. The analysis shows 3 areas where the ERP is under-developed so they manage to improve these parts.

When the system is going to become stable, the users will be adjusted to the system and the ERP will be at its executive level, the ERP will deliver its full benefit.

The immediate benefits of the implementation of the ERP are: the company is going to be able to promise and deliver to the customer in time, which leads to the improvement of customer satisfaction as well as the improvement of customer confidence for the company. This would increase the number of orders in the future. Furthermore, this will improve the relationship in the supply chain thanks to the use of electronic communications which is going to facilitate transactions.

4) Advantages and limits of ERP

a) Advantages

i) Better organization

An ERP bring a better organisation in a company thanks to the mutualisation of data and the various modules which compose the software.

By its only software and database, ERP permit:

- Process's management optimisation (economic and financial flows): a better stocks and human resources management,
- Coherence and homogeneity of information (one and only article file, one and only client file),
- Integrity and unicity of information system: to avoid duplicates of data or multiplied seizures,
- Sharing the same information system: to facilitate intern communication and mobility, a unique database which update information in real time,
- Formation globalization (same logic, same ergonomic),
- Centralized control of the company: to optimise the coordination between services.

All the information is managed within a platform to which all members of the company have access. This system makes it possible to avoid the redundancy of information between various services of the company but it also avoids the rendering of divergent information between different services which can be the source of many daily errors.

ii) Competitiveness

The implementation of ERP is also a benefit on the competitiveness of the company. Here are the advantages which lead to a better competitiveness:

- A time saved thanks to: decreased seizures, reduces errors in information's communication, interconnexion between services and a better reactivity;
- Increased business revenue thanks to: increased sales, a better stock's and supplies' management, facilitate workers life and increase motivation of employees, help with productivity and help to make quicker decision.

With the sharing of information, services benefit of a better coordination between themselves, actions become more effective and logical. Indeed, this centralisation and this traceability of data permit to the company to enjoy a better intern communication as well as a much faster decision-making. The productivity of the company finds impacted in a positive way.

This optimized process management and the centralisation of information permit a much better monitoring of the order process and inventory input and output. Stocks are better controlled. Orders and invoices can be sent on time and suffer less late payment. The organization of the company, input and output flows are reorganised to be controlled so that the company no longer suffers from organisational errors which have an impact on the company's finances, as well as on its competitiveness. All these organisational restructuring have a positive impact on the customer relationship and its satisfaction. Furthermore, an ERP software offers to the company the possibility to enjoy have control over costs and therefore save a lot of money.

Furthermore, the software can be translated in many languages very well adapted to international contexts. Also, this software allows a company that has to manage many entities that are geographically dispersed, to standardize human resource management, which can be extremely useful for international companies.

Another advantage of ERP is the traceability. Traceability is the ability to identify, track and trace elements of a product. Indeed, ERP permit to know all the life of the product, since its raw materials to the final customers. Customers, by having access to the route of products, have more trusts in the dealer and know the quality of the product.

b) Limits

Limits of ERP need to be considerate during the implementation of ERP, even if there is less inconvenient than advantages.

The price of an ERP can be very high, the investment can be between 6 000€ and 100 000€ per company (hardware + licence + integration + training + maintenance).

The implementation and getting started with ERP can be very difficult, an ERP training is indispensable for every employee.

Companies which implement an ERP also have to review their organization and sometimes accepted that some modules are less performant than their previous and/or specialized software.

Employees can have difficulties of appropriation of the ERP linked with the difficulty of changing. Every ERP has is Achilles heel because every module doesn't have the same value.

5) Future of ERP

At short term, ERP will be more develop and improve. With the addition of some other software for example the cloud, companies find the cloud safer for their information.

What will ERP look like in the future?

- more ERP services delivered over the cloud,
- based on the blockchain, newer accounting models will be integrated, and newer underlying data models
- more embedded business intelligence, analytics, and data management features built into ERP
- more ERP transactions triggered by sensors and other external systems/devices
- machine learning applied to automate more unsupervised and supervised transactions (which recommend user interactions).

At long term, ERP is going to be develop even more to be capable of being in link with new process that appears. For example, ERP will need to be connected to blockchain or AI, Artificial Intelligence. And then, companies will opt for the personalization of their ERP, which helps companies to stay up to date with the industry trends.

6) Conclusion

To conclude to the question: How, ERP, can be a technology to support innovation for competitive advantage in global logistics? We can say that ERP is a very useful management system which can simplify the life of a company and help it to improve by becoming more competitive. Thanks to the grouping of all the data in one and only software, this system improves lot of aspect of the company in all services, throw improving inventory management to help make quick decision. This technology can definitely help companies to support innovation for competitive advantages.

However, many aspects of the company must be taken in consideration before implementing an ERP because the system will take into account every part of the company, every service. The company which want to implement an ERP need to know that the software can be less performant than their previous software. Furthermore, all the employees are going to need a formation on the ERP to tame the software.

ERP will always be improved and the future ERP system will have even more functionalities as: big data analysis and advanced reporting, machine learning, artificial intelligence and automation, data secured with blockchain technology, virtual reality for better interactions... etc.

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