

## **Determining the suitability of e-learning in a global ERP project**

Cargotec Oyj, ONE Programme

Marta Fernández San José

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<p><b>Author or authors</b> Marta Fernández San José</p>	<p><b>Group or year of entry</b> 2007</p>
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<p><b>Teacher/s or supervisor/s</b> Olli Laintila</p>	
<p>It has become apparent in recent years that, due to the rapidly changing business environment, companies need to adapt more and more to new market conditions and new technology trends in order to remain competitive. Organisations are becoming global and increasingly complex and as a result new enterprise-wide systems and streamlined business processes need to be implemented. Employees do not always work within the same geographical location and the use of virtual tools and the creation of virtual teams is nowadays a reality for many companies.</p> <p>The purpose of this research is to analyse and determine how suitable a virtual training approach can be for organisations implementing enterprise resource planning systems globally. The research also analyses internal marketing strategies and how to manage the change in an organization.</p> <p>The theoretical framework used as the foundation of this study covers the topics of e-learning, enterprise resource planning, change management and internal marketing and it is used to formulate the interview questions and conduct adequate qualitative research. Face to face and virtual interviews were conducted for data collection during September-October of 2012. The respondents were chosen according to their role in the company and their connection to the research topics. The interviews were structured according to the main themes of the study and the participants answered verbally in an informal and conversational manner.</p> <p>At the end of the study it was possible to conclude that the success of e-learning highly depends on the organisation's commitment to the initiative, how well it adapts to meet learners' needs and how effectively it is promoted internally. If planned and implemented correctly, e-learning can bring value to a company and create real return on investment.</p>	
<p><b>Keywords</b> E-learning, ERP project, ERP implementation, change management, internal marketing</p>	

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# 1 Introduction

In today's fast changing world, more and more businesses are using information technologies at all levels, including learning. Particularly, e-learning has gained great popularity in a small span of time. This rather new concept of e-learning has both benefits and challenges which need to be carefully considered. Computer-based training can save time, money and effort for large organizations (Schooley 2003, pp.1-3); however, a previous analysis needs to be conducted to determine in what cases e-learning can substitute the traditional face-to-face training or if it can only be used as a supporting tool.

Nowadays, many companies are implementing complex software solutions such as ERP (enterprise resource planning) systems in order to integrate all aspects of a company's operations. ERP systems help companies reduce costs, improve management of business processes and share data across the organization. These systems usually develop very rapidly and it is sometimes difficult to guarantee that employees are properly trained on them (Sumner, 2005).

When implementing a new ERP system, many companies face difficulties due to employees' resistance to change. As a result, internal marketing and change management strategies need to be developed in order to promote the incorporation of the new ERP system into the workplace. An effective internal marketing strategy increases employees' understanding of their role within the change, guarantees their commitment towards the goal and ultimately contributes to a successful implementation (Hayes, 2010).

In this study, I explain the concept of e-learning, analyze its advantages and limitations and to what extent e-learning can be applied in a global ERP implementation project. Internal marketing and change management theories are also introduced and connected to the main topic of e-learning. This study aims at determining in which cases an e-learning approach can be helpful when it comes to training a new ERP system,

including business processes, and how e-learning can be applied for change management and internal marketing purposes.

The theoretical background for this study was obtained from different sources including proven theories and mostly current articles and publications from reliable journals, organizations and institutes. Due to the fact that the research topics of this study are relatively new and developing constantly, it is necessary to analyze recent publications to follow the latest developments.

In order to gather empirical data for this study, I resorted to qualitative research methods. Data was collected by means of structured interviews, mainly face to face but also via conference call. The purpose of the interviews was to gather experiences, opinions and diverse points of view from the organization's employees who are in one way or another involved in the research topics. Finally, the results of the interviews are summarized and presented in a logical manner highlighting recurring opinions and new proposals and ideas which were considered relevant.

As a final point, conclusions are drawn and recommendations are made with the purpose of helping the organization get more clarity on the topic of e-learning and its suitability for the company's projects.

## **1.1 Purpose of the study**

The purpose of this study is to find out the suitability of an e-learning approach within the training strategy of the ERP implementation program known as ONE Programme, in the global organization Cargotec. The intention is to identify the benefits and challenges of e-learning in a global ERP implementation and in particular, determine how suitable e-learning can be for ONE Programme projects. This study also aims at researching how e-learning fits within the company's change management strategy and how e-learning can be utilized as an internal marketing tool. The overall objective of this study is to help the organization get a tangible return on investment.

## **1.2 Scope of the study**

This thesis covers the topics of e-learning, ERP implementation, change management and internal marketing and how these concepts are interconnected. Even if in order to implement and develop an e-learning platform a lot of technical aspects need to be considered, these are not covered in detail on this thesis. The study aims at researching the topics more from a business point of view than a technical perspective.

This research concentrates specifically on the case of the commissioning party but the theoretical part and findings could be applied to other organizations.

## **1.3 Structure of the study**

The first chapter of this thesis, the introduction, is a general description of the work done during this study. It gives background information about the research topics and the purpose of the study. The second chapter describes the commissioning party, Car-gotec Oyj. It provides relevant details about the company and the ONE Programme and it explains thoroughly the frame in which the topic for this research was assigned. Chapters 3-6 deal with the theoretical part of this study by introducing the concepts of internal marketing, change management, e-learning and ERP. Chapter 7 describes the methodology used for this research, the reasons for choosing a qualitative approach and how the data was collected via interviews. Chapter 8 contains the results of the research, an analysis of the findings as well as a description of the validity and reliability of the study. In the closing chapter, the conclusions of the whole research are summarized as well as the author's personal comments and recommendations.

## **1.4 Research methods and questions**

A qualitative approach is used as the research methodology for this study. Data was collected through interviews which were conducted either face to face or virtually via Live Meeting. More detailed information about the methodology can be found on chapter 7. This research aims at answering the following questions:

- 1) What benefits can be obtained from e-learning in a business environment?  
What are the main challenges?

- 2) How can e-learning be utilized effectively in ERP implementations?
- 3) How can organizational change management and internal marketing strategies benefit from e-learning?

## **2 Commissioning party**

This thesis was commissioned by the company Cargotec Oyj, more specifically by the Process Deployment and Change Support track within the ONE Programme. In this chapter, a general overview of the company is offered as well as an introduction to the mentioned ERP project, ONE Programme. The project structure and the different cross project tracks are explained. This information is relevant in order to understand the context in which the research topic was conceived. Due to the complex nature of these projects, the descriptions and explanations are simplified to ease the reader's understanding.

### **2.1 Cargotec Corporation**

Cargotec is a Finnish company that delivers cargo and load handling solutions and services for ships, ports, terminals and local distribution. On land, load handling solutions are used in various sectors in inland transport and delivery, including construction, distribution, warehousing and defense. In ports and terminals, Cargotec customers include container and bulk terminals. At sea, Cargotec offers solutions to ship owners and ship and terminal operators, shipbuilders, and navies. In addition, Cargotec customers include offshore vessel owners and operators, as well as shipbuilders. Cargotec also offers a wide range of services for all customers, including maintenance, repair, spare parts and training.

Cargotec has three daughter brands – Hiab, Kalmar and Macgregor.

Cargotec operates in 120 countries and more than 600 sales and service points worldwide.

Cargotec employs approximately 10,500 professionals globally of which 58 percent are located in EMEA (Europe, Middle-East and Africa). Personnel in the Asia-Pacific region make up 28 percent of the employees, while those in North and South America represent 14 percent.



Cargotec's sales amount to EUR 3.1 billion in 2011.

Cargotec headquarters are located in Helsinki, Finland. (Cargotec Oyj company presentation 2011).

### **Vision and mission**

- Mission: To improve the efficiency of cargo flows
- Vision: To be the world's leading provider of cargo handling solutions

Cargotec's promise: *we keep cargo on the move™*

### **Values**

As Figure 1 shows, Cargotec has three core values supporting their promise: *we keep cargo on the move™*

- Global presence-local service
- Working together
- Sustainable performance



Figure 1. Representation of Cargotec's core values supporting their promise (Cargotec intranet pages 2011)

### **Strategy**

Cargotec's strategic target is to be the global market leader in cargo handling and aim to grow faster than the industry on average.

As Figure 2 portrays, Cargotec's strategic focus areas are:

- Customers: customer perspective lies at the heart of their strategy. This means focusing on selected segments, while making a flexible transition toward a more customer-driven approach.
- Services: stronger emphasis is put on service development, in line with the customers' value chain, and on seeking growth when customers outsource their service operations.
- Emerging markets: mature markets are showing slower growth. A successful company must be strong, particularly in growing economic areas.
- Internal clarity: enhanced efficiency and unity are pursued through process development. (Cargotec Oyj intranet pages 2011).

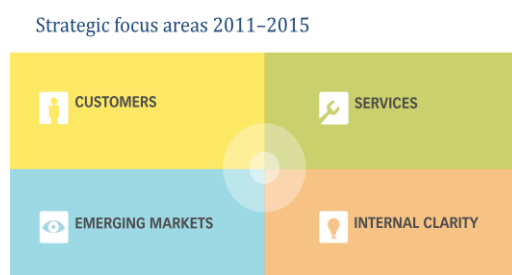


Figure 2. Cargotec's strategic focus areas for 2011-2015 (Cargotec intranet pages 2011)

## 2.2 One Company

Cargotec Corporation was created by mergers and acquisitions during the past years. However, the businesses within Cargotec have much longer history during which their expertise, product offering and customer relationships have been formed.

In December 2004, it was decided that Kone Corporation would be demerged into two companies to be listed: Cargotec and New KONE. After the demerger, the container handling (Kalmar), load handling (Hiab) and marine cargo handling (Macgregor) businesses formed Cargotec.

In 2005, Cargotec commenced its transformation into one global organization and the concept of *One Company* was developed. This concept is defined as "Cargotec's way of working together as one entity benefitting from its diverse knowledge and scale and

operating with combined resources in the interest of the customers.” (Cargotec Oyj intranet pages 2011).

## ONE Programme

In January 2011, following the One Company operating model, Cargotec established the ONE Programme to implement a common business platform for Cargotec. The business platform consists of common processes and a supporting enterprise resource planning (ERP) system.

As Figure 3 shows, the new ERP system will support common processes, manage resources and facilitate the flow of information between all business functions across the organization.

ONE has the highest priority in Cargotec’s development portfolio in the coming years. (ONE Programme presentation 2011).

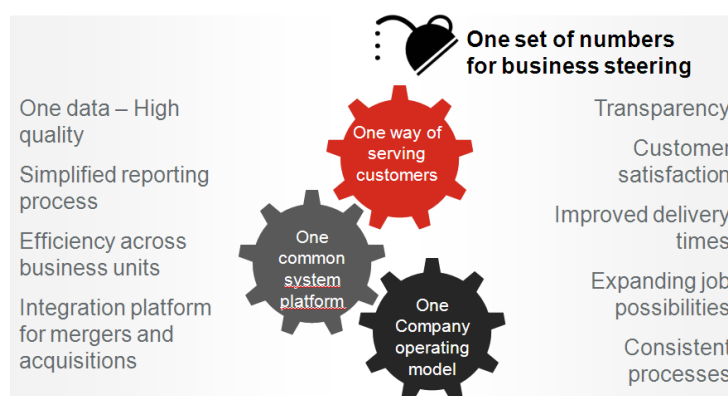


Figure 3. Business objectives to be obtained from ONE Programme (ONE Programme general presentation 2012)

## ONE Programme projects

As depicted on Table 1, ONE Programme consists of seven different projects:

- 1) ONE Frontline
- 2) ONE Finance

- 3) ONE Parts
- 4) Principal
- 5) ONE Project Business
- 6) ONE Data
- 7) ONE Architecture

Table 1. Description of ONE Programme projects (ONE Programme general presentation 2012)

<p><b>ONE Frontline</b></p> <p>Common processes and business platform for common frontline sales and service processes with a supporting information infrastructure.</p>
<p><b>ONE Finance</b></p> <p>One set of numbers through harmonized financial and accounting processes with common set of accounting master data.</p>
<p><b>ONE Parts</b></p> <p>Common central processes and one business platform for centrally managed distribution centers.</p>
<p><b>Principal</b></p> <p>Connecting frontline to supply units (Multi Assembly Units or MAUs) with redefined order flows and processes to enhance operational efficiency.</p>
<p><b>ONE Project Business</b></p> <p>One way of working to manage customer delivery projects in Terminals and Services business areas and to develop one SAP solution to support the processes.</p>
<p><b>ONE Data</b></p> <p>Rules, roles and responsibilities for customer, vendor, product as well as financial and reporting master data.</p>
<p><b>ONE Architecture</b></p> <p>Transforming the current business application landscape into the target business application landscape.</p>

ONE Programme is at the same time divided in five different cross project tracks:

- 1) Project Management
- 2) Solution Management
- 3) Delivery Capability
- 4) Process Deployment and Change Support
- 5) Data Implementation

Figure 4 shows all ONE Programme projects are impacted by these cross project tracks. (ONE Programme presentation 2012).

The topic of this thesis was assigned by the Process Deployment and Change Support track with the purpose of studying how e-learning can be utilized when training the common processes and new ERP system. The Process Deployment and Change Support track is formed by experts on the fields of communications, HR, business process deployment, training and change management.

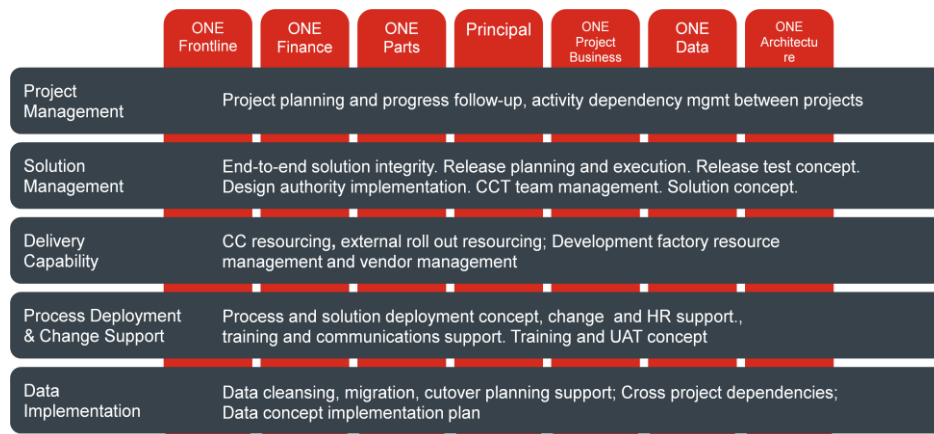


Figure 4. ONE Programme projects and cross project tracks with description (ONE Programme general presentation 2012)

### 3 What is e-learning?

Before starting a discussion on e-learning, the terms distance learning and e-learning need to be explained.

Distance learning can be defined as any approach to education delivery that replaces the same time, same-place, and face-to-face environment of a traditional classroom (Volery and Lord, 2000). More specifically, there are five main elements of distance education: the separation of teacher and learner; the influence of an educational organization; the use of technical media to unite the teacher and learner and to carry educational content; the provision of two-way communication so that the student may benefit from or even initiate dialogue; and the possibility of occasional meetings for both didactic and socialization purposes (Keegan, 1990).

In this study, e-learning is described as the latest development of distance learning (Raab et al., 2002). E-learning includes all electronic forms of media, including CD-ROM, internet, extranets and intranets, audio and video (Govindasamy, 2002). A very important aspect of e-learning (occasionally known as “Internet-enabled learning”) is using network and information technologies to enable learning, anytime and in any place (Raab et al., 2002). Table 2 shows the evolution of distance learning into e-learning (Choi et al., 2006 223-225).

Table 2. Evolution of distance learning (Choi et al., 2006 225)

	Past	Present
<b>Definition</b>	Any approaches to education delivery that replace the same-time, same-place, and face-to-face environment of a traditional classroom ( <i>i.e., correspondence teaching; multimedia distance teaching</i> )	The most recent evolution of distance learning that creates, fosters, delivers, and facilitates learning, anytime and anywhere, with the use of interactive network technologies ( <i>i.e., e-learning</i> )
<b>Paradigm in education</b>	Focus on teaching: lesson based Objectivist model of learning in which learners are passive A series of lectures for efficient transfer of knowledge from instructor to learner	Focus on learning: learner based Constructive, collaborative, and cognitive information processing of learning Individual differences in the learning process; learning as a social process
<b>Interaction</b>	Lack of direct interaction between	Interactions between instructor and

	the teacher and the learner Asynchronous interactions	learner, and among learners Asynchronous/synchronous or real-time (e.g. chat forum, instant messaging, video conferencing) interaction
<b>Technology</b>	Written or printed materials, broadcast media, audio/videotapes, telephone, and CAI/CBT with stand-alone computers	All electronic media, especially, network technologies such as the Internet, intranets, and extranets

Many companies have adopted the use of e-learning in recent years due to the growing importance of lifelong learning. Employees nowadays need to frequently update their knowledge and skills as jobs-for-life seem to be disappearing. It is also necessary to be up to date in an era of new technologies and immense amounts of information available on the Internet (Mason & Rennie 2006, 13).

Organizations usually wish to invest in e-learning in order to reduce training costs and time and to improve the overall performance in the organization (Schooley, 2003). But most importantly, one of the main reasons for implementing e-learning tools and developing e-learning strategies in recent years is the increase of virtual teams; doing business in a virtual environment is nowadays a reality for many companies. Organizations want to have the most competent professionals in their teams and geographical location is no longer an obstacle. Multinational companies are becoming more and more global especially in areas such as Latin America, China and India, but at the same time, they are also becoming more aware of the high cost of travelling which leads to the increasing use of virtual tools and virtual environments.

In order for virtual teams to perform well, a series of elements need to be in place first:

- The technology used needs to be simple and user-friendly.
- The processes need to be clearly defined.
- Communicating in a straightforward way is essential.
- Effective leadership can ensure the success of the virtual team (Caulat, 2006).

Due to the fact that companies are progressively transforming into global organizations and implementing common global business platforms, the role of the manager needs to also develop to adjust to the changing environment (Willmore, 2003). Some of the most frequent challenges that managers and team leaders are facing nowadays when managing virtual teams are communicating effectively and identifying the learning needs of the team. A high-performing team usually learns and grows together (Jones, 2007 157-162). Effective leadership in a virtual team requires a number of skills that need to be developed. Since team members are most likely spread out worldwide, cross-cultural awareness becomes very important, therefore leaders need to consider cultural differences when managing global projects and recognise that each culture has particularities that need to be taken into account and that might have a big impact in the development of the team. It is also important for managers to acquire flexibility and become more versatile since there might be a number of key roles that they need to adopt. But above all, leaders need to build a comfortable relationship with team members in the virtual environment by using clear communication and having very good listening skills (Caulat, 2006).

When companies decide to implement an e-learning strategy and make use of virtual tools as part of their daily life, there are many different aspects to be considered which cannot be forgotten. For example, the existing company culture has to be reviewed, if it is somehow a very traditional or “old-fashioned” organization, characteristics such as employees’ age, language skills and computer literacy need to be taken into account. If learners are used to a traditional classroom type of education or instructor-led courses, they may not feel very comfortable learning on their own by sitting in front of the computer. In addition, if e-learning is deployed globally, organizations need to first make sure that their employees possess the necessary language skills in order to follow the courses. But mainly, in order to achieve success and implement a successful e-learning, it needs to be supported by the CEO and executive management commitment needs to be present, otherwise employees will not feel engaged or motivated to use the new virtual environment.



Change management initiatives and internal marketing are required when introducing e-learning in an organization. As mentioned, there needs to be an understanding of the cultural and technological obstacles encountered within an organization which can lead to employees' resistance to change. In order to make an e-learning initiative work, a big effort needs to go into internal marketing. Before launching e-learning you have to know who your target audience is, that is who you want to direct your marketing efforts to and who will be the key users of the e-learning platform. After that initial step, there needs to be an adequate promotion campaign and communication plan to get the right message across and engage the target audience. As previously stated, it is important to get senior management commitment to awaken interest of the employees. For example, the completion of e-learning modules can be included in new employees' inductions, in development discussions with line managers, CEO statements and letters to learners, etc. (Hayes, 2010).

Another factor to be considered is how to measure and assess the success and effectiveness of e-learning. E-learning implementations are usually big investments; therefore clear ROI (return on investment) metrics need to be in place (Henry, 2001). Clear objectives need to be set before implementing e-learning, what do we want to achieve with this initiative. When those objectives have been decided and e-learning courses are available, companies need to check if they have achieved any meaningful results. A metric can be to check how many people took the training, if an objective is that 100% will take it and only 50% did, employees' exposure to the materials needs to be increased or managers need to promote the courses or make them part of their development targets. Another way to assess the success can be by testing the employees' knowledge before taking the course and after and how they are able to perform after receiving the training. If the goal of e-learning is information sharing within the organization, the key metric can be to check how many people actually viewed the information, how many hits to the link there are or how many downloads (Articulate Global Inc., 2008).

Ultimately, from a more technical point of view, there are several key factors to be considered in an e-learning solution:

- E-learning platform elements: content, applications and services.
- Types of training: asynchronous, synchronous or blended.
- Deployment method: externally or internally provided (Schooley, 2003).

As far as content is concerned, it can be concluded that it is the core element of e-learning, it is what really delivers the business benefit and adds knowledge, skills and expertise to the employees (Henry, 2001). Content can be obtained as generic or “off-the-shelf” courses from the supplier or if the company has the internal know-how it can be developed by the organization. In addition, a suitable learning management system (LMS) which fulfils the company’s objectives needs to be chosen. It is recommended that the company considers first those technology applications which will be used immediately and extra applications can be added later. Companies may consider e-learning platforms in which the content can be edited and personalized, which support applications for real-time instruction and interaction such as video conferencing and chat. In case the company has no previous experience in developing e-learning solutions, vendors can provide services to help assess the company’s needs and IT infrastructure.

There are also different forms of e-learning in a business environment which can be selected. The most common types of training are asynchronous, synchronous or blended. Asynchronous e-learning refers to self-paced learning in which the students can choose the time and place where they want to access the courses. Learners choose the materials themselves or they are assigned by the manager. This type of learning needs to be assessed afterwards by means of examination to ensure more successful results. Synchronous e-learning is usually an instructor-led virtual class in real time and it is used when interaction between learner and educator is required. And finally, blended e-learning includes both elements, both asynchronous and synchronous learning. It allows students to progress at their own pace but also interaction with the instructor in case it is needed for better understanding. This form of blended e-learning is the most recommended in business environments which is proving to have successful results.

The last factor to be considered is the deployment method, meaning if the e-learning platform will be hosted by the supplier or if the company will be putting it in their own servers. Smaller organizations usually choose the first option since they do not have enough IT support staff or cannot make such a big investment, however, organizations with global e-learning initiatives in which e-learning plays a big role in the company's business commonly decide to have it in their own servers (Schooley, 2003).

### **Advantages and challenges of e-learning**

As discussed previously, many companies nowadays are willing to invest in e-learning as part of their solution. However, in spite of its many benefits, e-learning has also some challenges. Schooley (2003) summarizes the most important advantages and challenges of e-learning as follows:

- Cost reduction: travel savings and better performing teams can lead to big cost reductions.
- Flexibility: time and location can be chosen by the learners.
- Availability: materials are available 24x7.
- Consistency: the content and the message is always the same and it does not depend on the instructor.
- Productivity: Employees spend less time away from their jobs when learning can be done at the workplace.
- Ability to be global: a global audience can benefit from e-learning at the same time.
- Scalability: there can be an unlimited number of students and courses can be repeated as many times as needed.
- Community building: e-learning encourages online collaboration and support.
- Rich content: there are many options available such as videos, graphics, animations which facilitate learning.

On the other hand, the challenges that e-learning can face are the following:

- Content: it can be difficult to engage the audience therefore a high-quality and appealing content is necessary.
- Support: technical support is needed as well as tutors and instructor's support.
- Learner's attitude: self-discipline and motivation are a must in e-learning.
- Poor measurement: it can be difficult to measure e-learning's effectiveness and there can be a lack of data to support ROI.
- Course design: navigation and layout needs to be easy and intuitive.
- Technical limitations: implementation problems and technical challenges can hinder e-learning.
- Computer literacy: some employees are not as familiar with technology as others.

## 4 What is an ERP?

As defined by Somers and Nelson (2003),

ERP systems are the software tools used to manage enterprise data. ERP systems help organizations deal with the supply chain, inventory management, customer order management, production planning, shipping, accounting, human resource management, and other business functions.

According to Deloitte Consulting,

An ERP system is a packaged business software system that allows a company to automate and integrate the majority of its business processes: share common data and practices across the enterprise; and produce and access information in a real-time environment.

ERP systems basically integrate all business operations and functions and a common database is used as opposed to the legacy systems where different applications are used for different business operations. One of the main challenges about implementing an ERP system is that all business processes need to be reviewed and possibly modified.

It can be argued that one common mistake made by organizations which are implementing a new ERP system is trying to adapt the old ways of working to the new system. The company's business practices need to be redefined and adapted in most of the cases in order to serve customer needs.

Before implementing a new system, it is important to check how the processes can be mapped to the new system and what the necessary changes are. It can also happen that companies try to implement too rigid ERP systems which cannot be easily customized and do not adapt well to rapid-changing business needs. ERP vendors need to offer functionalities that allow companies to shape the system in a way that is aligned with their business activities.

It is also common that companies purchase additional solutions which are not offered by the core ERP to complement its functionality. The purpose of an ERP system should be to make business processes easier, not more difficult (Microsoft Dynamics, 2012). The ERP market is probably one of the fastest growing markets in the software industry nowadays. There have been a big number of organizations which have recently attempted to implement ERP systems such as SAP, Oracle and Microsoft Dynamics in order to reduce operating costs and substitute the large number of legacy systems.

ERP systems are a very big investment and companies need to study the benefits and the objectives they want to achieve very carefully (Sumner, 2005).

ERP systems as such are a quite recent development and they have advanced immensely in the past years. It was not until the late 90s, that ERP systems offered a common set of applications supporting all business processes. Table 3 shows the historical evolution of e-learning since the 1960s.

Table 3. Historical evolution of ERP systems (Sumner, 2005)

Types of systems	Time	Purpose	Systems
<b>Reorder point systems</b>	1960s	Used historical data to forecast future inventory demand; when an item falls below a predetermined level, additional inventory is ordered	Designed to manage high-volume production of a few products, with constant demand; focus on cost
<b>Materials requirement planning (MRP) systems</b>	1970s	Offered a demand-based approach for planning manufacture of products and ordering inventory	Focus on marketing; emphasis on greater production integration and planning
<b>Manufacturing resource planning (MRP-II) systems</b>	1980s	Added capacity planning; could schedule and monitor the execution of production plans	Focus on quality; manufacturing strategy focused on process control, reduced overhead costs, and detailed cost reporting
<b>MRP-II with manufacturing execution (MES)</b>	1990s	Provide ability to adapt production schedules to	Focus on the ability to create and adapt new

<b>systems</b>		meet customer needs; provide additional feedback with respect to shop floor activities	products and services on a timely basis to meet customers' specific needs
<b>ERP (enterprise resource planning) systems</b>	Late 1990s and onward	Integrate manufacturing with supply chain processes across the firm; designed to integrate the firm's business processes to create a seamless information flow from suppliers, through manufacturing, to distribution to the customer	Integrates supplier, manufacturing, and customer data throughout the supply chain

Even if implementing an ERP system is a very arduous task that requires an enormous effort from the company and the statistics indicate that there are an elevated number of risks that can endanger its success, organizations find motivations and benefits from a business point of view to proceed with the implementation. Table 4 represents some of the most important business objectives achieved by an ERP system. However, the business benefits of an ERP may take a long time to become apparent especially in large-scale ERP projects, for that reason company's commitment and satisfaction can be affected.

Table 4. Before and after ERP: business standpoint (Sumner 2005).

	<b>Before ERP</b>	<b>With ERP</b>
<b>Cycle time</b>	Costly bottlenecks	Time and cost reduction of business processes
<b>Transactions processing</b>	Multiple transactions use multiple data files	Faster transactions, using common data. Reduces the time and cost of multiple updates
<b>Financial management</b>	Increased cost of excess inventory, cost of overdue accounts receivable	Improves operational performance (e.g., less excess inventory, reduction in accounts receivable)
<b>Business processes</b>	Proliferation of fragmented processes with duplication of effort	Re-engineering around a business model that conforms with "best practices"
<b>Productivity</b>	Lack of responsiveness to custom-	Improvements in financial man-

	ers and suppliers	agement and customer service
<b>Supply chain management</b>	Lack of integration	Linkages with suppliers and customers
<b>eBusiness</b>	Web-based interfaces support isolated systems and their components	Web-based interfaces are front-end to integrated systems
<b>Information</b>	Lack of tactical information for effective monitoring and control of organizational resources	Allows cross-functional access to the same data for planning and control. Provides widely available information
<b>Communications</b>	Lack of effective communications	Facilitates organizational communications with customers and suppliers

ERP systems are organized in modules which represent the system's capabilities. For example the more common modules in SAP ERP are:

- Production Planning (PP)
- Materials Management (MM)
- Sales and Distribution (SD)
- Plant Maintenance (PM)
- Project Systems (PS)
- Quality Management (QM)
- Financial Accounting (FI)
- Management Accounting / Controlling (CO)
- Human Resources (HR)
- Business Intelligence (BI)

The abbreviations are very commonly used to describe a person's expertise on that field, for example a FICO expert is very knowledgeable in those two modules.

Apart from ERP systems, companies might also consider acquiring the so-called inter-company applications which help them fulfil most of the business processes. Many vendors such as SAP and Oracle offer these application suites. Some of these systems are supply chain management (SCM) and supplier relationship management (SRM)



systems and customer relationship management (CRM) systems which connect the company's ERP with the customers and suppliers and enable marketing, sales and customer service (Magal & Word 2012, 26-27).

As discussed, there are many risks that need to be considered when companies decide to implement a new ERP system. Large-scale ERP projects are especially risky due to many diverse factors. For example, if the ERP system needs to be customized and very much modified, the project time will increase noticeably thus increasing the cost as well (Mabert et al., 2003).

A very important decision when starting an ERP project is deciding if the project will be totally or partially outsourced to a partner. If it is totally outsourced, the company will miss the opportunity of developing internal knowledge within the company. Another risk factor in implementing

ERP is that companies usually neglect the creation of effective change management strategy to address the resistance to change. It is very common that employees experience change resistance especially when their job descriptions will change. In order to achieve ERP success, user training is a key factor and it can also become a risk if companies do not invest adequately in training the employees not only on how to operate the software but also the business processes (Sumner 2005, 118-119). Sumner (2002) summarizes the main risk factors in ERP projects as described in table 5.

Table 5. Summary of risk factors in ERP projects (Sumner, 2002).

Risk Category	Risk Factor
<b>Organizational fit</b>	<ul style="list-style-type: none"> <li>- Failure to re-design business processes</li> <li>- Failure to follow an enterprise-wide design which supports data integration</li> </ul>
<b>Skill set</b>	<ul style="list-style-type: none"> <li>- Insufficient training and re-skilling</li> <li>- Insufficient internal expertise</li> <li>- Lack of business analysts with business and technology knowledge</li> <li>- Failure to effectively mix internal and external expertise</li> <li>- Lack of ability to recruit and retain qualified ERP systems developers</li> </ul>
<b>Management strategy</b>	<ul style="list-style-type: none"> <li>- Lack of senior management support</li> <li>- Lack of proper management control structure</li> <li>- Lack of champion</li> </ul>

<b>Software design</b>	<ul style="list-style-type: none"> <li>- Ineffective communications</li> <li>- Failure to adhere to standardized specifications which the software supports</li> <li>- Lack of integration</li> </ul>
<b>User involvement and training</b>	<ul style="list-style-type: none"> <li>- Insufficient training of end-users</li> <li>- Ineffective communications</li> <li>- Lack of full-time commitment of customers to project management and project activities</li> <li>- Lack of sensitivity to user resistance</li> <li>- Failure to emphasize reporting</li> </ul>
<b>Technology planning/integration</b>	<ul style="list-style-type: none"> <li>- Inability to avoid technological bottlenecks</li> <li>- Attempting to build bridges to legacy applications</li> </ul>

According to Panorama Consulting 2012 ERP report, the most common reasons why ERP projects do not succeed are that the projects are late, over-budget or do not realize the planned benefits. One reason for not keeping the budget or the planned schedule is that companies prefer to prioritize the project results and quality but it also indicates that it was not originally designed in a realistic manner. When the budget is initially set up, many companies may underestimate costs such as organization change and training costs, travel costs, customization and technical implementation costs, business process blueprinting costs etc. If these costs are not considered, projects will easily run over budget and schedules will be extended. According to Panorama Consulting research, in 56% of the cases companies exceeded the budget and 54% of the projects run over schedule in 2011. Lastly, the other risk factor mentioned is benefit realization. Due to the complex and costly nature of ERP projects, executive management needs to understand that it will take time to realize the planned business benefits. According the Panorama's 2012 ERP report, about 50% of the companies that they researched achieved more than 50% of the planned business benefits in 2011.

It is also mentioned in the report that a key success factor in ERP projects is the selection of the adequate implementation rollout approach according to companies' needs. There are three main types of rollout strategies that companies can decide to implement: phased approach, big-bang approach and hybrid approach.

A big-bang approach means that all modules and all departments will go live at the same time which can entail significant business disruptions. Companies can also implement a phased rollout approach in which they go live in different locations at differ-

ent times and implement modules in a staged manner. Finally, a hybrid approach which is a combination of both can be chosen for large organizations. Maybe it makes sense to use a big-bang approach for smaller business units and a phased one for other areas. Panorama Consulting survey results indicate that 34% of the companies chose a big-bang approach and 24% a phased approach.

Finally, Panorama's 2012 ERP report concludes that approximately four out of five companies are satisfied with their ERP system; however the satisfaction levels go down dramatically when they start the implementation. This result is due to many reasons such as poor understanding of the implementation, lack of management and user commitment and lack of resources, but the most significant result was that two thirds of the companies were having difficulties in both process and organizational change areas.

### **The role of training in ERP implementations**

As already mentioned, an ERP implementation is usually very costly effort and an insufficient investment in training is one element that can put this type of projects at risk. As shown in Figure 5, training is a key factor in a successful ERP implementation. To get a tangible business return from the application investment, employees have to learn how to use the application efficiently. (Gartner, Inc. 2011).

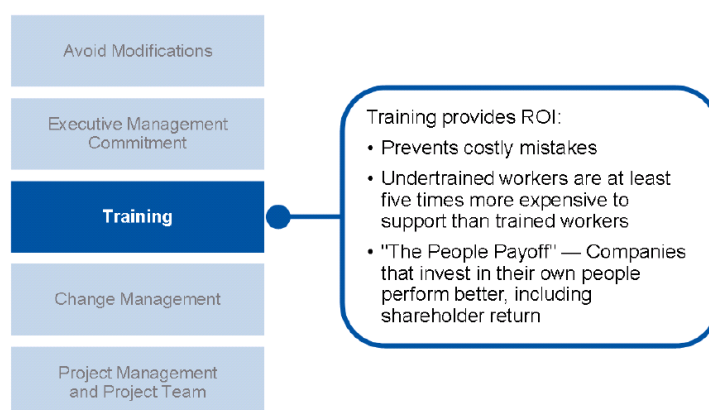


Figure 5. Key factors for successful ERP implementations (Gartner Inc., 2011).

There are many reasons why the implementation of an ERP system in an organization might be unsatisfactory, or actually fail. A decisive factor can be inefficient training of

for the end users who interact with computer systems on a daily basis. In many cases, training is treated as a cost instead of an investment and many companies struggle to design an effective training strategy. Some organizations might have a traditional approach and think that the best way to learn is by simply doing the job and no real effort is needed in developing a comprehensive training strategy. This is not the case, as a proper training can provide for the organization real return on investment. Training can prevent costly mistakes, especially when working with complex ERP systems where a little mistake somewhere can become very expensive and have a big impact somewhere else. Organizations must make a real commitment to training, but not only during the implementation phase but also afterwards during the support phase (Gartner Group, 2011).

In order to design a successful training strategy during ERP projects, some important aspects need to be considered. The training should be oriented towards processes and roles and not only system-based. It is a common error to teach end users to use the systems transactions without make sure they understand first the newly designed business processes and end user roles. Also the work time that users need to allocate for the project needs to be considered. If they need to attend training and take care of their daily business at the same time it is much more difficult to obtain satisfactory results and the frustration levels will increase. It is also important that users complete all required courses to fully take advantage of the applications and avoid mistakes in the future but users should not be overloaded with knowledge that they are not going to use right away or that they cannot put in practice directly. A key success factor is the creation of a competent training team which possesses the correct skills and knowledge and the ability to be good trainers.

A successful training strategy should always be paired with a strong change management initiative. Due to the complex nature of ERP projects, training the new system and business processes is not enough. Some aspects like job, process and organizational changes need to be taken into account not only during the project but also after go-live.

Getting management commitment is another key factor in ensuring a successful training program. Managers need to understand the importance of training and allocate the necessary time and resources to develop and deliver training as well as for users to attend training. The training team needs to be included in all project activities from the beginning and it must gain credibility within the project team. All training activities and deliverables need to be included in the project plan to coordinate the dependencies and plan the schedules correctly. But most importantly, users need to understand the value of training and be engaged by team leaders, it should be treated as an incentive instead of an obligation. Certification can be used to motivate people and give them positive visibility within the organization and among their colleagues. Lastly, a good initiative is to create a key user network which supports training and can be even used to fill in temporary resourcing needs (Gartner, Inc. 2011).

## 5 Organizational Change Management (OCM)

Brown (2002) explains that the only thing that is certain in the business environment is that things will change. But why does change happen? Nowadays we are getting more and more used to things developing and changing rapidly and it is just a matter of time until things change again. We might feel that everything is going rather well in our organization and changes are not necessarily required, however change is imposed on us. Tushman et al. (1986) conducted a study of hundreds of companies and concluded that change happens in an s-shaped pattern. Organizations develop slowly in the beginning and gradually grow gaining stability until they reach a middle point where the growth is more rapid and finally slow down becoming outdated and transformation is needed. Then the pattern starts all over again (Hayes, 2010 16-17). Figure 6 shows the s-shaped representation of organizational development over time.

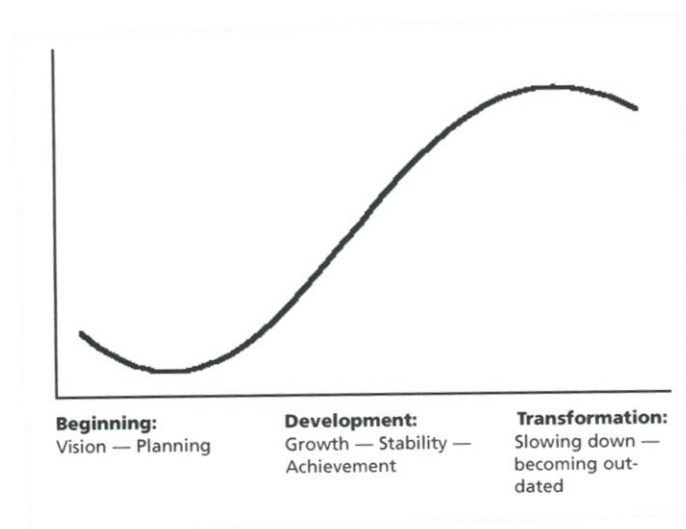


Figure 6. Organizational development over time (Brown, 2002)

A process that many companies have to go through is the so-called re-inventing the organization. In order to be market leaders, new ideas and developments need to be analyzed and launched. Companies need to understand where exactly they are on the curve and how to move ahead. Organizations may, however, move at different speeds depending on several factors. Some companies may not have the necessary financial resources available to conduct the change, different business environments develop at a different pace, managers may not encourage the change or maybe the resistance is

stronger than the motivations for change. What is clear nowadays is that companies are changing and developing much faster globally than in the past decades. So it can be said that change is not only unavoidable are re-inventing themselves at a vertiginous rate.

As soon as a company starts to introduce new developments and changes, opposing forces will start to arise. It is human nature to oppose change and in organizations this opposition is due to several factors. Employees will start to think, why change something that has worked well so far. This is because the reasons pushing the change may not be visible for everyone. The strengths and the weaknesses in the system need to be understood by everyone and how to use them effectively. The most usual drivers for change according to Brown (2002, 19) are “external pressures, poor performance or internal dissatisfaction”.

External pressures can be driven by competitors taking the lead on the market, political or economic factors, technological developments, change in customer perceptions among many others. A PEST (political, economic, socio-cultural, technological) analysis can be conducted to determine these changes. Poor performance can be noticed if companies fail to meet their targets such as reducing costs or increasing operations and profit. Internal dissatisfaction can spread fast in an organization and become a real threat. Some of the reasons for internal dissatisfaction may be working conditions, operational processes, company policies and many others.

In order for employees to support change, at least the following targets need to be achieved: clear objectives, adequate organizational structure and effective communications. It is very difficult for employees to commit to change if they do not understand what is expected from them, especially if those changes involve new processes. Preferably, every person in the organization should contribute to design the changes and set the common objectives for the company. If teams or departments are excluded, it is much more complicated to get their commitment. Change objectives should be cascaded down in the organization as follows: executive → manager → supervisor → front line. The aim of this cascading process is to make every employee accountable

for the success of the change process even if they are far away from the company's central operations, customers or products.

Something that has become very noticeable in past years is that organization structures being constantly rearranged because the way of working is changing. Mainly because of technological growth and global competition, workers are now located remotely and in many cases hired just part-time for specific projects. Companies need to make sure that those changes work within the structure and framework of the organization. But one of the major problems that come up whenever there is change is communication. Employees usually feel that they are not being informed sufficiently about the change and they are not trusted to contribute in the change process. (Brown 2002, 29-39).

According to Jones et al. (2006),

understanding how to communicate an intended organizational change is one of the main challenges for organizational communication and more attention should be paid to the ways employees perceive, talk about, and manage change in their work.

Transformation within an organization is not possible unless the vast majority of employees are willing to make an effort and make short-term sacrifices. Even if the employees are not satisfied with the status quo, they will not support the change if they do not think it is useful or necessary. It is even more challenging when part of the change includes downsizing. For these reasons, it is necessary to create effective internal communication strategies and all possible communication channels should be utilized. In order to create these effective communication strategies, managers need to be heavily involved and they need to “walk the walk” for the new changes to gain credibility (Kotter, 2007).

If we look at Hiatt's (2006) ADKAR change management model, it becomes clear that the following five elements are essential for successful change: awareness, desire, knowledge, ability and reinforcement (Figure 7).



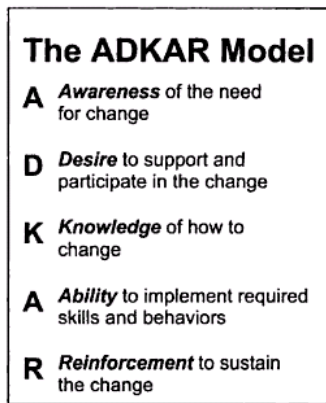


Figure 7. The ADKAR Model (Hiatt, 2006)

Awareness means that a person needs to understand the change and be aware of the internal and external factors that are driving the change, also “what is in it for me”. Desire refers to how willing a person is to participate in the change, what their internal motivation is. Knowledge about the change is the information and education provided to know how to change, understanding about the processes, job roles, systems etc. Ability is “turning knowledge into action”. It refers to a person or a group that execute the change. And finally, reinforcement refers to internal and external elements that help maintain the change. The ADKAR model follows the natural course of how change is experienced and the order of factors cannot be altered.

If we take a closer look at the aspect of knowledge, we can conclude that teaching the employees the knowledge and skills needed to change their behavior and meet the company’s goals is essential for success. But in order to achieve the desired knowledge, several factors play an important role. Firstly, the actual knowledge of the person needs to be assessed, maybe some persons already possess the required knowledge or maybe the knowledge gap is really big. After that, we need to consider the person’s ability to learn, some people have for example more difficulties in acquiring technical skills than others. Another aspect that needs to be regarded is the educational resources available in the organization. Some companies may not have the necessary funding to provide extensive training. Lastly, we need to take into account the accessibility of the required knowledge. It may happen that in some parts of the world educational sources are not easily available for everybody. (Hiatt, 2006).

As a conclusion, we can say that training and an effective communication strategy need to be part of any change management efforts. The use of all available communication channels will greatly contribute to the success of the desired changes. For this reason, an e-learning approach can be a great solution to address communication issues and support change management strategies.

## 6 Internal Marketing

Without good and well-functioning internal relationships, external customer relationships will not develop successfully. Managing employees – on all levels – is a true test of managing an organization (Grönroos, 2007).

The concept of internal marketing is not new; companies have always considered employees' motivation and attitudes and campaigns have been developed to address these topics. Internal marketing is based on the premise that in order to conduct successful external marketing, employees have to first develop a service orientation and an interest in customers. If new technologies, new processes and operations are not marketed first internally organizations cannot be successful. Coordinated and goal-oriented efforts inside the company need to exist in order to improve external efficiency. All employees, functions and departments need to be seen as internal customers and services have to be offered in the same customer-focused way as to external customers.

Everything that is provided for external customers is evaluated first by internal employees therefore, if the internal resources are not convinced or sure of what they are delivering, it will also have a negative impact in the external market. Employees need to feel that they are working in an organization where they will get something in return, such as the possibility to develop and an encouraging environment.

Developing internal marketing processes can be viewed as a strategic move but it needs support from the executive management. "If top management does not understand the strategic role of internal marketing, money invested in internal marketing efforts and processes will not pay off". Internal marketing requires two types of management processes: attitude management and communications management. Attitude management refers to the employees' motivation and their willingness to communicate and interact with customers and be overall service-oriented. The ability of managers to obtain information about employees' needs and their views on how to improve performance is known as communications management. In order to achieve successful internal marketing, communication has to be a two-way effort, employees can be swamped with information, newsletters, brochures etc. but they may not get any encouragement

or feedback from their managers. Therefore, internal marketing needs to be an ongoing process instead of a temporary campaign or a fleeting initiative. It can be said that the overall objectives of internal marketing are to make sure that employees are motivated, attract and retain good employees, ensure that internal services within the company are delivered in a customer-oriented manner and provide staff with the necessary managerial support.

Grönroos (2007, 392) defines the three prerequisites for successful internal marketing as follows:

Internal marketing has to be considered an integral part of strategic management. The internal marketing process must not be counteracted by lack of management support. Top management must constantly demonstrate leadership and active support for the internal marketing process.

When discussing what type internal marketing activities a company can develop, some of Grönroos' (2007, 392-395) proposals are the following: training, team leaders' support, internal mass communication and information support and developing systems and technology support.

Usually there is a lack of understanding among the employees about the company's strategies and change initiatives, for that reason, training is an essential part of an internal marketing program. Training is one of the basic components of the communication management aspect of internal marketing. If this aspect is overlooked, employees will most likely be able to see the whole picture in an organization and understand why they should change their behavior and they will not bother to acquire new skills. However, a training program will not succeed on its own unless it is promoted within the organization and an adequate internal marketing strategy is developed. The role of top management, middle management and supervisors is once again of utmost importance. Most managers recognize the need to inform their employees about new strategies or changes, however in many cases they do not really know how to do this in an effective way. Communications materials such as magazines, brochures or newsletters can be mass distributed but employees may not be receptive to these communication chan-

nels. Multimedia and audio-visual materials such as computer software or DVDs can be easily used by managers to communicate their message. The development of information technology has had a great impact in internal marketing. Employees are able to contact each other through electronic and virtual tools which create a positive feeling of being connected thus improving internal relationships (Grönroos 2007, 396).

## 7 Conducting qualitative research

On this chapter, the research methods and the research process will be described and analysed in detail. For this study, a qualitative research approach was chosen as the most suitable research method.

According to Hennink et al. (2011),

qualitative research is an approach that allows you to examine people's experiences in detail, by using a specific set of research methods such as in-depth interviews, focus group discussions, observation, content analysis, visual methods and life stories or biographies. ...one of the most distinctive features of qualitative research is that the approach allows you to identify issues from the perspective of your study participants, and understand the meanings and interpretations that they give to behaviour, events or objects.

Through qualitative research methods, it is possible to examine people in their own environment and understand better what the social, economic and cultural context of the study is. In order to succeed as a qualitative researcher, it is necessary to be flexible, empathetic and interested in listening to people's experiences. A qualitative approach aims at answering the why and how of the research questions.

This qualitative research started with the formulation of the research questions. Research questions are intended to be answered by means of data collection. After the study is finalized and data has been collected and analysed, it is possible to answer the research questions, they are the focus throughout the research. Formulating the research questions helps identify also the clear objectives of the study. The next step was to review literature and theoretical sources to be incorporated to the qualitative research and to add new knowledge and a conceptual framework to the study. According to Hennink et al. (2011), it is very important to include a theoretical chapter when conducting qualitative research.

...we suggest that research is never conducted "out of the blue", there is always a theory underlying data collection. It is therefore essential to make this theory explicit to indi-

cate which theories guide your research and guided the selection of particular qualitative methods. Only then can the validity of the qualitative methods that you applied be understood and verified.

By incorporating theories and a conceptual background to the research, it is easier to conduct the empirical part of the study and prepare the data collection methods. Data was collected for this study by means of structured interviews which were conducted mainly face to face but also via the conferencing tool Microsoft Office Live Meeting. The interviews had predefined questions and were organized according to topics, but in many occasions, the discussion led to open interviews and other topics aside from the main questions were discussed. It became clear for the start that qualitative methods were the most suitable for this research and that interviews would be the more appropriate approach for data collection. The purpose of the study is to gather experiences, knowledge and get different perspectives on the researched topics from the company's employees. The in-house expertise and the employees' points of view were very valuable for this research. In this case, questionnaires or surveys were not chosen because a more personal form of research was needed, it was necessary to ask follow-up questions to the participants and to dig deeper in some of the answers that came up from the predefined questions. Interviews are usually easier for the respondent as a personal interaction is present and clarification for some of the questions can be asked. Interviewees seemed to become engaged with the topic and many were interested in finding out about the results of the research.

### **Interview structure**

Once that it was determined that interviews were the most suitable method for data collection, it was decided that a structured and logical series of questions were needed. The questions are organized in three different main categories defined by the main research topics of the study. The first group of questions refers to general e-learning topics in order to get a better knowledge about the respondent's background and experience with e-learning. Interviewees are asked to share their opinion and general thoughts about e-learning regarding advantages and risks as well as the cultural aspects that need to be considered when using e-learning. There is also a more concrete ques-

tion concerning how e-learning has been developed at Cargotec and participants are asked to express their point of view on this topic and also suggest improvement ideas. The second part of the interview concentrates more on specific questions about e-learning in ERP implementations. The objective is to gather information from the participants regarding their past experience with e-learning in ERP projects and how e-learning can be utilized specifically for the projects at Cargotec. The last part of the interview focuses on the topics of change management and internal marketing and interviewees are asked to reflect on how these topics could be addressed via an e-learning approach. Not all of the questions were applicable for all the participants, so in some cases questions were skipped or combined with other questions. In many cases, the answers diverged from the original question and further topics were discussed which added value to the research and new ideas and impressions were shared.

An important aspect to be considered when preparing the interviews was the confidentiality or anonymity that the participants required when answering the questions. Therefore, this question was added in the beginning of the interview to make sure that the participant's consent was granted to publish the results and their names and titles were allowed to be used. Generally, participants were not concerned about the confidentiality of their answers but anonymity was requested in some of the cases. For this reason, I have decided to only include the interviewees' title or role in the company and what their field of expertise is.

As mentioned most interviews were conducted face to face but also some via Live Meeting. The main challenge of having virtual interviews is that you cannot analyse people's reactions, facial expressions or body language. On the other hand, it is convenient that the whole interview can be easily recorded and played back several times if needed to get a full transcription of the answers. Permission to record the session was asked to the interviewees who participated via Live Meeting. When interviewing participants face to face, no recording tools were used; the key ideas were typed on the spot and summarized after the interview. The general impression is that face to face interviews are much more personal and participants give longer and more detailed answers than virtually. The tone of the interviews was always informal and led in a con-



versational manner. Before starting the actual interview, a brief introduction of the purpose of the research was given and some background information was shared with the participants. They were also informed how the data will be used, what the intended outcome of the study will be, how much time they require for the interview and that no previous preparation was needed for this.

The participants were chosen for their knowledge in the fields of study and also for their involvement in the company projects. The aim was to select employees with different backgrounds and different roles in the company or in the project. 16 participants were interviewed in total between September and October 2012 with many diverse profiles. All of the interviewees except two of them are directly involved in the ERP project at Cargotec; the other two have very valuable background in e-learning and how to apply it for ERP projects. The employee roles and profiles used for data collection are the following:

- Training manager
- Communications specialist
- Marketing coordinator
- Process expert
- System key user
- Program director
- Project manager
- HR specialist
- Global resourcing manager
- Enterprise architect
- SAP expert

## **8 Results of the interviews**

The following chapter summarizes and analyses in detail the results of the interviews. These results are divided in three main sections according to the research questions and the interview structure as well as sub-chapter that deals with the validity and reliability of the study.

### **8.1 General e-learning questions**

The first sections deals with the topic of e-learning from a more general point of view. All of the interviewees had had some experience with e-learning in one way or another. Most of them had used it mainly for academic purposes and a few of them also in a business environment. The persons who had used e-learning at work in the past had mainly a technical background and came from companies such as IBM and Nokia where e-learning is very much in use. When asking about the e-learning initiatives that have been developed so far at Cargotec, most of the interviewees were familiar with them or had heard about it in one way or another but only a few had actually tried out the courses. The main advantage that the participants see in using e-learning is the possibility to take the courses any time anywhere and at your own pace. Everyone agreed that it is a very convenient way of learning but self-motivation and self-discipline are very much needed. Several interviewees, who had used e-learning at their workplace in the past, highlighted the importance of management commitment. Managers need to encourage the use of e-learning and allow employees to take courses during working hours. Managers need to also promote e-learning initiatives by making it part of the employees' development targets. One of the main challenges of e-learning that the interviewees pointed out was that it does not have enough credibility or support within the organization and its use needs to be encouraged by the top management. Some suggestions were that the CEO should talk about this initiatives in the company during the global personnel webcasts or include videos and statements on the company's intranet pages. It was also discussed that a lot of information available on the intranet pages does not have the necessary visibility and it gets easily forgotten. Therefore, an e-learning approach needs to be properly promoted and internally marketed within the organization. Another challenge that was mentioned by the interviewees was the con-

tent offered by the e-learning courses. The content needs to be compelling and of high-quality in order to engage the learner. The use of videos, animations and other multimedia tools greatly improves the interest of the learner. The content of the courses needs to be logical and very easy to find and to follow. All of the respondents agreed that virtual conferencing tools are very useful to deliver training and, in many cases, face to face training can be substituted by interactive real-time tools. Finally, the technical aspect of implementing an e-learning platform was often mentioned. Before choosing an e-learning vendor or implementing a tool, there needs to be a previous study of the company IT infrastructure and the training needs of the employees. If the training that needs to be provided requires lots of multimedia tools or is too complex from a technical point of view, it first has to be determined if the e-learning platform will support those types of courses and if the company IT structure and security policy will allow it.

All of the respondents agreed that e-learning at Cargotec needs to be very much developed since it is still at its very early stage. Several participants who were used to taking corporate e-learning courses at their previous companies were surprised by the lack of e-learning presence at Cargotec. In general, it is seen as a positive initiative and the participants would like to see that the company makes efforts in developing e-learning. The main suggestion for improvement was to firstly get executive management commitment to support the idea and then nominate a task force, for example a training team, which will be in charge of analysing the training needs in the company, monitoring course development, gathering the results and feedback and overall aligning and centralising all e-learning at Cargotec. It was also agreed that it is necessary to measure and track the success of e-learning. Some of the proposals include testing the learners after taking the courses, monitoring the completion of the courses and asking for direct feedback and improvement ideas. Regarding the reasons behind this lack of e-learning development at Cargotec, almost all of the interviewees concluded that it was due to the company culture and its more traditional approach towards learning. Some of the participants saw language skills as a big challenge in launching e-learning globally, since many employees do not have the sufficient English skills. Age or computer literacy was generally not seen as an obstacle.

## **8.2 E-learning in ERP projects questions**

When moving towards the more specific questions about e-learning in ERP projects, most of the participants revealed that their experience with e-learning in this area was limited. A few of them were used to taking very technical system training virtually and agreed that e-learning can be used for training the new system in ERP projects. However, generally, interviewees were of the same opinion that face to face training is absolutely necessary and it cannot be substituted when implementing a new ERP system. E-learning is seen more as a supporting tool which can be very useful if implemented correctly but in any case can it completely replace the human interaction and personal training. In any case, all interviewees agreed that if needed, e-learning could be used for training the very basic system navigation and standard functionalities and also the standard business processes could be learnt and understood by taking e-learning courses. But exceptions and variations in business scenarios and in the system are very tricky to be taught via e-learning due to their complex nature and the constant updates that are being done. It would require continuously keeping the e-learning materials up to date and it could result in an almost impossible task. It was suggested that training materials would be delivered in advance and learners would already have a pre-knowledge on the topics that were going to be discussed during the face to face training so that the trainers' trips could be minimized and the training time would also be reduced and would become more efficient. For example, if by completing a number of e-learning courses in advance, users could already have a good understanding about the new processes, how to navigate in the new system, what are the most common standard transactions used, what are the phases of the project, what is their involvement in the project etc., this would be already an enormous improvement and a lot of money could be saved.

## **8.3 Internal marketing and change management questions**

Finally, the participants were asked a number of questions concerning change management and internal marketing strategies. As it has been made clear by the theory in previous chapters, managing the change in ERP projects is an area where many com-

panies fail and where a strong internal marketing strategy is required. The interviewees agreed that one of the main challenges in projects is to make sure that the local project team fully understands the change that is coming and what it is expected from them. In most cases, business and sales people are not project-oriented and have never gone through a big ERP implementation or such an important organization change in their professional careers, therefore, it is essential to address these issues from the very beginning of the project in order to achieve a successful implementation. Interviewees agreed that change management was very much neglected at Cargotec and no formal internal marketing initiatives have been put into practice. The concept of One Company that Cargotec intends to promote globally does not have enough visibility within the company and in many frontline units they are totally unaware of its existence until the ERP project starts. It has been proven that even during the implementation phase, local project teams still have difficulties in understanding the change and what the outcome will be. In many cases, they consider the new ERP system and business processes much more complex and unnecessary. They fail to see the big picture and the overall benefit for the company. In these situations, an e-learning approach could help in increasing the awareness and the understanding of the changes as well as to see the full picture and what the final outcome will be. If employees understand the why and the how of the changes, it is more likely that they will cooperate more and be less change resistant. Many interviewees suggested that a key user network should be created in order to support users in future implementations and that the past experiences of key users could be extremely useful to motivate and increase awareness about the project and the challenges ahead. Some suggestions include recording videos and testimonials, having forums where employees can add comments and opinions, create simple and easy to understand animations where the processes are explained and the project model is described phase by phase in a very straightforward way. It was agreed that it would be very beneficial that local project teams would have access to these types of e-learning modules and they could consult them repeatedly during the project and also after go-live. But, all in all, the most shared opinion among the interviewees was that managers need to take action and support e-learning initiatives for them to work, communication has to cascade down in the organization and real efforts need to be made to implement a successful e-learning platform. If management fails to see the

importance of this or if the it is not properly promoted within the company, all efforts may be in vain.

#### **8.4 Validity and reliability**

The idea behind the reliability of a research is that the findings are repeatable and not just a one-time finding. But in studies where human judgement is involved as opposed to scientific measurements, it is much more difficult to prove the reliability of the results as the observations made by the interviewees may vary considerably. In this study, the theoretical sources and participants used for data collection were carefully chosen and found reliable. The results can be very specific for the company and the case that was being researched; however, a comparison with the theoretical sources suggests that the findings could be applicable and extrapolated to other organizations.

Validity of the research refers to how accurate the research methods used were and if they are actually analysing what it was intended when the study was initiated. For this research, the initial formulation of the research questions was refined and adjusted in several occasions in order to specify better the objectives of the study. The theoretical background was used as the main structure along the course of the work to stay focused on the main topics and support the validity of the interview questions. As a result it was possible to compare the collected answers with the research questions.

## 9 Conclusions and recommendations

The aim of this research was to determine in which cases the use of an e-learning approach would be suitable in an ERP project. After analysing both the theoretical and empirical parts, it can be concluded that e-learning can be very beneficial for companies and help reduce costs significantly; however, a good e-learning strategy needs to be developed and the company needs to make an effort to implement it correctly. As seen in chapter 3, Schooley (2003) explains how e-learning can offer many benefits for the employees, some of which were highlighted also by the interviewees. The main benefits that were mentioned were flexibility and availability. It is very important for employees nowadays to be able to learn anywhere at any time and to have the materials available in any situation. This becomes especially relevant in project work when employees need to travel a lot and their working hours are unconventional. We can conclude from the theoretical background (Henry, 2001) that a successful e-learning implementation can be quite a large investment for the organization and therefore, clear metrics to measure return on investment need to be established. Interviewees agreed that one of the main benefits of e-learning is the fact that costs can be considerably reduced (travelling costs are reduced) but it is not always easy to measure its success. Choosing the right e-learning platform and correct contents is as important as measuring the results achieved and analyzing users' feedback. When concentrating on the technical aspects of e-learning, several interviewees highlighted the importance of choosing the right vendor that adapts to the company's objectives as well as the company's IT infrastructure. As mentioned on chapter 3 (Schooley, 2003), developing high-quality e-learning content, choosing the correct e-learning format, platform and deployment method is essential. This seemed to be especially important for the interviewees which were directly involved with e-learning development at Cargotec and had already faced technical difficulties. I would suggest that before developing or implementing any e-learning solution, employees from the IT department should be involved in the process of choosing a vendor so that all aspects are covered in advance. It is not just important to choose the right content and method, if the platform is not compatible with the IT infrastructure, the project is more likely to fail. Another aspect often considered by the interviewees is the existing company culture and how it will

adapt to a shift from traditional classroom to virtual learning. Hayes (2010) points out that characteristics such as employees' background, language skills and computer literacy need to be taken into account when implementing a change in an organization such as delivering training using an e-learning approach. According to the interview results, the e-learning culture at Cargotec still needs to be very much developed and introduced as part of daily life. I would propose that a big promotion campaign is developed and the importance of using the e-learning platform is highlighted by all the managers and supervisors. The completion of e-learning modules should be included as a target in people's PDP (performance and development plan) discussions.

Regarding the use of e-learning in ERP projects specifically, it was generally agreed by the interviewees that face to face training should not be completely replaced by e-learning since a strong change management element is present in this type of projects which requires a more personal interaction. As seen on chapter 4, Gartner's study emphasizes the big role that training plays in an ERP project. It mentions that training of a new system should always start with training of the refined business processes. All of the interviewees concluded that the standard processes and transactions could be easily trained via a virtual environment but the exceptions or variants probably needed a face to face interaction in order to be properly trained. Given the complex nature of the ERP project at Cargotec, it is seen as almost impossible to conduct all training by using an e-learning platform. Nevertheless, I would recommend to develop e-learning to a point where users are already very familiar with all standard processes and scenarios, and therefore the presence of onsite trainers can be substantially minimized. We can conclude that e-learning can prove to be a very helpful supporting tool and bring very valuable results to the project. Multimedia, video and real time tools were highlighted by the respondents as the preferred methods to be used in e-learning courses. As mentioned in chapter 3 (Henry, 2001) it is important to get learners' attention and engage them with appealing and high-quality content. I would suggest that the main focus when developing e-learning content for an ERP project should be that it is very user-friendly, easy to navigate and very interactive. In that way, users will enjoy the experience and resort to the e-learning course instead of boring powerpoint presentations or word documents.



One of the main conclusions that can be drawn from this research is that two key elements are lacking in many cases from any type of implementation that entails big changes in the organization: a well-analysed change management and internal marketing strategy and enough commitment from the top management. If one thing can be pointed out from the interview results, is that respondents recognise the lack of top management support when it comes to developing new projects or initiatives and the lack of effort devoted to change management initiatives. In chapter 5, Hiatt's (2006) ADKAR change management model summarizes the elements that are needed for a successful change management strategy. It is essential that also managers are aware of this in order to support the change. Employees need to firstly understand the change and then be willing to participate and make it happen. For this reason, knowledge plays a key role in securing the success of a change management initiative. Clear and regular communications are needed as well as management support. The interviewees considered that it is a good opportunity to develop e-learning in order to increase internal awareness and improve internal communications. It can be a very useful tool to increase users' knowledge about the project and the changes to come. If utilized correctly, it can help reduce the change resistance as well as the risks of the ERP implementation. If Cargotec wants to really promote the idea of One Company globally across the organization, they will need to use all the tools available and e-learning could be one of them. A successful internal marketing campaign can be conducted with the necessary managerial support. As pointed out in chapter 6 by Grönroos (2007), internal marketing needs to be considered as a strategic move from the organization but if top management fails to see this, the investments and efforts will not be rewarded.

As a final recommendation, I would like to emphasize that companies need to seriously make an effort to invest in developing employees' skills and expertise. It is very important that employees feel that organizations are willing to invest in them and in their future. As stated in Smith and Milligan's (2011) book, "the best way to create a WOW experience for customers is to first create a WOW experience for employees". And I completely agree with this statement, if employees feel motivated, their knowledge is increased and they get an overall understanding of the company operations and strategies, they are much more likely to perform well and to serve customers better. I also

agree that managers' commitment is absolutely essential. In order to succeed in today's business world, companies need to adapt very quickly and be very agile since competition is fierce. But changes in the organization need to be looked at also from a human point of view, not only from a technical or operational perspective. Every company should devote a lot of time and effort in analysing how to manage the change and how changes can be promoted in the best possible way within the company. For a long-term success, a company's culture and commitment to its people cannot be overlooked.

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# Appendices

## Appendix 1. Interview questions

1. Do you require anonymity for this interview?

### **General e-learning questions**

2. What is your experience with e-learning?
3. What are the pros and cons of e-learning?
4. How do age /culture / nationality / language affect the usage e-learning?
5. Does the e-learning culture still need to be developed in Cargotec? If so, how can it be improved?
6. How can we check/measure the success of the e-learning?

### **E-learning in ERP implementations questions**

7. In your opinion, how efficient is e-learning in an ERP implementation?
8. To what extent can e-learning be used in training a new ERP system? What face-to-face training can it substitute / what cannot be substituted?
9. How can e-learning be used for ONE implementation projects?
10. Can e-learning be used to train both the system and the processes? To what extent?
11. Can it be used to train the standard scenarios or also exceptions?
12. Do you have any experience of companies using e-learning in ERP implementations?

### **Change management and internal marketing questions**

13. What kind of change management activities can be conducted via e-learning? In what way can e-learning be used to help break the change resistance in ERP implementations?
14. How can communications and general understanding of the project be improved via e-learning?
15. How can e-learning be used for internal marketing purposes?