Records Management and Electronic Records Management
Opportunities and Limitations. A case study in Greek companies.
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List of Abbreviations

RM: Records Management
ERM: Electronic Records Management
ERMS: Electronic Records Management System
EDMS: Electronic Documents Management System
EDRMS: Electronic Documents Records Management System
IT: Information Technology

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Abstract

This Master thesis focuses on the concept of Records Management (RM) and Electronic Records Management (ERM) and how the adoption of an Electronic Document Records Management System (EDRMS) affects a business setting. The research focuses on the factors of perceived efficiency and on the costs that exist in a company. More specifically, this Master thesis is a qualitative exploratory case study which's aim is to examine and present the experiences and the attitudes of 4 individuals who are working in companies that possess an EDRMS. In order to acquire this deeper understanding, the data collection methods that were used were the in person semi structured interviews and the observation. During the research was examined how the perceived efficiency and the costs in a company are affected by a proper RM/ERM program. The analysis of the collected data shown that the specific individuals in the specific firms are benefited by the EDRMS and that their work is improved.

Keywords
Records Management (RM), Electronic Records Management (ERM), Electronic Document Records Management System (EDRMS), Opportunities, Benefits, Limitations, Companies, Greece.
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Athens, June 2015,
Konstantinos Manikas.
1. Introduction

This section is the introduction of this Master thesis. The aims and objectives which were defined in a preliminary stage, the research questions which were raised, the topic justification and the scope of the research along with the limitations are presented in this part of the Master thesis.

As the world is changing and the development and modernization are inevitable we can observe that the things around us are altered. The business field is a field that could not remain stable and unaffected by this transition. So, the businesses and all kind of organizations are obliged to move according to this development.

Many activities have changed with the passage of time and new opportunities should be considered and exploited in order to achieve the goals that each organization has set. In this alteration a factor that has played a significant role is the appearance and the evolution of technology. As we all know, technology renders the people lives easier and faster. However, as it is rational, there is also the opposite view that supports that technology can be proved harmful for humanity (Quan-Haase, 2013). But, specifically, in the organizational environment where the demands are getting more and more increased, technology offers a very important help to daily tasks that are vital for an organization's operation.

An activity that has proved beneficial is the Records Management (RM) and the Electronic Records Management (ERM). Shepard and Yeo (2003, p. 1) argue RM "[Records Management] is the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records." The implementation of IT systems broadened the field of Records Management and allow the people to manage the records electronically and from distance. Electronic Records Management is both the electronic management of paper records and electronic records. Naturally, nowadays, the type of the records is different than that it was in the past. Many documents exist in electronic form while in the past existed in paper form. However, the necessity, the usefulness and the aim of the Records Management remains the same and this is to boost and to enhance the business process. We can characterize Records Management as a necessary activity that helps to improve an organization and it can be a part of the culture of organization. The aim of this management is to provide to the people the information that is needed easily and quickly (Johnston and Bowen, 2005, p.134). The storage and the use of the produced records offer many opportunities to the organization that adopts it. In order to manage those records it is necessary to have an Electronic Records Management System (ERMS). Johnston and Bowen (2005, p.132) define the term ERMS in the following way: "An electronic records management system (ERMS), as the term stands, could be an electronic system for managing records on any media. An electronic system for managing paper records in a records centre or registry would be an ERMS. An ERMS could also be a system for managing electronic records, i.e. computerized records ". Because in the specific survey the systems that operate in the selected companies could be said that are a combination of Electronic Records Management System (ERMS) and Electronic Document
Management System (EDMS), the term Electronic Document Records Management System (EDRMS) will be used. However, a usual problem is how the workers face something new and something innovative. Another problem is the Information Security. Such systems are in danger of humans disasters and it is very strategic to ensure the safety of the data.

In the Master thesis will be examined Records Management and Electronic Records Management. In order to avoid possible misunderstanding it is necessary to clarify that in this work ERM and RM are used for the same purpose. The only thing that changes is the ink and the computers. We have the same data but in different forms. Furthermore, it is essential to clarify that the study focuses in the perceived efficiency because the research does not apply percentage metrics. The qualitative method that is selected offers the opportunity to interview the participants, to take their experiences, to interpret the meaning of the collected data and to observe the process.

1.1 Aims and Objectives

During the time of thinking about the topic of the Master thesis I was sure that I should choose to deal with something that improves the situation in the business sector and offers new opportunities. A better operation is the demand for many firms and this is achieved by the application of various methods. A usual problem that companies face is the difficulty to manage the records and the documents that are produced in their internal environment. As a result they waste time and labor in their effort to use the existing information that is included in their records. To accomplish those things easier it is necessary to have a functional program that would solve this problem. The things above motivated me and the aim of the specific research is to investigate the experiences of 4 individuals that use an EDRMS. It is tried to explore how the system supports the employees work and what are the possible drawbacks at this process. Hence, the main objective is to get a deeper understanding of how important is the role of EDRMS in the accomplishing of daily tasks in a company and the impact that it has in a company's operation in terms of perceived efficiency and if the financial part is benefited or not.

1.2 Research Questions

This Master Thesis aims at answering the following research questions:

1. What are the perceived efficiencies of using an EDRMS in a company?

2. How does the adoption of an EDRMS affects the operational costs of a company?
1.3 Topic Justification

It is beyond any doubt that every organization should accomplish many activities in its internal environment in order to be successful. An important task in organizations is the Records Management (RM) and the Electronic Records Management (ERM). RM and ERM as it has been proved in many cases, offer many benefits to the organizations some of them are: the important increasing of perceived efficiency in the organizational environment, faster and higher quality services to the customers due to the easy access to existing information and important reduce of the costs in a company.

The implementation of an EDRMS is a long and complex process. However, As Henriksen and Andersen (2008, p.41) state “It is also recognized in the academic literature that implementation or ERMs holds. It is thus widely accepted that ERMs can lead to less coordination effort, higher quality, higher efficiency and higher maintainability”. The business sector is a field that needs a continuous effort to be operational and competitive. The situation in Greece is a little bit weird. The foreign and the big enterprises are following the necessity for change in order to accomplish their targets. Some small enterprises do not follow this path and as a result they lead to a bad situation from an economical and an operational view. The aim of this research is not to add new knowledge but to discover and present the impact of an effective RM. It is aimed to explore and present the facilitations that are offered in the daily work tasks of a company. It is tried to present new opportunities to the business sector by interpreting the experiences of people that have taken advantage of such system. Through the study will be shown that technology can improve the situation and can make the peoples' life and work easier and faster.

According to the National Archives of Australia (NAA) an EDMS is "an automated system used to support the creation, use and maintenance of electronically created documents for the purposes of improving an organization's workflow. These systems do not necessarily incorporate recordkeeping functionality and the documents may be of informational rather than evidential value (i.e. the documents may not be records) (National Archives of Australia, 2005). On the other hand, an ERMS is: "an authorized system used to manage the creation, use, maintenance, and disposal of electronically created records for the purposes of providing evidence of business activities. These systems maintain appropriate contextual information (metadata) and links between records to support their value as evidence”. (National Archives of Australia, 2005). As it is said before, the term that is used in this Master thesis is the EDRMS.

1.4 Scope and Limitations

This Master thesis focuses on the impact of RM and ERM to the perceived efficiency and to the costs of a company. To achieve this, is conducted a qualitative case study in order to examine and present the experiences of four individuals. However, as it is
rational the study has limitations. The first limitation is about methodology. The selection of the methods means that specific things are attempted to be found. For instance, the use of a case study does not allow to generalize the findings. The interviews' sample consists of 4 individuals and one observation is conducted. This allow only the presentation of their experiences. The findings does not mean that those things are valid for other employees or for other organizations. Furthermore, another limitation is that only two factors are mainly examined. It is not feasible to present all the aspects that are positively or negatively affected by the adoption of an EDRMS.

Furthermore, it is important to state that when I talk about perceived efficiency this is measured with time and effort. When we are talking about time it is measured in hours. Due to the number of reduced hours we can understand the time that is not wasted and the efficiency is increased. As regards the costs, they are measured in Euros because the currency of the selected sample is this and in some examples in the literature other currency is also used.
2. Literature Review

This section constitutes a review of the literature that is used in this research study. A theoretical outline is created which includes significant bibliographical elements about the concept of RM and ERM. This framework is referred mainly to the factors of efficiency and cost.

The theoretical framework of the Master thesis will be based on the following topics. The relation between human and technology, the changes that technology brought in the business field, the concept of RM and ERM, the possible benefits that arise by the use of an EDRMS and the possible drawbacks. The factors that will be more carefully mentioned are the perceived efficiency and the costs in a business and how they are affected. Previous studies of researchers who examined the implementation of EDRMS and offer a good perspective and a deep insight in the topic will be used properly. The aim of this literature review is to use the appropriate sources in order to understand how the adoption of an EDRMS affects the working process. The literature review will start from the general part and it will be continued with some more specific things as regards the concept of RM and ERM.

An important part that it is examined is the use of technology within the organizations. Many people claim that technology is not a mean of improvement of the current situation, while others maintain that technology can be proved very beneficial and can save many enterprises for unwished results. They believe that technological artifacts can help the organizations to achieve their goals and apply innovative solutions. In order to clarify what technology is, it is appropriate to use the concept of duality of technology by Orlikowski. Orlikowski (1992) identifies that technology is a product that is created and changed for multiple reasons and it is considered as a result of human action but it also helps human to accomplish actions. Moreover, we can talk about the interpretive flexibility of technology. Technology can interact with organizations with various actors and there is a dependency with the social and historical context of its use (Orlikowski, 1992).

In order to acquire and offer an overall understanding of the context of RM and ERM it is necessary to describe some elements of this kind of management. The concept of RM and ERM will be considered not only by explaining what exactly is but also by examining the possible benefits and boundaries and how the systems should be applied in order to achieve an effective management. In the international literature we can observe that the field of RM and ERM is very important and very prevalent. Many enterprises use this kind of management with beneficial results. Both public and private enterprises have understood the necessity of adopting new strategies due to the opportunities that technology provides. In the beginning will be used again the definition of Sheperd and Yeo (2003) about what RM is. "Records Management is the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records." (Sheperd and Yeo, 2003, p.1). According to the American Archival Glossary by the society of American Archivists record is "a document created or received and maintained by an agency, organization or individual in pursuance of legal obligations or in the transaction o
business" (Bellardo and Carlin, 1992, p.28). According to Bearman (1996) "records are at one and the same time the carriers, products, and evidence of business transactions...business must create records which logically are metadata encapsulated objects" (Bearman, 1996, p. 6). "ERM, while involving special consideration, requires the planning, budgeting, organizing, directing, training and controlling activities associated with managing the records in its entirety" (State and Consumer Services Agency Department of General Services, 2002, p.3). As it is said in the beginning the RM and ERM are used in the same manner at this Master thesis. Furthermore, it is essential to present with the definition of the term Records. Records is "any recorded evidence of an activity" (Sheperd and Yeo, 2003, p. 2). Records are something important for every organization or company. Their usage is that are important in order to conduct the current business, to enable decisions to be made and to accomplish actions. The maintenance of records is necessary because it helps to use them as evidence for actions that happened in the past. Other uses of records is that help to face possible deceptions and to protect the organization. Accountability is one more serious thing that the keeping of records secures (Sheperd and Yeo, 2003). According to the definition of Uniform Electronic Transaction Act (UETA), electronic record is a record "created, generated, sent, communicated, received or stored by electronic means." (State and Consumer Services Agency Department of General Services, 2002, p.3).

![BUSINESS ACTIVITIES & RECORDKEEPING](image)

**Figure 1: Business activities and recordkeeping**

At this point is necessary to talk about the lifecycle of a record. The records, despite the fact that they are not biological organisms, they have a lifecycle. The first phase is their birth, the second phase is their life and the third and last phase is their death (Figure2, Figure 3). During these phases, the records passes from some stages which are the following:

- Creation
- Capture
- Storage and maintenance
- Use
- Disposal
This life span has to do with their current use and their final destination. In the literature exist many models that present the lifecycle of the produced records. The majority of the models include the following time of actions regarding the records: creation, capture, storage, disposal (Figure2, Figure 3).

Another way of categorizing the records is by taking into consideration the age of each record. Every record has three stages of age. The first is the current stage when it is used in the business, the second is the semi-current stage when the usage value is reduced and the last stage is the non-current when it has no business value or it is needed only for historic and archival reasons. Those terms can also be replaced by the terms active, semi-active and non-active (Sheperd and Yeo, 2003).

The first phase in the life cycle of a record is the creation and receipt. This stage is the phase that the life of the record starts. For instance, if we are talking for a paper document is the phase when the document is written and when we are talking for an electronic document is the phase when it is sent from a person to another. In this stage it is important to understand the value of the record and the significant role that it can play in the daily business process (Makhura, 2005).

The second phase is this of maintenance and use. This is the part for which the life of a records exists. From the beginning of record's life till the end this is the most useful for the retrieval of information. During this stage the records are used and the necessity of them is understood by the everyday use in the daily working procedure. At this phase, are offered the circumstances to the employees for easy and accurate to the available information of the existing records (Makhura, 2005).

The last phase is the disposal where the value of the record has been identified and it not valuable for use. Then the records are destroyed or they are kept for archival reasons. This is essentially the end of the record's life. An organization can select one of the following for the future of the record: destruction, alienation, transfer of the records to the archives. This part of disposal is very important because the business value of the records is insignificant and their disposal helps to avoid operating costs (Makhura, 2005).

A reasonable question would be why the organizations do not keep their records forever? The answer is that potential legal problems and costs may arise. Furthermore, some records are not useful and their lifetime has passed. The records are separated in
active, non-active and historic. Their usefulness begins from the beginning of their existence where they are very useful and while the time elapses they are getting useless.

**Figure 3: Records Life-Cycle**

Due to the existence of many records in the companies and given that every day the bulk is too big, it is rational that a good management is required for gaining the possible advantages. As Sheperd and Yeo (2003) state in their book, a bad RM does not exploit the value of the records, many records are lost and there are not categorized in a proper way.

Because of the huge spread of technology the types of records are differentiated from the past and the paper is not the only type of records. Some other types of format are mentioned by Porter-Roth (2006) in his paper: word processing documents, emails, faxes, instant messaging, text messaging, digital images- scanned paper documents and new media type such as blogs and wikis. The data above is the essential reason that ERM has appeared and spread. The records' format, changed the situation and due to the fact that the produced volume of information was huge, the ERM and ERMS was the integrated way in order to manage all the types of records efficiently.

At this point will be presented the benefits that occur by the use of RM-ERM. Porter-Roth (2006) mentions the following elements. He characterizes RM important because it reduces litigation risks, provides regulatory compliance and protects corporate assets. (Porter-Roth, 2006). Moreover, when we are talking about records, we are talking about the memory of the organization. So the proper use of them is a functional assist for a company. The benefits can also be categorized depending to who is benefited. So, Johnston and Bowen (2005) have done an interesting separation and they are referred to the benefits of ERM.

According to Hounsone (2001) a good Records Management offers long-term and short-term effects to every organization. Some of them are the following:
• "Information will be easily accessible to, and retrievable by, any authorized user.
• All information, regardless of medium will be captured at creation, receipt, classified to a corporate classification system, assigned a retention period and managed affectively through its complete life-cycle, until its ultimate destruction of archival preservation.
• Staff will be aware of their responsibilities vis-a-vis the management of information.
• Productivity will be improved and costs through easier access to records and less time spent looking for information.
• More timely, better management decisions are likely if a complete information view is readily available.
• There will be improved accountability to the public.
• There will be improved information integrity and preservation of the corporate memory.
• There will be a reduced requirement for equipment and prime office space for paper records."
(Hounsome, 2001, p.7).

Every organization that adopts and EDRMS intends to reach some purposes that RM and ERM offer. Richmond (2010) in his paper answers to the question “Why Records Management?” by listing ten business reasons that should motivate them to adopt an EDRMS.

1. **Preservation of corporate memory.** Through the passage of the years it is a fact that the working setting have changed dramatically. The situation nowadays is more challenging. Every firm should prepare the ground for the departure of an important employee. Now, the employee is an integral part of the organization and the necessary measures should be taken in order to avoid an information crisis. The crucial knowledge that exists in an individual's head should remain to the capital of the firm and it is unacceptable to lose important ingredients of success because it is difficult to recover any losses. So, an effective RM can ensure that the produced information and the work of an employee will be preserved for the future.

2. **Supporting of better management decision-making.** A usual phenomenon in a working environment is that the right information is not available to the right person at the right time. A good RM equips the right person with document proof in order to take the appropriate decisions.

3. **Controlling the creation and destruction of records.** It is a common fact that the information that is created and is kept is more than the information that is destroyed. Every day, a vast amount of information is produced. Some of them are destroyed without the knowledge or the consent of the management. The absent of policies that are relative to the creation, retention, and destruction of information is the reason that this control is not possible to happen. A EDRMS is an effective way of proper and systematic organizing and identification of records.

4. **Reduce of operating costs.** Every employee has been in the position of searching on boxes for the information that he wants. This wasted time costs
to the organization because this also affects productivity. Moreover, costs, such as the information storage are also reduced by an effective RM because less money are spent for equipment.

5. **Improvement of efficiency and productivity.** Due to the demanding conditions that exist in many companies, it's very usual for an employee to be obliged to accomplish many things and sometimes simultaneously. The moment that the employee tries to accomplish his tasks within the deadline, it is necessary for him to have access to the appropriate information. If this does not happen, can lead to losses such as a failure in an agreement between firms and customers. So, this inability of the employees lead to reduce of efficiency and productivity. This can be solved because a good RM increases efficiency and productivity by offering the proper information when necessary.

6. **Assimilation of new records technologies.** Keeping up with the quick changes of technology is difficult for an organization. The conversion of documents is a difficult task but the transition of paper-based systems to electronic systems and the following changes are easier to be done.

7. **Ensure regulatory compliance.** In every organization exists regulation for the proper operation of it. A kind of regulation may be the documentation and records keeping for the organizational purposes. A proper RM program with efficient policies ensures that the legal obligations are met.

8. **Minimize litigation risks.** Undoubtedly, no one promises that a company will never have legal problems. A way to enhance the position of the company and to prove the things that supports is to use records as evidence with a proper records management, in case of a legal case, is given the opportunity to identify, protect and retrieve the necessary information without costs.

9. **Safeguard essential information.** Another important aspect that RM covers is the ability to secure important information. In case of a disaster there could information that helps the information to recover.

10. **Foster professionalism in running the business.** Credibility and public opinion are necessary ingredients for a company to be successful. Information has the same value as the people and the finances of a company, so it is essential to be properly managed. Credibility can be ensured by a good RM (Richmond, 2010, pp. 1-3).

In another paper that was published by the Library of Virginia are also listed some benefits that may occur by the use of RM and ERM. According to the paper RM can lead to the following things: "Reduce the volume of the records stored by destroying records that have reached the end of this retention, increase the efficiency of the office operation through better storage and retrieval systems, reduce costs for equipment, supplies, space and personnel, identify and protect essential records, improve accountability of funds, reduce liability risks by keeping records according to retention schedules". (Library of Virginia, 2014, pp. 5-6).

McLeod (1996) in her research also supports that the factors that render a DMS successful in a business setting are: faster accomplishing of tasks, improvement of quality and reducing of costs.
As Johnston and Bowen (2005) state the basic benefits that are easily observed in a company are that the work is done more easily because the effort that is needed is less, the work is done more quickly, the quality of services is increased and it is easier to find out about it afterwards (p.134). More specifically, the authors separate the measurable benefits in a key list. They use three categories. The individuals, the organization and the society as a whole. To begin with the individuals, an EDRMS offers:

- "Information available when required.
- Greater quality, efficiency, and effectiveness at work processes (easier, better and quicker tasks).
- Less blame and dissent when looking for lost information.
- Evidence is available for what they were asked to do and what they did.

As regards the organizations:

- Work is done more quickly.
- Completing a task requires less effort.
- Quality of processes and their outcome is improved.
- Cash flow is improved and compliance with laws and regulation is achieved and demonstrated.

Regarding the society as a whole:

- Organizational processes are open and can be understood and monitored.
- Organizations comply with laws and regulations.
- Quality life is improved.
- The historical record is accessible and reliable."

(Johnston and Bowen, 2005, p.134).

Moreover, according to the paper of Sprehe (2005) a good RM is an essential part of business process and it is connected to financial management and Human Resources Management. Records ensure that a company:

"Conduct its business in an orderly, efficient and accountable manner, deliver services consistently and equitably, document its policies, decisions, and outcomes to stakeholders and regulations, meet its legislative and regulatory requirements including audits, protect itself in litigation, function in a financially and ethically accountable manner, protect corporate interests as well as the rights of employees, clients and other stakeholders, provide continuity of operations in an emergency or disaster and maintain its corporate and institutional memory." (Sprehe, 2005, p. 298).

However, the use of technology and the ERM gives space for thinking about security issues. The keeping of the available information safe and the avoidance of possible threatens is the job or Records Management Coordinators. The Information Security dangers are a usual phenomenon especially when we are talking about Information Technology. Natural and man-made disasters are facts that should be tackled in an organization. It is necessary to deal with those problems and to protect the data. "The key to an effective Information Security awareness program is linking the Information Security strategy to the organization mission" (Leyton, 2005, p. 17).

The usual dangers that an EDRMS faces are those of software attacks. Intentional problems such as hacking and malware are usual, in contrast with hardware attacks.
such as negligence, incompetence, and stupidity/cupidity of the system users, operators and owners. Thus there are also some legal attacks such as media reports of errors damaging users/customers confidence.

In an organizational setting it is necessary to take some measures in order to protect the content of the records that are managed. The goals of a security plan that should be achieved are:

Ensure that only authorized personnel have access to electronic records, backup and recovery of records, personnel are trained in how to safeguard sensitive or classified electronic records, minimize risks of unauthorized alteration or erasure of electronic records and ensure that electronic records security is included in computed systems security plans.

Mokhtar and Yusof (2009) at their study they examined the ERM in the Malaysian public sector and especially the existence of a policy. The authors claim that the rapid evolution of information and communication technology (ICT) is the usual reason that motivates the organizations to allocate their resources to technology-based investments. They describe the situation by telling that the field of electronic management is very useful and that many organizations understand the need to move forward (Mokhtar and Yusof, 2009). Additionally, the authors highlight one issue that can be proved vital and this is the existence of a policy. Sometimes the most important thing in the implementation of a new plan is the existence of a good policy. For instance, in the specific case, keeping pace with the steps of technology is the key for a good ERM (Mokhtar and Yusof, 2009). Another existing opinion is this of O’shea (1997) that the ERM is not just a challenge that has to do with technology but the secret of success is hiding behind the strategic planning of the activity. This is not wrong but when we are talking about a transition from manual to electronic era, then technology is a challenging issue for the coordinators (Henriksen and Andersen, 2008). Naturally, when it is demanded the proper implementation of an ERMS it is vital to pay attention to the legislative and policy environment (Henriksen and Andersen, 2008).

At this part of the Master thesis will be presented some supplementary data about the factors that are examined in the research part of the Master thesis. The first is the perceived efficiency and the second is the cost in the business.

The first factor is the perceived efficiency. According to definitions that were found on Internet, efficiency "is the ability to accomplish something with the least time and effort" (American Psychological Association).

According to the online business dictionary, efficiency, "is the comparison of what is actually produced or performed with what can be achieved with the same consumption of resources (time, money, labor). (Business Dictionary).

According to the Harvard's Records Management Services (2012) RM promotes efficiency in a working setting. Based on estimations RM can help to:

- Save time: based on estimations in a typical organization the staff's time is spent for searching for information (20%). Easy, quick and reliably retrieval can be done.
- Increased employee productivity: unmanaged records is possible to lead to a chaos in a company so in a setting with organizing, the employees take advantage of it and become productive.
- Optimize prime office space.
- Improve capacity to collaborate and share information.
- Support decision making.

As it is specifically stated:
"The orderly and efficient flow of information enables to perform its mission successfully and efficiently."
(Harvard’s Records Management Services, 2012, no pagination)

As regards the second factor is the costs that can be reduced by the use of and EDRMS. According to the literature, a good RM can help to increase the value of a company and to reduce the costs. It is beyond any doubt that a systems that organizes a company and assists to a better operation is expensive. However, in long-term this investment can be proved positive for the enterprise. An EDRMS can help to:

- Reduce records storage costs: the maintenance of inactive records is very expensive and belongs to the costs that a company can and should avoid. The timely disposal of needless records can benefit the financial situation of a company because the storage, server and securing costs are reduced.
- Avoid purchasing unnecessary office equipment: The lifecycle of the produced records is a very important process that can decrease the costs. In the typical office, 40% of the records are kept without reason. A proper use of lifecycle can help to reduce this fact and as a result will be saved money by avoiding purchases of unnecessary office equipment.
- Make information easier and less costly to retrieve and use. When an employee cannot find what he wants, he loses money and time. The RM helps the employee to have a better access to the information that so the information handling costs are minimized.
- Minimize risk. Possible dangers because of the absence audit documents that may lead to penalties are eliminated by an efficient RM.
- Explore cost-effective technology solutions for the records.
(Harvard Records Management Services, 2012, no pagination)

In every enterprise the costs should be controlled and kept as lower as possible in order to be more successful and more profitable. The costs are divided into two categories: 1. The recurring (ongoing) costs and 2. The non-recurring (one-time or start-up) costs. Some indicative costs are the personnel salaries, servers, hardware, personal computers, security software, ongoing training, records storage etc. Many of the costs are not concur with the ability of RM to reduce some costs. However, there are some that can be reduced with the assist of RM such as: paper usage, physical storage costs, facilitates the retrieval of records and hence the productivity is increased, facilitates the preservation of records (U.S. National Archives and Records Administration, no date).
Johnston and Bowen (2005) refer to some cases in order to support the notion that RM can help to reduce the costs of an enterprise. The first case is the Orange County in California. The reports of the company shown that the company saved over 1,000,000$ per annum and they saved office space (over 800 square meters). Furthermore, the satisfaction among the customers was increased and as a result the profits increased. The investment was not reported exactly but it was estimated that it was around 650,000$.

Another case is this of Ove Arup where the financial benefits were obvious. They reported that the costs for supporting their EDRMS was 120,000 £ per annum (about 200 £ per user) in comparison with the commercial system which was about 3,000,000 £ and with annual charges of 1,000,000 £.

Nucleus Research has also reported some cases that the cost investment brought financial return to the companies. For instance, Transport Canada which "reported a return of 86% and 1.17 year payback (Johnston and Bowen, 2005)."
3. Methodology

In this part, the methodology that was followed is presented. The research methods and strategies, the data collection methods, the data analysis process, the quality of research and the ethical considerations are discussed throughout this section.

The aim of the Master thesis is to examine and present the experiences of four individuals that are working in companies that possess EDRMS, about the effect that the system has in their daily working tasks. According to the set objective of the Master thesis the qualitative method is used. The qualitative method will be accomplished by using the method of interviews and the supplementary method of observation. The study will be an exploratory case study where the experiences of 4 individuals will be examined and presented. The interpretive method is used to approach the findings of the study. The goal of interpretive research is to "document and interpret as fully as possible the totality of whatever is being studied in particular content from the people’s viewpoint of frame of reference" (Leininger, 1985, p. 9).

3.1 Philosophical Perspective

Every research method depends on the underlying philosophical assumption of the researcher. A qualitative research can be positivist, interpretive and critical (Myers, 1997).

**Positivist research:** The positivists support that reality is objective and that it has no connection with the human because it exists independently.

**Interpretive research:** The interpretive researchers support that reality can be accessed only through language, consciousness and shared meanings. Interpretive research is based on hermeneutics and phenomenology (Boland, 1985). In the interpretive research are in focus the human subjective experiences and the way that they interpret the phenomena that surrounds them. In an interpretive research, the researcher affect, the interpretation of the findings according to his beliefs, values and interests. This results to the conclusion that the same study is difficult to be repeated by another researcher and consequently the results cannot always be generalized.

**Critical research:** The aim of critical researchers to display the limitative conditions the limitative condition and to accommodate change in cooperation with the participants.

The specific Master thesis in an interpretive research because I aim to understand the phenomena by examining the people's experiences. I attempted to have a deeper understanding of the examined field and it was tried to interpret the situation. There was no aim to intervene in a situation or to propose possible improvements but only to explore and present the participants' views and the results of the participant observation.
3.2 Strategy of Inquiry

In the International literature exist three types of research design. The qualitative, the quantitative and the mixed methods. Essentially the qualitative and the quantitative are two different but not opposites research methods while the mixed method is a combination of the two others. The selection of the research methods is an important part for the study of a researcher. During this part are decided the elements that specify the study such as the data collection methods and the analysis of the research. This selection is not only based on the researcher's experiences but also is based on the nature of the problem that is addressed and on the audiences of the study (Creswell, 2009).

"Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging question and procedures. Data typically collected in the participants’ setting. (Creswell, 2009, p.17). The qualitative research has to do with text analysis and is about interpretation of themes and descriptions. Some methodological techniques that the qualitative researchers use are the interviews and the observations.

"Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures." (Creswell, 2009, p.17). The quantitative research is a kind of research that leads to outcomes that are statistics and a statistic analysis can be applied. The opportunity that could be said that is provided through this research is that the findings can be generalized and replicated. Methodological techniques of this approach are the surveys and the experiments.

"Mixed method, is an approach to inquiry that combine or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches and the mixing of both approaches in a study. (Creswell, 2009, p.17). The positive in this kind of research is that the researcher is not limited to select the techniques because he can choose both experiments and observations for instance. However, as it is rational the analysis of both kinds of data is difficult. Naturally, the power of such a research is greater than the two others because it combines the others.

As it is understood the quantitative method is done in cases that numerical data will be measured and analyzed. Essentially this method was developed in health sciences in order to study natural phenomena. Survey methods, laboratory experiments, econometrics and formal methods such as mathematical modeling are some examples of quantitative methods. On the other hand, a qualitative method has been proved more useful for researchers of social sciences that study social and cultural phenomena. Methods that can be used to acquire data in a qualitative study are observation and participant observation, interviews and questionnaires, documents and texts and the researchers' impressions and reactions (Myers, 1997).
In this study I will use a case study. A Case study is a strategy where the researcher is doing an empirical inquiry in order to explore a phenomenon in its natural setting by using multiple sources of evidence. A case study answers to research questions such as "How" and "Why". The choice was taken because for instance grounded theory is a strategy that is helpful for in depth investigation. The reason that I will use a case study is because I aim to get a deeper understanding about the concept of RM and ERM and my intention is to add strength to the existing research and to present the experiences of my participants. My study is an empirical inquiry and explores the application and the effects of RM and ERM. Especially, is a case study of 4 individuals that are working in companies that possess an EDRMS. The intention to examine a specific group of persons and to get a better understanding of the concept of RM and ERM lead me to conduct a qualitative research in order to interpret the experiences of the participants and not to present only numerical data.

3.3 Research Strategy

As it is said this Master thesis is a case study. Baxter (2008, p. 544) argues that "A qualitative case study is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources. This ensures that the issue is not explored through one lens but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood". As it is said in the literature, the case study strategy is probably the most common in the qualitative research. According to Yin (2003) a case study strategy should be followed when: a) the study focuses on answering "how" and "why" questions, b) when it is not feasible to manipulate the behavior of the participants, c) it is aimed to cover contextual conditions because they are relevant to the phenomenon under study and d) the boundaries are not clear between the phenomenon and context. (Yin, 2003).

Generally, a case study is an empirical investigation that:
- "explores a current phenomenon in depth and within its real life context especially when
  - the boundaries between phenomenon and context are not clearly evident."

(Yin, 2009, p.18).

According to Yin (2009) the research design of a study is the element that merges the collected empirical data with the question that have been set in the beginning of the study. Moreover, the author proposes the following elements for better research design.
- Define the unit of analysis and the likely case(s) to be studied
- Develop theory, propositions and issues underlying the anticipated study
- Identify the case study design (single, multiple, holistic, embedded)
- Define procedures to maintain study quality

(Yin, 2009).
Furthermore, in case studies five elements are also important:

- Study's questions
- Its propositions, if any
- Its unit(s) of analysis
- The logic linking the data to the propositions
- the criteria for interpreting the findings

The decision was taken because the things above agree with the aims of the study and by those strategies the outcomes will be the desired. The "How" and "What” RQs would be better answered and the participants would not be manipulated in order to take invalid data.

Another decision that should be taken for the research design is this of the type of the case study. After the determination of the research method by thinking of the best answering of the research questions and the determination of the boundaries it is necessary to select the most appropriate type. The overall purpose of the study is the main factor that determines the type of the case study. Yin (2003) uses the terms explanatory, exploratory and descriptive to categorize the type. Moreover, he separates them in single, holistic and multiple case studies.

The specific Master thesis is an exploratory case study. Yin (2003) will be used to offer a definition of what an exploratory case study is, it is used “[This type of case study is used] to explore those situations in which the intervention being evaluated has no clear, single set of outcomes” (Yin cited in Baxter, 2008, p. 548).”

This Master thesis is an exploratory case study due to its overall aim. As the aim of the research is to explore the experiences of 4 individuals about the effect of RM/ERM in their daily working process and it is attempted to acquire a better understanding of the situation, an exploratory case study is the most appropriate type of case studies in order to achieve the things above. Through the data collection methods of interviews and observation it is aimed the further exploring of the specific effects that are very essential for a company.

3.4 Data Collection Methods

In this part are analyzed the methods that were used in order to collect the necessary data in order to fulfill the aim of the study and to lead to the expected outcomes. In this specific study I will use in-person interviews and the supplementary method of observation. Interviews are the most common tool in qualitative research and offer the opportunity to the researchers to get a better understanding of the studying conditions.
3.4.1 Interviews

Qualitative interview ‘“permit[s] us to see that, which is not ordinarily on view and examine them which is looked but seldom seen.” (Myers and Newman, 2006. p.3). To begin with, will be provided some definitions in order to explain why the qualitative interviews were used.

As Kvale (1996) argues he qualitative research interview seeks to describe and the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say. (Kvale, 1996).

McNamara (1999) defines about interviews that "are particularly useful for getting the story behind a participant’s experiences. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to questionnaires, e.g., to further investigate their responses."(McNamara, 1999).

In the current study, semi-structured in-person interviews were used. This decision was taken after considering the need to encourage the respondents to develop their personal experiences and to allow them to mention their daily working effects of an EDRMS. The group of participants was randomly selected from companies that possess an EDRMS. The interviews were recorded after the permission that was taken from the participants according to the informed consent form that was given to them to sign. I recorded them with my mobile phone and then I used the recordings and after listening them I transcribed the material in order to keep them in paper form.

The group of participants consists of four individuals that are working in companies that have an EDRMS. Three of them are working in law firms while the fourth is working in a consultant company. There were not specific criteria for the selection of the sample but it was necessary to examine persons that use an EDRMS in order to present integrated opinions.

The interviews' duration was about 15-20 minutes the procedure took place in their working environment.

<table>
<thead>
<tr>
<th>INTERVIEWEE</th>
<th>INTERVIEW DATE</th>
<th>COMPANY</th>
<th>COMPANY SIZE</th>
<th>INTERVIEWEE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual 1 in Company A</td>
<td>22/04/2015</td>
<td>law firm</td>
<td>big</td>
<td>administrative director</td>
</tr>
<tr>
<td>Individual 2 in Company B</td>
<td>24/04/2015</td>
<td>law firm</td>
<td>medium</td>
<td>Lawyer</td>
</tr>
<tr>
<td>Individual 3 in Company C</td>
<td>04/05/2015</td>
<td>consultant company</td>
<td>medium</td>
<td>MIS manager</td>
</tr>
<tr>
<td>Individual 4 in Company D</td>
<td>06/05/2015</td>
<td>law firm</td>
<td>medium</td>
<td>Lawyer</td>
</tr>
</tbody>
</table>

*Table 1: Information about the conducted interviews*
3.4.2 Observation

The supplementary method that was also used as a method to collect data is the observation. Observation is another qualitative method that allows the researcher to get a better understanding of the situation that is examined. Through the observation the researcher can interact with the participants of the case by observing the case. By participant observation we mean "the method in which the observer participates in the daily life of the people under study, either openly, in the role of researcher or covertly in some disguised role, observing things that happen, listening to what is said and questioning people, over some length of time" (Becker and Geer, 1957, p.28). In observation, the researcher can act as observer or as a participant. "Participant observation is a special mode of observation in which you are not merely a passive observer" (Yin, 2003, p.93). "You may actually participate in the event being studied." (Yin, 2003, p.94). Thus, during the usual everyday work of the employees, it was observed the usefulness and the use of EDRMS. It was observed the way that this management facilitates their work and it was also observed how the system works. The difference that exist in observation is that as an observer, the researcher remains outside of the case and he only observes and documents the situation while when he acts as a participant, he takes an active role in the process and he participates. In the specific case study I acted as an observer. The observation took place in the company C where I observed the individual 4. The procedure lasted two days, 6 hours each day. I observed how the employee behaved at those hours and how the EDRMS affected his activities. The process of observation took place in the company that individual 4 is working. It was tried to avoid influence on his working activities. My attitude was neutral in order to avoid manipulating him. The participant was encouraged to act as it was a simple and usual day in order to get true and clear results. During the process were taken notes in order to record the whole situation and to have a detailed observation. After the procedure a narrative was created in order to expand the notes and to offer a better understanding of the process and of the examined situation. The two factors that are examined in my data collection are the efficiency and how is affected by an EDRMS and the costs that are decreased by the adoption of a RM and ERM program. As it is rational, in an observation of 2 days it is not possible to observe the impact on the costs but I observed in what extent the efficiency is affected.

3.5 Data Analysis

The next part of the research is the analysis of the empirical findings. Data analysis is a long procedure and the aim is to make sense and to interpret the collected data. As Creswell (2009) states, the data analysis can start in parallel with the data collection. Lichtman, (2013) in her book proposes the following six steps for the analysis of the data:

- Step 1: Initial coding. Coding from responses.
- Step 2: Revisiting initial coding.
- Step 3: Developing an initial list of categories.
- Step 4: Modifying initial list based on additional rereading.
- Step 5: Revisiting your categories and subcategories.
- Step 6: Moving from categories to concepts.

(Lichtman, 2013, pp. 252-254).

In the specific study, the steps that Lichtman proposes were followed carefully (Figure 4).

In the beginning of the data analysis process, the recorded interviews were carefully transcribed and double checked in order to avoid possible mistakes. Then, the raw data of the interviews and of the observation were initially coded. This happened in order to summarize the ideas of the respondents and to match them. Phrases from the interviews and their main experiences used for this coding process. Subsequently, the initial codes were revisited in order to modify them and create a consistent coding part. In the next step, after modifying the codes, they were organized in categories. Essentially, the codes became categories in order to list them. Then the categories were revisited to discard similar categories and to remove whatever was unnecessary. Finally, the categories became themes/concepts where the findings were based on.

The data analysis is illustrated in Fig. 4, that is, the process from raw data – on the left hand side, to the final themes – on the right hand side. The themes that emerged out of the thematic analysis are the following:

- **Theme 1: Perceived Efficiency in a company**
- **Theme 2: Controlling costs in a company.**
- **Theme 3: Security issues of Records Management and Electronic Records Management.**
- **Theme 4: Impact on company's environment.**

![Figure 4: The 3Cs Data Analysis](image-url)
3.6 Quality of Research

As it is rational, in a research design it is necessary to ensure its quality. Every study, should be tested in order to get the better result that is possible. Yin (2009) proposes four criteria that can establish the quality of research. Those four tests are: construct validity, internal and external validity and reliability. Those four elements are important because paying attention to them can guarantee the high quality of research.

3.6.1 Validity and Reliability

Qualitative validity means that the research inspects in order to ensure the accuracy of the findings by adopting important strategies. Creswell's proposal about ensuring are the following strategies. Triangulation, present negative or discrepant information, member checking, use of rich descriptions, use an external auditor, peer debriefing and spending of time in the field. In the current Master thesis, the validity of the study has been ensured by using some strategies. For instance, many sources of evidence were used. Through those sources it was tried to establish a contiguous explanation about the themes. The sources and the perspective of the participants are elements that help to increase the validity of the Master thesis. All the sources were used after a meticulous analysis and reading. Furthermore, the data from the in person interviews were carefully, listened, translated, transcribed and used in order to avoid omissions that would effect and differentiate the real results. Moreover, an external auditor helped in order to maximize the accuracy and the validity of the sources and findings.

As regards, reliability, is the element that ensures that the approach that has been done to the topic is in line with those of other researchers and studies (Creswell, 2009). Essentially, reliability proves that important parts of the study, for instance, the process of collecting data, can be restated with the same results (Yin, 2009). According to Gibbs' (2007) suggestions, in this study the transcripts were checked in order to avoid possible mistakes in the coding process. The definition of the codes is important because the consistency of the study can be ensured by this process.

3.7 Ethical Considerations

During a research we are in the difficult position to decide methods are the appropriate in order to take what we want. An important part during this procedure that must be secured is this of the ethical considerations. Ethical issues arise during the selection of the sample of research, by respecting the rights of the participants, by the proper use of acquired data by ensuring their validity and reliability and when using other research by avoiding plagiarism and by giving the proper citations. In the literature we can find many definitions about ethics. A popular one is the following: “Ethics is concerned with the attempt to formulate codes and principle of moral behavior.” (Hart, 2005, p.279). Punch (2000) declares that “all social research involves consent, access and associates issues, since it is based on data from people
about people”. As it was said above in order to have an ethical research the researcher is obliged to respect the participants’ values and rights (Creswell, 2009). In this particular proposal will be tried to cover all the ethical issues successfully. This will be achieved by taking into account all the things below and implementing them. As Creswell states is important to keep in mind the things below. As it is rational, every research that uses data and conducts interviews and personal experiences are examined should pay notice into the ethical considerations that arise. In my research will be tried to cover all the possible ethical issues by ensuring the following things:

- Protection of research’s participants
- Develop trust with the participants
- Authenticity and credibility of the research report
- Identification of the aim of the research
- Identification of the benefits for participating

(Creswell, 2009)

During the research process I protected the participants and their personal data. I explained them the reason of the interview and I told them that the data will be safe and will be used only for the specific Master thesis. We developed a relationship of trust and by giving them the informed consent form they were informed about the aim of the study, about the benefits that will occur and finally I ensured them about the authenticity and credibility of the research report. I used their real experiences and the interviews were used properly.

In his book Hart (2005) separates the stages of the research and talks about the main ethical issue. In the stage of implementing the research:
- Keep a respectful position to the others.
- Effort in order to avoid mistakes.
- Being self-reflective

In the stage of reporting the research:
- Respect the law and give credit to previous researchers and not violate copyright.
- Obtain the probity of the collected data.
- Keep secure the confidential information.

(Hart, 2005).
4. Empirical Findings

In this section the empirical findings and the data analysis of this Master thesis are developed. A thematic analysis is conducted, during which specific themes/concepts are produced.

As it is already stated, all the data occurred by two data collection methods. From 4 in person semi-structured interviews and from a two-day observation process.

The interview consisted of two parts. The first was the background questions and the second was the exploring questions about the topic that is examined. They were asked about what they have studied in order to understand their educational and working field, they were asked about their age and also they were asked if they are familiar with technology. So, the sample consists of 4 persons whose age are from 25-51 years old. The two of them have graduated from law school and they have accomplished a Master program. The third participant has studied economics and he graduated a Master program in computer science while the last individual has studied information science and he is an Information Technology engineer.

Another question was about how familiar the respondents are in order to understand how easy is for them to use an EDRMS and to identify if they are not aware of technology. All the participants are very familiar with technology because of their studies or because of their age.

In this part of the chapter are presented the findings that occurred by the second part of the Interview which focused on the effects that the adoption of ERM and especially of an EDRMS has in the organization of the individuals.

During the procedure of analyzing the acquired data I used the 3Cs analysis of Lichtman (Figure 4). Through this process, the data were coded, then they were categorized and some themes occurred. The codes created by the use of specific answers that were drawn by specific answers in the interviews. In this Master thesis are not observed the operational costs or efficiency time or efficiency in a company's environment or controlling costs in a company but the experiences and the attitudes of certain individuals about the costs and the efficiency. The individuals' experiences are analyzed especially by attempting to examine the impact of an EDRMS in the perceived efficiency and in the costs of the companies of the specific individuals. However, through the whole research some other aspects of the RM/ERM use arise.
Through the thematic analysis that was done to the raw data occurred some themes. Those themes are:

**Theme 1: Perceived Efficiency in a company.**
**Theme 2: Controlling costs in a company.**
**Theme 3: Security issues of Records Management and Electronic Records Management.**
**Theme 4: Impact on company's environment.**

**Theme 1: Perceived Efficiency in a company.**

Through the "Three Cs of Data Analysis: codes, categories, concepts" the first theme that occurred by the whole process was this of the perceived efficiency and how the adoption of an EDRMS affects it. After the background questions, the respondents were asked to define how they perceive the term "efficiency". The respondents answered according to their thoughts and a general impression about what they define as efficiency was created.

*Individual 1* defined that:

"I believe that efficiency is how fast the individual and the firm can cope with the demands and to the requirements that exist in a company. If a person serves the customer fast and properly then the person is more efficient and as a result the efficiency of the company is getting more and more increased. The firm usually helps to increase an employee's efficiency by offering the best tools that it can and then the company gains the possible advantages."

*Individual 2* answered that:

"I would say that efficiency is the ability to meet as fast as possible the demands of the clients. As we essentially sell services we should have the ability to answer him as soon as possible we can. We must give sufficient and fast answers at those that he asks."

*Individual 3* responded that:

"In my point of view, efficiency in a business setting is the ability to do things faster and easier as it is possible. An employee is efficient when he achieves the tasks that are assigned to him without worthless actions and things. However, this depends on many things such as the climate in a company, the willingness of the individual."

*Individual 4* responded that:
"My opinion is when we are talking about efficiency it is related with the time. In our company we need quickly retrieved information. The retrieval of an information in the framework of a company is very important. In a firm like our own firm is necessary. The lawyers we can work in a same case and it is very important for us to have easy and quick access to everything that is produced. It is imperative to save time if we want to be efficient."

After defining how they perceive efficiency they were asked to say if the adoption of EDRMS has increased the perceived efficiency in the business environment that they are working. The answers of the four individuals were decisive. They strongly support that the perceived efficiency is increased by using their EDRMS.

Then they were asked to talk about the two elements that are included in their definitions. Time and effort. Firstly they were asked if their job became faster with the adoption of the EDRMS.

All the participants answered positively. They observed that their work affected and became faster than it would be if they hadn't the EDRMS.

*Individual 1* responded:

"Essentially, the records management and the electronic records management offer facilitation in the finding and in the organizing of the records. The records can easily be organized and then we can find them easy and fast."

*Individual 2* stated:

"Of course yes."

"We can find what everyone has done and when. This happens really fast."

*Individual 3* stated:

"... use an ERMS helps you to save tame and to accomplish the activities faster. The biggest benefit of EDRMS is that you can find immediately whatever you want. You only need some seconds to find the information that are necessary the specific time."

*Individual 4* stated:

"We save much time and this is a fact."

In the observational process was observed that the retrieval of information was a very fast task for the employee. The employee used the system many times during the day and it was imperative to have quick access to the things that he needs. The fact that he
was sitting in his chair and it wasn't necessary to go to the archive to search it was very simple to understand how much time was saved.

Then the participants were asked if their work is easier after the adoption of the EDRMS. As it is rational, again all the answers were positive.

*Individual 1* stated:

"*my work is easier now.*"

"*Some things without the existence of this specific system would be really difficult to be accomplished. ...the finding of some records, especially old, could be impossible.*"

*Individual 2* responded that:

"*Yes, I believe that time and easiness are really connected.*"

"*It is not necessary to search in boxes. It is easier to search in our PC. So simple, so easy.*"

*Individual 3* responded:

"*Certainly, because you have already organized the records and you can use them easily*"

"*The facilitation is not only on the use of the saved record but also in the procedure of creating and storing of a new one.*"

*Individual 4* answered:

"*Yes, I strongly believe that.*"

"*Specifically, in professions like mine is easy to understand it.*"

"*For example, some months ago I had a problem to face and I had the suspicion that we have faced it again as an office. I asked the head lawyer of the office and indeed he mentioned the case that we used the same records. It was very easy to find it and to achieve my goal.*"

As regards the observation it was observed how easier their work was. The way that the information was retrieved and used was very easy. There were no involvement with other persons during the process of searching and it was very easy for him to take what he wants. It was observed how easy it is to lie in a place full of information.
How easy to move from a case to another case only with a click. Furthermore, the mining tool that is used to find specific elements in a record is very helpful and of course more functional that the human eye.

**Theme 2: Controlling costs in a company.**

The second theme that was created after the coding and categorizing process is this that is related to the costs of a company. The respondents were asked about the impact of an EDRMS to the costs and to the financial part of their business. The general notion is that the use of an EDRMS reduces costs and assist to the increasing of profits.

In the questions about the costs and to the question about the advantages and disadvantages, participants' reactions were in the same line.

*Individual 1* stated:

"Undoubtedly, the financial part of the company in benefited by the adoption of an EDRMS...when a system saves for you time and effort it is unavoidable to gain profit from this. Moreover, the storage costs are decreased."

*Individual 2* responded:

"Because I am the man at the head of this firm I assure you that the impact of an EDRMS in a company is positive. This is beyond any doubt. A proper Records Management can help to reduce storage costs. Boxes and other archive materials for storage are not bought as frequent as in the past. And of course when we talk about increased efficiency it is rational that the profits are also increased."

*Individual 3* stated:

"Especially, long term the company will be benefited by the ERMS. The continuous storage cost, the money that are necessary to be spent for people to organize the produced material are constantly reduced."

*Individual 4* responded:

"In the company that I am working I believe that the costs are decreased. I believe that costs such as the storage costs and the long terms profits that are results of the productivity increase are important for a company."

As it is rational in the observational process it wasn’t feasible to understand and to observe the long term impact of an EDRMS in the costs of a company. However, it is easy to understand that when we have an effective RM/ERM some costs are avoided.
Moreover, if we say that an EDRMS saves time for an employee and for a company, comes in our mind the phrase of Benjamin Franklin that "time is money" and it is rational that if we save time we save money.

**Theme 3: Security issues of Records Management and Electronic Records Management.**

The third theme that arise from the data analysis is this of security issues as regards the RM and ERM. In this part of the research the respondents formulated their answers by saying that security is a controversial issue. This happens because the security is up to each company.

*Individual 1* stated:

"Maybe also someone could say that there could be a security problem but the use of backups decreases the dangers. The only negative is that sometimes the server and the Internet can stack and this is a temporary problem that is solved after some time. However, the content of the system is not in danger."

*Individual 2* mentioned:

"Probably, someone can talk about a disaster but everything can be destroyed and the important thing is the level of security that a firm has."

*Individual 3* stated:

"As regards the disadvantages we can talk about security. I mean that if the security level is low there are some dangers such as the leak of important information or the disaster of them. Moreover, the security should be also considered by the employees who must be responsible and careful. Many backups are kept and we should ensure that if the system crashes we must continue with the backups."

*Individual 4* stated:

"Now about the drawbacks, the security of such programs is a little bit controversial. Lately, I heard some cases in some companies as regards the leak of sensitive and important information. Some employees took data that existed in the company and in which they had access. The company should ensure the safeguarding of the data. Usual backup and high security level for cases such as crashing of the system, power outage are imperative and safeguards the content of the system."

As regards the security issues that were observed in the observed in the observational process are similar to the things that the participants stated in their interviews. It was observed that the security of such a system is up to the hand of the company to preserve it. For instance, it was observed that the security level of a company is the element that ensures the safe keeping of the material. Continuous backup is a factor
that increases the security level in a company. Various safety valves are necessary for a big company in order to ensure that its precious material will not be lost. However, when we are talking about electronic documents and records, it is also a responsibility of the employee. For instance, the negligence of an employee when he uses his codes to have access or a possible leak of the content cannot be always be managed by a security policy. The only problem that occurs by using a system is for instance a power outage. It was observed that the PC is integral part of the daily tasks and if a problems like this appears then the working procedure will be hindered. However, the content of the system will not be at risk because backups ensure this.

Theme 4: Impact on company's environment.

The last theme of the analyzed data is this of the organizational and operational issues. In this theme are included elements that are important for an organization. For instance the cooperation, high quality services and the improvement of business' environment.

Individual 1 stated about the various effects:

"we are talking for a big law company. I want to inform you that we have more than 1,000,000 records. The amount of the produced information is huge and it is necessary to organize them."

Individual 2 stated:

"As we essentially sell services we should have the ability to answer him (customer) as soon as possible we can."

"this system that we possess now exploits all the opportunities."

"A law firm produces vast amount of information and we as the main users we should exploit it to offer better services faster and to gain profit by the quality level of the services."

Individual 3 mentioned:

"I believe that every firm that adopts an EDRMS is because it is aimed ...and to offer quality services to the customer."

"The customers wants to be served and they usually want to be served quickly...we try to make our work better and easier and as a result our customer is assisted to do his job according to the thing that he wants from us."

Individual 4 mentioned:
"This ability to meet the customers' demands offer to the company competitive advantages."

"The produced information are used as evidence for us."

"EDRMS... increases the speed of accomplishing work tasks, increases the cooperation between the employees, facilitates our everyday lives, increases the efficiency of the firm, increases the organizing in the firm."

"response to the customer at the minimum time because you possess this system, automatically offers points and this push you up on his eyes. "

Regarding the impact of the EDRMS in the business environment it was observed that the technological factor influences dramatically the way that a company operates. It was observed that the cooperation was encouraged because the lawyers can work in the same time to the same case without problems. Furthermore, when a customer came to the firm and he wanted to solve a case, the lawyer responded immediately with the help of the system. These high quality services with the help of technology is something that helps every firm to enhance its position in the market.
5. Discussion

This chapter includes the discussion of the Master Thesis. In this part the findings are discussed and are related with the theory and with the previous research. The specific Master thesis is an exploratory case study where it was tried to lead to some useful and important conclusions.

The use of an EDRMS could be considered as an evidence that technology can be proved beneficial for the operation of a company. Who does not want to increase the perceived efficiency of his company? Who does not want to reduce the running costs? Who does not want to increase his profits and who does not want to exploit elements such as the information organizing, the cooperation and the ability to offer quality services to his customers? The answer is no one. Those goals possibly can be achieved in a company that uses an EDRMS. The imperative requirement is the proper use. The adoption of a RM/ERM program that would be sufficient and cover all the aspects should be done properly. Someone could say that this is not a general truth. Many people may not support the changes and possibilities that technology brought in the business domain. As we saw in the previous chapter the employees of the specific companies have a very positive stance to the RM/ERM. Through the results of the study it is not aimed to generalize the findings but only to record the individuals' experiences and to get a better understanding of the concept of RM and ERM.

In the beginning of the research had been set two Research Questions:

1. What are the perceived efficiencies of using an EDRMS in a company?
2. How does the adoption of an EDRMS affects the operational costs of a company?

Those research questions was tried to be answered. Through the whole procedure of data collection the research focused in the factors of perceived efficiency and costs. However, as it is rational, some additional factors occurred.

To begin with, according to the American Psychological Association definition who states that, "efficiency is the ability to accomplish something with the least time and effort and to the participants' sayings about efficiency, the efficiency is strongly connected with time and effort. Those two elements were examined during the research and the results that were taken was really encouraging. The experiences of the respondents were totally matched with the research that have been done until now. The accomplishing of the employees' tasks became faster by the adoption of the EDRMS. They responded that the time that they need to retrieve and use the desired information is reduced. They supported that it is very important to have the ability to use the right information at the right time. If they want to be successful they must be quick and this is an aspect that is improved in their organizations. They do not waste time to search for what they want. The level of organizing allows them to find very quickly the needed information. It was stated that it is essential for the customer service to have the ability to response quickly to the demands of the customer."
Positive were also the results as regards the facilitation that an EDRMS offers to the employees of a company. Through the findings it is observed that the specific individuals appreciate the help that the EDRMS offers to them. All the respondent highlighted the facilitation that the system offers to them. They mentioned that the opportunity that they have for easy access to the information is something that increases the quality of the offered services. The ability to search in PC and not in boxes is of major importance for them. The empirical findings of the study are in accordance with the data of previous research and to the general verifications of the international research. Many studies and articles about the RM and ERM state that on an aspect that is positively affected by the adoption of an ERM is the perceived efficiency. For instance, Richmond (2010) has stated that one of the important reasons that a company should adopt an EDRMS is that increases efficiency and productivity. The ability to retrieve information easily and fast affects positively the efficiency of a company (Richmond, 2010). Furthermore, Johnston and Bowen (2005) have stated that an EDRMS offers greater efficiency and their working tasks can be accomplished easier, quicker and in a better way (Johnston and Bowen, 2005). Finally, according to the Harvard’s Records management services RM is an important factor increases efficiency. For instance, it is estimated is saved 20% of the time that is needed in a typical office to search for the appropriate information (Harvard’s Records Management Services, 2012).

As regard the costs and how much they are affected, all the participants had the same opinion about this factor. All of them stated that the purchasing of an EDRMS is expensive but they also agree that such a purchase must be considered as an investment. Its aim is to reduce costs and to increase profits in the long term. According to the participant’s experiences and according to the international literature the adoption can reduce a part of continuous costs. Storage costs are a category of costs that can be reduced. It is obvious that much money are wasted in order to store the vast amount of the produced information. The need for space and the process that is necessary to store what is produced is costly. Undoubtedly, when we are talking about financial issues such as profit and loss our mind usually goes to the sales of a company, to the number of the customers that a company has, to the salaries etc. However, in the business field also exist some strategic actions that help a company to succeed and to operate properly. The only thing that is needed is the identification of the opportunities and the desire to innovate and succeed. Another way to save money is to cut the office equipment costs. Boxes and other material that are useful to organize the records can be reduced. Someone could say that those costs are not important because they are not so high. This is a big mistake because when we are talking about profits and losses, every firm should look on the future. Companies that do not have duration had not carefully examine the strengths and the weaknesses of the situation, however, because the sample of the study consists of persons that are working in successful firms with a long history and a strong position in the market, every opportunity is very carefully considered. Long term wins maybe are more important than the short term. Another type of costs that can be affected is this of the personnel costs. As the amount of produced information is increased, the need for organizing them is also increased. With a proper RM those costs are avoided because the procedure is automated and the managing of the records is simpler and easier. As
it is already said, the respondents, are positive to the use of the EDRMS. Furthermore, the general impression in the literature is positive. For instance, the Harvard’s Records Management Services support that “the efficient management of records lowers the cost of doing business”. Additionally, it is stated that the proper records management maximizes the value of an organization and minimizes their cost. We can observe that the beliefs in the literature and in the examined sample concur. We cannot oversee that but it is important to say that this does not absolutely for all the firms.

Except from the two factors that were planned to be examined in the research procedure occurred and some other fields in the setting of the organizations of the individuals that are affected by the use of an EDRMS. It is a fact that the most responses were about advantages and when they were talking about negatives they did this with specific justifications. The participants developed their general thoughts and about the advantages and disadvantages of RM and ERM. The other themes that occurred by the answers of the individuals are the security issues and the impact of the ERM in the business environment. About the security issues it is obvious that the security level that a firm has can ensure the safety of the important content. Despite the fact that there is also the human factor that may affect the security, a company should do the best for security. Regular backup of the records and a strong security policy can help to avoid bad consequences. As an overall ascertainment it was found that a functional EDRMS increases the perceived efficiency in the firms of the individuals, reduces the costs, secures the valuable information, encourages cooperation, increases the quality of the services that a firm offers, organizes the produced information, "obliges" the employees to keep up with the changes that happen in firms because of the technology's evolution, assists the working procedure to be more coordinated and offers the ability to the companies of the specific individuals to use the records as evidence.

To conclude with the discussion part I have to say that the findings are representative and are in accordance with the opinion that I had during the data collection process. I observed one employee who is benefited by the use of the EDRMS and I also understood that the three others are also benefited by this. I believe that the Research Questions are satisfactorily answered and the findings are properly connected to the literature. The factor of perceived efficiency and the costs in the specific sample are positively affected. Despite the fact that the findings cannot be generalized I cannot oversee that the findings are in accordance with previous research. It is observed that factors such as perceived efficiency and costs are affected. Moreover, it is necessary to mention that despite the fact that in Greece, the advantages of a proper RM/ERM are not totally exploited because of strange legislation for instance, the positive effects cannot be ignored.
6. Conclusion

This is the last part of the Master Thesis. In this chapter I conclude and are included the research contribution, the opportunities for further research, the research challenges and the final comments.

In the current study, I tried to investigate the concept of RM and ERM within a company's setting by examining the experiences of 4 individuals. The need for a better working process with facilitations, the need for every firm to succeed lead me to this topic. The study's aim was to explore and present the experiences of 4 individuals. Through the semi-structured interviews it was attempted to find out what offers to the companies of the individuals the adoption of an EDRMS. The construction of the Research Questions aimed to gain a better understanding about how the perceived efficiency of the organization of the individuals can be affected by the adoption of an EDRMS and how this adoption affects this costs of a company. Furthermore, the method of observation allowed me to have a first-hand experience of the operation of an EDRMS. The findings of the research were positive and encouraging. Both interviews and observation showed the belief of the specific individuals that the adoption of an EDRMS can be proved beneficial. The perceived efficiency and the field of the costs are positively affected in the specific cases. The perceived efficiency is something that is affected immediately. The basic factors that characterize perceived efficiency is time and effort. The adoption of an EDRMS and the implementation of a proper RM affect those factors dramatically. Employees that are obliged to do many things in limited time and sometimes difficult are facilitated by RM and ERM. The system gives them the opportunity to have fast and easy access to the needed information. Regarding the costs, we observe that is a field that is also affected but this is easier to be shown in long term. Running costs are decreased, due to the higher level of efficiency the profits are increased but the high cost of the system's purchasing does not allow the immediate evidence of profits. However, according to the response of Individual 3 who is the boss in his company, ensures that reduction of costs that can be shown from the first year of system's usage.

6.1 Research contribution

Business sector is a sector that is strongly connected with technology. Moreover is a constantly changing field which should explore every opportunity that appears. So this Master thesis aims to present the effects of IT and especially of RM and ERM in 4 companies according to the personal experiences of 4 individuals. Four individuals who are working in four different Greek companies participated in research and through their answer are displayed the effects and the possibilities and boundaries of the adoption of an EDRMS. The study aims to contribute to the better understanding of the RM and ERM. In order to motivate for better operation of various firms.

Furthermore, in the study are used techniques that are very useful for IS research and it is important to prove their value and necessity. The research does not aim to create
something totally new but to add knowledge to the already existing by examining different situations and circumstances.

6.2 Research challenges

Undoubtedly, completing a Master thesis is a very demanding, hard and interesting process. From the beginning till the end, the researcher faces many challenges and difficulties. The decision about the topic is a choice that is done after many thoughts and after thinking about the aim that you want to fulfill. The facing of challenges are a usual situation during the Master thesis. During the preparation of my thesis I faced many challenges which I was obliged to manage in order to continue and to reach my purpose. The procedure of searching for the appropriate literature was the first challenge which was eliminated by finding and using of the proper sources. However, the difficult part was this of the data collection. As it is rational, it is difficult to have access to companies, especially big companies. Their time is limited and it is difficult to accept you. So, after many efforts and a strenuous process I achieved to take 4 interviews. The process was interesting because I learned things and I analyzed the data that I took from skillful persons. Furthermore, for me the most interesting and challenging part of the Master thesis was the part of observation and this of the ethical considerations.

Observation was something totally new and unknown for me before my studies in this master program. So, the opportunity to apply what I have learned for 1.5 year was very challenging and tempting. During the process I acquired a better understanding of the concept that I tried to examine and I achieved to strengthen my findings. Regarding the ethical considerations, despite the fact that is a general field that I am very interested to, I understood the necessity and how careful a researcher must be with the participants. It was very important and interesting to take into account the ethical considerations of a study and to be careful in order to protect the participants' rights. This does not mean that in my undergraduate studies and specifically in my thesis I didn't protect my sample but at this time I have learned to do it in a more formal way and very detailed by taking into account all the possible harms.

6.3 Future Research

In my point of view, this study lead to important findings that are useful in order to get a deeper understanding of the importance of the of RM and ERM. However, as it is easy to understand, future research can be done in order to take more and supplementary results. Some proposals for other studies are mentioned in this part. A research which would include more hours of observation or more observed persons is an interesting perspective. The time that a person has in order to fulfill his study is essential for his choice. Another choice could be the fulfillment of a quantitative research that would bring quantitative results and would present a different approach. The research community could be also benefited from a study in a big organization which would evidence the usefulness of RM and ERM in a whole environment. Moreover, in future
research can be examined other factors that may be affected such as the quality of the offered services or the huge field of Information Security.

The conducting of a research is not a simple and easy task, many things are required in order to take valid and useful results. Furthermore, every study will have deficiencies, it is impossible to cover all the aspects.
References


Appendix 1

Interview

*Question 1:* Could you tell some things about your background?

*Question 2:* What is your age?

*Question 3:* What is your working experience?

*Question 4:* How many years are you working in this company?

*Question 5:* Which is your position?

*Question 6:* How familiar are you with technology?

*Question 7:* How often do you use the EDRMS?

*Question 8:* How do you define efficiency in a business setting?

*Question 9:* Do you believe that EDRMS increase efficiency in the company that you are working?

*Question 10:* Does EDRMS help you to accomplish your work faster?

*Question 11:* Do you believe that your daily work becomes easier with the use of the EDRMS?

*Question 12:* By using the EDRMS is the produced information more organized?

*Question 13:* Could you develop your personal general opinion about the benefits and drawbacks of the adoption of an EDRMS?
Appendix 2

INFORMED CONSENT FORM
Date:                                                                 Place:

Study title
Records Management and Electronic Records Management: opportunities and limitations. Case study in Greek companies.

Researcher
Konstantinos Manikas
email: km222fd@student.lnu.se
Master Program in Information Systems, Linnaeus University

Aim of the study
The aim of the specific research is to investigate and present the experiences of the employees 4 individuals that work in companies that possess an EDRMS. Moreover, it is aimed to explore the way that the use of RM and ERM facilitates the daily work tasks of the employees and to present the benefits and the drawbacks by examining the impact that the system has in the perceived efficiency and on the costs of a company. It will be tried to explore how the system supports the employees work and what are the possible obstacles at this process. Hence, the main objective is to understand the importance of the use of an EDRMS and if it is useful for a company. Perceived efficiency and costs are the two main factors that are examined.

Plan of the study
The topic will be investigated by conducting interviews to 4 individuals of companies that exploit the services of RM and ERM. The interviewees’ selected to be the most appropriate to examine through their experience in order to enhance the validity of the exported results. During the interviews will be taken notes. The interviews will be recorded for further analysis. Additionally, another method that will be used is the observation in order to get a better insight and to enhance the findings.

Benefits of the study
The current study intends to contribute to a deeper understanding of the concept of RM and ERM as much as of their usefulness and necessity in a constantly changing business environment. The participants’ experiences will form a framework about the impact of technological systems in their daily working process. The interviewees will offer their answers in a sense that their opinion could present a concept that improves the offered services and improves employees’ task executing processes.
Participation & Privacy issues

- Participation is voluntary
- Participation will be anonymous
- Participants can have access to their shared data at any moment
- Participants can change their given data at any moment
- Participants can withdraw from the study at any moment and they can ask to remove their data
- The collected data will be used for this Master Thesis
- Interviews will be recorded
- Only the author and the supervisor will have access to the raw shared data
- Participants can have access to the whole study, if the other participants’ rights are not offended
Consent

I have read all the statements above about the Master Thesis.

Yes ☐ No ☐

I understand that my participation is voluntary.

Yes ☐ No ☐

I understand that I can ask to remove my data whenever I want.

Yes ☐ No ☐

I understand that my personal data will be secured and my participation will remain anonymous.

Yes ☐ No ☐

I allow the recording of the interview.

Yes ☐ No ☐

I consent to participate in this study.

Yes ☐ No ☐

By signing this consent form, I agree to take part in the research about Records Management, Electronic Records Management and Records Management System. I agree that the data I will share with you can be used in your Master Thesis.

Participant’s Name ___________________________ Researcher’s Name ___________________________

Signature ___________________________ Signature ___________________________
### Appendix 3

**Time Schedule**

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*Table 2: Time schedule*