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The Implementation and Use of ERMS

A Study in Icelandic Organizations

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Abstract

This research studied the implementation and use of ERMS in eight organizations in Iceland. Four organizations, where 34 employees were interviewed, were studied in detail. Seven participant observations were also conducted in these organizations. Four other organizations, where four key employees were interviewed, corroborated the findings. Six consultants/teachers at six different software providers were also interviewed, making the total number of interviewees 44. One participant observation was conducted as well at one of the software providers.

These eight organizations operated in different fields of industry. They had implemented four different ERMS with two using each system. The organizations were both public and private. They are representative of medium to large size organizations in Iceland and had experienced varying success rates in the implementation, although detailed results were not known before this study.

ERMS are systems to manage records during their lifetime. The systems studied met all RM requirements. They were all part of a groupware and were those that had gained the widest distribution on the Icelandic market.

The aim of the research was to discover why and how ERMS were being implemented and to find out whether and how employees were actually using ERMS. The study aimed at examining the association between the implementation and the use of ERMS. The focus was to discover which implementation factors influenced a successful outcome and the actual use as well as the perceived objectives of the implementation.

The study discovered that there was a strong correlation between the most important input factors and the outcomes that they influence. There were mainly three implementation factors that appeared to be most important for the success of the implementation. These were support by top management, co-operation between the IT and RM functions in the system development and in the training, and the training of the users who should receive both basic training in RM and comprehensive training in using the system. The study also revealed the importance of having users participate in the implementation process, particularly in fitting the records classification scheme (FCS) to the ERMS.

The study revealed how employees used ERMS, how they registered records into the system and which search parameters they used. These work procedures were identified both for records created in-house and those received. E-mail was the form of the records that was a problem in RM, frequently neither captured into ERMS nor filed as paper records. Training was most influential in determining the level of use by employees, but their participation in adapting the FCS to the ERMS influenced their skills in registering and searching for records in ERMS and how user-friendly they found the system to be.

Employees did not object to sharing their completed work with their co-workers, indicating that ERMS could be effective systems for quality RM and productive group work, if successfully implemented.

These findings are of value to the management of organizations in Iceland that want to introduce or reintroduce ERMS. The theoretical contribution of the study is the uncovering of the input factors of implementation that influence the outcome factors. These findings can, therefore, be of value to middle-sized organizations in Western Europe, North America and Australia as the organizational culture regarding work, co-operation and competition and style of management is not that different in these other parts of the world.

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1 Introduction

My career as a consultant in information and records management (RM) began twenty years ago. When it became known that such service was available it became apparent that organizations needed help and advice in how to organize their records. In many organizations this was a problem that had accumulated for many years. Records have, during this time, increasingly become electronic, creating a need for electronic records management (ERM). In the past few years there have also occurred two developments that have increased the momentum. These are the e-government initiatives in many countries requiring that official records be available electronically and legislation granting individuals access to information resting with public authorities. These developments have created a great demand for systems to manage electronic records in public organizations. The need is equally great in private organizations where electronic records are no less prevalent.

Working as a consultant during the past ten years I have witnessed many organizations that have bought electronic records management systems (ERMS) for the purpose of managing their records. Unfortunately, I had a reason to believe that these investments were not always providing the return that had been expected. I frequently observed that the systems were not used by all of the employees who were intended to do so, the systems were not being used correctly, and the opportunities that they offered were not being fully utilized. Failure in the implementation process seemed to be the reason why.

Upon examination there was no research available on how ERMS had been implemented in Icelandic organizations. A review of the literature revealed only a few descriptive accounts of implementing ERMS abroad. The only guidance was from studies of implementing other information management systems that sometimes made little demands on sharing and exchanging personalized information. No studies were available on how ERMS were actually being used in organizations. The research topic was chosen for these reasons.

The aim of this research was to contribute new and valid knowledge on the implementation and use of ERMS in Icelandic organizations in particular. The study aimed at finding answers to the questions: (1) which were the perceived objectives of introducing

ERMS and were these objectives being met, (2) how were ERMS implemented and how successful was the implementation, (3) was there a difference between public and private organizations regarding the success of the implementation, (4) did the systems differ in how easily they were implemented, (5) how did the employees use ERMS, if they did, and if not, what did they use as a substitute, (6) how did the employees feel about working with ERMS, and (7) what role did the implementation of ERMS play in the subsequent successful use or non-use of the system.

This study has both theoretical and practical contributions. First, it creates new knowledge regarding which factors influence the implementation of ERMS and how employees used these systems. Second, by revealing the connections between input and output factors in implementations, it yields information as to how input factors should be treated for achieving a successful implementation outcome.

The dissertation is organized into eight chapters starting with the introduction. Chapter two reviews the literature and examines relevant theories and studies. It introduces how ERMS and groupware are used to manage knowledge and information in general and then proceeds to discuss the literature on information systems, groupware, RM and ERMS in particular. Theories on the management of change, motivation and the implementation of change are considered. A model of the implementation process is presented and the process is discussed. Finally, surveys and studies of implementing similar or related systems are examined and discussed.

Chapter three presents the aim and the objectives of the research and the ensuing research questions. The ties of the researcher to the subject and the personal reasons for choosing this topic for research are also discussed.

Chapter four discusses why qualitative methodology was chosen for the research. The settings of the research are described and data provided on the participants. The chapter covers the procedures and methods used in obtaining the data and the methods used in the data analysis. The reliability and validity of the study are outlined and the value of the research is estimated.

Chapter five presents what the participants in the research perceived to be the objectives of introducing ERMS in their organizations. The seven perceived objectives are discussed in the chapter.

Chapter six covers the main success factors in implementing ERMS. These were support by top management, participation of users in the project and the training offered to the users, both training in RM and system training. Finally, the outcomes and expectations of introducing ERMS are discussed for each of the eight organizations participating in the research.

Chapter seven examines how employees used ERMS in their work and how they entered into ERMS the records created and received by the organization. The actual use is compared with the options provided by the systems to determine to what extent the features offered in ERMS were being utilized. The chapter concludes by discussing how employees felt working with ERMS and whether they appreciated or resisted using the systems.

Chapter eight presents the general summary and the conclusions of the research.

2 ERMS – Their Nature, Implementation and Use in Organizing Information and Knowledge as Records

Modern times are characterized by change. These changes have made obvious the need to organize, manage and preserve knowledge within organizations, leading to a growing need for information and knowledge management (KM). These practices rest to a large degree on good RM that has recently received important support from two developments: ISO standards on information, documentation and records management (ISO, 2001a; ISO, 2001b; ISO, 2006) and software developments that have been introduced to manage information and records. RM has also grown in importance due to new trends in industry and government.

The introduction of total quality management (TQM) to industry and the certification of companies in accordance with *ISO 2000: 9000* quality standards (ISO, 2000a) have encouraged companies to register their work and production processes and to operate in accordance with these documented procedures. RM plays an important role in TQM. Research shows that many organizations discover during the implementation process of *ISO 9000* standards that the most common reasons for failure in TQM are problems relating to RM (Gunnlaugsdottir 2002b).

Recent legislation on preservation of records, privacy, access to information and proper procedures in public administration make similar demands on public as well as private organizations to keep their work procedures and records in order (Gunnlaugsdottir, 2004a).

Information is only valuable if it is accessible and retrievable. Groupware and ERMS have been introduced to facilitate the sharing and preservation of information and knowledge. The advantages are several: information and records that are in the system when employees depart are preserved in the organization's memory, available for use by their successors; employees can gather, organize and distribute information, collaborate with their colleagues and refine the information for their own use. These benefits are valuable to employees and the organization as well, but only if correctly implemented and put into daily use. The ERMS studied in the present research are all part of a groupware.

This chapter places groupware and ERMS in perspective by introducing how these systems are used to manage knowledge and information in general and then proceeds to

discuss the literature on information systems, groupware, RM and ERMS in particular. The implementation of ERMS changes the way people work and how they co-operate on the job in creating, sharing and using knowledge and information. Theories on the management of change, motivation and the implementation of change are, therefore, considered to some extent as well. Finally, surveys and studies of implementing similar or related systems are examined and discussed, and their relevance to the present study is highlighted.

2.1 Managing Knowledge and Managing Information

During the last quarter of the 20th century, there has been an increasing focus on the use of knowledge in industry. Peter Drucker predicted in 1988 that the typical large business in 2008 would be knowledge-based with fewer than half of the management levels of its counterpart 20 years previously (Drucker, 1988; p.46). History has already proven him right (Applegate, 1995). Now, we hear of TQM, business process reengineering (BPR) and its stages and 72 techniques (Kettinger, Teng & Guha, 1997), the learning organization (Senge, 1994), and KM. Utilizing and organizing information and knowledge are central to these developments.

Facts, measurements and statistics without context are called 'data'. However, when data have been organized, analysed and interpreted to acquire a meaning, one talks of 'information'. 'Information is data endowed with relevance and purpose' (Drucker, 1988). Information only becomes 'knowledge' when it is put into a logical and understandable context that is relevant and actionable and can be verified and recalled from experience. Information only becomes knowledge when it meets a need to finish an assignment or to solve a problem (Turban, McLean & Wetherbe, 2004; Awad & Ghaziri 2004; Davenport & Prusak, 1998b).

Knowledge is an important asset that individuals and organizations can use to their advantage. Many organizations have realized this and have embraced KM as a way to discover, collect, document and organize a knowledge base which the employees of the organization can later retrieve, distribute and use in their individual daily work. This new environment, this system of people, practices, technologies, and values, is even acquiring a new name: 'information ecology' (Yakel, 2000; p. 26). Table 2.1 presents the focus and the essence of KM.

Table 2.1. Knowledge management. What is it? (Abel & Oxbrow, 2001; pp. 39-42).

The focus:	*The essence:*
• Creating repositories of knowledge. • Facilitating the capture, creation, transfer, use, and sharing of knowledge. • Managing knowledge as an asset, structuring it, organizing it, safeguarding it.	• Connecting people with people. • Connecting people with information. • Enabling conversion of information into knowledge. • Encouraging innovation and creativity.

On the one hand there is implicit knowledge that rests in the minds of employees, such as work experience or contacts with customers. This knowledge can easily become lost to the organization when employees leave, especially if their work is terminated due to a dismissal. On the other hand, there is explicit knowledge that has been documented in some way (Saffady, 1998a). This knowledge can be both inside and outside the organization. A productive way is to approach knowledge from this angle, whether it is internal or external to the organization, and to examine how it can become internalized, organized and made explicit.

Examples of external knowledge and information are seminars, conferences and lectures attended by employees. If employees are required to report on such events, this knowledge can be internalized as a part of the knowledge base of the organization. The external information that business organizations find most valuable concerns customers or clients, competitors and the market in general (Alavi & Leidner, 1999).

Internal knowledge, whether documented or not is created in the daily operations of the organization. Basically it is of three types. First, there is the knowledge that rests in the minds of the employees. Second, there is the documented knowledge that can be found in the various records of the organization. Finally, there is a relatively recent phenomenon, groupware, where the knowledge base of the organization is organized, can be managed and is accessible to all authorized employees.

Many organizations have developed databases of best practices that document the preferred ways of doing things based on employee experience (Saffady, 1998a). A list can be made of frequently asked questions (FAQ) about products or services. The manufacturing company, 3M, for example, integrated customer relationship management (CRM) and KM software to respond to customer queries on their more than 60,000 products (Edwards, 2000). This shows that there are a number of ways to make expert and implicit knowledge explicit and available to other employees.

The most common documented internal knowledge in organizations is records that are to be found on paper, films, discs and tapes, both in human readable and electronic format. These records are in the form of incoming and outgoing correspondence – including faxes and electronic mail – internal and external supporting material, minutes from meetings, agreements, internal memos and reports, plans, contracts, and other related matters. Furthermore, these are accounting and business records, production records, service and maintenance records, as well as records relating to work processes in the quality and environment management systems. These records may vary according to the type of industry that the organization is in, but they are essentially the same for all practical purposes.

These records are kept in filing cabinets, folders, in the memory of personal computers, on floppy discs, computer discs and in various databases using a variety of information technologies. This knowledge can become lost if the information is stored in a manner making it difficult to retrieve. The storing of information on the hard drive of personal computers by individual employees is a common example of information that can become totally lost when the employees leave the organization. ERMS and groupware can help in preserving this knowledge that employees formerly created and had access to only on their own (Gunnlaugsdottir, 2003).

2.2 The Knowledge Quadrants

The authors of the book *The Knowledge Creating Company* (Nonaka & Takeuchi, 1995; pp. 62-74) claim that new knowledge is created by conversion, for example when personal knowledge becomes public knowledge. Groupware, and ERMS within it, with its functional classification system (FCS) for records, play a role in this conversion. These conversions are of four types:

1. From explicit to tacit (internalization). Learning is acquiring and internalizing public knowledge. General knowledge is obtained from books, the Internet, and other public sources.
2. From tacit to tacit (socialization). Socializing with other people, exchanging ideas and experiences results in learning as well.
3. From tacit to explicit (externalization). Personal knowledge becomes public or explicit knowledge through documentation. The knowledge of individuals is collected, documented and classified with the aid of FCS to be available for re-use by others.

4. From explicit to explicit (combination). Here explicit knowledge from different sources is combined, mixed or connected to create new knowledge, new innovations. Later, it will be shown how groupware, and the ERMS within it, is used for this purpose.

Sharing and exchanging knowledge will be fruitful when it is put into ERMS in the groupware in an organized manner. If that is not done, retrieving it, sharing it and building on it may prove difficult. The knowledge base, just as a database, must be organized. In Figure 2.1, it can be seen that the knowledge base, the repository, is being organized as it moves from tacit to explicit. However, when moving between the explicit quadrants the groupware is in use.
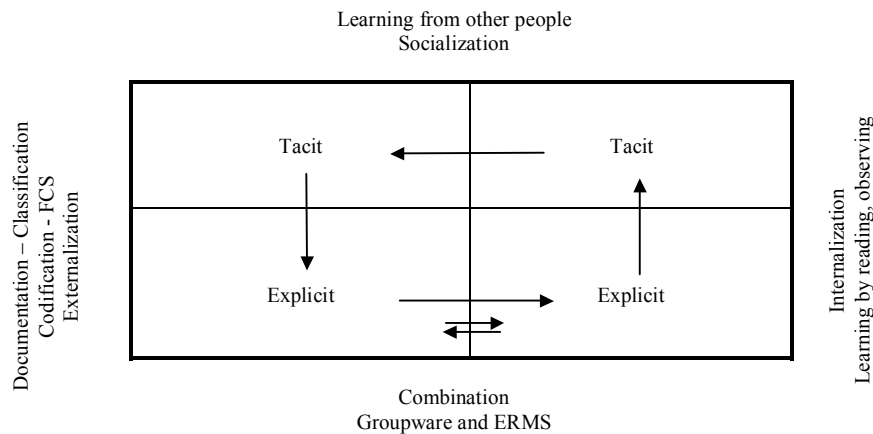
Figure 2.1. Organizational knowledge conversion. Adapted from Nonaka & Takeuchi (1995).

There are mainly three things that organizations can do to facilitate the co-operation of their employees in the creation and sharing of knowledge if they want to build valuable knowledge organizations and increase their intellectual capital:

- For knowledge to become useful to others, it must be organized by using FCS into a *knowledge repository* systematically where it will be accessible and retrievable.
- *Groupware* must be introduced which makes it possible for employees to work together and share their knowledge.
- Various obstacles must be removed in order to facilitate the co-operation of employees and their *sharing of knowledge* (Dash, 1998).

Knowledge repositories have the purpose of storing information about the organization of the enterprise, its products and services, customers and work processes in order to provide easy access by the employees (Beckman, 1999). Consulting firms have been in the forefront of building knowledge databases or repositories (Takeuchi, 1998). One objective of these firms was to search throughout the organization to collect scattered information, knowledge and experience from working with customers in order to make the knowledge available by converting it into a database accessible to others in the company. Valuable knowledge can be collected and placed into repositories for use by others. This work is facilitated by employing the tools of information science, such as classification, indexing and taxonomy.

The organization of a knowledge repository starts by defining the needs of the users and what they want to know. Such projects can easily be destroyed with information overflow and inaccessible information (Seng, Zannes & Pace, 2002). The organization of the information must be uniform. It is necessary to provide a classification scheme for organizing the information into the repository and for later retrieval. The classification scheme is an important tool for organizing knowledge. The classification scheme makes it possible to classify knowledge and information in much the same way as records are classified when using FCS for records (Gunnlaugsdottir, 2004d; ISO, 2001b). If the knowledge repository is planned and organized, it will become a fountain of valuable knowledge that employees turn to for answers in their daily work and will then be a repository of the explicit knowledge of the organization, its intellectual capital. Several authors have written about the returns and the value of this intellectual capital and put forward ways to measure it (Stewart, 1997; Kaplan & Norton, 1996; Davenport & Prusak, 1998b; Sveiby, 1997; Aston, 2002, Davenport, De Long & Beers, 1998), but such valuations are beyond the scope of this review.

Specialization was originally introduced to increase efficiency and output. However, what followed was that information was departmentalized and not shared: departments and individuals kept it to themselves. This was not so much of a problem in small organizations that operated locally when the ability to create records was limited and they were on paper. In an organization of two to three hundred people, it is even possible for people to know one another 'well enough to have a reliable grasp of collective organizational knowledge'

(Davenport & Prusak, 1998a; pp.17-18). With the creation of large organizations that act globally, access to information, both globally and on an individual basis, becomes difficult. Groupware is aimed at solving this problem. A groupware program is designed to collect information, support group work and facilitate the sharing of knowledge.

2.3 Groupware

Groupware is designed to facilitate co-operation between employees and at the same time to preserve knowledge that is necessary for the successful running of the organization. The concept is made up of three components: The computer software, the employees and the work processes within the organization. It is built around three key principles: communication, collaboration, and co-ordination (Laudon & Laudon, 2002; Bocij et al.; 2003). It is a collaborative technology that allows people to communicate with each other, co-operate on projects, and share information and knowledge without regard to time and location.

2.3.1 The Main Elements of Groupware

The most common features of the groupware are presented in Table 2.2.

Table 2.2. Common features of groupware (Gunnlaugsdottir, 2003; p. 372).

- Electronic mail and messaging.
- On-line calendars or diaries of employees.
- An electronic RM solution (ERMS) is sometimes a part. This is the part of the system that is also utilized for KM.
- Project management, TQM and environmental management with all their manuals and documents are part of the system, if applicable.
- Mapping of employee knowledge areas and expertise is part of the open system, but most of the other records of the HRM (human resource management) department are typically with limited access.
- On-line catalogues of library material, books, journal articles, etc. are part of the system, and sometimes portals are made up to create access to specific material on the Internet or in internal databases.
- Desktop video conferencing is a less common feature, but many of these software solutions offer the possibility to hold meetings on-line and even to vote on issues anonymously.

Groupware makes telecommuting possible (Orlikowski & Barley, 2001). It links employees together and connects them with the knowledge base of the company or institution, offering them the opportunity to access it from different locations. Records are stored in a central database where all authorized employees have access to the latest version of manuals and other records. The system offers also version control. Knowledge

stored in a groupware program continues to be explicit knowledge thanks to its organization and classification. It takes the form of records that have been written or scanned into the database itself, transferred electronically into the system, or just registered in the system but kept elsewhere where they can be found. The database also contains references and links to other files and databases such as accounting information, production records, and records in other internal and external databases that can be searched for information that can then be transferred into the groupware.

The groupware program provides access to information. Besides the advantages already mentioned it opens up the possibility of analysing the database in many ways and forming connections between events and ideas which otherwise would be difficult or not as obvious to envision (Gunnlaugsdottir, 2004b). To summarize, the KM part of the groupware must have the following five basic functional components:

- *Gather*. The system must provide a means to gather or capture information.
- *Organize*. To be accessible, information must be organized and classified in meaningful ways.
- *Distribute/Deliver*. The system should both deliver information to users and allow users to search for information.
- *Collaborate*. Users need to be able to send messages, participate in workflows, route information, contribute to discussions and schedule meetings with each other.
- *Refine*. The system should employ the principles of classification – taxonomy – and allow users to refine or analyse the content of the knowledge base in different ways (Choksy, 1999; pp. 33-34).

In order for the groupware to function, all relevant information must be entered in time, correctly, and in an organized manner.

When a groupware program is bought from a vendor, it is nevertheless like a house under construction, lacking all fixtures and plumbing. Each organization has to adapt it to its own needs, organize the information and put in the communication pipelines (Ministry of Finance, 1998). The organization must decide and then collect and record the information that it wants to store. The system does not do this automatically and neither does it guarantee that employees will share their knowledge.

2.3.2 Sharing Information in Groupware

The use of groupware does not guarantee co-operation or automatically result in shared knowledge. Studies may, for example, show a general satisfaction with the groupware but no increase in collaboration is detected (Vandenbosch & Ginzberg, Winter 1996-1997). The groupware only provides a technical solution for communicating and collaborating. The fault does not lie in the software but rather in the culture that emphasises competition over co-operation (Coleman, 1999). Sharing knowledge is not a part of our cultural upbringing. People, in the Western world, are raised in a competitive society where knowledge is power, and the sharing of knowledge is not highly valued. It is, therefore, important in all group work to create an atmosphere of trust and honesty so that the participants will be willing to learn and share knowledge (Roberts, 2000). In such group work, trust, honesty, the willingness to learn and to share knowledge and ideas are important qualities. The research of Amidon and Skyrme (1997) has shown that, in order to create high levels of innovation and learning, it is critical to have a culture of knowledge sharing. 'Free flowing conversation, open dialogue across organisation boundaries, team and network building' are important for creating such a culture (Skyrme, 1997; p. 26). 'People must be able to trust what others will do with their tacit knowledge, feelings, and emotions before they make this knowledge explicit and shareable' (Marchand, Kettinger & Rollins, 2002; p. 151).

Marchand, Kettinger and Rollins (2002; p.114) summarize the five preconditions that must exist for sharing information in a group:

1. Common language with a shared meaning among the members.
2. A prior relationship creating knowledge of the group members relative to their role or a position.
3. A level of trust.
4. A shared purpose or common stake or ownership of results where not sharing information has negative consequences.
5. A group culture that promotes sharing.

Groupware functions best in a co-operative, team-oriented culture that fosters the collaborative nature of the groupware technology. When reward and performance evaluation is based on teamwork, groupware is more easily introduced, whereas it is often

reluctantly used in organizations that reward individual performance and competition (Orlikowski & Hofman, 1997). The corporate culture of end user-resistance to knowledge sharing is the biggest obstacle (53%) in implementing groupware KM systems. However, although 'employees loathe to share their knowledge' (Cole-Gomolski, 1997; p. 6), they will share their knowledge if they feel that sharing it is of some benefit to them. The problem is that many organizations provide incentives that constrain incentives for sharing knowledge, even though the organization may officially espouse such values as collaboration and teamwork. It is this gap between rhetoric and practise that in many organizations breeds cynicism, contempt for management and an unwillingness to contemplate or to contribute to change (Garvey & Williamson, 2002).

However, the participation of top management is more convincing than anything else that contribution will be noticed. The leadership of the organization can create a culture where sharing is the accepted and preferred way of working. By using both the carrot and the stick, management can make employees quickly learn that they are penalized for not contributing and rewarded for sharing. Participation and contribution can, as an example, be tied to performance reviews. For example, the consulting companies Ernst & Young and McKinsey partially evaluate their consultants on their contributions to their knowledge repositories (Davenport, De Long & Beers, 1998).

Motivating employees to share is a challenge. It involves:

- Removing all barriers to sharing knowledge.
- Linking reward and advancement to contribution.
- Withholding benefits from non-contributors.
- Finding points of mutual benefit for the employee and the organization where both parties can be made to benefit by sharing (Bukowitz & Williams, 2000; pp. 167-178).

Creating the necessary knowledge-sharing culture is up to the leadership of the company or institution involved. Here HRM is of help. The views of HRM promotes that employees are a source of wealth rather than an expense and contributions for training are an investment rather than a financial burden, are those which are most likely to create a fertile soil where knowledge may blossom (Beardwell & Holden, 2001). Under these circumstances groupware can create a work environment where employees can share classified and registered knowledge and at the same time co-operate within the system in a

creative way, exchanging opinions, ideas and information. The system even offers the opportunity for people to participate in discussions, present and challenge ideas, and vote on issues, anonymously, thus creating an environment where the participants can be frank and open without having to worry about consequences (Abell & Oxbrow, 2001).

2.4 ERMS – What are They and What Can They Do?

The information and knowledge that the groupware contains are stored as records in the ERMS part of the software. ERMS is the part of the system that is designed to capture and manage records in paper and electronic formats according to the organization's record-keeping principles. The system is designed to organize and manage the records of the organization from the time that the records were created or appear until they are disposed of, either destroyed or put into permanent storage. ERMS must be capable of managing the records of the organization during their physical lifetime to earn its title.

There is a considerable confusion between what is ERMS and what is an electronic document management system (EDMS). This confusion needs to be cleared for the purpose of this research.

Traditionally, records have been defined in terms of their physical format as paper documents, tapes, diskettes, and CDs in combination with the information that they carry. But the medium is not the message. Rather the medium is the carrier of the record. Records can be moved from one medium to another, be stored in a format that humans cannot read and continue to exist even when they have supposedly been eliminated from the medium that carried them.

According to, *ISO 15489-I* standard a record is 'information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business' (ISO, 2001a; p. 3). There are other definitions that are also widely accepted (ARMA International, 2004b; Doculabs, 1998), but the ISO standard definition is widely used and chosen here due to its international acceptance. The standard defines a document as 'recorded information or object which can be treated as a unit' (ISO, 2001a; p. 3). The main distinction between a record and a document is that a record is evidence of an organization's activities or operations whereas a document does not have to be and may only have informational value. A document may not be a record

(National Archives of Australia, 2005), but when a document is placed into ERMS it automatically becomes a record.

EDMS, however, can contain documents that are not necessarily records. For this reason there is a distinction made between EDMS and ERMS. ERMS, as an RM system, contains all documents, regardless of format, which are necessary to record the actions of the organization. An ARMA International technical report describes and differentiates these two most common types of information systems used to manage electronic records. In the report, electronic document management (EDM) and electronic records management (ERM) have the following definitions:

- *Electronic Document Management*: The electronic management of electronic documents contained in an information technology system, using computer equipment and software to manage, control, locate, and retrieve information in the electronic system.
- *Electronic Records Management*: The electronic management of electronic and non-electronic records contained in an information technology system using computer equipment and software according to accepted principles and practices of records management (ARMA International, 2004a; p.4).

EDMS typically include indexing of documents, storage management and version control (CECA, 2001), but do not necessarily incorporate all record-keeping functions as do ERMS. ERMS 'maintain appropriate contextual information (metadata) and links between records to support their value as evidence' (National Archives of Australia, 2005). ERMS are used to organize and manage the records of the company or institution during the life cycle of the records (see Figure 2.2). These systems must be capable of managing the organization's records during the whole cycle to claim to be ERMS. Table 2.3 summarizes the differences between these two systems.

Table 2.3. The distinction between EDMS and ERMS. Adapted from *MoReq* (CECA, 2001; pp. 63-64).

Characteristics	EDM & EDMS	ERM & ERMS
Who controls?	– Owner/user controlled:	– Company controlled and completed:
Version control	Documents can be edited or altered and exist in several versions.	Prevents records from being edited or altered.
Disposal control	Allows documents to be deleted by their owners/users.	Prevents records being deleted other than in controlled circumstances.
Retention control	May include retention controls.	Includes rigorous retention controls, including historical logging, archive transfer and destruction.
Comprehensiveness	May contain paper or other physical documents that may be converted to digital data without identifying them as 'retained in paper'.	Is able to register physical files under the same classification structure as the electronic records and be able to manage these 'hybrid' archives.
RM structure	May include a defined document storage structure that may be under the control of owners/users.	Includes a rigorous RM structure (FCS for example) that is maintained by the administrator.
Functional value vs. evidence value	Is aimed at supporting day-to-day use of documents and their on-going business use.	Is aimed at securing repository for business records that support as evidence the documentation of the business processes.

EDMS are often implemented in a 'looser' framework than ERMS whereas ERMS are designed to support document controls and accountability (Waldron, 2002). Organizations need to account for and be accountable for their actions. That is the main reason why private and public organizations create, keep and manage records. RM is for these reasons now recognized as an important management function in any business organization. In the standard, *ISO 15489-1* it is defined as:

> The field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposal of records, including processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records (ISO, 2001a; p.3).

RM covers the life cycle of a record, from the beginning to the end and involves five stages: creation, use, maintenance, retention or disposition and finally preservation. These stages are shown in Figure 2.2.
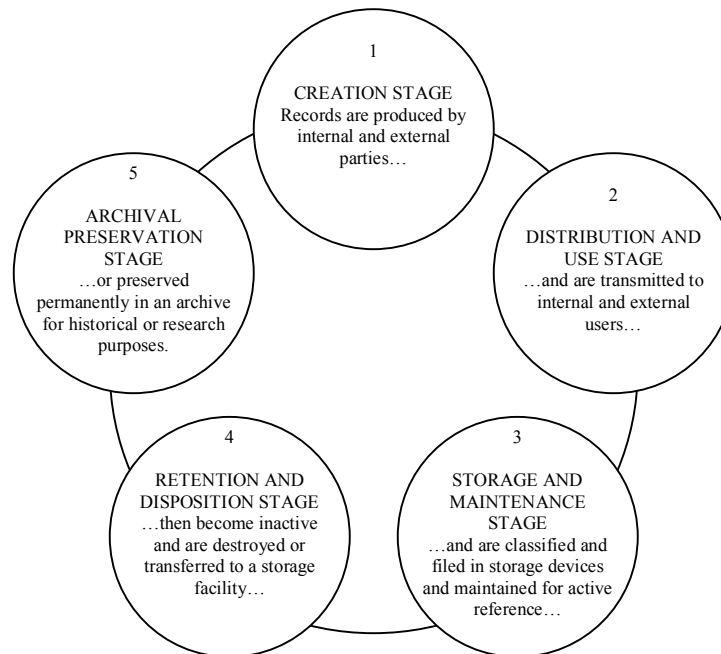
Figure 2.2. Five stages in the life cycle of a record (Robek, Brown & Stephens, 1995)

In recent years, the Australians have started to replace the 'life cycle' concept with what they have called the 'records continuum', looking at the process from the time of creation of a record through the preservation and use of it as archives (Standards Australia, 1996a). They maintain that 'any of the processes that we apply to records can happen at any point on the line. It does not matter if the task is traditionally a records management or an archival one' (National Archives of Australia, 1996).

ISO 15489 is the first international standard on RM. It provides a framework within which the necessary RM can take place. To help place it in context for the user, the British Standards Institution has published three books in a series on effective RM (Best, 2002; McLeod, 2002; Jones, 2003). Now, with these definitions covered a closer look at the two building blocks of ERMS is in order.

2.4.1 ERMS – The Contribution of Information Technology

ERMS rest on two branches of learning. The systems are on the one hand based on information science that provides the techniques to organize information in any form in a

structured and standardized manner. These are FCS and various solutions where the methodology of indexing, registration and cataloguing of information is utilized. The importance of FCS will be discussed in the next section. On the other hand, ERMS are based on information technology (IT) that has been used by organizations to handle information. This section will cover the contributions of IT.

IT is used in order to satisfy demands for ERMS to be user-friendly and efficient when the user is working in the system, writing, registering, searching for, retrieving or distributing information. Some information in each document is automatically registered such as the date, the name of the receiver and the sender, and the subject line. The system provides ways to track the status of an inquiry within the organization, i.e. who is to answer the inquiry, has it been responded to and when.

The system provides registration of various work and communication processes, such as communications with customers or clients. It offers ways to perform a free text search which can be limited with the use of Boolean algebra (l, /, – versus AND, OR, NOT). These systems usually provide linkages to other systems, both within and outside the organization. These linkages reduce or prevent the repeated typing of data, but in addition they supplement ERMS with a wealth of information. Templates for the appearance of different types of documents are incorporated into ERMS for records creation.

In order to evaluate ERMS from an IT standpoint and to find out how it performs and whether it meets the demands of the user, a number of operational questions need to be considered. Examples of such questions are shown in Table 2.4.

Table 2.4. Sample operational questions regarding IT (Gunnlaugsdottir, 2004c; pp. 59-60).

A. Issues of importance to the user in daily use of ERMS:	
➢ Does the software offer multiple ways to search for information and retrieve it?	▪ By providing the date, will records created or received on that date be listed? ▪ By providing the name of a certain individual or organization – the sender or the receiver of a record – will documents relating to that party appear? ▪ According to subject matter? ▪ According to a record form which can be a paper document, an e-mail, an attachment, another electronic form, a fax, a film or a picture. ▪ According to a record type which can be a letter, minutes, a report, a plan, a contract or a memo. ▪ By matching a given text from a record? ▪ By providing the number or the name of a subject class in a FCS? ▪ By providing a unique case number?
➢ Is the system user-friendly concerning work procedures?	▪ Word Processing. ▪ Classifying. ▪ Cataloguing or registering. ▪ Saving. ▪ Searching.

		▪ Retrieving.	
		▪ Distributing.	
➢	Can the status of an inquiry or a case in the system be checked or monitored?	▪ Who is to handle the case? ▪ When is the case supposed to be dealt with? ▪ Has the case been finished? ▪ When was the case finished?	
➢	Does the system have a connection to the organization's records retention and disposition schedule?		
➢	Is it possible to search for inactive records, i.e. records that have been put in storage?		
➢	Is the system linked to internal date bases or systems?	▪ Employee records. ▪ Accounting records. ▪ Customer files. ▪ The quality management systems. ▪ FCS. ▪ The organization's library catalogue.	
➢	Is the system linked to outside databases?	▪ The National Register of Persons ▪ The National Real Estate Registry ▪ The Reykjavik Geographical Information System ▪ The Land Information System.	
➢	Is the system linked to the various templates which are used for records?		
➢	Can records/documents be scanned into the system?	▪ Does it offer OCR (optical character recognition) or not?	
➢	Is it possible to print out information from the system in various formats?	▪ On paper. ▪ On microform – COM (computer output microform). ▪ On optical disk – COLD (computer output laser disc).	
➢	Can the needed number of employees work in the system at the same time?		
➢	Does the system provide for global access, allowing employees in different countries around the globe to use the system?		
B. Safety features of the ERMS:			
➢	Is it secure, i.e. originals of documents cannot be changed without authorization and documentation?		
➢	Does the system furnish a history of the various versions of a document?	▪ Does it register or log when a record was changed? ▪ Does it register who changed the record? ▪ Does it preserve all older editions of records?	
➢	Is there controlled access to the information database?	▪ Accessible only to those with permission. ▪ Does not show that the document exists. ▪ No access. ▪ Read only. ▪ Read and write. ▪ Restricted. ▪ Confidential. ▪ Secret. ▪ Top secret.	
➢	Is it possible to obtain statistics from the system concerning its use?		
➢	Is it possible to trace or track all operations in the system?		
➢	Is the information securely stored in a central database and are security backups made regularly?		

It must be discovered whether the system has been adapted to recognized technological rules and standards (NISO, 1994; ARMA International 2004a; Public Records Office, 2002; Cimtech, 2005). Finally, there are bodies in some countries, such as the National Archives in the UK (Russell, 2005) that have approved ERMS for use in Britain. Likewise, in the USA the Department of Defense has been in the lead. The *DoD 5015.2-STD, version 2: design*

criteria standard for electronic records management applications, is the de facto ERMS standard providing testing and certification criteria for vendors of ERMS so they 'can receive a multi-year certification attesting that their products meet the requirements of 5015.2' (Sprehe, 2004; p. 54). The standard contains the basic mandatory functional requirements, and describes the non-mandatory features that are deemed desirable for RM software. The standard describes the minimum RM requirements and the implementing regulations proclaimed by the National Archives and Records Administration in the USA (DoD, 2002).

ERMS are basically of three types. They can be stand-alone systems that are client-based and independent of other systems. The second type is web-based systems where users can access records from any location. The web technology offers as well 'the capability to share all types of documents in a consistent HTML format across previously incompatible networks of servers and personal computers' (Marchand, Kettinger & Rollins, 2002; p. 59). The third type, and the type that is the subject of this research, is ERMS that is a part of a groupware, such as those based on *Microsoft Exchange* and *Lotus Notes*. With a proper needs analysis and a technical specification of what the system is supposed to be able to do, there is not a problem to find several systems that have all the technical features and the certifications of being able to do the job at hand. This has been my experience as a consultant working for organizations that have implemented EDMS or ERMS. There are also organizations that make independent evaluations of such systems based on specified criteria (Doculabs, 1998). The National Archives in the UK has an approval programme for ERMS (National Archives, 2002) and has approved many systems. The Archives revised the original functional requirements for ERMS from 1999 in 2002 reflecting later developments in the field. ERMS are tested based on these requirements some of which are mandatory while others are desirable. The approved products are listed on the website of the Archives (Russell, 2005). Many ERMS have also military approval, are *DoD 5015.2* (2003) certified. These standards and other specifications and standards, such as *MoReq* (CECA, 2001) and *ISO 15489* (2001) can be useful in planning the implementation in order to receive the benefits intended (McKinnon, 2004). It is a rare exception if ERMS do not have the technical capabilities that they are said to have. ERMS work technically and their records can be trusted (Johnston & Bowen, 2005). ERMS have the necessary RM functions

and possess the IT capabilities for integration into existing computer infrastructures, but it is only recently that records professionals have 'begun to realize their full power, potential, and uses' (Yakel, 2001; p. 26).

2.4.2 ERMS – The Importance of FCS

ERMS must include an FCS (National Archives, 2002), preferably with and index, and may include a thesaurus that needs to be designed according to the functions of the organization. A thesaurus, which is a collection of a controlled vocabulary giving a semantic relationship between terms, greatly facilitates search in a free text database. It suggests additional search terms that can be either equivalent or related in some hierarchical or associated way (Rowley & Farrow, 2000). However, if the thesaurus is not adapted to the needs of the organization it may do more harm than good, as proved to be the case of the thesaurus in the ERMS implemented at the British Library in 2001, as discussed in section 2.7.2 (Maguire, 2005). Care must always be taken to use terms that make sense to the users (Davenport, De Long & Beers, 1998, Vakkari, 2002). In indexing and classifying documents the attempt must be made to predict how a person will search for these documents and to design a logical scheme that conforms to the prediction (Fugman, 1994).

FCS are one of the most important organizing tools for records and information when they are written with the nature and functions of the organization in mind. Such schemes are sometimes called a business classification scheme (BSF) (Morelli, 2005) or even a file-plan (Jeffrey-Cook, 2005; ISO, 2001a; ISO, 2001b). FCS should extend to all records storage, both in paper or electronic format. Cisco and Jackson (2005; p. 45) have underlined the importance of taxonomy for organizing business records:

> The increasing volume of electronic records and the frequency with which those records change require the development and implementation of taxonomies – a classification system of topics or subject categories – to maximize efficient retrieval of records for legal, business, and regulatory purposes.

Section 3.2.7 in the guidelines accompanying the international standard on RM (ISO, 2001b; pp. 5-6) identifies 13 reports and plans which may be produced during the 'design

of a records system'. The section is very brief regarding FCS, the two words 'file plan' are just mentioned in the listing of the reports and plans, but section 4.2.2.2 devotes more space to the development of a business activity classification scheme (Gunnlaugsdottir, 2002a). It shows an example from FCS. The example is a duplex-numeric system that is characterized by numbers separated into parts by a period. The duplex-numeric system has infinite possibilities for extension and is, for that reason, the best way of constructing FCS because of its flexibility. The example provides, unfortunately, only a limited insight into writing FCS for records.

The most complicated work and the most time-consuming is to design a uniform FCS for the organization. Some valuable information on the subject is offered in *Information and Records Management* (Robek, Brown & Stephens 1995). Useful guidelines can also be found in the National Archives of Australia and ARMA International publications (National Archives of Australia, 2003; ARMA International, 2005), for example, as well as in the Australian standard of RM (Standards Australia, 1996b).

FCS should, as the name implies, be functional and descriptive of the activities and functions of the organization. Each organization must have its own FCS that is unique to the organization and its objectives. The various departments are dealing with different activities and have different functions. This difference will be reflected in the FCS as it reflects the different functions. However, FCS should not take notice of names of departments or divisions. One of the reasons is that if a function of one department is moved to another department, no change is necessary in the FCS.

FCS contain several levels, from general to specific, but the refinement or number of subclasses is determined by what is useful in each case. It is important to use unambiguous terms and discrete groupings so there will be little doubt where to classify information. FCS are written in consultation with the users and should be regularly updated to reflect changes in the organization. The importance of involving the users in the design of FCS was striking in four cases involving the implementation of ERMS in Britain. These cases are discussed in section 2.7.2 (Kibby, 2005; Williams, 2005; Smyth, 2005; Gregory, 2005). A relative index should accompany FCS. The index makes it easy for the users to find a class for the relevant business activity (Gunnlaugsdottir, 2002a). An index makes it easier to find information on a particular subject/activity in the FCS and to decide where to

store records. Guidance on the choice of subject names can be found in an international standard (ISO, 1985).

When FCS for records is constructed for an organization, several important principles should be kept in mind.

- *Logic* facilitates learning and demands that classifications proceed from the major to the minor.
- *Standardization* of terms because different terms can describe the same subject.
- *Simplicity*. FCS should be simple to understand and use.
- *Functionality*. FCS should be *functional* but not strictly based on the departmental divisions.
- *Flexibility*. FCS should be *flexible* enough to permit easy expansion. (Robek, Brown & Stephens, 1995; pp. 103-104).

A duplex-numeric system, which has infinite expansion possibilities, is used to classify the different subject matters (functions or activities). Each division is then subdivided into main classes that are then in turn subdivided into subclasses and so on as showed in Figure 2.3. Numbers are separated into parts by a period (.).

Divisions	0	1	2	3	4	5	6	7	...
Main classes	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	...
Subclasses	2.2.0	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7	...
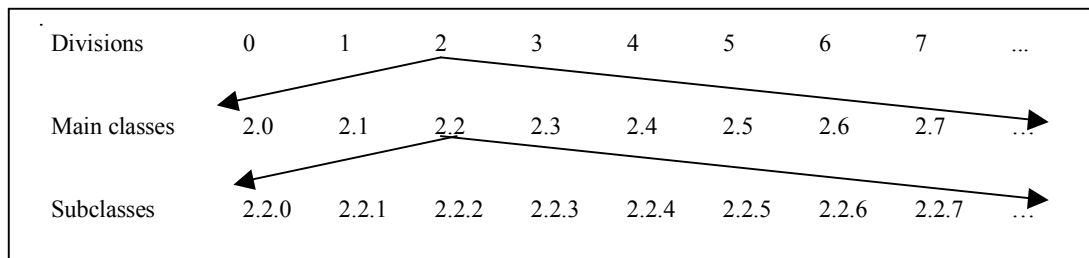
Figure 2.3. A Duplex-Numeric System Based on Infinite Expansion Possibilities.

An example of a FCS is given in Figure 2.4. There we can see the divisions or the main classes of a FCS written for an Icelandic airline. To explain the FCS in more detail, a part of a division, division 1, Human Resources, is presented in Figure 2.5. This part from the FCS explains how one division is subdivided, and it also gives some examples of the instructions in the FCS. In Figure 2.6 it is shown how the FCS can be employed in the ERMS in the groupware and an example of the relative index is given in Figure 2.7.

0	General Management	➢ Divisions 0 – 8 cover the internal operations of the company.
1	Human Resources	
2	Press and Public Relations	
3	Marketing	
4	Sales	
5	Finance	
6	Legal Issues and Collections	➢ Divisions 20 – 24 the productive machinery and equipment.
7	Insurance	
8	Office Services	
…		
20	Aircrafts – General	
21	Aircrafts	➢ Divisions 30 – 33 what the company produces or supplies.
22	Engines	
23	Spare Parts	
24	Equipment	
…		➢ In division 50 we begin to become concerned with issues outside the company:
30	Domestic Flight	
31	International Flight	
32	The Airline's Hotels	
33	The Airline's Car Rental	
…		
50	Daughter Companies and Subsidiaries	➢ daughter companies and subsidiaries,
…		
60	Relations with Other Airlines, Travel Agencies, Hotels, and Car Rentals	➢ various outside connections.
…		
70	External Relations	
		The three periods (…) indicate breaks in the system which are reserved for an expansion when needed.

Figure 2.4. The FCS of the Icelandic airline – Main divisions.

```
1        HUMAN RESOURCES
         (Subjects which concern individual employees are always to be filed under 1.12,
         i.e. in the private  file of that employee. Subjects which are of general nature are
         on the other hand to be filed under the relevant subject in 1)
         1.0      General and Miscellaneous
         1.1      Human Resources Policy
         1.2      Lists of Employees
                  (Here also Lists of Crew Members)
         1.3      Number of Employees, Number of Positions, Changes
         1.4      Rights and Duties of Employees
         1.5      Work Procedures, Code of Ethics
         …
         1.10     Vacant Positions and Recruiting
                  1.10.0     General and Miscellaneous
                  1.10.1     Vacant Positions
                  1.10.2     Work Permits
                  1.10.3     Recruitment, Employee Contracts
                             (Here among other things advertisements and applications)
                  1.10.4     Employee Exchanges
                  …
         1.11     Employee Oaths
         1.12     Employees
                  (A-Z; alphabetic by name)
         1.13     Employee ID Cards
         1.14     Confirmation of Employment, Letters of Recommendation
         1.15     Vacation Schedules, Leaves, Replacements
         1.16     Birthdays, Anniversaries
         1.17     Job Violations, Reprimands
         1.18     Complaints due to the Behaviour of an Employee
         1.19     Absenteeism
         1.20     End of Employment, Including Termination

…
```

Figure 2.5. The FCS of the Icelandic airline – Division 1 – Human Resources.
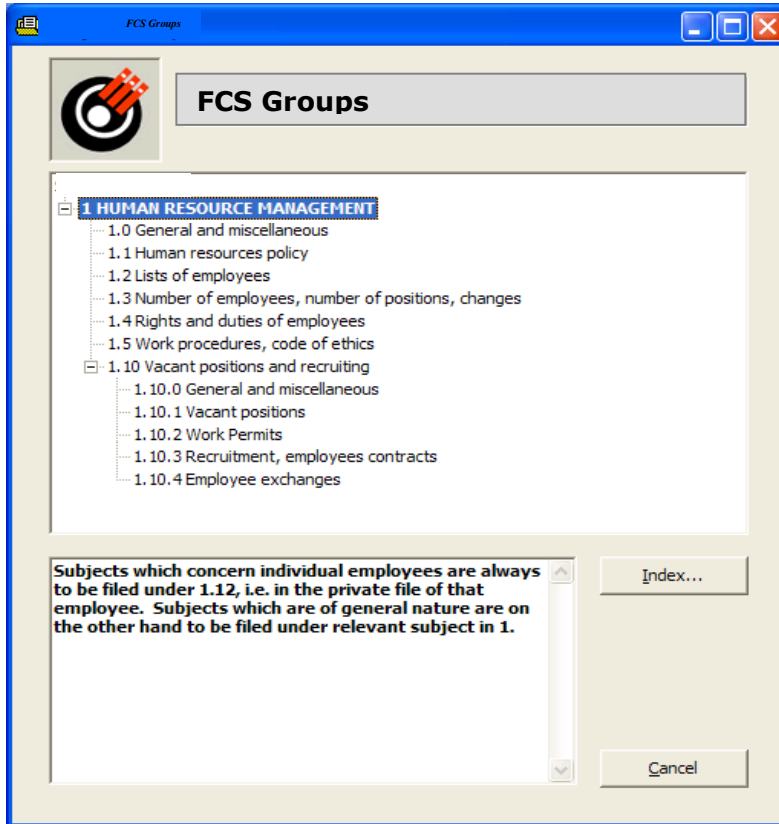
Figure 2.6. The FCS Groups.
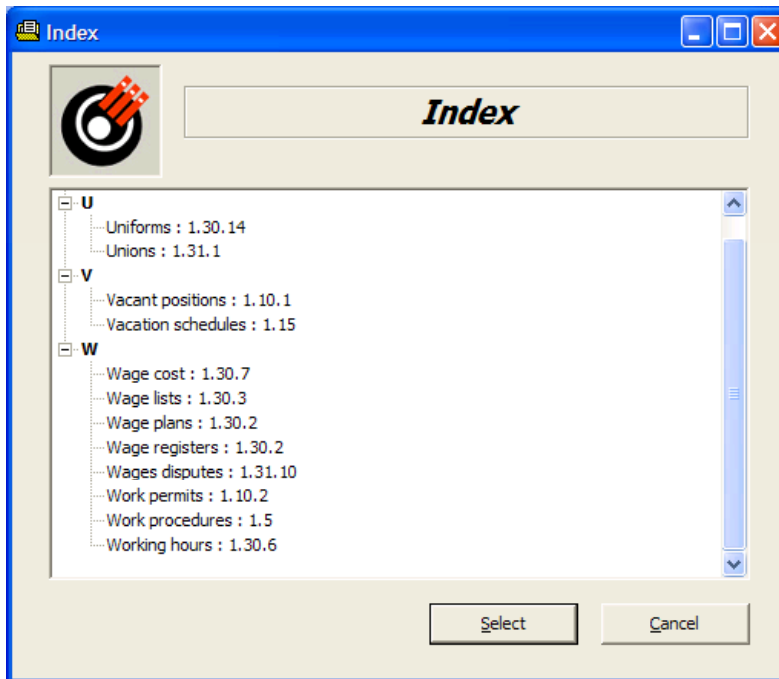
Figure 2.7. The Index.

Even though the infinite system is preferred, there are many FCS based on a decimal system. There are, for example, two rather good Norwegian references available on that approach (Nordal-Hansen, Paasche & Pettersen, 1986; Marthinsen 1996).

FCS make it easier to store and retrieve records. My experience in designing FCS for organizations working as a consultant for my company Gangskor sf. has shown that the design of FCS is also a decisive factor in how easy the users find it to use the FCS in classifying their records for storage and later retrieval. The modern organization cannot meet its information requirements and the public organization cannot find the records that it must to satisfy public demands without a good FCS. These requirements are the subject of the next section.

2.4.3 The Regulatory Environment, Standards and the Public Demand for RM

Certain legal demands are usually made regarding RM in most countries. These are provisions for the protection of confidential information, public access to information, demands for the protection of privacy and permanent preservation of historical records. In these cases it makes a difference whether the organization is in the private or the public sector. Different rules apply relating to access to information, as well as regarding preservation of records.

The widespread use of the Internet has lead to many 'e-government initiatives' where local governments have started to use it to provide services, information and communication platforms for their citizens (Ho, 2002). These initiatives first start to make public demands for ERMS when it must be possible to store and retrieve public records electronically. This demand has been made in the UK since the beginning of 2004 (Tower Software, 2005). Another major demand factor in the UK has been the Freedom of Information Act (2000). It allows citizens to request a variety of information from public bodies since January 1, 2005 (McLeod, 2004; McLeod, 2005; Tower Software, 2005). Many public organizations in the UK have deemed it impossible to satisfy such requirements without implementing ERMS. Several of these cases are discussed in section 2.7.2.

Individuals in Iceland have the right to private access to confidential information regarding themselves that is kept by public institutions, and furthermore, there are laws which

provide for public access to most documents kept by government departments and public agencies. For these reasons ERMS must be operationally safe and protected so that information can be accessed whenever needed, but only by authorized parties. This is accomplished with safety and recovery plans and by use of work rules and accepted standards for electronic media (BSI, 1999; ISO, 2000b; ISO, 2001a; ISO 2001b, National Archives of Australia, 2001; National Archives of Australia, 2004; CECA, 2001; Saffady, 1998b). An ARMA International standard gives recommendations for formulating an electronic RM policy throughout the life cycle from the creation of a record to its final destruction or disposition (ARMA International, 2004b), and the new Canadian standard, the *Electronic Evidence National Standard* is 'one big step for electronic records everywhere' (Fisher, 2004; p. 39).

Many organizations have not implemented procedures that can be used to prove the authenticity and reliability of their electronic records. To correct this situation the British Standards Institution published in 1999 *A Code of Practice for Legal Admissibility and Evidential Weight of Information Stored Electronically* (Allen et al., 1999). A workbook has also been written which organizations can use to determine whether their RM system complies with the Code (Shipman, 2004).

There are a number of laws and regulations in Iceland relating to records and the information they contain. Legislation on accounting records, income tax, electronic commerce, competition, telecommunications, proprietary rights, copyright and health and safety, for example, make demands on organizations to keep certain types of records accessible for certain periods of time. There are four acts in Icelandic law that influence directly the RM of all public organizations and have increased the demand for ERMS:

The National Archives Act, no. 66/1985, requires that the National Archives shall collect, preserve, and keep accessible all records of national history for the use of government, public agencies and the public to ensure their interests and rights and for research over time. The Archives play a leading role in the management regime for public records, regardless of format, and all public records must be deposited with the Archives thirty years after their creation.

The Information Act, no. 50/1996, covers public access to most documents kept by government departments and public agencies, both old and new. It is, however, possible to

limit access to records concerning the private affairs of individuals or when important national interests demand that records relating to national security, defence or relations with other nations or international bodies must be kept confidential. Records concerning private individuals shall, however, be accessible eighty years after they were created and records relating to national security thirty years after their creation.

The aim of the Privacy Act, no. 77/2000, is to insure that information on private individuals is treated in accordance with rules and basic views regarding the right to privacy. Another aim is to ensure the accuracy and quality of such information. The Privacy Act is aimed at both public and private organizations.

The Administrative Procedures Act, no. 37/1993, makes demands on public organizations to keep their work procedures and records in order. This legislation is very similar to such legislation in the other Nordic countries. Iceland has until recently lagged a few years behind in passing and updating these laws, but due to directives from the European Community it is no longer possible to do so. The Administrative Procedures Act is supposed to insure that individuals enjoy certain rights in their dealings with public authorities and do have access to records that relate to their individual cases. The law has been changed recently to enable the electronic processing of cases, Law Amending the Administrative Procedures Act, no. 51/2003.

These laws provide the framework for public agencies and the National Archives to be accountable to the government and the public. In Iceland both the national and municipal governments dominate the RM scene, although some of the larger business organizations also have suitably functioning RM systems. Icelandic laws demand that records should be accessible, but access cannot be assured unless the records are classified and preserved in an organized manner at the time when they are placed into the record-keeping system of the organization. These legal developments have increased the demands for RM, and as records are now predominantly also electronic, the demands are for ERM and ERMS to manage these records.

In the sections above the benefits and the importance of KM and RM have been discussed and their internal relations in modern organizations. The tools used in their management are ERMS and FCS. These management tools and techniques are of little value to the organization without effective implementation. In use they call for new ways

of thinking and collaborating. It is therefore important that the implementation of these changes in the workplace will be successful. Managing change and implementing it is the subject of the next two sections.

2.5 Managing Change

Implementing ERMS is managing change. Many authors have written about the change process and the nature of change, how people react to it and how change can be managed. It is a common view in many organizations that change is usually something unexpected and unwelcome. People feel comfortable in familiar surroundings among the people that they know. Stability and routines put people at ease and uncertainty causes anxiety (Beardwell & Holden, 2001; Enns, Huff & Higgins, 2003; Garvey & Williamson, 2002; Gunnlaugsdottir, 2004c; Kotter, 1995; Kotter, 1996; Orna, 1999). Implementing ERMS means introducing and managing change.

Gestalt Theory provides some prescriptions for change management. The advocates of Gestalt Theory 'see change being achieved through helping individuals understand themselves, the organization and the proposed change' (Pugh, 2000; p. 21). Individuals fear the unknown if they do not know or understand how it affects them. By providing more information about the proposed change, the individual is helped to confront it. People do not fear that which they understand, unless it is threatening to their livelihood, as suggested by Maslow (1943).

The Gestalt approach contends also that 'the whole act cannot be understood by an analysis of its parts. The function of any behavioral element is influenced by its relationship to other elements in the total behavioral pattern' (Maier, 1973; p.281). Job analysis by fragmentation cannot produce an accurate reconstruction of the total job performance (Maier, 1973).

Leadership style and organizational development can also have a profound effect on the acceptance of change. Effective leadership style can increase employee participation and allow employees to share in decision making and goal setting in the organization, widening their involvement and thus putting them in greater control of their work. The ideas promoted by open book management (Case, 1995) take this thinking still further. Open book management seeks to create a sense of shared ownership by teaching employees

to think like owners. According to Case (1998), a growing number of organizations in the US are adopting this philosophy as a way to manage change and the change process.

Despite efforts to the contrary, resistance to change can be expected. This is, in itself, neither good nor bad. Resistance should, however, always be a signal to management to find out why it exists (Lawrence, 1975). Conflict, or at least differences of opinion, can be expected in any worthwhile change project. It is in fact a positive part of the change process and should not be feared or avoided (Pugh, 2000). However, studies have shown that interpersonal conflicts, as expressed in disagreement, interference and negative emotions, are perceived as negative regardless of how they have been managed or resolved (Barki & Hartwich, 2001).

The motivation of employees, according to expectation theory, to support or resist change depends on individual expectations on how they: (1) will be able to manage after the change, (2) whether they will receive valued outcomes, and (3) whether they find the change and the distribution of outcomes fair (Vroom, 1964). With sufficient education and training, people should be able to work in the new environment and use the new technology that is being introduced. Valued outcomes of the change are those that people find motivating and/or rewarding, like pay, working conditions, achievement, recognition, status and challenge. Finally, the fairness in the distribution of outcomes can be of great importance. It can be best ensured by providing for genuine participation and involvement of those affected in the change process and thereby extending the life of the psychological contract between the employee and the organization (Hayes, 2002; Rousseau, 2001; Kickul, 2001). Employee participation, to have the desired effect, must be based on a true search for ideas that may improve or aid the change (Lawrence, 1975).

2.6 Implementing Change – Introducing ERMS into Organizations

The process of developing or introducing a new system, such as ERMS, into the organization starts with planning and should culminate in a post-implementation review. A system can be defined as 'a set of interrelated elements that collectively work together to achieve some common purpose or goal' (Parker & Case, 1993; p. 82). The system development can be broken down into specific stages: planning, analysis, system design, implementation and the post-implementation review. These stages have been called the

system development life cycle (Rob & Coronel, 2002; Avison & Fizgerald, 2003, Newcombe, 1995). These stages in system development are also referred to as 'conventional systems analyses' or in the US as the 'waterfall model' (Avison & Fizgerald, 2003; Johnston, 2005).

Several authors have put forward models of the implementation process (Beckhard, 1969; Kolb and Froman, 1970) These authors break the process down into discrete stages whereas others like Pugh (2000) want to concentrate the planning for change on those aspects that help anticipate resistance and conflict.

A larger view of the whole process is in order before the individual steps and the most critical success factors are discussed. Figure 2.8 shows a modified version of a model put forward earlier by Hayes and Hyde (Hayes, 2002). It identifies the most important and critical steps in the change process and gives an overview of the process as a whole.
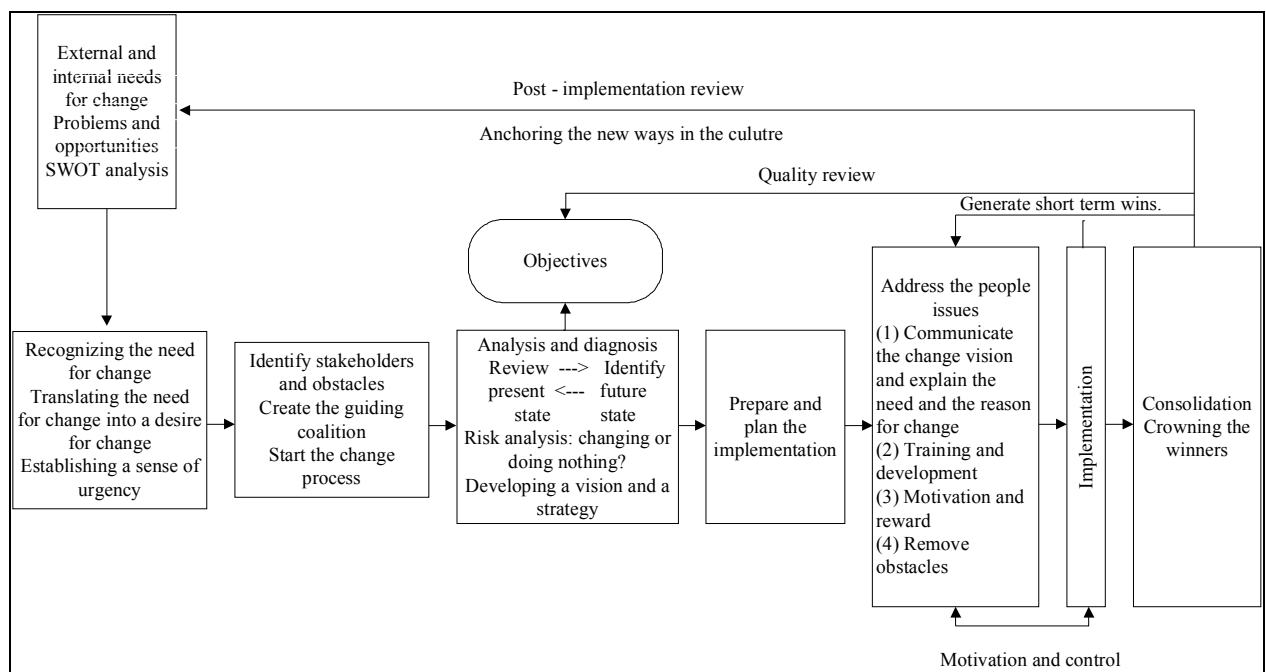
Figure 2.8. The Change Process. Based on and inspired by Hayes and Hyde (1998) and Kotter (1996) – (Hyde, 2002; p. 54).

The change process has essentially three phases: discovery of the need to change, transformation and preservation of the changed state. Lewin (1951) highlighted these stages and the concept of permanency. He used the descriptive terms of unfreezing, moving

and refreezing. Other authors (Dawson, 1994; Kantor, Stein & Jick, 1992) have argued that organizations need to be fluid and adaptable. The freezing stage is, in their opinion, therefore, not relevant. It is important to note in this respect that change is often short-lived and things soon slip back into the old ways of doing things. When introducing ERMS it would be counter-productive if employees had the impression that this change were to be short-lived and that soon there will be a still newer system put into place. Although people need to be open to better ways of doing things, they must not neglect the need for promoting stability when necessary as this is an important part of sustaining change.

The first step in the change process is recognizing the need for the change, in the case of introducing ERMS, why it should be implemented. This demand can either originate from outside or inside the organization. Organizations have an internal need to manage their records in order to function. There are also external demands and legislative changes that set organizational requirements to manage records or to manage them differently.

Establishing the need to introduce ERMS and creating the sense of urgency to do so, is often relatively simple. The reason is that employees in most organizations are creating records electronically, using even the latest word processing programs in doing so. Finding these records later may, however, be a serious problem. Duplication of effort may be common as many employees are creating the same documents, a situation which could be avoided. The frustration that employees experience under these circumstances makes them open-minded to accept change and to welcome ERMS. Whether ERMS will be the solution to their problems depends on how successfully the next steps in the change process are carried out.

The second stage in the change process is to identify the stakeholders or key players, those with the greatest power and the largest stake in the outcome (Rubenstein & Geisler, 2003; Hayes, 2002). Success depends on considering the views of those that could block the change, identifying those who could support the change, and enlisting their support. The support of top management is of prime importance. If top management is not an active supporter of introducing ERMS and will not use it and instruct others to use it as well, then it is likely that the project will fail. Top management can form a powerful coalition to introduce ERMS and can create the necessary vision for the employees to welcome the change. Pugh's Alternative Change Model (2000) points to the need to identify the key

players and to look for any personal agendas that may upset the change process. If there are no opponents, the change will go through smoothly. The third step in the change process is the analysis and diagnosis of the proposed change. At this stage the present state is reviewed and the future state identified. When this analysis is complete, it should form a vision of the future that is communicated to all of those having a stake in the change process. A part of this process is a risk analysis of the pros and cons of changing: Is the organization better of changing or should nothing be done and the present state maintained?

The objectives of the change process are the outcome of this analysis. These are the goals that will be used to measure the success of the change project when the quality review is performed. These goals must be realistic, attainable and desirable. They are an important part of the vision that must be created to make people want the future state and welcome or accept the change.

Planning focuses attention on objectives and reduces the uncertainty that may lead to failure. Plans thus provide a rational approach to agreed objectives. Planning involves detailing the steps to be taken, what is to be done, who is to do what, putting down the time frame for the project, estimating the resources needed, and mapping who are the stakeholders. With an approved plan, the project can proceed to the next phase, the analysis where user requirements regarding ERMS are identified. It is useful to evaluate the existing system as well to see if parts fit into the new system. In the end there should be a written specification for the new system, a detailed system design, where user requirements have been spelled out as software specifications (IEEE, 1998).

Although ERMS can be bought off-the-shelf, they are not ready made. An ERMS is not in itself the solution. The solution lies in what is made of the system. It must be possible to fit specifications to the system as it is defined in the need analysis or user requirements. The vendor should have a good reputation for service and for providing solutions. The vendor must also be able to meet needs for service (Newcombe, 1995). Finally, the vendor should be experienced in implementing systems and use implementation programmes or standards for that purpose.

The vendor only provides the system. The buyer must define what it is supposed to do. He must, therefore, be ready to invest time, money and effort in filling in the functions that the system is supposed to perform. The buyer must define what he wants to purchase.

Various guides are available which assist buyers in the purchase decision when buying computer hardware or software (Ministry of Finance, 1998). The Central Computer and Telecommunications Agency (CCTA) in the UK has developed a standard for information technology (IT) projects management called PRINCE2 which has now become the de facto standard for project management in the UK. (CCTA, 1989; Stationery Office, 2002; Bentley, 2002; Smyth, 2005; Kibby, 2005). *ISO 15489* (ISO, 2001a; ISO 2001b) is useful when analysing the requirements for effective RM and such solutions in ERMS and the National Archives in Britain have published guidance on the successful implementation of ERMS (National Archives, 2004).

Although each system has to be evaluated according to its particular system specification, some general guidelines can be given regarding the evaluation (Russell, 2005). Some evaluation criteria were discussed previously in section 2.4.1 as shown in Table 2.4.

After ERMS has been chosen and installed, then comes the fourth step in the change process, to prepare and plan implementation.

The plan for implementation depends on the nature of the change effort. The most straightforward type is where the end state and the way to get there are commonly understood and agreed upon. This type of change is often referred to as a 'blueprint' change as architectural drawings are followed in the project management. Erecting a house is an example of such projects. Project management techniques like PERT: Program Evaluation and Review Technique (Heyel, 1982) and work progress charts, like Gantt Charts (Heyel, 1982) lend themselves well to such changes. People issues that create conflict or resistance are, for all practical purposes, absent in such projects. At the other end of the spectrum there are the evolutionary change projects where the people issues must be successfully addressed if any change is to be effected.

The post-implementation review is made after the implementation at time that is deemed appropriate in each case. It is done to make sure that 'all of the project's objectives have been met' (Bean, 2000), that the system was implemented on time and on budget and if not, then why not. The aim is to make sure that the system serves the needs of the organization and that both old and new records are accessible.

Another important reason for the review is that it enables adjustments and corrective action and provides for enhancements. Continuous improvement should be introduced by

monitoring the system in use. Although the post implementation review is valuable, surprisingly, only a fraction of organizations perform it compared to those that are satisfied by merely justifying the investment up front (Skyrme & Amidon, 1998).

It is important to sustain the change and to convert it into stability. A formal date should be set for closing down the old system and starting the new (Bean, 2000). An ERMS is only fully implemented when it has become an integral part of an organizational culture and is the only accepted way of creating and managing records. The next section examines surveys and studies on how some organizations have managed to do this.

2.7 Surveys and Studies of Implementing and Using Groupware, ERMS or Related Systems

There are several studies available on the implementation and use of groupware systems, but the literature regarding the ERMS part of these systems is not voluminous. Recently, however, a few descriptive accounts or cases of the introduction of ERMS and EDMS (or electronic documents and records management systems – EDRMS) have been published. This section covers surveys of the state of ERM, followed by descriptive accounts of recent experiences of introducing ERMS, especially in seven public organizations in Britain. Finally, cases of implementing ERM solutions and systems of group support or groupware in the USA are examined. The review of these studies and the other literature in this chapter leads finally to a deduction at the end of this section that inspires the research questions in the next chapter.

2.7.1 The State of ERM

According to a study that Forrester Consulting did for ARMA International there is a lack of clear understanding among business and IT people as to what ERM really is. IT plays a dominant role in ERM projects, but the study revealed that neither business nor IT people fully understood what ERM was and underestimated its complexity, and its role in compliance regulations and legislation. The study showed as well that records and information management (RIM) professionals had an exaggerated sense of their importance in ERM and did not grasp how much ERM will change reporting relationships. They did, however, have a better understanding of the 'complexities surrounding ERM

implementations' (Moore et al., 2004; slide 65) and it was clear that IT specialists needed their expertise in implementing ERMS with regard to:

- Preservation of records.
- Identification of critical records.
- Classification of records.
- Handling metadata.

Although RIM and IT professionals disagree on who is responsible for ERM projects, and who has the 'responsibility for developing ERM policies and determining business needs and user requirements' (Launchbaugh, 2004; p. 1), gradually both business and IT managers are coming to believe that RM roles are merging with IT. RIM professionals need to develop IT skills and IT professionals need to gain a better understanding of RM to improve their co-operation in implementing ERMS. IT projects do not have a very high success rate with 'only about 16% of such projects being judged by clients as successful' according to studies by Oxford University and the British Computer Society (Craig, 2005; p. 6). There seems, therefore, to be substantial room for constructive co-operation that should improve the success rate for ERMS implementations.

A survey undertaken by Cohasset Associates (Williams, 2004) for ARMA International, in which more than 2,200 RM professionals that were members of ARMA participated, showed that there was more than a substantial room for improvement in ERM. This study was repeated in 2005 with 2,100 participants, showing some improvement (Williams & Ashley, 2005), but there is still ample room for improvement on these policy issues:

- 47% of the organizations represented did not include electronic records in their retention schedules (43% in 2005).
- 59% of the respondent's organizations did not have any formal e-mail retention policy (49% in 2005).
- 65% of the respondents reported that electronic records were not included in their organization's record holds (53% in 2005).
- 70% of the organizations (68% in 2005) did not have a migration plan for records in place and 53% (57% in 2005) did not realize that they will have to migrate many of the organizations' electronic records in order to comply with established retention policies.

- Finally, 62% of the respondents (49% in 2005) were 'not at all' or only 'slightly confident' that their organization could demonstrate that its electronic records will be accurate, reliable and trustworthy many years after they were created (Williams, 2004; Williams & Ashley, 2005).

The ARMA International survey reveals a sorry state for ERM, a situation that had not improved much from earlier surveys until 2005. The conclusion of the survey in 2004 was that 'the majority of organizations are not prepared to meet many of their current or future compliance and legal responsibilities' and were 'not doing what they need to do today regarding digital preservation to be prepared for the future' (Williams, 2004; p. 7). These conclusions were still valid in 2005 despite improvements in all measurements except one.

In the year 2000, 34% of the top 100 US industrial companies did not have a 'systematic records and information management program'. This was revealed in a benchmarking study based on 42 interviews with information professionals in a sample of 100 of the largest US industrial companies derived from the *Fortune* 1000 list. The smallest company in the survey had 4,400 employees and USD 1.8 billion in annual revenue, but the 'median staffing level for records and information management programs in all participating companies is four employees' or 'one-tenth of one percent of the total workforce in the smallest participating company' (Saffady, 2002; p. 69). The situation regarding electronic records in these large industrial companies, which were on the *Fortune* 1000 list, is particularly disturbing:

- Retention policies were less than comprehensive, if they existed at all.
- E-mail messages were automatically deleted after one year, even as soon as after 14 days.
- Only 5% of the US industrial companies covered by this study did have policies regarding retention of web pages on corporate intranets or the public Internet (Saffady, 2002).

In a survey of 300 small and medium-sized enterprises in North-East England in 1997 it was revealed that little more than half of the companies kept their records electronically on personal computers. However, one of the main conclusions of the survey was that 'many companies lacked in-house records management expertise and conducted

their records management activities in a rather haphazard manner' (Webster, Hare & McLeod, 1999; p. 293).

In the year 2004, the Iceland National Archives made a survey of ERM in public organizations in Iceland. The survey was sent to 354 organizations, or more than a third of the organizations that fall under the jurisdiction of the Archives with regard to RM. The response rate was 71%. The survey revealed that 46% of the organizations responding did have ERMS or EDMS. The organizations started to use these systems during the period 1995 to 2000. About 100 organizations of the 114 responding had a system based on *Lotus Notes*. The majority of respondents, or 72%, had a manual for ERMS or EDMS. These manuals, other things being equal, should ensure information on the effective use of these systems. The survey showed that the majority of those creating records in public organizations did register their records.

When the respondents were asked about the registration and filing of e-mail, it was revealed that the majority of respondents (62%) did neither register nor file e-mail records in ERMS or EDMS. E-mail records were filed by the employee in question outside of the systems according to 63% of the respondents. It may be deducted from these replies that the registration and preservation of e-mail fell for the most part outside of general registration and filing (National Archives, 2005).

2.7.2 Implementing ERMS in Britain

Although ERMS have been in use for more than a decade very little information could be found in the RM literature regarding their implementation and use. It was not until a considerable number of public organizations in Britain recently started to implement ERMS to manage their records that more information has begun to become available.

One of these organizations was the Department of Constitutional Affairs (DCA). In addition to having to comply to the Freedom of Information Act (2000) and to satisfy the UK e-government initiative (Modernising Government, 1999), the DCA had the added incentive in implementing ERMS to find a way of storing the additional 40 million pages of information that the department estimates that it will create during the next five years. This will be difficult without ERMS. Finally, the DCA was discovering, as so many others

are doing, that e-mail was being stored privately and was not being shared and properly managed (Tower Software, 2005).

The ERMS that the DCA implemented is not part of a groupware, but with a proven technical record. After a three month pilot project, 47 users were involved in testing the software to ensure that it performed as expected. Before the end of 2004 some 1,000 users were scheduled to be online and the rest of the 4,000 employees were to be connected during 2005. Extensive training was part of the implementation. The role and the importance of ERM were underlined in an extensive awareness campaign. Every employee had to undergo training in-house and received support when beginning to use the ERMS. Checks were performed subsequently to ensure that the ERMS was being used effectively. Although it is too early to pass the final judgement on the success of the implementation, Celia Wood, the ERM Project Manager, claims already several benefits from implementing the system, such as improved disaster recovery, more effective use of staff time, increased collaboration and less duplication of effort (Tower Software, 2005).

DCA chose the ERMS based on references regarding the successful implementation of the same system at the UK Department of Trade and Industry (DTI). The DTI had completed the implementation of the ERMS on time and on budget in March of 2003. It was 'initially unpopular with staff probably because of change management issues' (Williams, 2005; p. 159). This change was one of the largest projects that the DTI had ever undertaken (EDRM benefits the DTI, 2005). It started with a trial involving 400 users that helped design an extensive 'Management of Change' programme that involved briefings, training and communications. Training of 5,100 users was involved and it took 10 months, training 50 users per week. Early indications show a substantial improvement in productivity with a 37% reduction in time searching for information, a 62% reduction in time waiting for information from other employees and a 75% reduction in filing time. The implementation of ERMS has resulted in information being increasingly shared, duplication of effort being avoided and in improved retention of knowledge. According to Liz MacLachlan, the programme director, she expects the ERMS 'to make a big difference to the way we work in DTI' (EDRM benefits the DTI, 2005).

The Competition Commission in Britain with a staff of about 150 is not as large an organization as the DCA. But 'size does not diminish the complexity of its information

processes' (Kibby, 2005; p. 41). In 2002 the Commission started a major change project to implement ERMS to help it conclude cases within the time limits specified by law. This project detailed many of the concerns that public authorities in Britain had that has lead to the transition to implement ERMS:

- Security and access controls.
- Managing disclosure (e.g. via the Freedom of Information Act).
- Efficiency of time-critical information-based processes.
- Disparate procedures for records keeping.
- Inconsistent approaches to and levels of experience in handling electronic information (Kibby, 2005; p. 42).

The project revealed the need to write a new file plan for the Commission and to have it completed well in advance of the actual implementation of ERMS. The Commission chose a FCS which is now the generally recommended design as 'functions are less likely to change over time' (Gregory, 2005; p. 83). Organizations discover soon when they start to introduce ERMS that FCS is not a part of ERMS that they buy from the vendor. It has to be designed and incorporated into the ERMS, bearing in mind the functions of the organizations. This part is the responsibility of the organization undergoing the transformation. The project sponsor at the CC offered also additional guiding principles: Although a new technology is being introduced, the project is 'more about leading and managing change', and the 'leadership comes from the top' emphasized Barbara Varney, the project sponsor at the Commission (Kibby, 2005; p. 43).

'Careful preparation of the Business Classification Scheme' paid also dividends in the implementation of ERMS at the National Weights and Measures Laboratory (NWML), a small agency belonging to the DTI, employing a staff of 52 (Williams, 2005; p. 158). This implementation was in general successful, recovering in less than two years the cost of the ERMS due to time saved in searching for and filing information, and not printing records, which again produced savings in paper, printer cartridges and copy charges. A major savings was also the saving in storage resulting from the 50% reduction in filing cabinets needed. The FCS was painstaking work that, although 26 weeks behind schedule, was fortunately not on the critical path in the implementation and did not delay the project. The functionality proved its value when the movement of three groups of personnel did not

necessitate any major changes in the file structure. The effort put into the FCS paid off as well in the ease and familiarity that employees discovered when filing their records. Other contributors to the success of the project, according to David Williams, the NWML Records Officer, were the commitment from top management, how closely the IT and RM functions worked together on the project, and that training was one-to-one and tailored to the user. The size of the Agency made the implementation also more easily manageable (Williams, 2005; National Weights and Measures Laboratory lightens document load with DERM, 2005).

Another case underlining the importance of designing FCS is the implementation of ERMS at the Public Record Office of Northern Ireland (PRONI) where the development of a detailed FCS was deemed to be 'the single most critical component' of the project (Smyth, 2005; p. 144). The organization had to move away from the organizational and subject based classification scheme of the paper file and 'accept the cultural change of sharing information'. The best way to achieve this was believed to be to involve employees in the development process and allow time for this cultural change to become ingrained. RM training, focus groups and staff meetings were used to discuss file classification requirements, business processes, activities and transactions. PRONI has now a FCS that mirrors its business processes and 'a culture of sharing information (unless there is a specific legal or privacy requirement) has been successfully introduced' (Smyth, 2005; p. 149).

The FCS was also one of the project team's major successes when implementing an ERMS at the Purchasing and Supply Agency of the National Health Service in Britain. At a later day, there was a major reorganization at the Agency, but due to the functionality of the system, 'virtually no work has been needed to restructure it' (Gregory, 2005; p. 83). The ERMS is so recently implemented that the lessons that one can learn from the exercise are not all in. One lesson is, however, that both compulsion and persuasion are needed as part of the change process. People do not elect to work differently and prefer to work the way they have been working. An important part of the implementation was thus to disable the old system. In this case, the use of the new ERMS 'shot up in the build up to turning off the old drives' (Gregory, 2005; p. 84).

Not all IT projects are successful. According to Ryan (2005) most vendors have been relying on the same few case studies of successful ERMS implementations at RM conferences during the last five years. In his opinion this does demonstrate that there are 'relatively few successful implementations compared with the number of projects started'. It is understandable that cases of failure are not actively promoted. Organizations are not eager to publicize management mistakes and failures. That is unfortunate as only by sharing 'failings' do we 'learn how to do things better' (McLeod, 2005a; p. 126). There are, however, a few cases of failure that one can learn from.

Maguire (2005) gives an account of the implementation of ERMS that the Estates Department of the British Library undertook starting in 2001 for its staff of 80 with 60 likely users. The system that was chosen met all compliance and functional requirements, seemed user-friendly and was easy to install. The DTI in Britain had introduced the same system and had experienced some initial user resistance but enjoyed subsequent success. The experience at the Library was quite different. The introduction came to a halt at about 20 regular users who were not even saving all of their records in the system. This was only 1/3 of the expected 60 potential users and no further expansion of the system seemed likely within the Library.

There seem to be mainly three major reasons for this poor success rate. The new senior management in Estates was not impressed with the ERMS and it was decided early in 2004 that the use of the system was not compulsory and its use was not being enforced. There was also a lack of training in addition to the lack of support. When employees gave up, they received no encouragement or refresher training to continue using the ERMS. Thirdly, a thesaurus of controlled vocabulary of Estates terms was bought as a part of the ERMS but it put people off as they could not understand the keywords in the index. The filing of records was further complicated by not having metadata entry as automated as possible. The conclusion of this case was that an RM system 'based on what people already know needs to be in place before an automated one will have any chance of success' (Maguire, 2005; p. 157). Some late good news is that a new Head of Corporate Information Management at the Library, a new RM policy and accepted proposals to manage records using a corporate file plan may be turning the tide and forming another way of managing electronic records at the Library.

Above, several cases of implementing ERMS in Britain have been discussed. Next, cases of implementing ERM solutions and groupware in the USA will be reviewed.

2.7.3 Implementing ERM Solutions and Groupware in the USA

In a descriptive evaluation of 54 case and field studies of research into group support systems (GSS) in the USA, several factors have been identified that characterize successful and unsuccessful implementation of such systems. These characteristics are shown in Table 2.5.

Table 2.5. Characteristics of successful and unsuccessful GSS implementation (Fjermestad & Hiltz, Winter 2000-2001; p. 123).

Successful Implementation	Unsuccessful Implementation
Facilitator	No Facilitator
Leadership	A dominating or unenthusiastic leader
Many sessions	Few sessions
Training on the technology	No training on the technology
Complex tasks	Trivial tasks
Idea generation task for Decision Room GSS	
Decision making tasks Asynchronous Computer Mediated Communication (CMC)	
Permit verbal and electronic communication	Discourage verbal communication
User defined approaches	Limited approaches
Culturally sensitive implementation	
Anonymity	Misappropriated anonymity
High trust	Low trust

GSS has been defined as a combination of 'communication, computer, and decision technologies to support problem formulation and solution in group meetings' (DeSanctis & Gallupe, 1987; p. 589). Although GSS are not ERMS, they are IT solutions intended for group work and co-operation. The knowledge of what makes their implementation a success can, therefore, be of importance and provide some guidance to those planning to implement ERMS. The success factors emerging in these studies were: (1) leadership that supports and facilitates the implementation, (2) genuine participation by the users with exchange of ideas, and (3) training in the use of the technology. These three seemed to be the most important factors to bear in mind for the successful implementation of ERMS or groupware.

One successful case is the implementation of ERMS at the Palo Verde Nuclear Generating Station. It was implemented with the vision 'to leverage information technology to improve business processes, lower overall costs, and capture intellectual

assets'. The Station is located 50 miles outside of Phoenix in Arizona. It had one million customers and more than 2,000 employees. The ERMS program involved implementing efficient paperless processes that included among other things the following:

- Public-key infrastructure (PKI) digital signature eliminating the need to print documents for routing and/or signatures saving USD 100,000 a year.
- An online archive program that eliminated the need to build a new storage vault and to film records for archival storage at a combined savings of USD 450,000.
- A standardized file format, portable document format (PDF) was implemented across the site.
- 220,000 media-based engineering drawings were converted to digital format in house.
- Computer-based instructions were developed and made available on every desktop reducing the need for formal training.

Two employees of the Palo Verde Station (Hernandez & Sawtschenko, 2004; pp. 1-2) documented this case. They may, therefore, emphasize the successes, but there is no reason to doubt the savings obtained mentioned above. The authors contributed the success of the project to four key factors:

1. IT staff joined with the RM staff to analyse business processes in collaboration. They redesigned and simplified the processes prior to introducing the new technology and thereby acquiring the *vision* that motivated the staff to change.
2. The *attitude* of executive management was to challenge the staff to look for innovative approaches to old problems.
3. A change that reaches across departmental and cultural boundaries cannot be achieved except by *teamwork* and collaboration of RM, IS and plant personnel.
4. Finally, *control* was applied to ensure the validity and integrity of the archived electronic files.

It was the conclusion of the authors that 'proactive collaboration, innovation, teamwork, management support, and effective communication' was instrumental in improving these business processes across the Station (Hernandez & Sawtschenko, 2004; p. 2). In addition, the importance of developing computer-based instructions for every desktop as part of the training should not be overlooked.

Cooper (2000) examined the experience of Investments Inc. (a pseudonym) that is a large financial institution, when it began employing imaging information technology to store, index, and retrieve images of documents on optical disk. This system, *Image*, could

make a single document available to several employees at the same time. Changes made to documents could be tracked in the system. The storage and retrieval capabilities of *Image* were similar to database management systems. When Investments Inc. decided to implement *Image* several companies in the financial services industry had adopted *Image* with good results. The technology had, therefore, a proven track record that fitted the cautious innovation policy of Investment Inc.

It has been suggested that IT projects can be employed to enable significant organizational change. The reverse seems also to be true that these technologies can as well typically reinforce organizational status quo rather than contributing to significant organizational change (Child et al., 1987; Kimberly, 1987; Orlikowski, 1991). In the case of Investments Inc. re-engineering did not take place. The failure was due to a lack of an appropriate climate within the organization. Top management support was significant, but the same could not be said about user participation. Creativity fostering elements, such as rewarding risk-taking were not provided. A climate fostering creativity did not exist and was an important factor contributing to the failure of the project. *Image* was intended to improve document access, as documents were to be entered into the system within 24 hours of receipt. This was believed to be a drastic improvement from the manual system where one clerk may have held on to a specific document until he or she was sure that the document did not have to be referred to anymore, as it took weeks to convert documents to microform. The document was not available to others during this time and other employees may have had little idea where to find it.

Nevertheless, despite this promise of improvement, the users did not have this vision and had a hard time letting go of the current manual system that for them at least worked. The IT staff wanted to proceed at full speed in implementing the new system while the users preferred caution. Employees were thus working at cross-purposes, with users resisting *Image* which they believed disrupted their workflows. If the old system had been closed down, the users might have made a greater effort to make the transition. The rapid growth of Investments Inc. also brought about continuous organizational changes that further led to employees in new and newly reorganized units not finding much guidance for their tasks, and their tasks kept changing (Cooper, 2000). In this case a proven technology

that worked in other companies in the same industry was incorrectly implemented and the change process was not completed with the change anchored in the culture.

Training has appeared to be very important in the introduction of new systems. In a study providing lessons from early adopters of web groupware, training was the 'key difference between the successful and the unsuccessful organizations; the successful organizations trained users, the unsuccessful ones did not' (Dennis, Pootheri & Natarajan, 1998; p. 85). The authors believed that training in using the technology and 'perhaps more importantly on the new work processes required, was an important factor in successful adoption'. The successful organizations provided training on the technology ('which keys did what') and also on the new work procedures.

It has been previously noted that the implementation of collaborative software such as *Lotus Notes* 'does not automatically transform the organization into a flexible collaborative enterprise' (Jaffee, 2001; p. 196). It, therefore, makes an interesting comparison to examine the organizational consequences of introducing groupware technology in two different organizations, as done by Orlikowski (1992; 2000b). The technological properties that *Notes* had when Orlikowski did her studies are shown in Table 2.6.

Table 2.6. Properties of the *Notes* technological artefact (from DeJean & DeJean, 1991) – (Orlikowski, 1992; p. 414).

ELEMENTS	*THECHNOLOGICAL PROPERTIES*
Electronic Communication	Electronic messaging to geographically dispersed community via e-mail
	Announcements and responses on widely distributed electronic bulletin boards
	Importing of newsfeeds from external services
	Electronic mail gateways to transfer Notes e-mail messages to other systems
Text Editing	Creation and editing of documents that include multiple field types and formats with an emphasis on free-form textual information
	Importing of text, tables, spreadsheets, graphics, images, and sound from other programs
Document management	Creation and management of databases of documents in a variety of views
	Search and retrieval of individuals or groups of documents based on indexes or free text searches
Customization	Direct manipulation of user interface
	Modification of default views and database templates
Integration	Connection between various feature: communication, text editing, and document management
Replication	Periodic, scheduled duplication of designated databases across Notes servers in a network
	Support for stand-alone computers through dial-up into a Notes server
Security	Provision of password protection and ID verification to control access to databases
	Support for data encryption at level of e-mail messages, databases, documents, and particular fields
Application Development	Programming of unique database applications via Notes Application Programming Interface
	Computation of totals, averages, and other statistics on any field.

The Chief Information Officer (CIO) of Alpha (a pseudonym), after being introduced to *Notes*, quickly realized that it was a 'breakthrough technology', with the potential to create 'a revolution' in how members of Alpha communicated and co-ordinated their activities. Alpha, according to Orlikowski 'is a large, multinational consulting firm with offices in hundreds of cities around the world, employing thousands of consultants' (Orlikowski, 2000b; p. 414). However, the CIO decided to introduce *Notes* with very little communication and no training. Thousands of copies of the software were just bought and the program was installed rapidly by the IT staff in all offices. The CIO believed that the program did not require formal end-user training and therefore no emphasis was placed on it. The training that was made available was either self-study or classroom training. None of these training options emphasized the collaborative nature of the software.

The consultants were at a particular disadvantage regarding the training as they were held accountable for any non-chargeable hours that they incurred and it was ingrained into the culture of the organization that they should not have any. The alternative was to undertake the training in their own free time, but most were not willing to make that sacrifice: as one consultant commented: 'I have another life too' (Orlikowski, 1992; p. [5]). The consultants also competed with each other to attain principal status. Only relatively few promotions were handed out each year, and in such a competitive culture it was not the norm to co-operate and share knowledge with peers. Software for collaboration such as *Notes* therefore did not fit into the culture that the consultants experienced in their daily work.

The situation changed when consultants gained principal status. Then the competition with their peers disappeared, as did the fear of losing status or power. The principals could focus on the interests of the organization as a whole and they utilized the co-operative functions of the software. Similarly, the IT staff used it to exchange technical expertise. They were not 'subject to the competitive culture, individual-focused reward systems, 'up-or-out' career pressures, and 'chargeable hours' constraints of the consultants' (Orlikowski, 1992; p. [6]). The findings in this study suggest the following regarding implementing groupware:

- If the premises underlying the groupware technology (shared effort, co-operation, collaboration) are counter to the cultural to an organization's structural properties (competitive and individualistic culture, rigid hierarchy, etc.), the technology will be unlikely to facilitate collective use and value.
- Conversely, where the structural properties do support shared effort, co-operation, and collaboration, it is likely that the technology will be used collaboratively (Orlikowski, 1992; [p. 1]).

It should also be emphasised that the consultants could only acquire training at the expense of their performance evaluation or family life. This was probably a powerful hindrance to acquire the new technology.

It is interesting to compare the experience of Zeta (a pseudonym) of implementing *Notes* with the case of Alpha. Zeta was one of the top 50 US software companies that produced and sold a range of powerful marketing analysis products (Orlikowski, 2000b; p. 418). It was in 1992 that the customer support department (CSD) of Zeta purchased *Notes* and developed a customized application within it to help keep track of customer calls, the incident tracking support system (ITSS). At Zeta the software was being introduced into an organization where teamwork was the cultural norm, or as one specialist commented: 'I don't care who grabs credit for my work… This support department does well because we're a team, not because we're all individuals' (Orlikowski, 2000b; p. 418). The CSD members, as support specialists, were knowledgeable about technology in general and *Notes* in particular. Their work started to grow and accumulate in the ITSS database. It grew from about 4,000 entries in December 1992 to 35,000 in December 1994. Their work culture was based on co-operation and teamwork, and an environment of sharing and learning, as one specialist commented: 'If it is quiet I will check on my fellow colleagues to see… what kind of calls they get, so I might learn something from them' (Orlikowski, 2000b; p. 419).

From these two studies it can be seen that individuals react differently to the same technology. They do so 'in response to various technological visions, skills, fears, and opportunities, influenced by specific interpretations and particular institutional contexts, and shaped by a diversity of intentions and practices to collaborate, solve problems, preserve status, improve efficiency, support work processes, learn, and improvise.'

(Orlikowski, 2000b; p. 420). There are at least two lessons that can be learned from this comparison between Alpha and Zeta:

- People are purposive, knowledgeable, adaptive, and inventive agents who engage with technology in a multiplicity of ways to accomplish various and dynamic ends. When the technology does not help them achieve those ends, they abandon it, or work around it, or change it, or think about changing their ends.
- The possibility to change technology structures is inherent in its every use. This allows us to understand when, where, how, and why people choose to reinforce, ignore, enhance, undermine, change, work around, or replace their existing structures of technology use (Orlikowski, 2000b; pp. 423-424).

Studies of groupware and similar systems have, however, shown that even systems that are very good technologically do not work, or are not being used as intended, if they do not fit the culture of the organization or if they are incorrectly implemented. Whether the same factors hold true for the implementation of ERMS and which are the most important can only to some extent be inferred from descriptive cases, most of which were published after the present study was carried out. There seem, however, to be no studies of systematic implementation and use of ERMS. That is why this study was undertaken, to study the implementation process and how it can be improved and to find out how employees actually use ERMS in the groupware that it belongs to.

Based on implementations of similar systems, one deduction can be made and this study aimed to discover whether it could be proven true or false for ERMS:

If, ERMS in a groupware is implemented in an organization without top management support and without user participation and supportive training, the implementation will fail. Conversely, with top management support, user participation and supportive training, and when the culture of the organization supports teamwork, ERMS will prove to be highly efficient system for quality RM and productive group work.

This proposition leads us to the research questions that are subsequently formulated in chapter 3, Problem Definition.

2.8 Summary

An attempt was made in this chapter to discover the likely important factors for the successful implementation of ERMS based on general implementation literature and surveys and studies of implementing similar or related systems. A few descriptive cases have recently become available in Britain. The various success factors for the implementation were, unfortunately, not always well documented nor identified. One of the successful cases was the NWML where the commitment from top management, the close co-operation of the IT and RM functions and the one-on-one training tailored to the user received the credit for the success of the project (Williams, 2005). The careful preparation of the FCS involving users in the design and adaptation paid also dividends. Lack of top management support, the lack of training and purchasing a thesaurus with terms that the users did not understand without further adapting it to the organization were, on the other hand, the explanations of poor results at the Estates Department of the British Library (Maguire, 2005). Carefully designing and adapting an FCS for the ERMS and involving the users paid also dividends at two other organizations surveyed. Other implementation factors were not credited in these two organizations, but the importance of training was identified in two additional organizations without mentioning other implementation factors.

A descriptive evaluation of 54 cases of research into group support systems in the USA identified leadership support, genuine participation by the users and training in the use of the technology as the factors most likely to influence on the success of the implementation. Those reporting on the outcome of the Palo Verde project came to a similar conclusion. The training on that project was computer based. Training seems very important for the introduction of new systems. Lessons from early adopters of groupware indicated that the successful organizations provided training on the technology but the unsuccessful did not (Dennis, Pootheri & Natarajan, 1998). Lack of training and the poor fit of the groupware to the culture explained the poor success rate at Alpha but the outcome was on the contrary a success at Zeta where teamwork was the cultural norm (Orlikowski, 1992; Orlikowski, 2000b). In the case of Investments the support of top management was present, but no official date was set when the new system was to take over and the users were not actively involved in the implementation, making it a failure (Cooper, 2000). The users seem to have an important role to play in the implementation of IT projects. Their

participation is 'essential to successful systems development. If their perceived needs are not met, users will certainly not accept the system' (Brittain, 1992; p. 78).

These cases reported on above imply certain input factors that may be important for the successful implementation of ERMS and suggest how it can be integrated into other systems of the organization:

- It seems important that top management is committed to the successful implementation of the system but it does not seem to be a sufficient condition.
- It seems beneficial that the impact on existing systems is positive and there is a fit between ERMS and the IT infrastructure. The IT and the RM functions seem to aid the implementation when they co-operate on the implementation.
- When the users are genuinely involved in the specification of requirements and subsequent adaptation and development of the ERMS applications, including the design of the FCS used for the ERMS the implementation seems to progress better.
- Sufficient and proper training seems to be essential, not only in how to use the system itself, but the users may need as well to understand why ERMS is being implemented and what it can do.

Using the experience of several Icelandic organizations, the present study examines, systematically, whether these input factors can be identified as those most likely to improve on the implementation process, and subsequently the actual use of ERMS by the users themselves.

3 Problem Definition

This chapter starts by presenting the aim and the objectives of the research followed by an outline of the research questions. Finally, the ties of the researcher to the subject and the personal reasons for choosing this topic for research are discussed.

3.1 The Aim and the Objectives of the Research

This research deals with ERMS that have been installed in Icelandic organizations. There is little verified information available about the implementation and use of such systems in Iceland or elsewhere. The aim of this research was in broad terms to provide this information. The following objectives contribute to that end:

1. To examine which were the perceived objectives of introducing ERMS.
2. To gain an understanding of how ERMS were being implemented.
3. To find out whether employees were using ERMS and how.
4. To examine the association between implementation and outcomes of the implement-ation, i.e. the use of ERMS.

My literature search turned up only a few studies on the subject or related subjects (see section 2.7) and no Icelandic research. As an example of how little attention has been paid to the topic, neither in the table of contents nor in the index of the four volume *Encyclopedia of Information Systems* (Bidgoli, 2003) are the terms records management (or RM), records and information management (or RIM), electronic records management (or ERM), electronic document and records management (or EDRM), records management systems (or RMS), electronic records management systems (or ERMS), electronic document management systems (or EDMS), and electronic documents and records management systems (or EDRMS) to be found. This work has a large format, is in four volumes and comes to 3,101 pages. It contains, among other things, articles on a multitude of management issues and information systems but nothing on ERMS. This example shows that there are ample reasons to conduct research into ERMS.

3.2 The Research Questions

The following research questions were formulated in order to discover the objectives stated above:

1. Which were the perceived objectives of introducing ERMS and were these objectives being met?
2. How were ERMS implemented and how successful was the implementation?
3. Was there a difference between public and private organizations regarding the success of the implementation?
4. Did the systems differ in how easy they were to implement?
5. How did the employees use ERMS, if they did, and if not, what did they use as a substitute?
6. How did the employees feel about working with ERMS?
7. Which role did the implementation of ERMS play in the subsequent successful use or non-use of the system?

3.3 The Researcher's Experience, Relations and Personal Reasons for Choosing the Subject

In qualitative research emphasis is placed on having the researcher explain the ties that she has to the subject of the research (Bogdan & Biklen, 2003). Furthermore, it is important that the researcher is always conscious of the effect that past experience, attitudes and views on the subject has on how the research is approached or conducted (Van Maanen, 1990).

In my career that now spans 20 years as a consultant in RM working for over 100 organizations in Iceland, I have had the opportunity to learn a great deal about the situation regarding the subject, i.e. RM and ERMS. For nearly ten years I have worked for many companies that have installed ERMS for the purpose of managing their records more efficiently. Unfortunately, I had a reason to believe that the return on investment on the considerable amounts of money spent to buy and install ERMS was often limited. I had witnessed organizations where not all the employees who were intended to use these systems did so. These systems were in addition not being used correctly and the opportunities that they offer were not fully utilized. Failure in the implementation process seemed to be the reason.

It is a certain advantage to be familiar with the research subject. Knowledge of the organizations being studied and their activities helps in asking the right questions and in exploring situations that are believed to be present. However, it can also be a disadvantage if one believes to know the answers before the questions have even been raised. It is, therefore, important to be objective, to listen well and not to take anything for granted. It is important to have the interviewees confirm all beliefs and for the researcher not to give away own opinions which may only result in answers that the interviewee believes that the researcher wants to hear. It is important to bear this in mind during the study and that I tried to do.

I have developed a deep interest in the experience of organizations of implementing ERMS. I feel that it is important to study this process in order to create knowledge that might lead to improvements in the implementation process and in the use of ERMS.

I have known these systems from the time that they were introduced into the market in Iceland and followed their development for a decade. I have through the years examined them at the software providers and worked with them in organizations, both public and private. I have, furthermore, held seminars and training courses in co-operation with computer specialists about ERMS for the employees of many organizations. The aim of this training has been to show how ERMS can be used by organizations to manage their records during the records' life cycle. I have also consulted on writing system specifications for ERMS for a number of organizations.

A part of my teaching at the University of Iceland is how ERMS should be implemented and used in organizations. In my lectures I emphasise that planning is essential before ERMS is bought and implementation is begun. A part of this planning is the writing of the system specification, the standardization of information that is to be entered into the system and the standardization of the classification and registration methods that are to be used in entering information into the system. I emphasize the fact that ERMS must be implemented in an effective way with proper training and that continuous control of the process is necessary to ensure productive use.

It the following chapter the methodology of the research is presented. The chapter gives also an explanation of the reliability, the validity, and the value of the research.

4 Methodology

This chapter starts by discussing the reasons why qualitative methodology was chosen for this research. Secondly, the settings of the research are described and information is provided regarding the participants: how many, how they were selected, and what were their characteristics. Thirdly, this chapter covers the procedures and methods used in obtaining the data, where the collection took place and when, and the methods used in the data analysis. The reliability and validity of the study are outlined. Finally, the value of the research is discussed.

4.1 Reasons for Choosing Qualitative Methodology

There are a few descriptive accounts available, but no research, about the success of implementing ERMS. In order to explore the topic in more detail than a survey instrument could provide a qualitative approach was chosen.

It was decided, in order to answer the research questions to collect comprehensive and accurate information from relatively few organizations and to approach these questions from different angles. It was believed that standardized questionnaires that were put to a large audience would not yield as accurate information as would interviews with open-ended questions and participant observations. Simply, there was not enough information provided by earlier studies to design a comprehensive survey instrument.

There is often a perceivable difference between what people say and what they do. Argyris and Schön pointed out this paradox when they distinguished between 'espoused theories' – what people say about how they act, and 'theories-in-use' – what the actions of individuals reveal about their true feelings. People are often unaware of the discrepancy that they display in this respect. Orlikowski (2000a; p. 254) has taken this thinking one step further and distinguishes between 'espoused technologies' – the ones that organizations buy and install, and 'technologies-in-use' – the technology that employees in fact use. Organizations may buy and install ERMS, but the success of the project cannot be measured by counting the number of user accounts if the employees are in fact not using the technology. The employees may also claim that they are using ERMS, but only by probing was it possible to find out if the use was in fact the case and how the employees were actually using ERMS.

For these reasons it was decided to use qualitative methodology for conducting the research. Another reason is that qualitative methodology has held a superior position within LIS in the last decade and has even gained a leading position (Vakkari, 1997; p. 451). These methods lend themselves also quite conveniently to collecting information in the field at the employees' place of work.

Qualitative research methods cross disciplines and are today used within a number of fields (Denzin & Lincoln, 2003). The methodology uses induction to come to a conclusion based on the data. The emphasis is on understanding situations as the participants live them, and people and circumstances are to be viewed in a holistic context. The researcher attempts to understand the social background and the social position, both during the data collection and during the data analysis, in order to understand the reality as the participants themselves experience it. For this reason there is a great emphasis placed on accuracy and thoroughness in the data collection because the analysis rests on having that part properly carried out (Bogdan & Biklen, 2003). The researcher tries to understand the context and the processes at work by describing exactly the experiences and the understanding of the participants. The data collected are then analysed in comparison to make them meaningful and finally, that meaning is used to put forward a theory based on what the researcher interprets as what the data revealed (Gorman & Clayton, 1997).

Qualitative research methods have not been standardized and fine-tuned like the research methods in the natural sciences. There are no strict rules that dictate how to conduct qualitative research but there are guidelines (Taylor & Bogdan, 1998) and they were followed in this study as discussed later in this chapter.

4.2 Participants and Systems

Sample selection in qualitative research is 'neither statistical nor purely personal: it is, or should be, theoretically grounded' (Silverman, 2000; p. 105). The sample selection for this research was purposive. An attempt was made to select organizations where the processes being studied were most likely to be present (Denzin & Lincoln, 1994a).

The sample consisted of eight organizations that had bought ERMS (see Figure 4.2). They can be divided into two groups. In the one group there were four organizations that were studied in great detail, two public and two private organizations. A number of

employees were interviewed in each organization. The other group was considered as a corroborative group. There a key employee, the records manager, was interviewed in each organization. This group consisted also of four organizations two public and two private. Time and effort was saved by interviewing only the records manager who could nevertheless provide a wealth of information that corroborated the findings in the other four organizations studied in greater detail. Finally, a third group, one key employee at six software providers offered valuable information that supported the findings in the other two groups. Approaching the search from these three angles was believed to produce more reliable findings.

The selection of participants for a qualitative interview study depends on the study's goals (King, 1999) and the needs of the study. The selection is not according to external criteria, such as a random selection (Morse, 1994). It was necessary for the purpose of this research to select different groups of interviewees to obtain different points of view on the subject. The selection of the organizations or cases required careful selection as well. According to Stake (1994), in selecting cases, the opportunity to learn is of primary importance.

By using a random selection of organizations in this research, the sample could have been only organizations that had recently introduced ERMS and had not completed the implementation process. It would also have been possible to have in the sample organizations where the systems had not been adapted and where the implementation was a total failure with hardly any use at all of the ERMS. It is, however, impossible to study the use of ERMS in an organization where the employees are not using the system due to total failure in the implementation. It was, therefore, a conscientious choice to select also organizations that were believed to have managed to implement ERMS in a rather successful manner. Thus the sample included organizations with supposed variation in implementation success.

All of the eight organizations are considered rather large in terms of Icelandic organizations with a total number of employees ranging between 150 and 300 office employees. The number of employees performing other functions varied between the organizations. These organizations operated in different fields of industry and they were understood to have experienced a variable success rate in implementing the ERMS being

bought, but the exact situation and the reasons why were not known. First, the selection of the organizations had the purpose to reveal whether there was a difference between private and public organizations regarding the implementation. Second, there was an interest to isolate whether there was a difference between the systems in the implementation, whether one system was more easily implemented than another. Finally, there was deemed interesting to find out whether the way the implementation itself was conducted provided the major explanation regarding the subsequent successful use.

The eight organizations had bought four different ERMS. Two organizations were using each system. One system, System D, was only used by two public organizations, System G was only used by two private organizations, but Systems F and E were used in a public and a private organization. During the present study, all the systems were examined thoroughly with a salesman at the premises of the software provider. All of the four systems in the study have been evaluated and are believed to meet all of the important requirements of the *DoD 5015.2-STD* and the requirements for approved RM procedures according to the *ISO 15489* standard for RM. Figure 4.1 gives an overview of the four systems.

Computer Services Selling System D Data collected in autumn 2003 System observation: Gestur (salesman)	***Computer Co.*** Selling System F Data collected in spring 2002 System observation: Helga (salesman)
Image Group Selling System G Data collected in spring 2004 System observation: Sofus (salesman)	***Knowledge*** Selling System E Data collected in spring 2004 System observation: Gisli (salesman)

Figure 4.1. Four ERMS observed.

All of the ERMS fulfil requirements that are made regarding RM in organizations by Icelandic law (see section 2.4.3). They are all part of a groupware. They all meet the requirements of being ERMS as shown in Table 2.3 and the sample operational questions regarding IT that are shown in Table 2.4. They also meet all general RM requirements as discussed in section 2.4.1 if properly used. These four ERMS are the four that have gained the widest distribution on the Icelandic market.

To summarize, what motivated the selection of the organizations for the study was to maximize the variance between them regarding the implementation given the size of the sample. It was sought to select organizations from both the public and the private sector, and organizations from different fields of industry. It was desired that they were implementing different systems and experienced varying success rates in the implementation, although the exact success rate was not known.

Purposeful sampling was also used regarding the informants, i.e. 'selecting the informants best able to meet the informational needs of the study' (Morse, 1991; p. 127). Qualitative researchers commonly use this method. According to Morse (1991, 1998) 'good' informants are those who have the ability to reflect, are articulate, have the time for the interviews and are willing to participate. These criteria were borne in mind when selecting the interviewees for this research. The number of interviewees in qualitative research is usually small, as Sandelowski (1986) explains, because of the large volume of verbal data that needs to be analysed, and also because of the tendency to emphasise intensive and prolonged contacts with subjects. According to Benner (1994), the sample size needs to be adjusted depending on the quality of the data and how the lines of inquiry tend to be reshaped by the participants. The sample of the present research consisted of 38 individuals that were employees of the eight organizations that had bought ERMS. The interviewees were chosen in a systematic manner and consisted of employees with the same job function in each organization. The interviewees were eight records managers, eight managers, four computer specialists, eight specialists and ten general employees in the eight organizations that had bought ERMS. These individuals in these five different job positions were those believed to be best able to inform on the implementation and the use of ERMS, possibly holding a different view. The eight records managers were all qualified and experienced professionals in RM. An overview of the distribution of the interviewees in the eight organizations is shown in Figure 4.2.

Six consultants/teachers at six different software providers were also a part of the sample, making the total number of interviewees 44. Five of them sell five different ERMS, four of which were bought by the eight organizations participating in the research. Interviewing the consultants/teachers was done to obtain information from the software providers regarding the use of ERMS at their various customers. In this way information

could be obtained regarding the implementation of ERMS at more organizations than those eight that participated in the research. Furthermore, one consultant/teacher was interviewed at a software provider that sold a different kind of information system, a management information system (MIS) for financial information. The purpose of doing this was to find out whether it was easier to implement this type of information system in organizations compared to ERMS. An overview of the research, showing the distribution of all the participating interviewees in the different organizations, is shown in Figure 4.2.

Four organization – several interviewees in each organization			

Government Institution
 System D
 In use since early 2001
 Data collected autumn 2003
  and spring 2005
 Used by 75% of the employees
 Eleven interviewees:
 Lisa (records manager)
 David (chief executive)
 Laura, Karl (managers)
 Stefan (computer specialist)
 Anna, Mark, Viktor (specialists:
  auditor, economist, statistician)
 Klara, Leifur, Susanna (general
  office employees: clerk typist,
  clerk, secretary)
	***City Organization**
	 System F
	 In use since late 1998
	 Data collected autumn 2001
	  and summer 2004
	 Used by 25% of the employees
	 Seven interviewees:
	 Ragna (records manager)
	 Peter (chief executive)
	 Hans (manager)
	 Alexander (computer specialist)
	 Bjorn, Karen (specialists:
	  technician, architect)
	 Disa (general office employee,
	  secretary)
		****Financial Institute**
		 System E
		 In use since late 2001
		 Data collected spring 2004
		
		 Used by 90% of the employees
		 Eight interviewees:
		 Dora (records manager)
		 Adam (manager)
		 Elmar (computer specialist)
		 Paul, Sven (specialists: financial
		  consultant, accountant)
		 Beta, Frida, Gunnar (general
		  office employees: clerk typist,
		  senior secretary, clerk)
			****Manufacturing Firm**
			 System G
			 In use since early 2000
			 Data collected spring 2004
			
			 Used by 15% of the employees
			 Eight interviewees:
			 Nina (records manager)
			 Magnus, Jana (managers)
			 Jens (computer specialist)
			 Marias (specialist: engineer)
			 Andres, Maria, Vilma (general
			  office employees: clerk, clerk
			  typist, secretary)

Four organization – one key interviewee in each organization			
***Public Services Office** System D In use since early in 2001 Data collected autumn 2003 Used by 60% of the employees One interviewee: Pamela (records manager)	****Food Processing** System F In use since early in 1999 Data collected summer 2004 Used by 80% of the employees One interviewee: Thor (records manager)	***Municipal Office** System E In use since late in 1999 Data collected summer 2004 Used by 40% (60%) of the employees One interviewee: Inga (records manager)	****Construction Firm** System G In use since early in 2000 Data collected summer 2004 Used by 70% of the employees One interviewee: Alma (records manager)
Six software providers – one key interviewee at each software provider			
*****Computer Services** Selling System D Data collected autumn 2003 One interviewee: Emma (consultant/teacher)	*****Computer Co.** Selling System F Data collected spring 2002 One interviewee: Liv (consultant/teacher)	*****Knowledge** Selling System E Data collected spring 2004 One interviewee: Agnes (consultant/teacher)	*****Image Group** Selling System G Data collected spring 2004 One interviewee: Andrea (consultant/teacher)
******Solutions** Selling System O Data collected spring 2004 One interviewee: Markus (consultant/teacher)	*******Software** Selling System S Data collected spring 2004 One interviewee: Katarina (consultant/teacher		

8 organizations had bought ERMS – 4 of them were studied in a great detail and in the other 4 a key employee was interviewed.
6 software providers – a key employee was interviewed at each company.
44 interviewees: 8 records managers, 8 managers, 4 computer specialists, 8 specialists, 10 general employees, 6 consultants/teachers.
* Public organization. ****** Private organization. *******Software provider selling ERMS installed in two of the eight organizations.
****Software provider not selling ERMS to any of the eight organizations – the interview was conducted for comparative purposes.
*****Software provider not selling a system to any of the eight organizations – the interview was conducted for comparative purposes.

Figure 4.2. The research overview: The 44 participating interviewees, the 14 organizations and the different systems.

The research was also based on seven participant observations at the four organizations that were studied in a great detail. One participant observation was also carried out at one of the software providers. Figure 4.3 gives an overview of the eight participant observations in the five different organizations.

Government Institution	City Organization	Financial Institute	Manufacturing Firm	Computer Co.
System D	System F	System E	System G	Selling System F
In use since early in 2001	In use since late in 1998	In use since late in 2001	In use since early in 2000	Data collected in spring 2002
Data collected in autumn 2003	Data collected in autumn 2001	Data collected in spring 2004	Data collected in spring 2004	One participant observation (a meeting):
Used by 75% of the expected users	Used by 25% of the expected users	Used by 90% of the expected users	Used by 15% of the expected users	Liv (consultant/teacher) Hanna (consultant/teacher) Hannes (chief executive) Kamma (marketing manager) Olafur (computer specialist)
Two participant observations (ca 50 work stations visited)	Two participant observations (ca 30 work stations visited)	One participant observation (ca 20 work stations visited)	Two participant observations (ca 40 work stations visited present)	Kristin (RM consultant from outside) Nanna (RM consultant from outside)

Figure 4.3. The research overview: The 8 participant observations in the 5 different organizations.

4.3 The Execution of the Research

The data collection took place during the period September 2001 to July 2004. Two different methods were used in the field. On the one hand open-ended interviews were conducted with employees and on the other participant observations in the relevant organizations. For the research overview see Figures 4.2 and 4.3.

The fieldwork started in the City Organization and ended at Food Processing. All of the 14 organizations were contacted with a formal letter that was written on the letterhead of the Faculty of Social Sciences, University of Iceland, and sent to the CEO of the organization in question. The letter explained the purpose of the research and sought their permission for the participation of the records manager and other employees in the research. Subsequently, permission was also sought to carry out participant observations at five of the 14 organizations. The CEO was asked to assign a contact person regarding the research. The letter requested a reply within 14 days. In those cases where no reply was

received within that time, contact was made by e-mail to the CEO and the letter sent as an attachment. Without exception, the e-mail produced an immediate response.

Letters were sent to a total of 15 CEOs of organizations. One CEO requested to be excluded from participation in the research as he judged that the employees did not have time to participate in the research. When the permission had been granted by the CEO work was begun to plan the interviews and the participant observations in co-operation with the contact person, who without exception was the records manager. The interviews were all conducted during normal working hours at the interviewee's place of work, in an office or a meeting room. One interview was conducted at the researcher's office at the University of Iceland at the request of the interviewee. It was specially requested that the interviews could be held in the morning to ensure that the interviewees were not tired after a long working day. All of the interviews were held during the early part of the day. Each interview lasted for about one hour. Every interview was recorded using a tape recorder and then subsequently meticulously typed and the researcher's observations and comments added. In writing up the findings the actual words of the interviewees were used. Denzin (1994) maintains that it is 'best to let Others do their own talking' (Denzin, 1994; p. 503). An effort was made to try to have the interviewees tell the story in their own words.

The eight participant observations were all made in the morning. Each participant observation lasted for approximately four hours where employees were observed using ERMS at their place of work (see Figure 4.3). The employees were occasionally asked about their use in order to clarify the observation. One exception was the participant observation at the Computer Co. where a meeting of seven people that lasted for two hours was observed (see Figure 4.3). The meeting was recorded. The topic was implementation of ERMS. Shortly after the participant observations were completed, the information was accurately written down and comments and thoughts subsequent to the fieldwork were attached to all field notes. The field notes from the interviews and the observations are each some 25 to 30 pages long.

Additional information to the interviews and the participant observations was needed in some cases. A permit was obtained at the end of each visit to seek additional information as necessary. That request was granted in all cases. The additional information was obtained over the phone, by e-mail and in two cases by a separate visit.

4.3.1 Ethical Issues

Interviews are an ethical phenomenon. It is therefore important to obtain the informed consent of the interviewee. Informed consent means that the interviewee participates in the interview of his/her own free will and has the opportunity to withdraw from the research at any time. Informed consent means also that the purpose of the research is explained to the interviewee to avoid any unintended deception. Another ethical issue is that the participation should not result in any risk or harm to the participants. A third issue is confidentiality that is provided by giving pseudonyms to interviewees and they are referred to in such a manner that they cannot be recognized. Confidentiality means as well that information that is obtained during the interviews and can be traced to a particular interviewee is not included in the research in a recognizable manner. Any information that could reveal the identity of individuals should be destroyed as soon as possible after completing the research (Esterberg, 2002; Gorman & Clayton, 1997; Kristinsson, 2003; Kvale, 1996). All of the 44 interviewees that participated in this research carry pseudonyms, their informed consent was obtained verbally prior to the interview and they were assured of confidentiality, that their comments could not be traced to them. Informed consent can also be an advantage for the researchers in the case of a misunderstanding (Seideman, 1998).

In the present study a letter was sent to the CEO of each organization that participated where their permission was sought for an interview with specified individuals within their organization. The purpose of the research was mentioned in the letter, the name of the researcher was given, full confidentiality was promised, and that the data obtained would be disposed of when the research had been concluded. All of the CEOs of the participating organizations gave their permission in writing for collecting data for the research in their organization. In their reply they also indicated who would be the best person to talk to, who would as well be the contact person, and the person who could suggest other employees to be interviewed.

A permit was always obtained from each participant for the interview and the interviews were taped with the consent of the interviewees. Strong emphasis was placed on the fact that all information obtained would be handled in strict confidence in order not to

reveal the identity of the individual or the organization involved. Then it was made clear to the respondents that all data would be destroyed when the research had been completed. A lot of very sensitive information was revealed during the interviews as the respondents had to discuss their superiors and colleagues and to comment on their support, their work procedures and habits.

Pseudonyms were used for all of the interviewees and all of the organizations. It was not deemed appropriate to identify the various ERMS and the ERMS in the participant organizations were simply allotted the letters of the alphabet, namely D, E, F and G. The ERMS that was not used in these eight organizations received the letter O, and the MIS the letter S, as shown in Figure 4.2.

As required by the Act regarding privacy, no. 77/2000, the Icelandic Data Protection Authority was notified of the research (Notification no. S874/2002 on processing personal information – 'Tilkynning nr. S874/2002 um vinnslu personuupplysinga').

4.4 Methods Used in the Data Collection

Interviews and participant observations were used in this study. The interviews played a substantially more important part than the participant observations. Qualitative research methods involve in addition the analysis of text, symbols and pictures. Such analysis was also used in the research to a small degree. It is not possible or sufficiently effective to depend totally on what the interviewees say. Various factors may colour their views, factors that the researcher may not be aware of. It is, therefore, sometimes of importance to examine documents related to the topic and add a third dimension to the research.

This approach is common among researchers who use qualitative research techniques and methods, as various methods can be combined to shed light on the same research topic (Taylor & Bogdan, 1998). The use of multiple methods, as in this study, or triangulation, reflects an attempt to ensure an in-depth understanding of the topic in question (Denzin & Lincoln, 1994b). However, triangulation involves not only use of several kinds of data (Janesick, 1994) but as well collecting data from various sources, as was done in this study. Four organizations were studied in great detail, other four organizations provide a comparison, and interviews with six consultants/teachers at six software providers offered a way of testing and corroborating the findings (see section 4.2). Many researchers

triangulate in order to improve the validity of their research (Hartley, 1999). Even though validity in qualitative research is currently being questioned in the literature (Gorman & Clayton, 1997), triangulation undoubtedly contributes to the quality of the research. Triangulation is meant to be a heuristic tool (Janesick, 1994) in order to come as close to the reality of the subject as possible.

4.4.1 Interviews

When open-ended interviews are used the subject is examined openly. The interviewee uses his/her own words and the researcher tries to gain an understanding of how others experience and perceive the subject (Bogdan & Biklen, 2003). The observer is present at the scene, interviews the participants at their place of work and tries to have them open up and discuss or describe particular aspects of their life or work in their own words (Kvale, 1996).

Kvale (1996) defines an interview as personal circumstances where two individuals discuss a particular subject that they are both interested in. It is a particular form of human interaction where knowledge is created through discussion. The interactions are neither as impersonal as when a questionnaire is filled out, nor as personal as is an interview between a doctor and a patient. The aim of the researcher is to have the interviewee describe an experience or some emotion(s) as exactly as possible and to approach the subject at hand from as many angles as possible. The researcher must also be able to decipher expressions other than speech, for example, tone of voice, pitch, facial expressions and gestures. Kvale (1996) suggests that the knowledge and experience of the researcher, the sensitivity and the observation skills that the researcher possesses, in addition to the relationship that is formed between the researcher and the interviewee, can influence the quality of the information that is revealed during the interview. An attempt should be made to conduct interviews in an atmosphere where the interviewee is at ease, for example, at the interviewee's home or place of work (Kvale, 1996). These guidelines were in general followed during the interviews.

Interviews have various advantages. One can obtain detailed information in a relatively short time by using interviews, and through personal contact there is often established a personal relationship that can lead to a better understanding of the research

topic by the researcher. The interviews make it possible for the researcher to understand how things happen and why and it is easy to ensure that the respondents lend the same meaning to questions as the researcher does. The main objections to using interviews are cost, too close a personal attachment, bias and a lack of criticism (Gorman & Clayton, 1997).

Open-ended interviews were used in this research and different interview guides were used for different groups. These guides are discussed below. An overview covering the interviewees is shown in Figure 4.2.

In order to get the views of the different groups of respondents, five slightly different interview guides were developed, one for each group that was going to be interviewed. The different groups were: (1) the records managers, (2) the managers, (3) the computer specialists, (4) the general office employees and specialists, and (5) the consultants/teachers at the software providers. Most of the topics were the same for all groups, but some issues that had to be addressed were only relevant for one particular group.

All of the groups were asked about the objectives of implementing the system and the implementation process, as well as the outcomes and the expectations of implementing ERMS. It was believed that all of the interviewees would have an opinion on these issues. The records managers were asked in detail about the use of the system and the actual user behaviour. The users themselves, that is the general office employees and the specialists, were also questioned on how they used ERMS, in entering records into the system and in searching for records, as well as various other issues regarding the use. The consultants/teachers at the ERMS providers were also asked in detail about their experience obtained from their customers of the use of ERMS. Both the records managers and the consultants/teachers were asked about demographical differences between groups of users, but only the records managers were asked about policies and standard procedures regarding ERMS. The interview guides are produced in Appendixes 1-5.

Kvale (1996) gives the advice that 'good interview questions should contribute thematically to knowledge production and dynamically to promoting a good interview interaction' (Kvale, 1996; p. 129). My experience as a consultant in RM and knowledge of the topic helped to formulate the interview guides. The main topics to be discussed were identified and a sequence of questions within the topics was constructed. Early in the

process the researcher became less dependent on the questions and used the guide more as a framework of ideas rather than a script to be followed exactly. It proved necessary to change the sequence of some topics and questions after the very first interviews, but changes were minimal. Those that had already been interviewed were then contacted again to obtain information regarding the added issues.

The interview guides took aim based on the research questions. The first part of the interview guide dealt with the first two research questions: (1) the objectives of introducing ERMS and (2) the implementation of the system. The second part of the interview guide dealt with the use of ERMS, that is the issues raised in research questions five and six. The third part of the interview guide concerned the seventh research question: the role that the implementation played in the outcome, the actual use of the system, i.e. whether the expected outcomes were obtained or not. The fourth part was about demographics.

4.4.2 Participant Observations

Participant observation takes place at the scene where the researcher observes the participants as they go on with their daily lives or work and notes how they behave or act. The aim of using participant observations is to gain an insight into the life of a certain group under particular circumstances in order to understand social behaviour in connection with these circumstances. During the participant observation the researcher tries to experience the circumstances as an individual and to take part in and share the experience of the participants (Bogdan & Biklen, 2003).

A field visit creates the opportunity for direct observations. Observations can range from formal to casual data collection activities (Yin, 1994). At the meeting at the Computer Co. the technique was one of observation. The participation of the researcher in the meeting consisted of paying close attention to what was said and done, but not as an active participant (Hartley, 1999).

In the other seven participant observations offices of employees who were deemed by the records manager and the researcher best able to inform on the subject were visited. Documents and various records were examined in the offices, work procedures and work methods were observed, and questions were asked regarding these as was deemed necessary to gain a better understanding of the situation. Sometimes the researcher was

allowed to obtain copies of work-rules, handbooks and instructions as support material to the field notes. The researcher paid especial attention to how the employees used ERMS during the observation. The eight participant observations in the five different organizations are shown in Figure 4.3.

4.4.3 Other Data Collection – Documentary Materials

In addition to interviews and participant observations, a further technique in data collection is to use other sources of data within the organization, some of it opportunistic and some of it deliberately sought out (Hartley, 1999). Some archive material is usually readily available within the organization that can provide valuable information on the research questions (Edwards et al., 1997). This study made use of such sources including, for example, (1) published materials such as laws, regulations and standards regarding records, RM and the storage, preservation, access and disposition of records (see section 2.3.3) and (2) documents of internal nature such as various work rules and procedures, policy statements, handbooks and manuals regarding the topic. Figure 4.4 shows the external and internal environment of the organizations regarding documentary material.

External environment	*Internal environment*
Laws	Rules
Regulations	Procedures
Rules	Policy statements
Standards on RM	Handbooks
	Manuals

Figure 4.4. The external and the internal environment of the organizations. Documentary material regarding RM.

Even though observation of laws, regulations and standards was part of the original strategy of the research, the use of internal documents were not. These documents, however, were useful as they enabled probing into various topics and thus provided further knowledge and background information. Looking into the legal environment and documentary materials inside the organizations proved to be helpful in order to determine whether the organizations were meeting the legal requirements as well as the organization's requirements regarding RM.

4.5 Data Analysis

In the analysis of qualitative data there are no strict rules that must be followed as when analysing quantitative data. There are, however, techniques that help 'make sense of the data' (Williamson et al., 2002; p. 293). In this section the methods of analysis of the research data are described. The majority of methods in analysing qualitative data are aimed at developing categories from the data. Grounded theory is one of those methods and probably the most commonly used. The analysis of the interviews and the participant observations are of this nature. The methods of discourse analysis were partially used in analysing the documentary materials.

4.5.1 Grounded Theory

The data analysis of the interviews and participant observations was based on forming a grounded theory, that is induction, deduction and verification were used to develop a theory based on the research data (Schwandt, 1997). A systematic and detailed analysis of the data took place. When developing the grounded theory, memos were made based on field notes, concepts and themes were searched for in the data, and they were subsequently coded and classified into general classes and sub-classes.

In grounded analysis the researcher writes down, as the data are collected, comments and notes about everything connected to the research. This is the first draft of the analysis of the data and is further strengthened by writing analytic and coding memos. A continuous comparison takes place during the whole research process. The progress of the research is based on comments, ideas, reflections, memos and coding. In that way the data collection becomes more to the point and at the same time the point of view of the researcher regarding the topic becomes more focused as the research progresses. A researcher who uses the methods of grounded analysis not only sheds light on the views of the participants in the research but shoulders as well the responsibility of interpreting what he/she sees, hears and reads (Strauss & Corbin, 1998). When the data collection has been completed all records connected to the interviews are read over a few times in order to draw out the main outlines of the research. This is done using coding, that is, subject names are assigned to the content of the interview that describe its contents as distinctly as possible. The coding is done in two stages. The first stage is open coding. At that time the data are read over and

over again and analysed word by word in an attempt to detect themes and coding classes that are then used in the subsequent analysis. The second stage is focused coding when the data are evaluated using one theme or coding class as the frame of reference (Emerson, Fretz & Shaw, 1995; Esterberg, 2002).

In the analysis of the data three main themes were in focus: (1) perceived objectives of introducing ERMS, (2) the implementation of ERMS, and (3) the use of ERMS. Chapters five, six and seven discuss these themes. Each theme is comprehensively analysed in one of these three chapters.

4.5.2 Discourse Analysis

When analysing internal documentary material and external material, such as laws and standards, the method of discourse analysis was used, among other methods. The method was, however, not used in a strict sense. In discourse analysis the researcher reads the text in a systematic manner and tries to understand the possible multiple meanings of the text, the contradictions in it, and the variable meanings, and so on (Bannister et al., 1994). In the analysis of these documents an attempt was sometimes made to compare what could be read from the text regarding instructions and rules to be followed and how the employees experienced these instructions and rules, whether they in fact knew them, understood them and followed them.

It is not to be expected that all the employees interviewed knew exactly all the factors that were influencing the internal and the external environment of their organization, even though most of them had some understanding of the situation. It was, therefore, important to examine internal policy statements and goals as well as external demands as expressed in laws and regulations set down by the society at large.

Organizations must operate in accordance with their bylaws that govern their operations and give them purpose. Many organizations have also written down policy statements and goals that apply to all or part of their operation. Records and information systems of organizations must meet these internal demands and in addition meet various external demands in a satisfactory manner. These external demands include, for example, laws regarding access to information or preservation of privacy, Icelandic and international standards on access to records and their safe-keeping.

It was important to examine both the internal and the external environment as it relates to records and information systems in addition to interviewing employees on their experience in using the systems. Otherwise, the aims of the research could not have been fully reached and it would have been difficult to conclusively determine whether the investment in these systems was returning the benefit that was aimed for at the time of purchase.

4.6 The Reliability and Validity of the Study

One of the limitations of this study may appear to be the small sample size. On a closer examination it is not. There were eight organizations that participated in the research. They were selected as being typical of medium to large organizations in Iceland. They were purposively selected to represent both private and public organizations and different types of industry. Furthermore, included in the sample were organizations that were believed to have implemented ERMS rather successfully as well as others where the implementation was not as successful. Finally, the implementation of four different ERMS programs could be compared between two organizations using the same system and between organizations implementing different systems. The sample is, to the best of my knowledge, representative of organizations in Iceland using ERMS.

The number of individuals interviewed was not large which may appear another limitation. However, it should be noted that those interviewed were those in the best position to provide information on the implementation and use of ERMS. It is not necessary to interview every employee to discover the actual situation regarding the implementation and the reasons why it succeeded or failed if those best able to inform on the situation are purposely selected. For this reason it was discovered to be not necessary to interview additional employees besides the records managers in the four-organization comparison group. The records managers were those best able to report on the implementation and could do so without bias. This became clear in the four organizations that were studied in detail. Furthermore, it should be noted that including consultants/teachers at the software providers produced additional information about other organizations that were not being investigated. These informants, the consultants/teachers, generously shared their own experience from working with and relating to employees in

other organizations that were their customers. This addition provided checks, offered a comparison with their field experience, and strengthened the grounds for making generalizations from the research.

Those who are not familiar with statistics sometimes become surprised how small a sample is often actually needed to obtain reliable results when the variation within the population is small. Order, culture and norms within societies and organizations reduse variation and versatility. Social order thus makes it less important which cases are examined. 'Look at *any* case and you will find the same order' (Silverman, 2000; p.108). It was Sacks (1992) who earlier pointed out this central tendency of social forms: 'Tap in to whomsoever and you get pretty much the same things' (Sacks, 1992; p. 485). He notes the ability of a child to learn a culture from very limited contacts with other people and gives the example of Whorf, the sociolinguist, who could build a more or less proper grammar of the language of the Navajo by just 'talking to one Navajo in New York' (Sacks, 1992; p. 485). Similarly within organizations there is culture and there are norms, and it turned out not to be necessary to question and observe a large number of employees to find out how ERMS was implemented and how it was being used.

The research design was based on a collective case study of these eight organizations that had bought ERMS. A collective case (or multiple cases) study is an exploration of a 'bounded system' or cases. It occurs over time through detailed data collection incorporating multiple sources of information in a rich context (Creswell, 1998). Case studies can be used to develop and to test a theory. Employing a case study like this one to make generalizations about the implementation and use of ERMS in other organizations requires attention to three factors, construct validity, reliability, and external validity (Yin, 1994). Validity refers to how accurately an account represents the social phenomena to which it refers, but reliability refers to the degree of consistency that different observers or the same observer on different occasions come to the same conclusion (Hammersley, 1990, 1992).

Construct validity is supported by the use of multiple data collection methods (Yin, 1994). In this research triangulation was used for this purpose. In addition to interviews and participant observations, valuable information could be obtained from documentary material that could be used to further identify the content of the interviews. During the data

collection access was granted to various written documentation regarding the topic and use of ERMS (see section 4.4.3). These documents directly impacted on the research.

Interviews were conducted with 38 employees of the eight organizations that had installed ERMS. These were those employees usually directly impacted by the introduction of ERMS; those that should or were directly involved in the decision, the implementation and subsequent development, and finally those that were supposed to be active users of ERMS after the implementation. Construct validity was further supported by the interviews with the six consultants/teachers at the software providers who had general knowledge of the situation as they were also dealing with other organizations in a similar situation as their customers in addition to those participating in the research. Finally, the participant observations provided the third approach to evaluate the implementation and the actual use of ERMS. The concept of triangulation implies that construct validity is supported if two or more sources identify a condition and at least two sources identify the proposition's impact (Cooper, 2000).

Reliability is demonstrated by following an appropriate use of a case study protocol (Yin, 1994). The way the interviews were conducted, transcribed and coded is described in section 4.4.1. The way the participant observations were carried out is described in section 4.4.2. Every effort was made to make the findings as reliable as possible.

External validity establishes the domain to which the findings of a case study can be generalized (Yin, 1994). It is not the aim of qualitative research to gerneralize. In this research, however, a detailed examination was made of four organizations. Another four corroborated the findings. Further, by including the participation of the six consultants/teachers and their field experience, the findings of this research, as far as they do no contradict their experience, can lend themselves to a general interpretation that extends to the implementation and use of ERMS in other organizations in Iceland.

This research is not a survey of the state of implementing ERMS in organizations in Iceland. The consultants/teachers had an impression of the success or failure rate when they gave their estimate of the situation. The extrapolations that can be made from this research are how employees use ERMS and which are the success or failure factors in the implementation. Although a further study and a larger sample may enhance the external validity, the general value of these findings should not be negated.

Silverman (2000) offers additional 'ways of thinking critically about qualitative data analysis' (Silverman, 2000; p. 188). He suggests five ways to obtain more valid or truthful findings in case that triangulation and respondent validation are fallible. These are:

- The refutability principle.
- The constant comparative method.
- Comprehensive data treatment.
- Deviant-case analysis.
- Using appropriate tabulations.

He urges qualitative researchers to become more objective by refuting their initial assumptions about their data, inspecting and comparing data between cases, avoid case selection that fits the analytic argument and on the contrary to seek out and address deviant cases (Silverman, 2000). It was attempted in the case selection and during the data analysis to have these guidelines in mind. Finally, it was attempted to use quantitative measurements whenever the qualitative data lent themselves to such interpretations.

It can be difficult to know when qualitative research is finished and enough data are at hand. At this point in the data collection saturation had been reached. It was deemed that there were enough data. Additional data were not providing valuable additional information. The data analysis proved this conclusion correct. This further supports the notion that generalizations can be made from this research about the factors determining success or failure in implementing ERMS in Icelandic organizations and how these systems are used, as a point of saturation had been reached in the data collection and new data did not provide additional information.

4.7 The Value of the Research

There is considerable discussion within organizations on how difficult it is to implement ERMS and how often the implementation fails to some extent. This research aimed at revealing how the implementation of ERMS can be facilitated and which factors influence on the successful implementation of such systems.

The practical value of the research is to discover new knowledge of how employees of Icelandic organizations use ERMS and which are the most influential factors in the

successful implementation of such systems. Likewise, it is of importance to learn which mistakes in the implementation are most likely to result in a failure of the introduction. The research could be of practical value for organizations by producing an analysis of the process in order that measures can be taken in the future which are likely to facilitate successful and effective implementation of ERMS and their effective use by employees.

The theoretical contribution aims at uncovering input factors of implementations of ERMS that influence on the outcome factors of the implementation. There is a lack of such studies, not only in Iceland but in other countries as well. This research was aimed at filling this void. The theoretical value of the research is to discover new knowledge on whether and how technological innovations are accepted into organizations, and how resistance to change is revealed in the implementation of these innovations. The research provided insight into the daily work of employees in organizations in connection with their use and non-use of the latest technology being introduced. This research should uncover whether organizational inertia regarding these systems inhibits such change, resulting in IT developments that reflect the organizational status quo, as has been sometimes the case with the introduction of information technology (Cooper, 2000).

5 Perceived Objectives of Introducing ERMS

Various reasons explain why ERMS are introduced into organizations. This chapter presents what the participants in the research perceived to be the objectives of introducing ERMS in their organizations. ERMS are designed to capture and manage records on paper and all electronic formats according to the organization's record-keeping principles. ERMS are designed to organize and manage the records of the company or institution from the time that the records are created or appear in the organization until they are disposed of, either destroyed or put into permanent storage. These systems must be capable of managing the organizational records during their lifetime.

The following themes/objectives emerged when the field notes from the interviews and the participant observations were analysed:

1. Increased productivity (including information security).
2. Improved customer/client service.
3. Anticipated cost savings.
4. Reduced space required for storing records (paper).
5. Integrated work procedures.
6. To gain a better overview of the processing of cases.
7. Legal requirements.

All of these seven objectives were mentioned spontaneously by some of the interviewees. In those cases when one of the above seven themes was not mentioned, an attempt was made to discover whether that theme was not in fact an objective or not. These seven suggested objectives are covered in turn in the following sections of this chapter.

5.1 Increased Productivity

All of the top management (the chief executives and managers) in the organizations studied considered increased productivity to be one of the objectives of introducing ERMS. Many of these mentioned that records and information management (RIM) would be more economical and to the point and would produce benefits for the organization as a whole. When David, the chief executive of the Government Institution, was asked about this, he replied:

Yes, more economical and to the point. The volume of information has increased dramatically. I spent far too much time in searching for information, sometimes about half an hour per day. And so did my secretary as well and my other subordinates too. We had to do something. We want this organization to have a well organized and an all encompassing records management programme.

Magnus, one of the managers at the Manufacturing Firm, mentioned that the employees were not turning out enough output. Magnus appeared to be a strict manager. He mentioned that he believed that the employees were not always doing their job. He mentioned that an objective of introducing the ERMS had been to get more out of the employees, to utilize the workforce better:

I believe that we must get much more out of each employee. All of them can do much more. Too much time is spent on idle chat and search for records and people do not work together. I think we should be able to co-operate, somehow. System G should make this easier.

When Peter, the chief executive of the City Organization, was asked whether one of the objectives of implementing ERMS was to increase productivity, he made the connection to security issues. He placed an emphasis on the fact that reduced security could lead to lost records and then time would be spent to recover the information, which would then lead to reduced productivity:

Yes, one of the objectives, and one of the main objectives, and I want to tie this to the security issues. Productivity falls if records get lost. Then everything goes into slow motion and we have to do things over again. By using System F we can store all our records in a central database in a safe manner. We make security copies of our records regularly.

Adam, a manager at the Financial Institute, said: "It is the objective of buying System E to manage information and to find it again. And then there is the second point, the system simplifies and speeds up every search for information." Jana, one of the managers at the Manufacturing Firm placed great emphasis on the fact that the main objective of implementing ERMS in the groupware had been to make it possible for many employees to work together on the same assignment. When she was asked about the objectives of implementing the ERMS, she replied:

One of the main purposes of buying the system was the groupware function. System G is a groupware and many employees can work on a record at the same time, such as on budgets and plans. We work together on assignments in this organization and work in teams a lot, and then this saves a lot of time and effort.

Only half of the records managers wanted to discuss this point to some extent. These four believed that this factor had played an important part in the introduction of ERMS. The other four of the records managers, however, when asked about this point found it likely that increased productivity was important. They made no further comments on this issue however. Dora, the records manager at the Financial Institute, placed great emphasis on the fact that one of the objectives of introducing the ERMS was increased productivity.

Yes, it was certainly one of the objectives to get this system as it makes a contribution. We should have economy as our guiding principle. I had been asking for this system for many years, but procrastination prevailed. Now, I am of course pleased and the system functions rather well.

Eight other employees – two of the four computer specialists, three of the eight specialists and three of the ten general office employees – agreed that increased productivity had been one of the objectives of the implementation of ERMS. Marias, a specialist/engineer at the Manufacturing Firm, said, for example:

I am sure that this could be very economical. It could save so much time and is also so much safer. Employees should not have any private files. We could, for example, find information from other employees, even if they are away, that is to say, if they used System G, but unfortunately not enough are using it.

Anna, a specialist/auditor at the Government Institution, like Peter, wanted to tie the decision to implement ERMS to security. She emphasized that reduced risk and increased records security contributed to increased productivity. She said, among other things:

Yes, the superiors, and others too, want this and assess it from the security point of view because we have to do so much risk analysis around here. This is a very safe system, much safer than the paper system, and we make security copies every day and they are kept at a different location, off the premises.

Other employees that worked for the organizations that had bought ERMS did not say much to support the idea that increased productivity had been the objective of implementing ERMS in their organizations. It was, however, never mentioned by any of the 44 interviewees that increased productivity was not an important objective. Furthermore four of the six consultants/teachers at the companies providing software emphasized strongly that expectations of increased productivity by the managers of their customer organizations played a large part regarding the implementation of ERMS. Markus, a consultant/teacher at Solutions, for example, considered this reason to be one of the main objectives: "Yes, they think that this is obviously the main objective, to increase efficiency."

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that increased productivity was one of the main objectives of introducing ERMS in organizations. This objective was not mentioned in the participant observation at the four organizations, the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm. The aim of conducting these participant observations was to study work procedures and to ask briefly about objectives.

5.2 Improved Customer/Client Service

All of the top management considered improved customer/client service to be one of the objectives of introducing ERMS. Adam, at the Financial Institute and Jana, at the Manufacturing Firm, placed great emphasis on this point and both said that the most important issue was that the customers were satisfied.

Six of the eight records managers and five of the eight specialists thought that improved customer/client service made a big difference and that the implementation of the system should improve the service. Viktor, a specialist/economist at the Government Institution, mentioned that it was embarrassing how late clients received replies: "Embarrassing, and then it is also directly our duty to respond within a specified time." Here Viktor refers to the Administrative Procedures Act, no. 37/1993, that contains directives that public organizations and institutions in Iceland must reply to inquiries within a specified time frame. Bjorn, a specialist/technician at the City Organization, also had

concerns regarding poor client service: "It is so depressing to have them wait and wait. We had to do something to improve our service."

Seven of the ten general office employees and two of the four computer specialists regarded improved customer/client service to be one of the objectives of implementing the system. All of the consultants/teachers in the companies providing software believed that expectations regarding this point weighed heavily with the managers of the client companies regarding the implementation of ERMS. Emma, at Computer Services, talked a lot about this issue and pointed to the importance of maintaining good relations with customers, otherwise organizations stood to lose their customers to competitors: "The competition is so great nowadays."

In the meeting of seven people at the Computer Co. everyone agreed that improved customer/client service was one of the main objectives of introducing ERMS in organizations. This objective was not mentioned in the participant observation at the four organizations, the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm.

5.3 Anticipated Cost Savings

All of the top management and all of the records managers considered anticipated cost savings to be one of the objectives of introducing ERMS. The managers connected this issue also to the question of increased productivity. "Yes, and it is efficiency that we were aiming for, and that it would reduce cost", said Hans at the City Organization, when he responded to this point. "Here we have such a high turnover of staff," said Adam at the Financial Institute. Adam made a reference to KM, that it was so expensive to lose the knowledge when staff left the organization. He added:

> It costs so much money to lose knowledge. Despite these merges we must preserve the knowledge within the organization. System E preserves the information, even if employees leave. That is the whole point of all this, obviously, because no one can find the records of other employees if they are stored without a system on the hard disk of their PCs or on system division disks. If an employee leaves no one can find anything. The information is just lost and that is expensive.

Laura, a manager at the Government Institution, mentioned various points regarding the implementation of the system that concerned anticipated cost savings. She said:

> This should of course lead to cost savings at the end of the day. That is the aim. We find information sooner and that saves time and speeds up decision making. Our job becomes more efficient, I should hope. I just refuse to believe that this does not reduce costs in the long run.

Two of the four computer specialists commented on this point. Jens at the Manufacturing Firm mentioned that one of the objectives was to reduce cost: "Yes, to reduce cost. There is no question. This should be labour saving, and that reduces cost." Stefan at the Government Institution, who proved to be very negative towards System D, thought that one of the objectives had been to save cost. He thought, however, that this objective would never be reached: "I am sure that this does not produce any savings, we just should have used better what we had before. It worked fine."

Six other employees, three of the eight specialists and three of the ten general office employees, agreed to some extent that the introduction of ERMS was based on anticipated cost savings. Furthermore, five of the six consultants/teachers in the companies providing software believed that managers of the implementing organizations anticipated cost savings from the implementation of the systems, "but that will never be realized unless the system is properly implemented," said Liv at the Computer Co.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that anticipated cost savings were one of the main objectives of introducing ERMS in organizations. This objective was not mentioned in the participant observation at the other four organizations, the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm.

5.4 Reduced Storage Cost

When the 38 employees of the organizations that had bought ERMS were asked if one of the objectives was reduced space required to store paper documents, 28 (six records managers, eight managers, four computer specialists, five specialist and five general office employees) were of that opinion. Thor, the records manager at Food Processing, said that

he had placed an emphasis on this point with his superiors, that the system would considerably reduce the use of paper in the offices:

> They understand it fully, also, because we have this quality management. Then every office is full of paper records, many keeping the same records. And there are many copies, all over. Now, everyone can access these records, just on their computer, also those records made by others.

When the consultants/teachers in the companies providing software were asked about the expectations of their clients regarding the reduced space required to store paper records by introducing ERMS they all six agreed that the expectations were that the volume of paper would be reduced: "It just has to be, paper records, folders, and cabinets. All of this occupies so much space," said Katarina at Software. And Agnes at Knowledge considered it to be one of their objectives. She said:

> It is one of their objectives. Often there are records and paper documents all over the offices. We have seen it in some organizations that have been successful, that the scanning reduces space. Everything is electronic, except that there may be one paper copy kept of the record for security purposes.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that reduced space required to store records (paper) was one of the objectives of introducing ERMS in organizations. Furthermore, it was found in the participant observations in the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm that reduced space required to store paper records was one of the objectives of introducing ERMS. About 15 employees of the four organizations mentioned this objective. In these participant observations a large number of offices were visited in each organization and several dozens of employees were briefly questioned about the objectives of introducing ERMS. None of these participated in the interviews and not all were asked about the objectives. There were close to 90 employees that commented on the objectives.

5.5 Integrated Work Procedures

When the 38 employees of the organizations that had bought ERMS were asked if one of the objectives of introducing ERMS had been integrated work procedures, 32 (eight records managers, eight managers, four computer specialists, five specialists and seven general office people) were of that opinion. All the managers thought so, and Magnus at the Manufacturing Firm said: "And we also want to have here quality work procedures."

All of the records managers and all of the computer specialists were also in agreement on this point. When Elmar, a computer specialist at the Financial Institute, was asked about this he emphasized that the organization valued co-ordinated and uniform work procedures. He said:

> It is our objective to co-ordinate our work procedures. Such tools support that effort. It is no good that each and every employee is just making up their own rules. System E gives us more opportunities to co-ordinate our work procedures, but we had to make up rules on how to work with the system.

Inga, the records manager at the Municipal Office, said that she had stressed with her superiors that she could see it as one of the objectives of buying an ERMS that it had to be possible to provide more uniformity in work procedures. She said that there had been a considerable inconsistency in the work procedures in the organization. She reported on her superiors:

> And they bought the argument. It is dangerous from the records management point of view to have inconsistencies in work procedures. Then every employee is storing records according to a private system, on floppy disks and on the hard drives of their PCs in the various systems. This makes it difficult to find records and information. It may also be difficult for employees to find their own personal records. Yes, they swallowed it, hook, line and sinker. It was one of the objectives.

All of the consultants/teachers in the companies providing software were in agreement that one of the objectives of the organizations in implementing ERMS was increased emphasis on integrated work procedures.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that integration of work procedures was one of the objectives of

introducing ERMS in organizations. Furthermore, it was found in the participant observations in the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm that integrated work procedures were one of the objectives of introducing ERMS in the organizations. About 30 employees of the four organizations manifested this objective during the participant observations.

5.6 A Better Overview of the Processing of Cases

When the 38 employees of the organizations that had bought ERMS were asked if one of the objectives of introducing ERMS was to gain a better overview by top management of the processing of cases, 26 of them (eight records managers, eight managers, three of the four computer specialists, three specialists and four general office employees) were of that opinion. All of the managers, all of the records managers and three of the computer specialists thought so. When Thor, the records manager at Food processing, was asked about this, he said: "Yes, one of the objectives was to provide top management with a better overview. Managers can now see who are not working in the system. They may ask, if employees are not working in the system, are they then just busy doing nothing?"

Vilma, a general office employee/secretary at the Manufacturing Firm had a lot to say about this point and when she was asked what she thought about the subject she stated: "Yes, they want to know what cases are being dealt with and responded to and which are not, and that's only normal." Sven, a specialist/accountant at the Financial Institute, was not particularly positive towards the employees being monitored, and observed on a daily basis. He said: "Yes, yes, this is supposed to be as in a police state, everyone is under observation." (See also section 7.6.4). Mark, a specialist/economist in the Government Institution, considered one of the objectives of introducing the system that managers and other employees would gain a better overview of the processing of cases:

> Not only managers and supervisors, but all of us. We need to process a huge number of cases, and it is marvellous to be able to discern the status of each case, who is processing it, and whether they may not have been processed at all, or by whom. The objective, by purchasing System D, was exactly to obtain this overview. However, not everyone is working in System D. That is the problem.

All of the consultants/teachers in the companies providing software were in agreement that one of the objectives of the organizations implementing ERMS was a better overview of cases and the caseload. "Yes, yes, then the managers can have an excellent overview of everything that is happening in the organization, and that is exactly the aim. They are then in a position to push, if cases are falling behind, or are not being responded to at all," said Andrea at Image Group.

In the participant observation (the meeting of seven people) at Computer Co. everybody agreed that to gain a better overview of the processing of cases was one of the objectives of introducing ERMS in organizations. Furthermore, it was discovered during the participant observations in the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm that to gain a better overview of the processing of cases was one of the objectives of introducing ERMS in the organizations. About 25 employees of the four organizations mentioned this objective during the participant observations.

5.7 Legal Requirements

Many of the interviewees in the organizations that had bought ERMS thought that one of the objectives of introducing it was to fulfil the organization's legal requirements. All of the records managers, all of the managers, three of the four computer specialists, six of the eight specialists and five of the ten general office employees said that this was one of the objectives. When the other five of the general office employees were asked about this point, it became apparent that they had not thought about it and therefore did not make any comments on this point.

However, it was revealed that many of those that believed that one of the objectives of implementing ERMS was due to legal requirements actually knew very little about these legal requirements. The records managers were, however, all fully aware of the legal requirements and could each and everyone make reference to the legislation that was pertinent to their organization. Lisa in the Government Institution placed great emphasis on fulfilling legal requirements as the main objective for the implementation of ERMS:

That was the main objective. There are so many laws: the National Archives Act, the Information Act and so on, and so on. Our work must be beyond reproach and we must be able to find everything, otherwise we are not fulfilling our legal obligations. David and the others have always been fully aware of these requirements and that is why we decided to buy System D.

When Ragna at the City Organization was asked about the matter she confirmed that one of the objectives of implementing ERMS was to meet legal requirements: "The information must be safe and secure, that is what the legal requirements dictate, also the old stuff, because for example the Information Act is retroactive." Dora at the Financial Institute considered one of the objectives as respecting privacy: "The aim, yes, and with this large number of employees, there must be rules, we are by no means exempt from the Privacy Law." Inga at the Municipal Office mentioned that it was necessary to manage knowledge and that it was a part of the legal environment of public organizations to preserve knowledge for future generations. She said, among other things:

> The National Archives Act makes it directly our obligation in the municipal offices to preserve knowledge for posterity, among other things for historians. This is part of our policy and the politics involved. We may have new people coming in after each election, a new board of directors, new directions and emphases. System E helps us to keep things in order, even if we have new people coming in.

Pamela at the Public Services Office mentioned the Administrative Procedures Act, no. 37/1993, and believed that the managers had had the aim in mind, when implementing ERMS, that they could now better meet the requirements made by this law:

> The Administrative Procedures Act makes a difference here. This is a public organization and we must stand ready to respond to various parties if the demand rises. Records are a proof of what was done, and if you do not manage your records, you are just in a deep shit.

Many employees of the eight organizations that had bought ERMS had worries that in the past the law had not been followed regarding the permanent preservation of historic records and registered knowledge and believed it to be one of the objectives of the implementation of ERMS to facilitate the preservation of that information and knowledge within the organization. Mark, a specialist/economist in the Government Institution, was

very much aware of the National Archives Act, no. 66/1985, and said that he worried very much that important historical records and information had disappeared from the organization over time:

> Of course it was one of the objectives. System D makes sure that historical records will not disappear when an employee leaves. We have experienced cases that are beyond anything and we have had to search for such records all over town, at the homes of previous managers. They removed full boxes of records, and one kept these in the garage at his son's house. They are all going to write their memoirs when they get old.

It was often mentioned by the interviewees that managers would remove records that were created during their tenure and take them home with them when they retired. These were especially managers in public organizations. They were going to write articles or books and would take the original records home with them without asking anyone or informing anyone. These employees saw a great advantage in implementing an ERMS and thereby eliminating the possibility of records disappearing with the change of management or when other employees left the organization.

All of the consultants/teachers at the companies providing software were in agreement that one of the objectives of the organizations of the implementation of ERMS was to fulfil legal requirements. It was also mentioned that one of the sales arguments used by the providers was to point out to the managers that by implementing ERMS, the organization could better meet their legal requirements. Liv at the Computer Co. said: "I think that the top management is usually aware of the legal requirements and by implementing ERMS this is one of the objectives sought. We put great emphasis on this point when we introduce System F. It sells."

In the participant observation (the meeting of seven people) at Computer Co., everyone agreed that legal requirements were one of the objectives of introducing ERMS in the organizations. Furthermore, it was discovered during the participant observations in the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm that legal requirements were one of the objectives of introducing ERMS in the organizations. About 40 employees of the four organizations mentioned this objective during the participant observations.

5.8 Discussions with Three Focuses

From the above it appears that many employees of the organizations had not given the objectives of implementing ERMS in the organizations much thought. All of the managers did, however, have certain objectives in mind. This is hardly a surprise as the managers are in the end those who make the final decision to buy ERMS and must have certain objectives in mind regarding the implementation of the system.

Records managers, computer specialists, other specialists, and the consultants/teachers at the companies providing software were, however, rather well informed regarding certain objectives. General employees of the organizations had not given much thought to the objectives of implementing the system. This is understandable, as it appears that in none of the organizations were the general employees systematically informed of the project objectives and the benefits to be obtained by implementing ERMS.

Some differences can be detected between employees performing different jobs regarding which objectives were regarded as most important or were mentioned most often, as shown in Table 5.1.

Table 5.1. Perceived objectives of implementing ERMS, according to job function, as mentioned during the interviews.

Perceived Objectives of Introducing ERMS	Records Managers	Managers	Computer Specialists	Specialists	General Office Employees	Consultants/Teachers	Total
1 Increased productivity	4/8	8/8	2/4	3/8	3/10	4/6	24/44
2 Improved customer/client service	6/8	8/8	2/4	5/8	7/10	6/6	34/44
3 Anticipated cost savings	8/8	8/8	2/4	3/8	3/10	5/6	29/44
4 Reduced space required for storing records	6/8	8/8	4/4	5/8	5/10	6/6	34/44
5 Integrated work procedures	8/8	8/8	4/4	5/8	7/10	6/6	38/44
6 To gain a better overview of cases	8/8	8/8	3/4	3/8	4/10	6/6	32/44
7 Legal requirements	8/8	8/8	3/4	6/8	5/10	6/6	36/44

All of the managers were of the opinion that increased productivity and improved client service were important objectives but only some 30% of the general employees mentioned the importance of increasing productivity. Anticipated cost savings was a perceived

objective by all of the managers and the records managers, but it was distinctly less perceived as an objective in the other groups. Members of all the groups, except the general office employees, seemed fully aware of the potential of ERMS in reducing storage space. It is noteworthy that the specialists and the general office employees did not value a better overview of cases to the same extent as the other groups.

The best general agreement on objectives seemed to be regarding integrated work procedures and legal requirements. This point was further manifested during the participant observations in the four organizations, the Government Institution, the City Organization, the Financial Institute and the Manufacturing Firm, as shown in Table 5.2. Meeting legal requirements seemed to be of particular concern.

Table 5.2. Perceived objectives of implementing ERMS, as mentioned in the participant observations.

Perceived Objectives of Introducing ERMS	Computer Co.	Government Institution, City Organization, (two public organizations)	Financial Institute, Manufacturing Firm (two private organizations)	Total
1 Increased productivity	7			7
2 Improved customer/client service	7			7
3 Anticipated cost savings	7			7
4 Reduced space required for storing records	7	8	7	22
5 Integrated work procedures	7	23	7	37
6 To gain a better overview of cases	7	20	5	32
7 Legal requirements	7	22	18	47

All of the seven participants in the participant observation at the Computer Co. agreed on the seven perceived objectives of introducing ERMS among their customers, as shown in Table 5.2. In the participant observations in the four organizations there was general agreement on the importance of meeting legal requirements among the employees present during the observation. Not all employees expressed an opinion on perceived objectives and they were not specifically asked if they did not express an opinion. Employees in the public organizations seemed, however, better informed or more concerned regarding the possible objectives of introducing ERMS.

It is of interest to discern whether there was a difference between public and private organizations regarding perceived objectives of implementing an ERMS. This is shown in Table 5.3.

Table 5.3. Perceived objectives of implementing ERMS, according to type of organization, as mentioned during the interviews.

Perceived Objectives of Introducing ERMS	*Public Organizations*	*Private Organizations*	*Total*
1 Increased productivity	10/20 (50%)	10/18 (55%)	20/38
2 Improved customer/client service	15/20 (75%)	13/18 (72%)	28/38
3 Anticipated cost savings	13/20 (65%)	11/18 (61%)	24/38
4 Reduced space required for storing records	16/20 (80%)	12/18 (67%)	28/38
5 Integrated work procedures	18/20 (90%)	14/18 (78%)	32/38
6 To gain a better overview of cases	14/20 (70%)	12/18 (67%)	26/38
7 Legal requirements	16/20 (80%)	14/18 (78%)	30/38

There seemed to be no significant difference in opinions regarding the objectives between public organizations and private organizations, for the most part. However, there was a slight difference, regarding two of the objectives, i.e., reduced space required for storing records (13%) and integrated work procedures (12%). The explanation could be that public organizations usually keep more paper records and have greater need for storage. One of the two public organizations placed great emphasis on uniform work procedures and a high standard for records. It had written manuals for records creation and management. Contrary to what some might expect, it was not found that public organizations were less concerned with improving customer service and did not spend their funds more freely, as the concern for cutting costs indicated.

It appeared that the managers of the organizations had certain objectives in mind when buying ERMS and they wanted the systems to increase productivity and efficiency in the organizations. These objectives were similar to the objectives identified in a survey of imaging systems in local governments in North America (Meagher, 1997). Meagher's survey was conducted among 30 ARMA members that registered to participate, 20 from the USA and 10 from Canada. Five objectives were identified and these are, ranked in

order of importance: (1) Improved customer service, (2) increased productivity, (3) reduced space, (4) anticipated cost savings, and finally, (5) that the imaging system would become an integrated component of document workflow solutions. The number of respondents is admittedly small and the selection is another limitation. Nevertheless, the survey revealed the likely objectives of introducing systems that facilitate RM. It identified the same objectives as the present research except for (1) gaining a clearer overview of cases and (2) meeting better legal requirements. These two objectives were not relevant for Meagher's survey. Later legislative developments granting individuals access to information resting with public authorities about themselves and of the processing of cases has made these objectives more than relevant for public organizations in many countries. This has, for example, been given as the main reason for a number of implementations of ERMS in the UK (Tower Software, 2005) which agrees with legislative developments in Iceland (Information Act, 1996).

The next chapter will examine whether the managers supported the proper implementation of ERMS in order to achieve the perceived objectives mentioned above. Secondly, the chapter examines how the organizations took advantage of user participation concerning the system specification, the selection of the system, and the development process during implementation, and thirdly, whether the managers were providing the employees with satisfactory education and training regarding RM in general and ERMS in particular, before and during implementation. Finally, the chapter compares the outcomes of implementing ERMS with the perceived objectives in the different organizations.

6 Implementation of ERMS

Implementing a new system, such as ERMS into an organization calls for new ways of thinking and collaborating. It has been proposed that the implementation of ERMS follows the same principles as managing change. It should, therefore, be important to use accepted procedures and processes of change management in implementations. The implementation of systems of new work procedures in organizations seems to result in a failure primarily due to a lack of management support, insufficient user participation in the system development process and limited training offered to employees on how to use the system. The implementation of such systems shows a much better success rate in the unfortunate by too few cases where the support of top management is strong (Fjermestad & Hiltz, winter 2000-2001), user participation is genuine (Lawrence, 1975) and the training of employees is sufficient (Dennis, Pootheri & Natarajan, 1998).

The following sections of this chapter examine how these factors were dealt with in the organizations studied and how they applied to the implementation of ERMS, and finally, will compare the outcomes of implementation with the objectives in the different organizations. Did the implementation meet expectations and did it fulfil the objectives set in the beginning of the implementation process?

6.1 Support by Top Management

Support by top management was mentioned quite frequently in the field notes. The themes that were discovered when support by top management was mentioned and those that were mainly discussed were:

1. Interest and control by management of how employees were using the system.
2. The use of the system by the managers themselves and their own knowledge of the various functions offered in the system.
3. How the managers motivated employees to use the system and how they rewarded those that used the system in the correct way.
4. The responsibility of managers for the correct and efficient use of the system.

These four themes are covered in turn in the following sections.

6.1.1 Interest and Control by Top Management

All of the top management, all of the records managers and all of the computer specialists commented on and were in agreement that the managers had to monitor the use of ERMS by the employees and should take advantage of that option in the system. Neither the specialists nor the general office employees expressed any strong opinions on this point. Five of the eight specialists and five of the ten general office employees mentioned this option in passing and knew of this option in the system.

Anna, one of the specialists in the Government Institution, put great emphasis on top management's maintaining control: "They must do it. Control is important and good for those of us who are conscientiously using the system. I monitor the use of the employees in my department."

Bjorn, a specialist/technician, and Karen, a specialist/architect, both at the City Organization, and Frida, a general office employee/senior secretary at the Financial Institute mentioned especially that they understood fully that the top management had to see to it that employees did use the ERMS. All three of them emphasized strongly, however, that they did not feel comfortable knowing that their own use might be monitored. They also admitted that this was part of the reason why they sometimes tried to avoid using ERMS (see also section 7.6.4). This feature is a necessary part of the system being a groupware, but "the feature must be explained to employees", as Dora, the records manager at the Financial Institute, commented. According to Icelandic Privacy Act, no. 77/2000, employees must be informed if their work is being monitored (Kristjansdottir, 2003). "Employees must be encouraged to do a good job and they do not have to enter records until they are ready for their work to be seen by others," Dora said.

All of the consultants/teachers at the companies providing software discussed this issue at length and were all in agreement that the control and groupware function was what ERMS was all about. Liv at Computer Co. had this to say:

> It is so easy using the system. We can, without any problem, control who are creating cases, the system itself does the monitoring. It's no problem to see who works in the system and who does not. And in Mat, as an example, the managers were open to this, too. They wanted the laggards to join the system, those that have always been pushing the system aside and do not want to work in the system.

"One has to promote such a process very strongly to top management when they are signing the contract," Agnes at Knowledge said. And she continued:

> In the contract there has to be a clause about control by top management. Surveys, both formal and informal, have shown that implementation will fail unless we follow some sort of a process. Then we are able to, perhaps after three or six months, to wait and see. Then we can see how it's going and who are using the system. Then the formal implementation is over and the continuous training begins.

The consultants/teachers at the companies providing software all found it unnecessary to point out that information from the "logbook" should be regularly presented to the managers to show who are working in the system and who are not.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that interests and control by managers of the use by employees of the system was a necessary factor for the successful introduction of ERMS into an organization. It was also revealed during the meeting that fewer managers used the control function offered in ERMS than those who did.

6.1.2 The Managers' Own Use

All of the records managers, six of the eight managers, three of the four computer specialists, five of the eight specialists and all ten of the general employees expressed the opinion that members of the top management should, just like the general employees, use ERMS. All the consultants/teachers at the companies providing software were of the opinion that all managers of the organizations should use the ERMS that had been bought. In fact, it became evident later that four out of the six managers claimed that they did not have time to work with ERMS and wanted someone else to do all the work for them in the ERMS. Magnus, one of the managers at the Manufacturing Firm, was one of these six but he said, as an example: "I am doing so many other things, naturally, that I do not have time. I want to have my secretary solely doing the job." "It is this lack of time," said Hans, a manager at the City Organization, who was also one of these six. "Ragna does the job for me."

Pamela, the records manager in the Public Services Office, mentioned that the chief superintendent hardly used ERMS but had his secretary take care of entering all records into System D on his behalf and also of searching for information that he needed. She said:

> The chief superintendent is not very keenly interested but he has a good secretary. The secretary helps him to do the job and is by his side, so it works. But we are lucky in the fact that other managers are relatively co-operative about using System D.

Nina, the records manager at the Manufacturing Firm said that it was a problem that hardly any member of the top management used ERMS at all. Thor, the records manager at Food Processing, claimed that some members of the top management in his organization got away with not using ERMS and had others, their secretaries especially, filing and searching for records and information in the system. He said that they should know how important it was for the organization that they use the system themselves:

> They should know how important it is that they use System F themselves. It is fundamental that the managers take an active part in the implementation and use of the system. It creates faith in others in the system if the managers use it and of course, that should be the policy. This is groupware designed for teamwork, by the way.

This division of work between managers and their secretaries may seem like a logical division of labour. However, it is to some extent doing the same thing twice over. Managers write a lot of letters, reports and memos, to mention just a few forms and types of records. The easiest and simplest way is to write these using the system. All employees are supposed to work in the system and to save all the records that they create in the system upon completion, as well as the records that they receive electronically. It is a duplication of effort if the managers have their secretaries take care of saving records that every manager can easily just do by taking a little time to learn some simple operations.

When Alma, the records manager at the Construction Firm, was asked whether the top management in her organization was using ERMS, she said: "It varies. Some use ERMS a lot, others do not." She discussed this at length and she said that she had the personal objective of having all managers in the end using the system, including those that

for now resisted using it and had others entering, searching for and retrieving the information for them. Alma then said, among other things:

> The managers frequently display this antipathy. They want to have their secretaries classify and register the records, but they must also learn this. They write a lot themselves, all kinds of letters and reports, and then they must classify, register and file as well. But they would rather prefer to have someone else do this for them.

When Dora, the records manager at the Financial Institute, was asked about the situation in her organization regarding the use by top management of ERMS she said that they did not all of them use the system but she said that she did not understand why:

> But it is so simple when you have got the hang of it. And if they do not want to join the rest of us, then they are running a great risk, for their departments, I mean. And if they are negative … everyone must work in the same system. Some of the managers want to write their letters using Word and they even let their subordinates get away with doing it as well.

Dora said that the use of ERMS by top management in her organization was increasing rapidly.

As mentioned before, Alma, the records manager at Construction Firm, said that many managers in her company used System G, but not all:

> We can see it so clearly because we have these field offices spread around the country. In those offices where the manager uses System G himself the going is great. Then everyone is using ERMS. But in those offices where the manager does not use the system, there we experience difficulties. Then the engineers in those offices get away with not using the system as well, if they prefer to use some other software.

All of the consultants/teachers in the companies providing software agreed that the main obstacle to successful implementation was when the top management in the client organization either did not use ERMS at all or hardly ever. The consultants/teachers believed that lack of time was the most common excuse by the top management for not using the computer software that their organization had invested in. Katarina at Software had this to say about this point:

They say: 'We do not have time to become familiar with this System S. We have so many other assignments.' Well, well, and as you can see, they did not want to learn how to use the system. And this is certainly ... I have seen this in many organizations, definitely. This is also one factor that plays a role in this respect.

Andrea at Image Group said that it was all too often the situation among their clients of Image Group that the top management did not want to use ERMS. When she was asked whether they did not realise the convenience provided by the groupware function, she said:

Yes, yes, exactly. But then they have not been buying the right system. Then they should rather have bought a cheap system for registration and have all correspondence go through some records clerk for registration. It is possible to get such systems really cheap.

Liv at Computer Co. said that she did not understand why members of the top management did not use System F themselves but wanted others to do so. And when she was asked more closely she said that every employee had to take part in the teamwork. By introducing ERMS, work procedures were being completely changed with the groupware function, she said.

Emma at Computer Services discussed at length the participation of top management in using ERMS. She mentioned that the managers in her client companies did often not use System D at all, which was, however, quite necessary if the implementation was to be a success. She said: "For the system to function correctly all employees must work together in an organized system, the records are filed centrally, and that of course calls for attention to detail and co-ordinated work procedures."

Markus at Solutions said that many managers in the companies that had bought System O did not want to use the system themselves. He considered it a great problem. He said that managers say that they have so little time. He knew of instances where the manager did not know how to work in the system, and he said that some did not even know how to operate a computer.

It was also crystal clear, as stated by all the consultant/teachers, that when the top management used ERMS it made all the difference regarding the successful implementation of the system. Liv at the Computer Co. said, for example:

When the top management knows what this is all about and uses it, I mean that situation does exist that they are using the system, and we have examples that we know quite well, like at Orka. The managers at that company understand this very well and attend introductory meetings and training seminars, and I think, are all using System F. Some managers understand this and want to learn how to use the system and do use it, but they are just many fewer than these who don't.

Emma mentioned also examples among the clients of Computer Services where the managers in companies that have bought System D used ERMS appropriately. She mentioned a CEO who was enthusiastic in using the system and participated in the training: "But this is rather the exception, unfortunately," she said.

Agnes at Knowledge mentioned that it was a fundamental point that the top management would use ERMS. They should set an example, be the leaders of the pack. She mentioned an example of one of the clients of Knowledge who was very active in the training who said: 'I am just going to see how you make this work right from the beginning.'

Liv mentioned other cases from the client group at Computer Co. and said that in some organizations the managers were enthusiastic in the beginning, but then they stopped trying to use ERMS. They most frequently used the excuse that they did not have enough time. Liv believed that the top management were just too lazy to use ERMS but the managers were, however, excited about using the system to begin with. Liv emphasised that all organization of information demanded time to begin with of course but paid off when it came to finding the information again. She said:

Sunna Karadottir at Berg, she came to the introduction and then to the training seminar. She wanted to show an effort but I do not think that she is using the system herself. She writes records in Word and sends them to her secretary who is to do the work and enter the records into the system. This is doing the same thing twice. Total nonsense.

Markus mentioned a similar example from the client group at Solutions regarding the use by top management of System O. He said: "The manager came to the training seminar just for show. He does not use the system himself but demands that others do use it. It is questionable whether there is any support given by such behaviour."

Later in the interview with Andrea at Image Group it was revealed that some of the managers among the clients of Image Group believe that they did not have to use ERMS and follow set rules. Other employees were, however, supposed to do so. She said that the managers were often the most difficult group to deal with. They did not attend the seminars, but she said that it is a key issue that the managers know how to use the system. She mentioned that the managers knew less than other employees, and had the most limited knowledge of it.

In the interview with Katarina at Software, it was furthermore revealed that it was very easy to print out various reports from the system, but the managers who were the only ones that had access to do so did not know how to do it and called in expensive consultants to do the job for them: "They do this over and over again, call in a consultant who pushes a button or two for them. This is absurd," she said. "Our consultants here at Software do not come cheap." In the interview with Katarina it was quite clear that there is often resistance on the part of managers of companies and other organizations to learn how to use the information systems. She said that they found it more convenient to call in a consultant from the company selling the system, even though the cost involved was considerable.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that it was very important that top management used System F and used it correctly. It was a necessary part of introducing ERMS into an organization. It was also mentioned at the meeting that there were many fewer managers who used ERMS than those who did, but they all wanted the other employees, nevertheless, to use the system.

6.1.3 Motivation and Reward

All the records managers, six of the eight managers, all the computer specialists, four of the eight specialists, eight of the ten general employees and all of the consultants/teachers at the companies providing software considered it important that managers would motivate employees to use the system and found it obviously important to reward those employees that used the system in a correct manner. It was, however, the opinion of most of the group that many managers did not act in this way.

The eight organizations differed in their culture concerning motivation and reward. This could be observed during the interviews, although a study of the organizational culture

was not part of the research. The Government Institution was managed with directives from above. Employees were supposed to follow set rules and rewards were not high on the list. The Financial Institute, the Food Processing and the Construction Firm, all private organizations, had a culture of rewarding those that showed a good performance on the job. The Public Services Office, the Municipal Office and the City Organization, one government and two municipal organizations, did not reward outstanding performance. Finally, the Manufacturing Firm used autocratic management where employees were expected to do their job in the absence of any reward or motivation.

The records managers and the consultants/teachers at the software providers had the greatest interest in discussing motivation and reward. Nina, the records manager at the Manufacturing Firm, said for example:

> This is really a management exercise. What I mean, what is needed is to follow through in the right way. All the tools are at hand but the employees do not have the knowledge and do not receive the motivation that is necessary. The employees have System G and they have the computers. It is, therefore, just a management exercise to implement it.

When Nina was asked more closely regarding the situation in her organization, she replied:

> Unfortunately, there is not much motivation. This is in fact a management problem within the company. The managers are not motivating the people enough to use the system, and the employees, well ... I mean, they are too lazy to learn to use it, and get away with it. What is needed is for the managers to motivate the employees, follow through to see that they learn how to use it, and finally, control their using it.

Inga, the records manager at the Municipal Office, spoke about the lack of special motivation coming from the managers in her organization. She felt that it was really bad. She said:

> Well, we have obviously bought this expensive system and then it is not being used because it … well the managers are just not capable enough to make the decision that now we will begin to use the system, using it is our policy. And then we must reward those that do a good job. Yes, and then all this goes down the drain somehow, and then they want to blame it on the system. But this is not any fault of the system. System E is a very good one.

When Alma, the records manager at the Construction Firm, was asked about motivation and reward of employees by top management she said that it was quite common that employees were rewarded for doing a good job, and their use of System G was no exception. She said:

> It has been done here. Employees have been rewarded that have excelled in their use of System G. We have here a few individuals who have been chosen employees of the month for excellent work in System G. And this is very motivating and rewarding.

"And you can reward people in many ways," said Thor, the records manager at Food Processing Ltd, when he was asked about reward and motivation regarding the use of ERMS in his organization: "Just a compliment or a pat on the back. One division manager does that every now and then in his department. It works."

Lisa, the records manager at the Government Institution, said that in her organization there was no special motivation or reward for employees for using System D. The culture of the organization was more that the employees are obliged to use ERMS and no other system for the records of the institution. She said:

> There is no special motivation at work here. In this institution everything is rigid. When a decision is made, it is just carried out, whatever the cost, even if there is some protest. There was some board decision made in the beginning that said that System D was to be the system that all employees should use. And the records of the institution are not to be put into another system, no way.

She continued talking about the formalities, and one could discern that she did not consider this the correct style of management: "I am, however, sure that it would be better to have some sort of reward system in place. People do not like to be coerced. Then they are not happy." Lisa maintained furthermore that a specialist had quit his job at the institution when he received a job offer from another organization, among other things because he was ordered to use System D and he did not like it.

Karen, a specialist/architect at the City Organization, talked a great deal about how important it was to motivate people and educate them about the use of the ERMS. That is, however, not how it was in her organization. She said:

The employees were neither motivated nor ordered to work in the system. Furthermore, they did not receive any information and training on how much the use of the system could improve the records management in the company. No motivation, and definitely no reward.

The consultants/teachers at the companies providing software mentioned often how important motivation by the managers was and reward of employees regarding the successful implementation of ERMS. They mentioned various examples and referred often to their customers. Liv at the Computer Co. said:

> I have found it makes a large difference, as I have seen at many of our customers, that the managers do something to reward those individuals within the company that are doing a good job in this respect. One company, for example, threw a party after the implementation because it was so successful. But this is rare.

"A reward system always works well," said Andrea at Image Group. "There must always be some carrot involved," and she mentioned an example from a customer of Image Group where an employee who was exceptionally good at using the system was given the opportunity to invite his family to a restaurant for a dinner at the company's expense.

Emma mentioned, as an example, the Social Work Office, which is a customer of Computer Services:

> There the managers motivate the employees and then they are rewarded as well for protecting and preserving the knowledge. They are facilitating achieving to the various laws. And they, these individual users, are contributing so much by using the system. The reward is, for example, that the employees are supported in attending training seminars in subjects that they have a personal interest in, like cooking, physical fitness, and so on.

Katarina at Software mentioned often during the interview that she found what she called personal development on the job and career planning lacking in many organizations in Iceland. She believed that Icelandic managers were lagging far behind in this respect compared to what she knew from her stay abroad. In the interview it was mentioned that she believed that managers were not supporting their subordinates, did not motivate them to pay attention to detail, and did not reward those employees that were doing a good job.

She felt that it was correct to reward those employees that were using the system and using it correctly.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that it made a great difference that employees were motivated to use System F and that they were rewarded for the correct use of the system. It was quite clear during the meeting that motivation and reward were important factors in the successful implementation of ERMS in organizations. It was also mentioned during the meeting that it was rather rare that employees were rewarded, but in those instances where it was done, it paid off.

6.1.4 The Responsibility of Management that ERMS is Being Correctly Used

All the participants were of the opinion that managers must realize that they are responsible for the correct and effective use of the system. It became clear, however, during the interviews that three of the eight managers in the four organizations that were studied in detail did not realize or accept this responsibility. These were Peter and Hans, both managers in the City Organization, and Magnus at the Manufacturing Firm.

Those that were mostly asked about this responsibility and therefore those that discussed it to the greatest extent were the records managers and the consultants/teachers at the software providers. Four of the eight records managers believed that many managers did not realize that they carried this responsibility. "I believe that they hardly recognize the responsibility here in this company," said Nina, the records manager at the Manufacturing Firm, "but who pays in the end if a costly investment does not pay off? The shareholders."

All of the consultants/teachers at the companies providing software could mention examples of managers not realizing that they ultimately carried the responsibility of the correct and effective use of ERMS. Five of them were of the opinion that in many cases there was a fundamental lack of understanding. Liv at the Computer Co. came straight to the point and did not put it mildly: "I am just so surprised how irresponsible some are regarding the records and what they are doing. The managers, for example, and they should be responsible for this part of the operation as well as the rest of the running of the organization."

Agnes at Knowledge was a little more positive and believed that many managers realized their responsibility regarding RM and that they saw ERMS as a tool to help them carry out this responsibility more effectively. She said:

> Fortunately, there are many managers that realize their responsibility. They also see the benefits that can be reaped and set clear rules about how and when ERMS is to be taken into use. They say why this is to be done and how the use will be monitored.

Andrea at Image Group thought that managers often did not want to shoulder the responsibility and mentioned as an example a customer, a government organization, where the CEO wanted to distance himself from the responsibility of ineffective implementation. The manager considered the system so poor, and that was the reason why it was so difficult to have the employees use the system. Andrea said:

> And he just wanted to blame it on the system: 'This system is no good', he said. System, system, system, I hear this just far too often. System G functions, however, quite well in many organizations, just very well. But you need to put time and money into the implementation, and the minimum requirement is that the managers are positive. That is my opinion.

In the participant observation (the meeting of seven people) at the Computer Co. everyone agreed that it made a considerable difference that the managers met their obligations and responsibilities regarding RM, and in that connection implemented ERMS in an effective way. Effective implementation made sure that the security of records and information was taken into account. In the meeting it was clearly stated that in many companies it seemed that the managers did not realize their responsibility. It was equally clear at the meeting that in those companies where the managers took their responsibility seriously, implementation of ERMS went much more smoothly.

6.1.5 Discussions with Previous Findings

The respondents were usually rather willing to express their views regarding the support by top management in implementing the use of ERMS in organizations. Even though all of the top managers were of the opinion that they should control the use by employees of ERMS, it was revealed in the interviews with other employees, and sometimes with the managers

themselves, that only five of them did so in practice. It is also a fact, as can be seen in the field notes, that only four of the managers used ERMS even though six of them thought it would be self-evident that they should use the system. It was further revealed in interviews with other employees that even though all the members of the top management said that they should carry the responsibility of the correct and efficient use of the system, only four of them actually did shoulder the responsibility.

In the interviews with the consultants/teachers at the companies providing the software and in the participant observation at the Computer Co., a meeting of seven people, some very useful information was obtained regarding the support of top management in implementing ERMS in organizations. Four of these four software providers sold the four ERMS that were studied. These were the most used ERMS in Iceland at the time of the study and their group of customers was large.

The consultants/teachers knew how the situation was in many organizations and had a rather good overview of the situation in organizations in general. They could, therefore, comment and inform about the situation in many organizations, not only in the eight organizations that participated in the research. The consultants/teachers thought that the managers often lacked a genuine interest in ERMS and its implementation, they rarely saw to it that employees used ERMS, that motivation and reward were often absent, and that it was common that the managers did not realize their responsibility regarding RM, including implementation of the systems. The consultants/teachers believed that all of these factors played a part in hindering the successful implementation of the systems. It was furthermore mentioned that implementation was usually rather successful in those organizations where the managers supported the project. It was, however, the opinion of the consultants/teachers that there were many fewer of these cases than organizations where top management shouldered the responsibility for the effective use of ERMS.

Table 6.1 shows the connection between top management support and the use of ERMS by employees in the eight organizations studied.

Table 6.1. The connection between top management support and implementation – use of ERMS by employees.

Support by Top Management	Government Institution	City Organization	Financial Institute	Manufacturing Firm	Public Services Office	Food Processing	Municipal Office	Construction Firm
1 Managers' interest and control	Yes	No	Yes	No	No	Yes	No	Yes
2 Managers' own use	75%	0%	100%	5%	60%	70%	20%	70%
3 Motivation and reward	No	No	Yes	No	No	Yes	No	Yes
4 Responsibility assumed	Yes	No	Yes	No	No	Yes	No	Yes
Estimated proportion of expected users actually using ERMS	*75%*	*25%*	*90%*	*15%*	*60%*	*80%*	*40%*	*70%*

All of the records managers were asked to estimate very carefully and to the best of their knowledge the proportion of expected users actually using ERMS. It should be born in mind that all employees were not expected to use ERMS, not even all office workers. The records managers estimated how widely the system was being used by the expected users, but not how it was used which is discussed in chapter seven. Most of the records managers already had a very good grasp of how extensively the system was being used, but a few wanted to examine the situation in more detail before they came up with their estimate. The estimate is based on actual counting by the records managers of the actual number of users expected to use the system. It should, therefore, represent the situation within each organization.

It can be seen in Table 6.1, among other things, when top management showed a great interest in ERMS and used ERMS the more likely the use was to be widespread among employees and implementation to be a success, measured in terms of how widely the system was being used. In those cases where the managers took an interest and used the system themselves, the usage rate was 70% or more. The use of ERMS worked quite well in the Financial Institute, the Government Institution, the Food Processing and the Construction Firm where a large part of top management was interested in and used ERMS themselves. Implementation was, however, not successful at the Manufacturing Firm where

the top management hardly used ERMS at all. The records managers estimated the level of use by the managers in each organization.

A considerable emphasis was placed on motivation and reward at the Financial Institute, the Food Processing and the Construction Firm, where implementation was rather successful with a high level of use, with 70% to 90% of those expected working in the system. However, neither motivation nor reward seemed to be the practice at the City Organization and the Manufacturing Firm, where the implementation was a failure with only 25% and 15% of the expected users working with ERMS.

The better the managers realized and assumed their responsibility regarding RM and the implementation of the systems, the more successful was the implementation, as shown in Table 6.1. The four organizations where the managers assumed their responsibility stand out with the highest level of use, 70% to 90%. These findings seem to support the proposition that adequate top management support is one of the necessary factors for the successful implementation of ERMS. This conclusion is in agreement with other research elsewhere on the implementation of information systems.

The need for top management support is confirmed by various studies as discussed in section 2.7 (Gregory, 2005; Hernandez & Sawtschenko, 2004; McKenney et al., 1995; Armstrong & Sambamurthy, 1999) These studies have spelled out the critical role that the leadership of the organization plays in facilitating the implementation of information systems and IT projects. Although this important point in the implementation process should be well known, integrating the new system can still become a failure due to lack of top management support, and there are many examples that can be mentioned (Brittain, 1992).

A proposed change, like implementing ERMS, is usually unsettling to some extent for people at all levels in an organization. All eyes will, therefore, turn to the leadership for strength, support, and direction. Support by top management is for this reason an important factor in any change project. The leadership of the organization must embrace the change in order to motivate the rest of the organization. The leadership must speak with one voice and show by example what is expected of the employees. Top management must support the implementation and be committed to making it happen. This message must be clearly

communicated for the employees to become persuaded to participate in the change and to make it a success.

Top management support seems equally important for the successful implementation of ERMS, as it is for other change projects. Motivation and reward are an important part of the role that top management plays in the implementation process. The strongest motivational factor seems to be user participation in the design, selection and subsequent implementation. This agrees with general theories of motivation (McGregor, 1960; Herzberg, 1975; Case, 1995) and for example the findings of Hunton and Beeler (1997) and earlier findings (Lawrence, 1975). Genuine participation of the users in the needs analysis, the selection, and the development of ERMS should for that reason not be neglected by management. In the next section the role that user participation played in the organizations participating in the research will be studied.

6.2 User Participation

An important factor in the implementation process of ERMS is active participation of users. It helps those involved to understand the change and thereby alleviates the fears that may be present and that the users may have. It can remove some of the uncertainties associated with the change and help the participants to cope with the change. The more closely one listens to the users regarding the system specification and the choice, the development and the adaptation of ERMS during the implementation phase, the more likely it is that the implementation will be a success.

In the analysis of the field notes three themes stood out regarding user participation:

1. Participation in the system specification.
2. Participation in the choice of the system.
3. Participation in the development and adaptation of the system during the implementation phase.

In the next three sections these themes are covered in turn.

6.2.1 Participation in the System Specification

When the interviewees were asked about their involvement in the project, five of the eight records managers, all of the computer specialists and four of the middle management employees and specialists said that their advice was sought when the system specification was made for the ERMS for their organizations. It differed how detailed the system specification was for the organization, but the most detailed specifications were set in the Government Institution. David, the chief executive, said:

> We formed a working group that included everyone close to the assignment. The group was composed of Lisa's predecessor [the records manager], Karl, Lisa's boss [one of the managers], and Stefan [a computer specialist]. Our lawyer and an outside consultant were also members of the team.

6.2.2 Participation in the Choice of ERMS

Only two of the eight records managers had a decisive influence on the choice of the ERMS for their organizations, Lisa's predecessor (Lisa started working in the organization later) in the Government Institution and Dora at the Financial Institute. The other records managers had very little if anything to do with the final choice of the ERMS in their organizations. Nina, the records manager at the Manufacturing Firm said: "... and then there were just some guys that made the decision, Magnus [the manager] and Jens [the computer specialist]."

All the computer specialists had a decisive influence on the choice of the ERMS in their organizations. The ERMS had to fit into the computing environment of the organization. For example, some organizations did not want to work in the *Lotus Notes* environment, preferred the Microsoft environment, but others did not have any preferences in this respect. The computer specialists were the best judges of this fit. Even though the systems were all good, they were not identical and vary in their records management solution.

In all of the eight organizations that bought ERMS, the most senior manager took part in making the decision which ERMS to choose. Adam, the manager at the Financial Institute said, however, that he had Dora, the records manager and Elmar, the computer specialist, have the final word regarding the choice and he had just supported their opinions

and their choice. In the interviews with Thor, the records manager at Food Processing, and Alma, the records manager at the Construction Firm, it was revealed that in their organizations the computer specialists had worked almost independently in their choice of the ERMS.

6.2.3 Participation in the Development and Adaptation of ERMS During the Implementation Phase

It was mentioned in the interviews that various employees had taken part in adapting the ERMS during the implementation phase. It varied, however, how well suggestions for improvement were received. Six of the records managers participated actively in the adaptation of the ERMS. However, Inga, the records manager at the Municipal Office was not actively involved and Nina, the records manager at the Manufacturing Firm, not at all. Both mentioned that they had not been listened to very much. Five of the eight specialists, Anna and Mark in the Government Institution, Bjorn in the City Organization, and Sven and Paul at the Financial Institute, said that they were involved in the adaptation of ERMS during the implementation process. Three of the ten general employees, Susanna in the Government Institution and Beta and Gunnar at the Financial Institute, mentioned that they managed to have things corrected that affected their work in ERMS.

Beta, a general office employee/clerk typist at the Financial Institute, mentioned that she needed to have things corrected in the system and that there had been some changes made that she was very happy with. She said:

> Yes, I am very happy with System E now. I have also asked for various changes regarding the bonds and debentures, which are my responsibility, and I have had replies to all my requests. Changes have been made at my request that I am very happy with.

6.2.4 Discussions with Previous Findings

Even though user participation is an important factor regarding successful implementation of ERMS in organizations, the managers in the organizations that did buy ERMS and participated in the research did not seem to have given it sufficient thought. It was particularly unfortunate how small a part the records managers played in the decision of

which ERMS to select, and in the writing of the specifications. All of the computer specialists participated in the process but general employees were never involved in the system specification and the choice of the ERMS, and only occasionally involved in the further development of the system during the implementation process.

Stefan in the Government Institution was very negative regarding System D although he played an important part in choosing the system. The three other computer specialists were positively disposed towards ERMS in their organizations but they were all so busy working on other assignments that they had only very limited time to support the implementation of the ERMS.

The records managers are all well educated in RM and have a very good knowledge of the field (see also section 4.2 Participants and Systems). It would have been great advantage to have them guide the whole process, the writing of the system specifications, the selection of the system, and the development process during the implementation period. The involvement of the records managers in making the decision as to which system to choose would have been beneficial, but only two of them participated in the choice.

Table 6.2 shows the connection between the records managers' participation in the ERMS project and the use of employees of ERMS in the eight organizations that participated in the research. It should be noted that the proportion of expected users actually using ERMS in the Municipal Office was 60% after the introduction of the system, but it subsequently fell to 40% after a change in the City Government that brought new employees to work in the Office. When Inga, the records manager, was interviewed the proportion was approximately 40%.

Table 6.2. The connection between the participation of the records managers and implementation – use of ERMS by employees.

The Records Manager's Participation	*Government Institution*	*City Organization*	*Financial Institute*	*Manufacturing Firm*	*Public Services Office*	*Food Processing*	*Municipal Office*	*Construction Firm*
1 System specification	Yes	No	Yes	No	No	Yes	Yes	Yes
2 Choice of system	Yes	No	Yes	No	No	No	No	No
3 Development during the process	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Estimated proportion of expected users actually using ERMS	75%	25%	90%	15%	60%	80%	60% (40%)	70%

It does not come as a surprise that in the Financial Institute, where implementation was probably the most successful with 90% of the expected users using ERMS, the managers listened to the greatest extent to the suggestions of the records manager and sought the records manager's participation in the system specifications, the selection of the system, and the development process during the implementation period. Nor does it come as a surprise that in the Manufacturing Firm, where the implementation of ERMS was almost a complete failure with only 15% of expected users using it, that the participation of the records manager in the process was not sought and her suggestions ignored. In the organizations where the records managers participated in the whole process, the proportion of expected users was 75% and 90%. The most important factors in the participation were to take part in the system specification and the subsequent development during implementation. Although other factors did matter, such as top management support and training, this participation improved the implementation process. If the records managers did not participate, as in the Manufacturing Firm, one would expect the proportion of expected users actually using ERMS to be as low as it was, a mere 15%.

It is also crucial to have the expected users participate in the development and adaptation during the implementation process to the extent feasible. The extent of user participation is covered in Table 6.3.

Table 6.3. The connection between user participation in the development and adaptation of ERMS during the implementation process and the use by employees.

User Participation in the Development and Adaptation of ERMS during the Implementation Process	*Government Institution*	*City Organization*	*Financial Institute*	*Manufacturing Firm*
Records managers	Yes	Yes	Yes	No
Computer specialists	Yes	Yes	Yes	Yes
Specialists	Yes	Yes	Yes	No
General office employees	Yes	No	Yes	No
Estimated proportion of expected users actually using ERMS	75%	25%	90%	15%

User participation could be analysed in the four organizations that were studied in detail. Most of the records managers and all of the computer specialists participated in the development and adaptation of ERMS in the four organizations. General office employees, however, only participated in this process in two of the organizations, those with the highest level of use, 75% and 90%. They did not do so in the City Organization where the level of use was 25% and in the Manufacturing Firm where the records manager and the specialists were also not involved. In the Manufacturing Firm the level of use was only 15%.

These findings indicate that the involvement of the records manager and the specialists was important and made a difference as shown by a comparison of the level of expected use between the City Organization and the Manufacturing Firm, a difference of 10 percentage units. However, the crucial factor was the level of participation of the expected users themselves, the general office employees. When they were genuinely involved in the development and adaptation they were moulding a tool that they not only could but also wanted to use in their daily work. One can lead a horse to water but one cannot make it drink. By involving the users in the adaptation the chances that they would use ERMS in the end were substantially improved.

Leadership style and organization development can have a profound effect on motivation. These approaches are used to increase employee participation and make them share in the decision making and goal setting in the organization, thus widening their involvement and putting them in greater control of their work. These ideas are an argument for truly involving employees in changes that affect their work to the extent that this involvement is possible and feasible.

Active participation in the change process provides the users with hand-on experience and an understanding of the objectives of the change. The users are encouraged to make suggestions for improvement, and their involvement avoids problems of communication between users and the system designers or implementers. In a longitudinal field experiment the findings indicate 'that user participation can be effective, particularly when users perceive a noticeable degree of instrumental control over the decision outcome' (Hunton & Beeler, 1997; p. 359). This agrees with earlier findings (Lawrence, 1975).

The implementation of many IT systems is too often guided solely by technical considerations, which is why so many IT systems fail to serve the needs of the users and the organization. The participation and involvement of the users can, on the other hand, '*excite, motivate and help create a shared perception of the need for change*' (Hayes, 2002; p. 140). When people are not involved, 'it can take them longer to understand and accept the new practices.' (Hayes, 2002; p. 141) The users have an important role to play in the implementation of IT projects like ERMS.

Active user participation in the system specification of ERMS, the system selection and its development entails that the users gain a certain knowledge of why it is important and wise to implement ERMS into the organization and how such a system operates and is operated. Another important point regarding implementation of ERMS in organizations is that the users get well planned and to-the-point training in what ERMS can do, how they are to work in the system, and why it makes so much sense to introduce ERMS into the organization. The next section provides a discussion of how education and training were conducted in the organizations that participated in the research.

6.3 Training

Training is a powerful tool to make people more comfortable with new ways of doing things. It provides the confidence needed to operate in a new environment and on how to use a new technology that is being introduced, if the training is successfully carried out. Training in conjunction with the implementation of ERMS is accomplished with an introduction to general RM that provides the trainees with the broad picture, why ERMS is being implemented. The second phase in the training is in the use of the system itself, the system training.

Training, training methods and the training arrangement were the topics most frequently mentioned by the participants in the research. When the field notes were studied, it could be seen that the topic of training covered about 2/3rds of the notes. The participants in the research mentioned these points often during the interviews, that is, general training in RM and the system training. This section discusses these points but begins by discussing training expenses, as the interviewees mentioned training costs quite often during the interviews.

6.3.1 Training Costs

The interviewees expressed opinions regarding the cost of training during the interviews. These opinions, statements or themes can be put into the following three groups:

1. The cost of training in general.
2. Training by outside parties versus training performed by own staff in-house in terms of cost.
3. The fact that customer organizations do not take advantage of training even though they have already paid for it.

Six of the eight records managers, seven of the eight managers, all of the computer specialists and all of the consultants/teachers mentioned the cost of training. The group that discussed training cost the most were the consultants/teachers.

Four of the eight records managers, six of the eight managers and all four of the computer specialists found the training bought from the software providers to be too expensive. The hourly rate charged for this service by the outside trainers, they said, was high, but that was not the only objection. Many of the respondents mentioned that the

trainers were lacking in knowledge of their own systems and especially in knowledge about the organizations that they were advising. The trainers themselves needed training. The training took, therefore, too much time and turned out to be too costly, was their argument. Nina, the records manager at the Manufacturing Firm, said, as an example: "The rate is sky high and my superiors are not willing to pay for more than one general seminar. They want me to do the training, but I do not have the necessary knowledge." Hans, a manager in the City Organization, expressed a similar view:

> It is not only that the system costs a lot to begin with, and we had a number of training seminars for our staff that also did cost a lot, but to have these guys walking around between people here in-house and charging us an arm and a leg, that is too much. Alexander [the computer specialist] should be taking over.

Two of the records managers, Lisa in the Government Institution and Dora at the Financial Institute, and one of the managers, Adam at the Financial Institute, said that they realized that this expense was necessary. They were satisfied with the service received from the software providers and they did not find it too expensive. Lisa, the records manager in the Government Institution, said, regarding the fee for the training seminars provided by a teacher from Computer Services: "No, I don't find the seminars to cost too much. I think that the price is fair." And Adam, the manager at the Financial Institute, mentioned also, when he was asked about the cost of the training, that he did not find the training too expensive: "The training that we have had to buy does not cost very much, not more than other services that we have to acquire from outside sources." He added:

> Dora [the records manager] is, however, mostly responsible for helping people that experience problems when working in the system. She knows this so well and is always ready to help. Paul [a financial consultant] is also very capable. He can also normally help. He is so interested. We have not had to pay for more than just the minimum training.

When the consultants/teachers at the software providers were asked about the cost of training, they all thought that far too many managers in their customer group were dragging their feet in taking advantage of seminars and the training that the software providers could offer. They mentioned that many managers believed that the training did cost too much and

that they thought that training by outsiders was more expensive than performing it in-house by their own people. Although the consultants/teachers were interested to sell training courses, and that it might have coloured their views, no such influence could be detected during the study. When Liv at the Computer Co. discussed the cost of training, she said:

> Yes, and they do not want to spend money on the training. It does of course cost money to get an outside party, someone from the seller of the system. And they do not want to spend too much money on this part. Well, because they say that the person in charge in-house does have all the knowledge and that person should take care of this. But that person does not have all the knowledge, not to begin with at least, and is, therefore, unable to take care of the training.

Andrea at Image Group was asked whether she believed that employees of the client could soon in the process take care of the training totally. She did not think so. She believed that it was necessary to regularly use outside trainers during the implementation period. It was not satisfactory that only in-house people took care of the training. She said:

> No, because we can see that it does not work completely. They may appoint some computer guy that has far too much to do. He does not have time when people need him. People may also be hesitant to ask for help because they have attended these training seminars and they may think that they are expected to know all this. They are a little embarrassed to ask the computer specialist.

Emma at Computer Services was of the opinion that the managers felt that the training was too expensive. She believed that it was necessary that consultants from the software provider participated in the training during the implementation period. Otherwise, implementation of the system was at risk and it was doubtful that the system would be put into full use. On this point she commented:

> That is exactly what we experience quite often, that the managers feel that our part in the education and the training does cost too much. We offer our assistance and of course we would prefer to come in and see to it that the system is functioning properly. But it does cost money, of course, and our company cannot afford to offer the training free of charge.

Agnes at Knowledge mentioned that she discovered quite often when working with her clients that the managers felt that the training was too expensive. She believed that one reason why the implementation failed was that the managers were so close-fisted and stingy that they did not buy the training from her company but wanted their own people, whom Agnes believed did not have the knowledge, to completely take care of the training. She said:

> When we offer our assistance in the training of their staff then we often get the reaction that it is too expensive. People believe that they can do it on their own in-house. But the knowledge is not available in-house. I believe that this is a wrong emphasis. Why buy an expensive system that can manage all your records if it is not used because the employees do not know how to work in it?

It was furthermore mentioned by Liv at the Computer Co. that some customers did not take advantage of the training offered even though they had already paid for it: "In these cases they buy a certain service that includes some specified training." And she mentioned one customer as an example: "They did not want to receive all the consulting hours that they had paid for even though they were included. It is so strange. They wanted to do this on their own." When she was asked if she knew why they wanted to do it on their own, she said that she thought that they did not want to take the employees' time from their 'regular' work.

One could discern from the interview with Katarina at Software that she believed that more emphasis should be put on the training. She mentioned that the main problem regarding the training was that it must not cost anything:

> A system is set up, and they [the managers] just want some limited training because it is so expensive. And this does not work. Then they are very unhappy, say that the system does not work correctly and blame it on the system: 'This is all the fault of the system,' they say.

During the participant observation (the meeting of seven people) at the Computer Co. it was often mentioned that the managers felt that the training by the software providers in how to use the system was too expensive. It was considered really bad that the companies did not want to pay for the training because this knowledge was not available in-house.

6.3.2 General Training in RM

Basic training in RM is covered in the field notes. Those that mainly touched on this point were the records managers but also and to a larger extent the consultants/teachers at the companies providing the software. In those cases when the employees of the eight organizations, other than the records managers, commented on training in RM in general, they all believed that such training was beneficial.

The following two themes surfaced in the interviews concerning training in general RM:

1. The importance of instructions regarding legal issues that cover access to records and the security of information.
2. The importance of having employees understand that effective RM is beneficial for the operation of the organization and helps employees to do their job.

In only three of the eight organizations that had bought ERMS had there been held seminars on basic RM before and during implementation, that is, at the Financial Institute, the Food Processing and in the Municipal Office.

When Dora, the records manager at the Financial Institute, was asked about the general training in RM, she said:

> We decided right from the start to have a seminar on general records management. I asked for it and got assistance from an outside consultant. I have since then held seminars on my own, and always for new employees. People must know why we are preserving these records. They must know about the law, for example.

Dora mentioned as well that the seminars were well attended as considerable emphasis was placed on every employee attending the seminars, "and everyone attends, high and low".

Thor, the records manager at Food Processing, said that his organization had started to offer seminars on general training in RM rather soon after the ERMS was bought:

> Yes, shortly after we got System F, I obtained permission from my boss to launch a seminar on records management. I think that it paid off quite well. People must see the benefit, know that it is for their benefit as well as for the benefit of the whole organization.

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Inga, the records manager at the Municipal Office, said that every now and then there were seminars being held on general training in RM "Not regularly, but I have these training sessions off and on, about once or twice a year". She said that the seminars could be better attended by the employees in general. The managers, for example, were reluctant to attend. When she was asked about what the seminars covered, she replied: "I discuss the legal environment. I introduce the National Archives Act, the Privacy Act, and the Information Act, mainly. And then I stress the security issues, and then the whole records creation process, to have these things uniform and neat."

Lisa, the records manager in the Government Institution, Alma, the records manager at the Construction Firm, and Nina, the records manager at the Manufacturing Firm, all said that they planned to ask for a seminar on general training in RM to be held in their organizations. Nina said, for example: "Yes, we must offer such seminars. The need is great. In our organization, there is really no tradition of good practice in records management." Neither Ragna, the records manager at the City Organization, nor Pamela, the records manager at the Public Services office, seemed to have thought about the benefits of offering such a seminar, but believed, when asked, that such a seminar would be of great benefit.

Five of the six consultants/teachers at the companies providing software mentioned that it was of great importance that the employees knew the legal environment in which their organizations operated. General training in RM was important for this reason. Although the consultants/teachers might have been interested in selling such courses it did not seem to influence their opinions.

Markus at Solutions was the only consultant/teacher that did not believe that general training in RM was important for the employees of the organizations. He did not comment much on this point. Solutions did not offer such training for their clients.

All four of the consultants/teachers in the companies providing the software that was sold to the organizations studied believed it to be important that employees in general were well aware of basic issues in general RM. All of them can offer seminars in general RM for their clients. Either they had a professional within the company that was a specialist in RM

or they had ties to consulting companies in RM that could offer such general training in RM for their clients.

Liv at the Computer Co. spoke, for example, about the importance for employees of receiving such training and said: "This is general training in records management, not just training in how to use the system itself. I mean how this supports our activities in general, both legally and operationally." And Andrea at Image Group said that she was very happy if the customer wanted to have general training in RM right at the start of the implementation of System G in order for the employees to have an introduction to the records process. The employees understood the legal demands better and she believed that it saved time for the rest of the implementation.

Emma at Computer Services mentioned in the interview that there were certain demands, both internal and external, concerning RM. She mentioned as an example recent legal demands that call for changed ways of doing business and she stated that System D could make the organizations better able to meet those demands. She thought that it was absolutely necessary to offer education in general RM concurrent with the training in the use of the system itself. Then people would understand better the aim of implementing the system.

Agnes at Knowledge thought that the managers of the organizations should see to it that the employees received an explanation of why the work procedures in RM were being changed, "or in other words why the ERMS was being bought", as she said. And she provided the answer:

> It is of course to fulfil certain functions within the organizations and certain needs in society, like the legal demands. And this must be done before the system is introduced. But I know that it is not always being done, to inform employees, you know, what in reality the reason is. It makes no sense that the managers just decide to introduce the system and then nothing else happens.

Katarina at Software did also touch on the general education about the purpose of introducing their information system. She believed that it would be good if organizations offered informative training on issues other than just the system itself in conjunction with the training on how to work in the system. She mentioned in this connection the legal environment and the reasons why the system was being introduced.

When employees other than the records managers in the five organizations, that is, those who did not have any general training in RM, were asked about the general training, they usually answered something in agreement with what David, the chief executive in the Government Institution said: "Yes, I am sure that general training in RM would be a distinct advantage." Karen, a specialist/architect at the City Organization, said: "It is exactly what is missing, information, for example about this Information Act." And Susanna, general office employee/secretary in the Government Institution, discussed in some detail the importance of having general training in RM in the organization. She said:

> I am quite convinced that it would be good to have such a briefing, especially for these old men. They do not know anything about this. But I am just of the old school, just a secretary. But we were taught in the Secretarial School to have the records in order.

Relatively few employees in the five organizations had, however, thought much about such general education and training in RM and did not connect this with ERMS until they were asked about this point.

Employees of the three organizations, besides the records managers, that regularly offered training seminars on RM in general were also asked about this point. They were all in agreement that the training that they received about RM in general was essential.

In the participant observation (the meeting of seven people) at the Computer Co. there was a lengthy discussion on the importance of having general training in RM in those companies that bought System F. All at the meeting agreed that the knowledge of employees regarding RM and an understanding of the importance of RM for the organization of today made it much easier to implement ERMS. It was mentioned that the Computer Co. had access to a consultancy in RM that was ready to hold these seminars and educate their clients about RM in general. In those instances where the clients had wanted to receive such training and education, they found it obvious that the implementation of System F went more smoothly and was more successful than in those organizations where no such training took place.

6.3.3 System Training and Methods

The field notes show that the training methods regarding implementation of ERMS were very often mentioned in the interviews with the participants. Eight different opinions or themes regarding the training methods were mentioned. These themes are discussed in this section.

It helps to explain the situation regarding training by covering the education and training in the use of ERMS for each organization separately. This provides the necessary overview of the training and training methods in each organization. It was furthermore deemed necessary to explain (1) how long ERMS had been in use in each organization, (2) when the interviews with the records managers were conducted, and (3) how large a proportion of the employees in the organizations used ERMS, as estimated by the records managers. The records managers had the best overview of the situation regarding RM, how successfully ERMS was being implemented, and how large a proportion of those intended to use ERMS actually did so.

The training is covered in sections 6.3.3.1 to 6.3.3.8, and a further presentation of points (1) and (3) is made in section 6.3.4. Finally, section 6.3.3.9 is presenting the opinions of the employees of the companies providing software regarding the systems training.

The eight themes that surfaced regarding the training are the following:

1. Group seminars in the beginning of the implementation of ERMS.
2. Individual training following each seminar.
3. Grouping of employees by job function/position and proficiency level and teaching them in small groups.
4. Call-up service as a solution if employees are willing to call the vendor and ask about features and possibilities of the system.
5. Exchange of e-mail, especially if employees have short questions about specific and rather simple operations in the system.
6. Follow-up courses and refresher courses where employees can get together to compare notes and discuss these with the trainer.
7. Employee's sharing of knowledge of the ERMS and their willingness to help each other to solve problems that may arise.
8. The relations with the computer department, the computer specialist's attitude towards the system, and their readiness to take part in the training.

These eight themes are covered in the next sections, though not necessarily in this order, and there are separate sections for each organization.

6.3.3.1 System Training in the Government Institution

The interview with Lisa, the records manager, took place in the autumn of 2003. Lisa was again contacted by phone in February 2005 and then in April 2005. System D was taken into use in the Government Institution early in 2001, according to her. At that time there were already seminars being offered for employees that were well attended. An instructor from Computer Services came into the organization and held a few seminars that 30 to 40 people attended each time. The purpose was to teach the employees the basics of System D and the main functions. The employees had their own computers and could, therefore, test the functions themselves.

The employees started to use System D in their work after completing the seminar. They were supposed to start trying to use the system and if they encountered problems, they were supposed to contact the records manager. It should be mentioned that the records manager was Lisa's predecessor, but Lisa came to work for the organization later. The employees were not allowed to contact the software provider directly to get instructions if they got stranded in using System D. Only the records manager and the computer department were supposed to be in contact with the software provider.

Most of the employees tried to acquaint themselves with the new ways of working and started working in System D immediately after the seminars. According to Lisa the success rate was not 100% to begin with. About half of the employees shortly afterwards stopped trying to work using the system as they had not received sufficient instructions on how to operate the system and the records manager himself (Lisa's predecessor) did not know enough about the system to be of sufficient help. He had to seek help from the instructor at Computer Services and then try to guide the employees. System D did not work well enough to begin with, technically, and that scared the employees away from using it. The system was in the beginning not capable of handling the necessary volume of information in such a large organization where most employees are working with records. The connections to one distant location, where a considerable number of employees worked, often broke down. The response rate when employees were saving or retrieving

records was very slow. This situation irritated the employees and led to the number of users decreasing.

In the telephone interview in February 2005, Lisa gave the information that these problems were for the most part no longer present. The Government Institution invested considerable funds to have Computer Services improve the performance of System D to suit a larger organization. Subsequently, about 75% of the employees that were supposed to work in the system did so for the most part, as the training and assistance had improved considerably.

What has especially been standing in the way of implementation, in Lisa's opinion, was that Stefan, who is a computer specialist and the head of the computer department, started very early to be very negative towards System D. That view spread within the computer department and the whole department was in the end rather negatively disposed towards the system. Lisa had this to say: "The attitude in the computer department towards the system has not been good." And when she was asked whether the computer department wanted another system to replace it, she replied: "No, I don't think so. I have never heard that, and they, well, participated in the system specification." And she continued:

> They are all rather negative. But it is mainly the boys that have been coming running to see me. Stefan does not give himself time to do it. He does not reply to my e-mail and always points to the boys. But they are always moaning and groaning and saying: 'This system is no good!' But now we plan to hire a special person in the computer department, a lady who is supposed to manage System D and be the contact person with the software provider. It never works when Stefan is taking care of the contact. I do not understand why, because Emma [a consultant/teacher at the software provider], she is so lovely.

In a telephone conversation with Lisa in April 2005 she said that the situation had improved greatly once the new employee was hired:

> And now I do not experience this arrogance towards me as there often is with the computer specialists towards us librarians. I mean, they think that we don't know anything, but it is they who don't know anything about records management. Sometimes I think this is an indication of insecurity on their part. And now I sit in on liaison meetings with the computer department with her [the new employee in the computer department] and others. Before, it was my superior, Karl, who attended the

meetings with the computer department, even though he is not working in records management at all.

According to Lisa, this reorganization of responsibilities and reporting relationships improved communications and had a positive effect on furthering implementation. Lisa said that a much larger number of employees used System D now, or more than 75% of all employees expected to use the system. "We have also done more," Lisa said:

> We started what we called miniature seminars, where we offered employees the chance to come in for a short time, always regularly on Mondays. There are always a few that come with their problems. Then I can help, and they can help each other, and some things they know better than I do.

And Lisa continued: "And always when we have new employees, they get training. We cannot leave them on their own."

When other employees were asked about the seminars that were held at the start of the implementation, six of the eleven employees thought that they had been rather good, although they made no further comments. Anna, a specialist/auditor said: "They were good as far as it goes, but the time available did not fit the subjects to be covered." Laura, one of the managers, mentioned that too many different and unrelated subjects were covered at the seminar:

> I would have thought that there should have been two separate seminars to begin with. One seminar just to acquaint us with the system as an overview and to show briefly the different menus and another just about the functions showing many, many examples of these and have us try several times.

Viktor, a specialist/statistician, believed that the training had been just sufficient at the seminar originally: "But I am rather good at operating computers. I am computer literate. If I need some features, I call Lisa."

When the employees were asked about assistance that was available after the seminars, eight of the eleven employees mentioned that there should have been more effective assistance available from the beginning. "This did not start on the right foot, not as we had hoped," said Mark, one of the managers, and he continued: "It took too long before we started to see results. There was not sufficient assistance to be had." When Karl,

one of the managers and Lisa's boss, was asked about the assistance following the seminars, he said:

> This was not successful enough. The records manager and the computer department tried to help. And then there were problems with the system. It was continually freezing, technically speaking. And we were, and are, trying too many functions at the same time instead of implementing the system as it is and then altering and adjusting those things one by one that may function better in the system. Translations into Icelandic for example tend to slow the system down. But we are stopping this now and will concentrate on implementation, teaching people how to work in the system.

When Karl was asked about the views of the computer department towards the system, he replied: "The computer department is very dissatisfied. They want the response time to be so short."

It was often mentioned in the interviews that it should have been necessary for the employees to have a more individualistic help at their computers right from the start until they had acquired knowledge in using all of the basic functions in the system. Getting stuck made many people angry. They were stranded and some gave up. Some of the respondents mentioned, however, that now it was usually possible to get help right away. Susanna, a general office employee/secretary, said, for example: "Yes, it is our Lisa, she always comes to our rescue. I just call if it is something complicated, and sometimes she comes, or else I just send her an e-mail." Anna, a specialist/auditor, believed that she was now rather good at using the system:

> I use only System D now, and it has helped a great deal that Lisa is so good at this. I just call her. She also wrote this handbook. And then she makes out some sort of a newsletter about new features and developments. Here is the latest issue, number five. I have also put forward suggestions and others have done so as well, and they are well received.

Leifur, a general office employee/clerk, Klara, a general office employee/clerk typist, and Mark, a specialist/economist, all mentioned that the miniature seminars were of great help. "They are very clever," said Klara and she continued: "These are informal seminars and the attendance is voluntary, and I always show up if I want to learn more." Lisa said that she

kept a log of who attended the seminars: "If some employees never show up, I try to find out why they never attend because often then there is something wrong."

The implementation of System D in the Government Institution had been relatively successful, even though it had taken in fact much too long a time. According to Lisa about 75% of the employees used the system and they took advantage of the main functions and features in the system. The system itself was later working much better. The bugs had been eliminated both the technical ones resulting in the system freezing and those relating to RM. Training and help was then functioning well and the employees were rather favourably disposed towards the system. More money had been put into education and a new employee had been hired into the computer department who was solely to work on helping employees regarding System D. All of this produced a considerable improvement.

6.3.3.2 System Training in the City Organization

The interview with Ragna, the records manager, took place in the autumn of 2001. Ragna was visited again during the summer of 2004 as a long time had elapsed since she had been interviewed originally in the City Organization. According to her the City Organization had started to use System F at the end of the year 1998.

After the use of the system started in the organization all staff members attended training seminars at another location in order to learn how to work in the system. About 40 people attended these seminars. An instructor from the Computer Co. gave the presentation at the seminars. Most of the employees attended the seminars in the beginning. Most of them thought that the seminars were fine, as far as they went, but the employees only learned to use a fraction of the functions that the system has to offer, according to Ragna. When Hans, a manager, was asked about the seminars, he replied:

> Most, I believe, were in agreement that the seminars were rather good. However, we felt that the subjects were covered too fast. There were too many subjects covered, many unrelated, in too short a time. It was done so quickly that you couldn't get a complete grasp of important individual functions.

The employees were then expected, following the seminars, to start to use System F in their work in the offices. They were supposed to start to try immediately, and if they got

into problems, they were to contact Alexander, the computer specialist, and he was to help them along. Furthermore, there was to be another employee in the computer department that was supposed to be at hand to solve problems regarding difficulties that rose regarding working in the system.

Most of the employees tried to learn these new ways of working and began to work in System F immediately after finishing the seminar. Ragna, for example, started to work in the system. Great emphasis was placed on having her learn how to use System F and that she would begin to use it immediately. Her job definition, in addition to being some sort of records manager, was to be a secretary to the General Manager. She was also responsible for the central file for active records. Alexander paid most attention to her regarding training, and if she got stranded, she could usually call him for help. Ragna had, nevertheless, not yet learned to use all of the functions in the system that could be of value for the organization. But it was clear that the private tuition that she received paid off.

No one, besides Ragna, said that they received sufficient help if they got stranded using the system. It was stated during the interviews that Hans, a manager, Karen, a specialist/architect, and Disa, a general office employee/secretary, tried especially hard to struggle on their own the best they could, and had to begin with a very positive attitude towards using System F. "And I know that is how it was with most of the people around here. We tried our best," said Disa. Karen said: "We all called for help if we got stranded, but Alexander is always so busy doing other computer work. He cannot make time to come to our rescue."

The employees were not authorized to seek the assistance of the instructors at the software provider. It was considered too expensive. Alexander was the only one that was authorized to do so. According to Ragna (2004) less than 25% of the employees expected to work in the system actually do so "and in fact only partly. They do not fully utilize the functions," she said. She blamed it on the training. There was no follow-through: "Those who started to use it to begin with stopped shortly thereafter because they did not receive any training and no help."

The employees mentioned quite often the point that it would have been better if they had received individual training at their desks until they had adequately mastered all of the

necessary functions of the system. This was in fact mentioned by all of the interviewees. Bjorn, a specialist/technician, said, for example:

> That is of course the reason. Anyway, that is what I believe has been the problem in our organization, that we did not follow through with each individual. People are not getting the hang of it. People must attend a seminar first, and then we must train each individual on a one-on-one basis.

It was further mentioned by Ragna that new functions had been added to the system later. These functions or adaptations were an improvement, fitting the system better to the organization, but she had not even been informed, not to mention taught, how to use them. She discovered this herself by accident. She said: "And then it was I started to scroll down that I find a lot of additions to the system that I had no idea were there! Nobody tells us anything. One must just discover this alone. I just found out by accident."

Karen, a specialist/architect, believed that the training on how to use the system should have been much better in the beginning. Continuous training was then necessary until the employees were proficient in using System F:

> When the employees started to work in the system in their offices after the seminar, they did not receive the individual assistance that was necessary for them to utilize what they had learned at the seminar. Most of the employees wanted to start to use the new work procedures but the implementation was not followed through with to the point training immediately following the seminar. The end result was that most of the employees gave up and continued using the old work procedures.

Ragna believed that there were various reasons why the individual training did not take place. She mentioned as an example the long illness of Peter, the chief executive, and his absence from work:

> He was our chief executive and it was he who wanted to introduce this system in the first place. It was as if no one was responsible for the project any longer including taking care of training on how to use the system. Alexander has a lot to do, and does not have the initiative and the energy that is necessary to attend to the training with enthusiasm.

When Alexander, the computer specialist, was asked about the training, he mentioned that he would have liked to receive more outside help in the training. He was under a lot of stress and had to take care of too many things, using overtime, and just did not have enough time. He said:

> We would have needed to get some outsider to teach us how to use System F, for example someone from the Computer Co. We could have used a call-up service and an e-mail service or just a trainer on the spot for a few months. I must take care of all computer issues here and I cannot just always throw everything away and attend to this training and problem solving.

Disa, a general office employee/secretary also believed that it had made a difference that Hans, a manager, had soon given up using the system:

> That is why he did not seek training and assistance for himself and others. He is in fact the one in charge of the organization due to Peter's illness. He should have given us a good precedent to follow. There is a lack of understanding that we need to invest in the training. It costs money.

At the end of the interview that was conducted in the autumn of 2001 with Ragna, she mentioned that there were plans to start the training again on how to use the system. She said then:

> It is supposed to be more based on the individual. It is also planned to hold seminars within the organization itself where people will work with their own records and those of others that belong to us. It seems that there is an interest among employees in learning how to use the system and hopefully everyone will learn how to use it in the end, except of course those jackasses of ours. Then I mean, if the training is based on the individual and will be to the point.

When Ragna was interviewed during the summer of 2004. She said that the implementation was not yet completed and was not yet a success: "This has not worked well. The system is not yet fully implemented at all. Very little has changed since you were here the last time." It was in fact revealed by Ragna that many employees sent records to her that she registered into the system, especially those employees that did not use the system. It could, therefore, be stated that the system was of use to the organization up to a point. No employee who was using the system used all of the functions in it, but it would be an

advantage if that happened, according to Ragna. At the end of the latter interview, she said: "People are not very good at doing this. There are still very few that work in System F. People are still doing it the old way. We held seminars after you were here the last time but the situation is not much better."

It can be seen from the interview with Ragna and other employees of the City Organization, that the implementation of System F had not been a success. Less than 25% of the employees expected to use ERMS did so, and very few used it in a satisfactory manner. A large factor in explaining the problems with the implementation was a lack of proper training, although the lack of support by top management obviously also played a large part.

6.3.3.3 System Training at the Financial Institute

The interview with Dora, the records manager, took place in the spring of 2004. According to Dora the agreement to buy System E was signed in September of 2001. The use of the system started at that time, but only a small group of employees started to use it immediately:

> There was a task force put together, with one member from each branch that received training and education in using System E. We did not want to install it on the computer of every employee until we were satisfied that it was functioning well. If a system is being implemented, that is only partially operational and therefore does not function well, then people will become so annoyed and will not want to use it. Employees get a phobia regarding the system. That is why we wanted to move slowly.

Dora mentioned, however, that many managers felt that things were moving too slowly: "And they were asking: 'How is it really with this System E?' But we did not let that bother us and this was the correct way to begin." According to Dora there was an instructor from Knowledge who, in co-operation with an employee in the computer centre in the organization, was in charge of training this group. "Then people started gradually to use System E and many do it now. We have, however, not yet trained every employee in using the system."

When Dora was asked about seminars she said that all employees had not yet attended training seminars. Regarding the seminars, she said: "We have offered seminars for certain groups, general managers, service managers, and service representatives as an example." And when she was asked who took care of the training in the seminars, she said that it was mainly employees of the computer centre of the organization. Dora mentioned as well that the computer centre had also been developing System E further with the aim that it would better suit the organization. She said:

> We decided to do it ourselves but we are always in contact with Knowledge that designed the system. There was a librarian hired for the computer centre for the implementation. That employee comes from a competitor and used to work there on implementation and training.

Dora was asked about the relations with the computer centre and she said that they were very good. There are no communication or co-operation problems present:

> The computer centre has all our systems. There are three employees that are involved with System E, the librarian, a quality manager and one computer specialist. You just call the computer specialist, or the others if he is not in, or you send e-mail and the problems are just solved. That is just how it is.

Dora mentioned in the interview that she was now herself becoming a part of the training team and a series of small seminars were planned for the near future. This was a programme for having all the employees that are to use System E able to use it. And she said:

> We just want to have a few employees each time and have a transparency presentation of the system. Then we aim to have the training one on one. Then there will be two of us in-house that people can call all the time. We will just take on one group at a time, sit down with the individuals and go through the system.

And Dora mentioned that a similar training method had been used when System X was implemented. System X is the customer relationship management (CRM) system of the organization: "Such a training method was used here when System X was introduced. It took many months to implement it. But it was done in the same way and that was quite

successful. It has of course cost some money but it paid off in the end." When Paul, a specialist/financial consultant, was asked about the training issues regarding System E, he said that he had been involved from the beginning. He had been put on a task force, a sort of a pilot group:

> I was put on a task force, a pilot group in the beginning that started to use System E. We were shown how the system works and that was rather simple. We were also involved in developing the system further and now the group handles idea generation and work in further developing the system in co-operation with the computer centre. The computer centre is then working with Knowledge that is the system provider, but I believe that co-operation has sometimes been rather difficult.

Sven, a specialist/accountant, was asked about the training that he received in using System E. He said that the training was rather good. He had received all the help that he required: "And if I get lost", he said, "I just call or send an e-mail. You do not get stranded unless the system stops to function, and it did that in the beginning."

Dora has great faith that System E will within a short while be fully implemented in the organization and in the interview with Paul, the specialist/consultant, it was revealed that he agreed. He said: "People are very positive, most of them, but some here are negative, but I think it is because they do not want to change their work procedures."

Gunnar, a general office employee/clerk, was asked about the training and he said that he was a member of the chosen team that learned how to use System E originally. He said that he received a very good education:

> Yes, yes, very good. And if I get stranded I contact the computer centre. It takes care of all of our systems so there is no problem if you get lost somewhere. I can also contact Dora or Paul or just someone in the System E group. We all help each other.

When Beta, a general office employees/clerk typist, was asked about the training she said that she was rather pleased and that she could always get help if she stranded in the system.

The implementation of ERMS has been successful at the Financial Institute in terms of number of users and their use. All of those that were supposed to use the system at the time, and had received training and education in using System E, were using it, and in a rather satisfactory manner. When Dora was asked about the proportion of expected users

using it, what she believed about that, she said: "I suppose that it is about 90%, but I am expecting more users. The implementation is not yet completed as we decided to do it in slow motion." Effective training and education made all the difference in how successful the implementation was in the Financial Institute, not the least individual training, and that employees were able to get help immediately if they got stranded in their use of ERMS. The Financial Institute did not have more resources for the implementation of ERMS and the training in how to use it compared to the other organizations that had bought ERMS and participated in the study. The interest was just more genuine from the top down in the organization in putting these resources into good use. Furthermore, they did not try to accomplish everything at once.

6.3.3.4 System Training at the Manufacturing Firm

Nina, the records manager, was interviewed in the spring of 2004. System G had been placed into use at the Manufacturing Firm in the spring of year 2000. According to Nina, the top management of the company intended that all employees would learn how to use System G immediately and would create all of their records in the system. The employees were expected to use the functions in the system to the fullest extent possible and were expected to practice good RM from day one.

A few seminars that 30 to 40 people attended were held at the beginning. It was Image Group that took care of the training. The employees were expected to start using System G on the job after completing the training. The employees were expected to contact Nina and an employee in the computer department if they got stuck and could not move back and forth in the system. Nina said that various technical problems that surfaced around the system were the reason for scaring people away from using it. The system was not installed properly and the computer hardware, some of it, was not powerful enough and led to a slow response rate and people believing that they had lost their records. People lost patience and became negative towards the system to begin with. When it was realized that the hardware was not suitable, new computers were bought, thus removing the technical problems relating to the hardware and the functioning of the software. This was done shortly after the system was installed and these problems disappeared.

Nina furthermore admitted that she was not adequately familiar with the system in the beginning and therefore not capable enough to teach others how to solve complicated problems. She said:

> I was not trained well enough in how to use the system, even though I knew the most basic functions. I was to help others and solve their problems. The computer department and I, we were the liaison with the software provider. It was a problem how long their response time was. Sometimes they didn't even show up when I asked for help.

Many employees started trying to work in the system after completing the training seminar. Nina began immediately to work in the system. There was a strong emphasis placed on her learning the ropes as she, being the records manager, was supposed to be able to teach others and help them. She also received the best individual training of all of the staff from the teacher at the software provider. Nina, nevertheless, did not at that time use all of the functions in the system that could be of benefit to the company.

Magnus, the manager, does not use System G himself but his secretary Vilma has been very conscientious in using it. Magnus said: "We have been disappointed. The system is far too complicated."

Jens, the computer specialist, uses some functions in the ERMS. Jana, a manager, earlier used some functions in the system and Marias, a specialist/engineer as well, but they do not do so anymore. Andres, a general office employee/clerk, and Maria, a general office employee/clerk typist, said that they had, as well as most others, given up using the system. They did not get the help that they needed subsequent to the training. Andres had this to say:

> And then they just threw us out of the nest. The training seminar was just a short one that lasted about one hour one morning. The training was not sufficient for us to be able to use the system to any extent. And if you do not use such a system, you become rusty.

The interviewees all agreed that the seminars were rather good but they wanted more extensive training. Marias, a specialist/engineer, said:

The seminars were good, but I thought that they were just the beginning. I could use System G to some extent after the training. I tried doing it immediately and I have used it a little bit. You have to use it quite extensively to maintain proficiency. This is just like using other computer software. A few use it in our department but it is not being used at all in some other departments. I even know of cases where the employee does not know that the system exists.

Maria, a general office employee/clerk typist, said that she just used the old methods in filing her records and she could always find them again. She found it impossible to use System G and did not like the system. She said: "Not to speak of the interference and the meddling. Nina is a kind of a salesman for the system. She is trying to sell me on using the system, but I have my own methods."

The implementation failed at the Manufacturing Firm. According to Nina, only about 15% of the staff of the Manufacturing Firm that were supposed to, actually used System G. The reason seemed to be that employees had not received adequate training. The seminars were good, according to most interviewees, but covered too much ground in too short a time. The capability to offer individual training was not available within the company. Employees were not allowed to seek help and guidance from the software provider as they wished in order to keep costs under control. There also seemed to have been communication problems between the company and the staff of the software provider as they were not ready to offer help in problem solving when it was asked for. The technical problems at the outset were solved without much delay. It may, however, have provided and added excuse not to start to use they system when training in using it was not being offered.

6.3.3.5 System Training in the Public Services Office

Pamela, the records manager, was interviewed in the autumn of 2003. According to her, System D was taken into use in the Public Services Office in the beginning of 2001. Pamela said that a larger number of employees were now using System D after a special training effort took place in the beginning of 2003. Now, all employees have received training. It was Pamela and Computer Services that jointly took care of launching the training seminars. Pamela said that she is the liaison with the software provider and she

receives assistance from the provider to help out other employees in the organization. Pamela said that in the Public Services Office they wanted to move slowly:

> We decided to move slowly. We started to run it on only one machine, my computer. I tried to think of this logically and wanted to get all bugs and problems out of the system. There were various features missing and I had the software provider put those features in. I wanted the system to work 100% before I started to teach others how to use it.

Pamela said that she had received a user's manual from the software provider about the system. She said:

> We received a draft of a manual, but we changed it a great deal. It was good to have the manual. It built confidence. Now, everyone has attended a training seminar and most employees have started to use the system. I have offered employees individual training and have trained them one by one.

The implementation of System D was rather successful, and later very successful. According to Pamela, about 60% of those that were supposed to use System D used it and in a satisfactory manner. Pamela was convinced that more training, especially individual training at the employee's desk, was the contributing factor in the increased and still growing use of ERMS. She said that interest in the system had grown and that she foresaw that most employees would be using it in the end.

6.3.3.6 System Training at Food Processing

System F was put into use at Food Processing in the beginning of 1999. According to Thor, the records manager, who was interviewed in the summer of 2004, the employees were rather positive towards the system. That was, however, not the case to begin with. He said that the system was a good one but it had been difficult to have the employees adopt new work habits to begin with. The previous chief executive showed little interest in offering general training to staff on how to use the system. Thor said that a new chief executive, who came into the company in the autumn of 2003, and who was used to such a system from where he worked previously, had wanted to launch a new training effort as soon as he started working in the organization:

Then we just jumped right into it. Everyone had to attend a training seminar and we got an instructor from the Computer Co. into the organization. They had one of their people here for about five months who was always available for helping us. And now we still have access to her, even though she has formally left us. Everyone can call her or send her e-mail.

Thor said that the instructor from the software provider had been very successful in keeping the confidence of users. She had walked between offices and taught people how to use various functions without them even realizing that they were being taught. Thor said that he had sometimes observed the training:

And the instructor said: 'And then you can do it like this, or like this.' She just sat down with people. She also took care not to overdo and exhaust people. She just started slowly and then increased the momentum as people caught on. It is this training tailored to the individual that makes all the difference.

According to Thor, most of the employees, who were supposed to use System F, did so, and most of them used it in the correct way. "We can thank the training for that," he said. And when he was asked about the approximate proportion of actual users, he said: "I could believe that it is now about 80%."

It can be seen from this account that the implementation of ERMS at the Food Processing was rather successful. The belated training effort and the strong support from the new chief executive seems to have been the main reason for this improvement.

6.3.3.7 System Training in the Municipal Office

The interview with Inga, the records manager, was conducted in the summer of 2004. System E was bought, according to her, for the Municipal Office at the end of 1999. She said that the work environment was affected by politics. She did not want to blame it on the lack of training that the system was not fully utilized, and only 40% of the employees expected to use the system did so and used it in a satisfactory manner:

Not the training, but the lack of top management support is to blame. This was going great up to the elections. Then we had a change in staff and then the new people wanted to buy another system that they knew better from the ministry. But that was

not done. There is no way that we would accept that. We have had training seminars here and training designed for the individual.

It should be noted that the proportion of employees expected to use System E that were actually using it was 60% after the introduction of the system. However, it subsequently fell to 40% after a change in the City Government that brought new employees to work in the Municipal Office. These new employees were expected to use the system but did not do so.

Inga said that most of those that had been working for many years in he Municipal Office used the system. She said also that the system was still under development and new and interesting features were being added:

> It is not a problem regarding those that have used the system for a long time. Last year I checked on every department, spoke to each individual and offered private assistance because I noticed, when people called, that the set-up seemed not to be the same on all computers. I just met with people to see if the system was perhaps not correctly installed. Sometimes the system had to be reinstalled.

She said that things had not gone as smoothly regarding those that came to work after the election. Some of those did not want to receive assistance: "They did not want you in their offices. They became defensive, as if someone was spying on them."

When Inga was asked about the training, she said that she had held regular training events about System E: "But those that complain the most about the system just do not attend, even if I send them a special invitation."

The implementation in the Municipal Office had been rather unsuccessful and only about 40% of the expected employees were using System E, according to Inga. She did not want to blame it on the training. She said that the training was sufficient and assistance was available. She said that the problem was that many employees did not attend the introductory meetings and training seminars that were being offered.

6.3.3.8 System Training at the Construction Firm

The interview with Alma, the records manager, was conducted in the summer of 2004. System G was, according to her, bought by the Construction Firm in the beginning of 2000.

As in so many other organizations, employees were sent to attend training seminars of 30 to 40 people. Then they were supposed to start using System G. There were very few that started to use the system to begin with, and for the first three years, but now about 70% of those employees that are supposed to use the system do so, according to Alma. She said:

> Most divisions in this building use the system to some extent, but it differs when it comes to branch offices. I found the people around here to be not positive enough. We, therefore, joined hands, the quality manager and our boss in the computer department, a year ago and started a campaign. We visited every division and all of the branches. We held training seminars and we put together people that work together, and maybe had the same problems.

Alma said that use of ERMS had increased "tremendously" after these training sessions. The attendance was compulsory. If people could not make it to their assigned meeting, they were invited to join other groups. Alma said that each session lasted about two and a half hours. The first part of the session was used for training and the second part for questions and discussion. About seven to ten people attended each session. This produced great results as most attendants had tested the system to some extent before the training.

Alma said that she received great help from the quality manager and the manager of the computer department. Both these employees had been hired by the organization about a year and a half before. She said that the manager of the computer department knew System G in and out. He had worked with it before: "He knows much more about System G than the consultants/teachers of the software provider. He is quite often teaching them new things. He is a specialist in the use of the system. He responds right away so you just have to call and it is taken care of instantly."

Alma mentioned that she knew about another organization, Vaki, where the computer department is opposed to the ERMS that they have invested in. She said: "It is impossible to establish any co-operation that makes sense when the computer department is so much opposed to the system."

Alma said that the training and the use had improved considerably after this new boss of the computer department came to work. She said as well that they planned a new campaign soon: "The use increased tremendously after the last campaign and now we are planning another."

Alma mentioned that great emphasis was placed on teaching new employees to use System G as soon as they started working. When she was asked if it was working well, she replied:

> Yes, it has been very successful, no problems. It can be much more difficult to deal with older employees that may not be any good at operating a computer. One was very impatient the other day. He said: 'I cannot make any headway. I will just have to quit. Here, there are continuous organizational changes and new computer systems constantly being introduced in this company'.

It can be seen from the above that the implementation at the Construction Firm was not very successful to begin with, which can be traced to insufficient help and training in using System G. After the campaign for training and the new head of the computer department was hired, who knew System G very well, the wheels started rolling much faster regarding implementation. Then, about 70% of the employees concerned used the system. Everything pointed to a complete and successful implementation of System G in the Construction Firm within a short time.

6.3.3.9 The Experience of Vendors in System Training

System training was quite often discussed in the interviews with the consultants/teachers of the software providers. All of the consultants/teachers mentioned that group seminars were necessary at the outset, but they alone were not sufficient. It was necessary to follow up with individual training after the seminar. Markus at Solutions believed that a certain conclusion had been reached that such group seminars were not sufficient in themselves to teach users how to work in the system. He said that people found out when they started to work on their own that they encountered various obstacles.

Markus mentioned also that training through the use of e-mail was often quite successful, especially when the subjects were well defined and demarcated. He said that his organization provided a lot of their service to clients in this manner and they tried to respond to all e-mail by return.

Liv at the Computer Co. said that the consultants/teachers in her organization had discussed the training and their conclusion was that individual training must always follow the seminars. Agnes at Knowledge was of the same opinion:

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It is good to follow up on the seminars with individual training. We have of course tried that. We have visited clients to follow up on the seminars by meeting with individual employees. This has proven very successful at those clients that have received this service and where the employees have been open-minded about participating.

Agnes also talked about the e-mail service and said that it could be of help to employees if they had rather short and specific questions concerning simple operations in ERMS.

Andrea at Image Group commented on this as well when she discussed system training. She said that implementation went much better when individual training was welcomed, but there was unfortunately a much smaller number of clients that wanted this service compared to those that did not.

In the interviews with the consultants/teachers the idea was often mentioned that it was advantageous to group the employees by similarities or interest and teach in small groups, for example, to single out those that believed they had very little time. Agnes at Knowledge wanted to classify users. She mentioned that they had sometimes tried to do this with larger customers, classified participants by interest in order to tailor the training better to their needs.

It was also often mentioned in the interviews with the consultants/teachers that a call-up service could prove useful if employees could be made to call in and ask about functions in the system. Liv at the Computer Co., for example, mentioned the call-up access. She said:

And that is by far the most common service today. Most clients pay for a service contract. This means that they have unlimited call-up access to our people. And we can see it quite clearly that those who call most frequently, they are naturally those who are having the highest success rate. It is always suspicious when we do not hear anything. Then people are just not using the system.

Liv said that in the end of each seminar all the consultants/teachers at the Computer Company encouraged customers to use this call-up service. Emma at Computer Services mentioned as well that the consultants/teachers in her organization pointed out this service

to the employees of their clients during seminars, and always when the client had bought a service contract.

All consultants/teachers considered follow-up training to be desirable, that is, to allow people to get together and compare notes among themselves and with the teacher. At this stage it is believed that the employees are reasonably knowledgeable about operating the system. Seminars had already been held and some individual training had taken place, either in the form of the teacher visiting the employee at work for training or he had been calling the provider up to ask for help or advice.

Emma at the Computer Services said, for example, that she thought that the follow-up seminars were necessary, but that everyone must have used the system before the follow-up seminars. She also said, when people were asked, that they almost without exception said that further training was necessary. She mentioned, however, that even though follow-up seminars were a part of the contract and had already been paid for, some customers were not using this service at all. Liv at Computer Services was of a similar opinion:

> We want to offer, say three to four weeks later, a follow-up seminar. Then people will have had the opportunity to work in the system and we can invite them to raise questions. Then, naturally, during the follow-up training, people will compare notes, what is wrong and needs to be corrected, and what they need to learn. Different people are often raising the same questions. But it is necessary that all the participants have worked in the system and sought help, and sought follow-up training. But not all do so.

Immediately, at the start of the interview, Katarina at Software wanted to discuss the system training. She put forward an unqualified statement regarding why employees of organizations do not use System S, that is an MIS, as intended and why implementation fails so often and for this reason: "There is a lack of training." Then she went on to discuss all kinds of teaching methods that have been developed by the instructors in System S, like various kinds of seminars, and different types of training subjects, among other things, training material on CDs that employees could study themselves, without the instructor being present. She said that all these training methods were being used, but Katarina spoke of them as not being sufficient alone. At one time she said: "And so it is extremely difficult for us to teach like this. We are developing skills. It is just like training pupils in carpentry,

to have 40 to 50 students in one class at the same time. It does not work." And when she was asked, she confirmed that she was very favourably disposed towards individual training. She replied:

> Well, that is what we really want to do. It is because these are such large companies, and within these companies there are key users, as we call them, and we want to train these users very well. They become acquainted with the system, learn how to use it, and become specialists within their organizations.

She stated that she wanted these key users to be trained by a personal instructor until they have become specialists in using the system. These key users could then teach others within the organization, one-on-one.

The consultants/teachers believed that the employees in the organizations buying the systems were not always getting the necessary assistance and training in using ERMS. There was, therefore, a great deal missing in the ability of the employees to use the systems in the correct way. They believed that various teaching methods had to be used in the system training, such as individual training in the form of call-up service, assistance through e-mail and training in the office or work station of the employee. Even though a seminar for a larger group in the beginning and follow-up seminars could be good, as far as these go, such seminars alone were not sufficient training by themselves.

During the participant observation (the meeting of seven people) at the Computer Co. the main issues in the system training were confirmed. The participants were of the opinion that different methods had to be mixed to get the best results, such as seminars for larger and smaller groups, personal training at the employee work station using the employee's own computer, meetings where employees and an instructor would meet to discuss problems and solutions, a call-up service for employees to the software provider and replies that the vendor could provide by e-mail to questions and problems that people might have. Finally, the participants were of the opinion that it was important that employees receive prompt responses and help if they got stranded using the systems. People would easily give up, if they did not get help promptly, especially if it happened over and over again.

6.3.4 Discussions with Earlier Findings

The opinions that the interviewees expressed regarding the training process have been analysed above. The analysis started with the cost of training in how to use the systems in organizations. Descriptions were given by employees of the progress and development in education and training in the eight participant organizations regarding general training in RM and system training in the ERMS installed in particular. These interviews gave an overview of the development from the time that ERMS was bought for the organization in question and up to the time that the interviews were conducted with the employees in that organization. Finally, the opinions of the consultants/teachers at the companies providing software were put forward as they appeared in the interviews and in the participant observation at the Computer Co.

The consultants/teachers knew the situation in many organizations, in addition to the organizations studied. They had a rather good overview of the situation in general. The consultants/teachers thought that general training in RM and system training were both important factors for the successful implementation of ERMS. They were of the opinion that the training was too often neglected, but in those cases where it was done properly, the probability of successful implementation increased substantially.

Table 6.4 shows the connection between training and the use of employees of the ERMS in the eight organizations that participated in the research. Most of the interviewees said that general training in RM was a very important factor in the successful implementation of ERMS. The implementation seemed to have succeeded better in those organizations that provided general training in RM, like the Financial Institute and the Food Processing. Seminars on general RM were also held in the Municipal Office and it should be noted that the proportion of expected users using ERMS was 60% after the introduction of the system in the Municipal Office. It subsequently fell to 40% after a change in the City Government that brought new employees to work in the Office. When Inga, the records manager, was interviewed the proportion was approximately 40%.

Table 6.4. The connection between training and implementation – use of ERMS by employees.

Education and Training of Employees in Using ERMS	Government Institution	City Organization	Financial Institute	Manufacturing Firm	Public Services Office	Food Processing	Municipal Office	Construction Firm
1 General training in RM	No	No	Yes	No	No	Yes	Yes	No
2 Seminars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3 Individual training	Yes	No	Yes	No	Yes	Yes	Yes	Yes
4 Support by computer department	No/Yes	No	Yes	No	N/A	Yes	N/A	No/Yes
5 Follow-up courses	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Estimated proportion of expected users actually using ERMS	*75%*	*25%*	*90%*	*15%*	*60%*	*80%*	*40%*	*70%*

No/Yes = First no then yes.
N/A = Not available; information of support or non-support was not strongly indicated.

All of the interviewees that commented on general training in RM agreed on the importance of having such training and believed that an understanding of the importance of RM made it much easier to implement the ERMS. Such general training was not offered in the two organizations with the lowest rate of expected users, i.e. the City Organization and the Manufacturing Firm. There was an interest in the other three organizations that did not offer general training in RM to do so.

All of the employees of the eight organizations studied, as well as all of the consultant/teachers, believed that good and well-organized training on how to use the systems was a key point regarding successful implementation. They all agreed that it was important to offer good seminars for all of the employees as a group at the outset of the implementation programme. All of the organizations, except the Financial Institute and the Public Services Office, held seminars in the beginning for all employees expected to use the system. These two organizations offered seminars, but only for a few selected employees who were supposed to start using the system. They wanted to move slowly and to take on only one department at a time. That approach seems to have worked equally as well, or even better, but it takes a longer time.

The respondents considered it important that employees started to work in the system as soon as possible after the seminars. Furthermore, they believed that it was very important that the employees could seek help from a trainer as soon as they got stranded using the system. The trainer had to know the system well and be familiar with all of the operations in the system. Employees found it particularly trying to attempt to solve problems that they encountered without any help being available.

The respondents were generally in agreement concerning system training that group seminars were necessary, but such seminars alone were not sufficient training. Personal training must follow, either at the workstation of the employee, or by solving problems over the phone, or as replies to e-mail inquiries. The only two organizations that neglected individual training were the City Organization and the Manufacturing Firm, the two organizations with the lowest rate of expected users. Respondents also stated that it was often productive to divide employees into smaller groups by interest or job function. Continuous education of older employees was considered equally as necessary as the introductory training of new employees. Learning to use ERMS should be part of learning how to perform on a new job. Implementation seems to have been most successful in those two organizations that used all of the different ways of training, i.e. the Financial Institute and Food Processing. The poorest success rate was in those organizations that only offered a general seminar at the outset for a large group of employees and neglected to complete the training with supplementary training methods. This result was evidenced in the City Organization and the Manufacturing Firm.

It seems to be obvious that communication and co-operation with the computer department of the organization has to be good if implementation is to succeed. Many of the interviewees expressed this opinion, especially the records managers. The support by the computer department in the Government Institution and the Construction Firm was not sufficient to begin with, but with a change in personnel this clearly changed for the better with a liaison in the computer department at the Government Institution and a new head of the computer department in the Construction Firm. In those organizations where support had been sufficient from the outset, the Financial Institute and the Food Processing, the proportion of actual users expected to use ERMS was the highest, or 90% and 80%

respectively. However, in the two organizations with the lowest user rate, the City Organization and the Manufacturing Firm, this support had been limited and unsatisfactory.

Some of the interviewees mentioned that there were some technical difficulties with the functioning of ERMS in the beginning of the implementation. The systems were slow or freezing in three of the organizations studied. These technical difficulties were not due to faults in the design of the software itself. All of the complaints related to limited capacity of the hardware and a long response time that is a situation that could have been foreseen. It is usually necessary to adapt new software and systems to the computer environment of an organization. In addition, in these cases, it was necessary to adapt ERMS to the RM requirements and regulations of the organizations.

These capacity problems were solved rather quickly and early in the implementation process. They may, therefore, have interfered less with the success of the implementation than could be expected, provided that other factors in the implementation were handled properly. However, the technical problems were real and were a source of irritation. Therefore, users avoided using the technology. Although these problems were fixed later it may take time for the users to overcome this distrust on the system, even though all of the four ERMS are of good quality and they can be adapted to the situation and the requirements in each organization. (See also section 4.2 Participants and Systems).

When the main conclusions are drawn, it seems that most managers find training too costly and it is common that they want to restrict expenditure for it. Some of the managers looked more upon training as an expense than a necessary investment. This view frequently resulted in neglecting training, and the training that was offered was not to the point, a situation that further led to limited use of the systems. It was nevertheless revealed by many of the interviewees that systematic and good training supports successful implementation of ERMS. When staff of the computer department was favourably disposed towards ERMS and was ready to deliver its share of teaching, then the training and implementation were more complementary and the rate of success increased.

When a training programme that is a part of implementing an ERMS is designed, the first task is to define what the trainees are supposed to be able to do after training. An important element is to have the trainees see the broad picture, why ERMS is being implemented. This is best accomplished with basic training in general RM.

Those working with ERMS on the job must have a good general understanding of the process of RM from the creation of a record to its disposition. They must also understand that the records are evidence and contain information about the activities of the organization. These records are the property of the organization and are not the property of the individual creating the record. These records are not something that the creator can take with him/her when leaving the job, although they may be useful in writing memoirs. The organization must meet certain legal requirements and must have the records to prove it.

The second phase is training in the use of the system itself, the system training. The training can be on-the-job and courses and seminars specially designed for the organization in-house or external courses, sometimes more general, that may be offered by the vendors of the system. An important part of this training is the hands-on experience of working in the system, creating records and utilising the various features that the system has to offer. It should not be neglected that there may be generation gaps in the use of word processors and computers. Part of the training must therefore be to make sure that all of the users are familiar with operating the equipment used. Some individuals experience computer anxiety, that is, they fear the implications of their computer use may result in mistakes and loss of data (Thatcher & Perrewé, 2002). (See also section 7.6.3). This factor must be taken into consideration before and during training. It is important to create a relaxed learning environment where no one is afraid to ask questions. Some questions come only later when the user has started to work in the system and knows better what to ask and what would be good to learn in more detail. Furthermore, sometimes changes and adaptations are made in the systems. It is, therefore, important to have refresher or follow-up courses as part of the training programme to assure that the users receive the complete training.

Testing should be used to find out if the users have acquired the general and specific knowledge that they should have during training. It is of no lesser importance to find out if they are applying this knowledge on the job. Control is needed to assure that people work in the system and use the knowledge that they have acquired and are not using the old system or some private system of their own. This is best accomplished with individual training on the job. Then it will be less likely to be viewed as an inspection by supervisors controlling work procedures. The user gets a last chance to correct his/her ways. Finally,

control must of course be applied to assure that the new system is fully operational and used by all intended.

The staff of the computer department must also be favourably disposed towards the ERMS and be ready to deliver their share regarding the teaching. The ERMS will become a part of the computer environment. The computer department will service certain aspects of the system. Good co-operation is, therefore, necessary between the records managers and the computer department in the training (Launchbaugh, 2004). Given the low success of many IT projects (Craig, 2005) there seems to be a substantial room for constructive co-operation that should improve the training in ERMS implementations. Studies have shown that training is very important in the introduction of new information systems (Dennis, Pootheri & Natarajan, 1998; Fjermestad & Hiltz, Winter 2000-2001) as covered in section 2.7. Training is a crucial systems success factor and it is risking failure if it is neglected and ignored and the IS implementers maintain a deliberate hands-off policy in that respect (Farwell et al., 1992; Markus & Benjamin, 2003).

Training is an important function in all change projects. It helps those involved to understand the change and thereby alleviates the fears that may be present. It can remove some of the uncertainties associated with the change and help the participants to cope with the change. The most powerful tool in making people more comfortable with new ways of doing things is training. Training provides the confidence needed to operate in the new environment. Change always involves learning and change itself is a learning experience that can be a positive motivational factor. Training can also be a way to make people feel that they are involved and that they matter in the change process. Truly, involving people in the change can be the strongest motivation available to make change accepted and a success.

6.4 Outcomes and Expectations

It was deemed interesting in the research to find out whether implementation of ERMS in the eight organizations had met the perceived objectives, as discussed in chapter 5, and fulfilled the expectations associated with its introduction. The outcomes mentioned in this section cannot be fully cross-linked with the objectives discussed in chapter 5 because members of the groups studied did not necessarily know both the objectives and the

outcomes. A manager may have known the objective but not necessarily the outcome in detail. The outcomes were not systematically measured in the organizations and compared to whether the objectives had been met. In general, however, some of the themes were recurrent. The records managers were the group that seemed to have the best insight into both the objectives and the outcomes. However, some of the perceived objectives seem to have been higher on the list with the managers and did not clearly appear as a general outcome when the records managers described the situation. Anticipated cost savings, for example, were a perceived objective that did not appear as a clear outcome. Furthermore, it should be pointed out that some of the perceived objectives could fall into the category of output and productivity.

The employees of the organizations were usually asked about points related to the outcomes and expectations, but most employees seemed to (1) have not given these issues any thought, (2) had only vaguely thought about them or (3) seemed to understand the outcomes and the expectations in the same way as the records managers. The best source regarding expectations and outcomes was the records managers. This section is, therefore, mostly based on their views. The views of other employees are presented when the occasion arises.

The six themes that were discovered when expectations and outcomes were discussed with the records managers were:

1. How large a proportion of the employees that were supposed to use ERMS are using it in a satisfactory manner.
2. Work procedures concerning RM.
3. Information security and access to information.
4. Legal requirements.
5. Output and productivity.
6. Expectations concerning implementation of ERMS.

The six themes mentioned above are covered, approximately in the same order, for each organization in the following sections. The outcomes and expectations of implementing ERMS are then summarized for the eight organizations in Table 6.5 after covering the situation for each organization.

6.4.1 Outcomes and Expectations in the Government Institution

When Lisa, the records manager, was last contacted by phone in April of 2005, she stated that approximately 75% of the employees that were supposed to use the system were using it and in a satisfactory manner. At that time, approximately four years had elapsed since System D had been introduced into the organization. Lisa mentioned also that although only 75% of the employees were working in the system, records from a larger proportion of employees were being entered into the system. Some employees, especially members of top management, had their secretaries filing their records in ERMS. Lisa said also that in some cases, she or her assistants were being asked to place records made by others into ERMS and they did so, if asked.

When Lisa was asked if the work procedures concerning records and information had changed after the introduction of ERMS she stated that they had improved. This was one of the objectives of implementing ERMS. She said that the employees knew more about the objectives of RM. Manuals and guidance regarding RM had been published in conjunction with the implementation of ERMS, even though no formal training in RM took place. David, the chief executive of the organization mentioned as well that these work procedures had improved markedly.

When information security was being discussed, Lisa said that the security was much better as it was easier to make security copies of records now in the central database of the ERMS than before when the records were scattered all over. Lisa connected increased security directly to easier access to information. She said: "Yes, information security is greater. Now, we can find everything whereas before usually some information got lost." Karl, a manager, believed that information security was greater after the introduction of ERMS, and even Stefan, the computer specialist, admitted that security was better.

When the legal requirements were discussed, Lisa said that organization was better for meeting these requirements after the introduction of System D. "Of course," she said, "it is obvious, there is more information security and easier access to information, and that is what the law is all about." Information security and easier access to records, as well as meeting legal requirements, were objectives of the implementation of ERMS. Anna, a specialist/auditor, and Susanna, a secretary, both mentioned that legal demands were better fulfilled.

Concerning output and productivity, Lisa said that it had not been systematically measured and that she did not know much about such things. When she was asked if implementation of ERMS had met expectations, she said: "Yes, in a way. At least I am rather pleased now." Lisa mentioned also, in this connection, that it had taken a much longer time to have people start to use the ERMS than had been anticipated: "More effective training and better co-operation with the employees of the computer department should have entered the picture much, much sooner."

6.4.2 Outcomes and Expectations in the City Organization

When the latter interview with Ragna, the records manager, took place in the summer of 2004, she stated that approximately 25% of the employees that were supposed to use the system were using it and in a satisfactory manner. At that time almost five years has elapsed since System F had been introduced into the organization. Ragna mentioned also that although only 25% of the employees concerned were working in the system, records were being delivered from a larger proportion of employees into the system as some of the employees, especially members of the top management, sent her their records for placement in ERMS. "Yes, about the same proportion is then added," she said making the proportion 50% in total.

When Ragna was asked if the work procedures concerning records and information had changed after the introduction of ERMS, she stated that they were better: "Especially those who use System F. They understand this better and follow the rules more closely." This was one of the objectives of the implementation of ERMS in the City Organization. Work procedures concerning records in general did improve although only a small proportion of the expected employees were using the system. For example, standard formats of documents (templates) were put into the ERMS and were being used by most of the users for records that they created themselves.

When information security was mentioned, Ragna began to discuss the legal requirements and the importance for the City Organization in meeting its legal obligations. She mentioned that she thought that the organization was meeting legal requirements better because, among other things, information security was greater and access to information was easier than before System F was installed. Although only 25% of expected users used

the system, Ragna was entering a large volume of records into the system on behalf of others. She was also a secretary to Peter, the chief executive. It can therefore be stated that most of the important records were entered into the system and were safely stored centrally, and security copies were being made regularly. Earlier, no electronic records were stored centrally, but rather on personal disks and drives and therefore subject to all of the hazards that accompany such storage. When Alexander, the computer specialist, was asked about security concerning records he stated that it had improved considerably after introducing ERMS.

The City Organization is a public organization and must adhere to the Information Act, no. 50/1996, that guarantees, among other things, that the general public has a right to have access to information about the activities of the organization, both old and new. Peter, the chief executive, did not seem to realize what the legal requirements were in this respect. When he was asked whether he could find information when needed, he replied:

> No, in fact not. I have contact with a lot of people that provide me with information. I do not file this information but reference it, like 'with Alexander' [the computer specialist] meaning that I can ask him for this information when needed. He is also sometimes working on projects for me that can then be found in the computer system. He stores this as he pleases.

When asked if he did not find it of concern that Alexander was the only person that could find this information, he replied: "Of course, when you mention it. He could just quit one day and what would I do then?"

Ragna said, when she was asked whether the implementation of ERMS had met expectations: "No, not my expectations. We would be meeting our legal obligations better if we had executed the implementation in the right way. Then more employees would be using the system, but that is not the case." And when she was asked more closely what should have been done differently, she mentioned that more emphasis should have been placed on training. Furthermore, she said: "And the support of top management was lacking. It has in fact been absent. Their interest has been limited, really." To summarize it can be stated that the objectives of more information security and better access to information and better meeting legal requirements were met to some extent.

6.4.3 Outcomes and Expectations at the Financial Institute

The interview with Dora, the records manager, took place in the spring of 2004. System E, according to her, had then been in some use in the organization for almost three years. Dora stated in the interview that approximately 90% of the employees that were supposed to use the system were in fact using it and in a satisfactory manner. At that time four years had elapsed since System E had been introduced. Dora confirmed as well that the employees were supposed to save and look for information in ERMS themselves. She only helped people out if they got into problems.

When Dora was asked if the work procedures concerning records and information had changed after the introduction of ERMS, she stated that they were much better. This objective was, therefore, met. She said:

> We, well, examined all our work procedures regarding records management. We made out a flow chart covering the whole process and then we published various guidelines, both covering records management and the system. All of this is paying off in the better quality of work being performed.

When Adam, a manager, was asked if he thought that the work procedures regarding records were better after the introduction of ERMS in those departments where it had been introduced.

When information security was mentioned Dora said that the security was much tighter. She said that all relevant records and information were gradually being entered into ERMS but that these records were all over the office before, in paper format and on various discs and computer drives at individual employees. Furthermore, she said: "It is so much easier to control and manage records from the security point of view when they are being entered systematically into a central database. Now, we can also always access the records quickly and without problems." Dora made a direct connection between increased safety and easier access to information. Elmar, a computer specialist, agreed that by introducing ERMS records security had considerably improved in those divisions where ERMS had already been introduced.

When the legal requirements were discussed Dora said that the organization did better in meeting the requirements concerning privacy of customers and employees after the

introduction of System E. It seems clear that these three objectives of better security, easier access to information and better conformity with legal requirements were being met at the company. Some of the other interviewees commented on the legal requirements, for example specialists and general office employees. Frida, a senior secretary, said: "The human resources department is now using the ERMS and utilizing the access control in the system. Privacy is now much better protected, as we are obliged to do."

Dora was asked if output/productivity had been measured before and after the introduction of System E. She said that it had been done informally: "Yes, maybe rather informally in certain departments, a measure of the service level. Now, our performance level is higher."

When Dora was asked whether implementation of ERMS had met expectations she admitted that implementation had not been as fast as some expected, but she also mentioned that that was the way those responsible in the organization wanted implementation to proceed: "We wanted to implement the system gradually, and by no means in all places at the same time – and preferably do a good job at it." The Financial Institute is one of the two organizations that showed a positive outcome for all of the expected results stemming from the implementation.

6.4.4 Outcomes and Expectations at the Manufacturing Firm

The interview with Nina, the records manager, took place in the spring of 2004. At that time approximately four years had elapsed since System G had been bought for the organization. In the spring of 2004, however, she admitted that only 15% of the employees that were supposed to use the system were using it in a satisfactory manner.

As could be expected, since the usage ratio was so low, one could detect that Nina believed that the situation concerning information security and access to information was in no way better than prior to the installation of ERMS. She said, however:

> We can perhaps state that it is an improvement with these 15% of users. I use the system and I see the benefits in this respect. But there is just no one looking for records created by others in the system. If someone needs something that I have created, that person just comes to me, to give an example.

It was obvious that she thought that implementation had not been carried out correctly. When she was asked what should have been done differently, she said: "Just everything. We should have invested much more in the training, and the support of top management has been at a minimum." The objectives of the implementation at the Manufacturing Firm were quite similar to the other organizations, but it seems that the failure in the implementation resulted in a failure in reaching all of the objectives.

6.4.5 Outcomes and Expectations in the Public Services Office

According to Pamela, approximately 60% of the employees at the Public Services Office that were supposed to use System D were using it and in a satisfactory manner. She mentioned also that the secretary to the superintendent was transferring his records into the ERMS. That was a lot of records. The interview with Pamela took place in the autumn of 2003 and at that time she said that System D had been in use in the office for almost three years.

When Pamela was asked if the work procedures concerning records and information had changed after the introduction of the ERMS she said that she thought that they were better, at least with those that were using System D. This was one of the objectives of the implementation.

Pamela was asked if she thought that information security was better after introducing ERMS. She answered:

> I would say that records security was nonexistent before. And fortunately, this has improved a lot. We are a public institution and must adhere to the Information Act, the Privacy Act and the National Archives Act, for example, and we are instructed directly to secure access and that will not be done unless the security is above reproach.

With this statement Pamela stated clearly that information security was greater, the access to information was better and the organization was more fully meeting the legal requirements after the introduction of ERMS than it had before. It can, therefore, be stated that these objectives of the implementation were being met.

Pamela did not want to comment on output/productivity. She said that the nature of the institution was such that it had never been measured.

When Pamela was asked whether the implementation of ERMS had met expectations she said: "We expected implementation to be more successful. Now, I am more optimistic because of the growing interest in the system." She mentioned furthermore, as elsewhere in the interview, that she had expected the superintendent to use the system. It was important that he should set a good example for others to follow.

6.4.6 Outcomes and Expectations at the Food Processing

System F had been in use at the Food Processing for five and a half years when the interview with Thor, the records manager, took place in the summer of 2004. According to him, approximately 80% of those who were supposed to use the system were using it and in a satisfactory manner.

When Thor was asked if the work procedures concerning records and information had changed after the introduction of ERMS, he stated that they were much better. This was one of the objectives of the implementation. He said that the employees had a very good understanding of the importance of RM, especially after seminars in RM were rather regularly being held in the organization and providing training in that field.

When information security and access to information was discussed, Thor said that he thought that there was no doubt that the security was much tighter and the access to information was both more rapid and secure than before the introduction of System F. Thor was asked whether he thought that the organization was better meeting the legal requirements regarding information and he said that he thought so. It seems that the implementation is meeting these three objectives. His answer concerning this was:

> Yes, for example, concerning employee records, and then I refer to the Privacy Act. But Food Processing is a private company and we do not have to think about public access to records, and legally speaking, not about the preservation of historic records, as a public organization must do.

When Thor was asked whether the output/productivity had been measured before and after the introduction of ERMS he said: "It is not easy to make accurate measurements of such things, but it is my feeling that the output is of a higher quality and much better." This was one of the objectives and it seems to have been attained.

When Thor was asked whether the implementation of ERMS had met expectations he said that this was not the case to begin with, but everything was now progressing normally, and in accordance with his expectations. Food Processing is one of the two organizations that show a positive outcome for all of the expected results stemming from the implementation, as shown in Table 6.5.

6.4.7 Outcomes and Expectations in the Municipal Office

The interview with Inga, the records manager, took place in the summer of 2004. System E had at that time been in some use in the organization for about four and a half years. According to Inga, 40% of the employees at the Municipal Office who were supposed to use System E were using it and in a satisfactory manner. She said, furthermore, that for a while, before the municipal elections, about 60% of the employees concerned had been using the system. She said that she thought that the level of use was now increasing again, somewhat: "I hope so, at least," she added.

When Inga was asked if the work procedures concerning records and information had changed after the introduction of ERMS she stated that they were better. She said among other things: "We also had seminars on general training in RM in connection with the implementation of System E. It resulted in our employees doing a better job regarding their records." This was one of the objectives and it seems to have been attained. The work procedures had improved, although there was still some room for improvement, with a larger proportion of users using the system.

Inga was asked if she thought that information security was better after the introduction of System E than before and she claimed that this was the case. She also mentioned that she thought that access to information was much quicker that before the introduction of ERMS. Inga was also asked whether she thought that the Municipal Office was better meeting the legal requirements and she answered: "Yes, our legal environment is aimed at public organizations and when information security is better and the access to information is quicker, then we are following the spirit of the law better." According to provisions in the Administration Procedures Act, no. 37/1993, public organizations must respond to queries within a specified time limit. Easier and quicker access to information helps to reduce the response time. These three objectives discussed above were among

those aimed at in implementation, as in the other organizations, and according to Inga, they seem to have been reached.

When asked about the output/productivity Inga said that it had never been measured, and in fact it was not relevant because the organization was composed of many different operational units that are in different locations all over town.

Inga was asked whether the implementation of ERMS had met expectations. She said: "It has, in a way, I think." But she also said that she had not expected that the use of ERMS would drop in some offices due to changes in staff. Therefore, there are problems "popping up" regarding implementing ERMS with new employees. She stated furthermore: "But there is not much else that we can do but to point to the importance of RM and ERMS."

6.4.8 Outcomes and Expectations at the Construction Firm

When the interview with Alma, the records manager, took place in the summer of 2004, System G had been in some use at the Construction Firm for approximately four years. According to her about 70% of the employees in the organization that were supposed to use System G were using it and in a satisfactory manner.

When Alma was asked if the work procedures concerning records and information had changed after the introduction of ERMS she stated that they were better in some respect: "Better with those working in the system. I have, however, high hopes regarding a seminar that we are preparing on general training in RM." She added that she had heard that such seminars had created a revolution concerning work procedures in RM in other organizations.

Alma was asked about information security and access to information, whether the situation concerning these two issues was better after the introduction of System G than before. She said that she was sure that it was much better. She said that she was also sure that the organization was better meeting the legal requirements regarding information after introducing ERMS.

Alma said, when she was asked whether the output/productivity had been measured before and after the introduction of ERMS, that it had not been done. She stated, however, that it could be easily detected in some offices, for example regarding relations with contractors. Things are moving much faster. "It is because the records are more accessible

and an overview of all communications with the contractor can be obtained instantly. They are also using the system 100% in that division," she said.

Alma was asked whether the implementation of ERMS had met expectations and she said: "It has, to some extent." In connection with that, she said that at first she had expected that full implementation would have been completed much earlier. She said, however, that she foresaw better times ahead: "Yes, with this good computer specialist and the quality manager." Overall, the objectives of the implementation seem to have been met, although not quite meeting expectations.

6.4.9 Discussions of the Outcomes and Expectations in the Organizations

In the previous sections the outcomes and expectations of implementing ERMS in the eight organizations that bought the four different ERM systems were discussed. Furthermore, these were compared with the objectives of the implementation. A survey of imaging systems by Meagher (1997) identified in many ways similar objectives as were discovered in this study and presented an evaluation of the outcomes.

All of the records managers stated how large a proportion of the employees that were supposed to use ERMS were actually using it and in their opinion in a satisfactory manner. There was a considerable difference among the organizations that participated in the research in the proportion of employees using ERMS, as shown in Table 6.5.

Table 6.5. Outcomes and expectations of implementing ERMS.

Outcomes and Expectations According to the Records Managers	Government Institution	City Organization	Financial Institute	Manufacturing Firm	Public Services Office	Food Processing	Municipal Office	Construction Firm
1 Estimated proportion of actual users expected to use ERMS	75%	25%	90%	15%	60%	80%	40% (60%)	70%
2 Better work procedures in RIM	Yes	T/S/E	Yes	No	Yes	Yes	Yes	Yes
3 More security and better access	Yes	T/S/E	Yes	No	Yes	Yes	Yes	Yes
4 Meeting legal requirements better	Yes	T/S/E	Yes	N/A	Yes	Yes	Yes	Yes
5 Increased output/productivity	N/A	N/A	Yes	N/A	N/A	Yes	N/A	Yes
6 Most expectations met	Yes	No	Yes	No	T/S/E	Yes	T/S/E	T/S/E

N/A = Not available – no information nor comments.
T/S/E = To some extent.

Table 6.5 also shows that, according to the records managers, the work procedures in RM seem to have improved after the introduction of ERMS, at least to some extent, in all of the organizations except the Manufacturing Firm. This was especially evident in the Financial Institute, the Food Processing, and even in the Municipal Office, where general training in RM had taken place.

According to the records managers, information security and the access to information did go hand in hand with use. The more widespread the use of ERMS is, throughout the organization, the better was the information security. Access was quicker and more secure. The records managers also felt that by improving information security and access to information, the organization was meeting legal requirements better, concerning information and records. This agrees with similar experiences in meeting legal requirements in Britain (Tower Software, 2005).

In none of the organizations had the output and the productivity been measured systematically. However, it was possible to understand from statements made by three of the four records managers in the private organizations, Dora at the Financial Institute, Thor at the Food Processing, and Alma at the Construction Firm that they thought that the output and the productivity had improved after the introduction of ERMS. When such measurements have been made, the result has been impressive. An example from the UK

Department of Trade and Industry is given in section 2.7 where a considerable improvement in productivity is described (EDRM Benefits the DTI, 2005).

Implementation of ERMS has, to a large extent, met the records managers' expectations in the Government Institution, the Financial Institute and the Food Processing, and it has met the records managers' expectations in a way at the Construction Firm, the Public Services Office and the Municipal Office. However, all of the six records managers in these organizations mentioned that they had expected that the implementation would have progressed much faster. It should, however, be mentioned that all of the records managers, except Inga at the Municipal Office, believed that general use of the ERMS in their organizations was within sight due to increased top management support and more effective training.

Implementation of the ERMS in the City Organization and the Manufacturing Firm had not met expectations in those organizations, according to the records managers. The records managers of these organizations seemed both to agree that the reasons were the lack of top management support and insufficient and improper training.

There appeared a strong correlation between the success rate as measured as the rate of actual proportion of expected users using ERMS and the outcomes and expectations of implementing the systems. The two organizations with the highest proportion of use among the expected users, the Financial Institute (90%) and the Food Processing (80%), also showed a positive result on all expected outcomes. The next runners-up, the Government Institution (75%) and the Construction Firm (70%) showed a similar result for outcomes and expectations. Those who came in fifth and sixth, the Public Services Office (60%) and the Municipal Office (60%>40%), were identical as to outcomes and expectations. The City Organization (25%) can state to some extent that the outcome was positive although not meeting expectations. However, the Manufacturing Firm (15%) neither showed a positive outcome for the available yardsticks nor were expectations met.

6.5 General Discussions of Chapter Six

It does not seem to make any difference concerning the implementation and the usage level of the ERMS whether the organization is public or private. Nor does it seem to make any

difference which type of ERMS is being implemented. The same system can show different implementation outcomes.

Table 6.6 pictures the four systems in use in the eight organizations and shows the success rate of the implementation.

Table 6.6. The usage level of the four ERMS in the four public and four private organizations.

System D	System F	System E	System G
Government Institution (public organization) 75%	City Organization (public organization) 25%	Financial Institute (private organization) 90%	Manufacturing Firm (private organization) 15%
Public Service Office (public organization) 60%	Food Processing (private organization) 80%	Municipal Office (public organization) 40% (60%)	Construction Firm (private organization) 70%

What is striking is the different success level of the same system in the different organizations. The implementation of System G was studied in two private organizations. In the Construction Firm the level of usage was 70% but only 15% in the Manufacturing Firm. When System F is looked at, the user level was much lower in the public organization, the City Organization, than in the private organization, the Food Processing. This is not proof that the success rate for implementation is lower for public organizations. System D, for example, seems to have been in rather extensive use in the two public organizations. The user level in the Government Institution was 75%, but such a high level could also be found in a private organization, with a level of 90% at the Financial Institute. These findings seem to support that whether the organization is public or private does not matter. Furthermore, all of the systems seemed to function relatively well, showing user rates between 70% and 90% when they are rather successfully implemented.

There is a difference between the eight organizations in terms of the number of persons interviewed. Four of the organizations were studied in detail and a number of employees were interviewed. In the comparison group only the records managers were interviewed (see Figure 4.2). There are no indications that this biased the findings regarding the implementation in the four-organization comparison group as discussed in section 4.6.

System O is also an ERMS but not one of the four ERMS in the eight organizations participating in the research. In the interview with Markus, the consultant/teacher in Solutions, he stated that the same issues seem to matter concerning the implementation of System O. The same can be said about System S that is an MIS, as brought to light in the interview with Katarina, the consultant/teacher at Software.

The findings of this research show that what seemed to make all the difference in the implementation for the outcome are the factors covered in the sections above: (1) support by top management, (2) participation of the users in the project, and (3) training in RM and in the use of ERMS. To have people work together and to encourage them to develop their skills and to motivate a certain outcome is a management exercise. How successfully it was carried out in the eight organizations can be seen when all of the different aspects of the implementation are considered as a whole. The implementation and the use of ERMS had the best success rate in those cases where: (1) support of top management was present and active, (2) user participation was genuine, and (3) training, both general training in RM and the system training, was sufficient and to the point. These findings and conclusions are shown in Table 6.7.

Table 6.7. Implementation of the four ERMS in the eight organizations.

Implementation of ERMS	Government Institution	City Organization	Financial Institute	Manufacturing Firm	Public Services Office	Food Processing	Municipal Office	Construction Firm
1.0 Support by top management								
1.1 Managers' interest and control	Yes	No	Yes	No	No	Yes	No	Yes
1.2 Managers' own use	75%	0%	100%	5%	60%	70%	20%	70%
1.3 Motivation and reward	No	No	Yes	No	No	Yes	No	Yes
1.4 Responsibility assumed	Yes	No	Yes	No	No	Yes	No	Yes
Yes, total	*2*	*0*	*3*	*0*	*0*	*3*	*0*	*3*
2.0 Records managers participation								
2.1 System specification	Yes	No	Yes	No	No	Yes	Yes	Yes
2.2 Choice of system	Yes	No	Yes	No	No	No	No	No
2.3 Development of ERMS	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes, total	*3*	*1*	*3*	*0*	*1*	*2*	*2*	*2*
3.0 Education and training								
3.1 General training in RM	No	No	Yes	No	No	Yes	Yes	No
3.2 Seminars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.3 Individual training	Yes	No	Yes	No	Yes	Yes	Yes	Yes
3.4 Support by IT department	No/Yes	No	Yes	No	N/A	Yes	N/A	No/Yes
3.5 Follow-up courses	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Yes, total	*3*	*1*	*5*	*1*	*3*	*5*	*4*	*3*
Yes, positive cases total	***8***	***2***	***11***	***1***	***4***	***10***	***6***	***8***
4.0 Outcomes and expectations								
4.1 Estimated proportion of expected users actually using ERMS	***75%***	***25%***	***90%***	***15%***	***60%***	***80%***	***40% (60%)***	***70%***
4.2 Better work procedures in RM	Yes	T/S/E	Yes	No	Yes	Yes	Yes	Yes
4.3 More security and better access	Yes	T/S/E	Yes	No	Yes	Yes	Yes	Yes
4.4 Meeting legal obligations better	Yes	T/S/E	Yes	N/A	Yes	Yes	Yes	Yes
4.5 Increased output/productivity	N/A	N/A	Yes	N/A	N/A	Yes	N/A	Yes
4.6 Most expectations met	Yes	No	Yes	No	T/S/E	Yes	T/S/E	T/S/E
Yes, total	*4*	*0*	*5*	*0*	*3*	*5*	*3*	*4*

No/yes = First no then yes.
N/A = Not available – neither information nor comments.
T/S/E = To some extent.

The number of *yes* replies to the three input factors: Support by top management, participation by records managers and the education and training correlated positively with the proportion of expected users using ERMS (point 4.1) and also strongly with the positive outcomes of implementation, as shown in points 4.2 to 4.6 in Table 6.7. The greater the number of *yes* replies, the higher was the proportion of expected users using ERMS. The Financial Institute had the highest score of a total of 11 positive cases. It also ranked highest in the proportion of expected users. The correlation is also strong between the

positive inputs and the positive outcomes. When the inputs and outcomes are rank ordered, as is done in Table 6.8, the correlation between the ranks is almost complete. The more positive inputs there were in the success factors explored, the more positive were the outcomes to be found in the implementation of ERMS. This result is strong evidence that investing in the many success factors leads to successful implementation, as measured by the various outcome dimensions.

Two of the organizations, the Government Institution and the Construction Firm had the same rank for inputs and outcomes, but the Government Institution scored higher on the proportion of expected users. The Municipal Office ranked fifth but nevertheless had a lower proportion of users using ERMS compared to the Public Services Office, which ranked sixth. In this connection it must be remembered that subsequent to municipal elections, an important change of staff occurred with the newcomers not using ERMS and thus making the user rate drop from 60% to 40%. If that had not occurred, the user rate might have risen instead of falling. The last runners-up, the City Organization and the Manufacturing Firm neglected the inputs, which explains the poor outcome and goes to show once again: 'He who sows sparingly will also reap sparingly, and he who sows bountifully will also reap bountifully' – Cor. 2 – 9.6.

Table 6.8. Rank order matrix of inputs and outcomes in implementing ERMS.

Rank Order Correlation of Inputs and Outcomes	*Government Institution*	*City Organization*	*Financial Institute*	*Manufacturing Firm*	*Public Services Office*	*Food Processing*	*Municipal Office*	*Construction Firm*
Estimated proportion of expected users actually using ERMS	*75%*	*25%*	*90%*	*15%*	*60%*	*80%*	*40% (60%)*	*70%*
Positive inputs, number of cases	8	2	11	1	4	10	6	8
Positive outcomes, number of cases	4	0	5	0	3	5	3	4
Rank order for inputs	3	6	1	7	5	2	4	3
Rank order for outcomes	3	6	1	7	4	1	4	3
Rank order of the eight organizations	*3*	*7*	*1*	*8*	*6*	*2*	*5*	*3*

The organization with the highest level of usage, 90%, and the highest rank, was the Financial Institute. That outcome followed from the full support by top management, the participation of users, especially the records manager, in the system specifications, choice of system and the subsequent system development, and the complete training offered to the employees. The organization that ranked number two with a usage rate of 80%, the Food Processing, differed in the level of use by the managers themselves. As only 70% of the managers were using the system, the level of use dropped for the whole organization. This agrees with writings on the effect of leadership (Barnard, 1968; Geneen, 1984; Maister, 2001; 1984; Smythe, 2002). The fact that the records manager did not participate in the selection of the system does not seem to have made any difference as the system met specifications and the users participated in the subsequent development and introduction of the system. The other organizations deviated in various aspects from the most successful implementation process, thus explaining the lower usage levels and the lower rankings in terms of outcomes. The two cases that showed almost total failure, where the usage rate was 15% and 25%, do not come as a surprise. They neglected most guidelines of the implementation process. That route seems, therefore, to be a recipe for failure.

The two organizations with the highest usage rate were also those where outcomes best matched expectations, the most important being the usage rate itself. These organizations showed a positive correlation between objectives, expectations and outcomes. These expectations were being met because of the way the systems were implemented. It is equally unrealistic to expect excellent outcomes if the implementation process is managed poorly. These conclusions are demonstrated in section 4.0 of Table 6.7.

During the participant observation, the meeting of seven people at the Computer Co., the discussion centred around implementing ERMS in Icelandic organizations. The discussions were not particularly on the eight organizations participating in this research but rather on implementing such systems in organizations in general. The conclusions were that most organizations were not proceeding correctly regarding the implementation process. This poor outcome is not particular to Iceland but seems too common in other countries as well (Brittain, 1992; Ryan, 2005). The participants at the meeting were of the opinion that implementation in organizations frequently results in a failure primarily due to: (1) lack of management support, (2) lack of general training in RM, (3) lack of effective

system training offered to employees who, (4), resist the change. They also believed that this was the case most often with the implementation of ERMS in Icelandic organizations. They were also of the opinion that the situation could be reversed if the implementation was carried out more effectively. The findings of this study confirm these views of the system consultant/teachers.

Figure 6.1 sums up the factors that contributed to the failures of implementing ERMS, based on the analysis of the discussions at the meeting with the experts at the Computer Co.
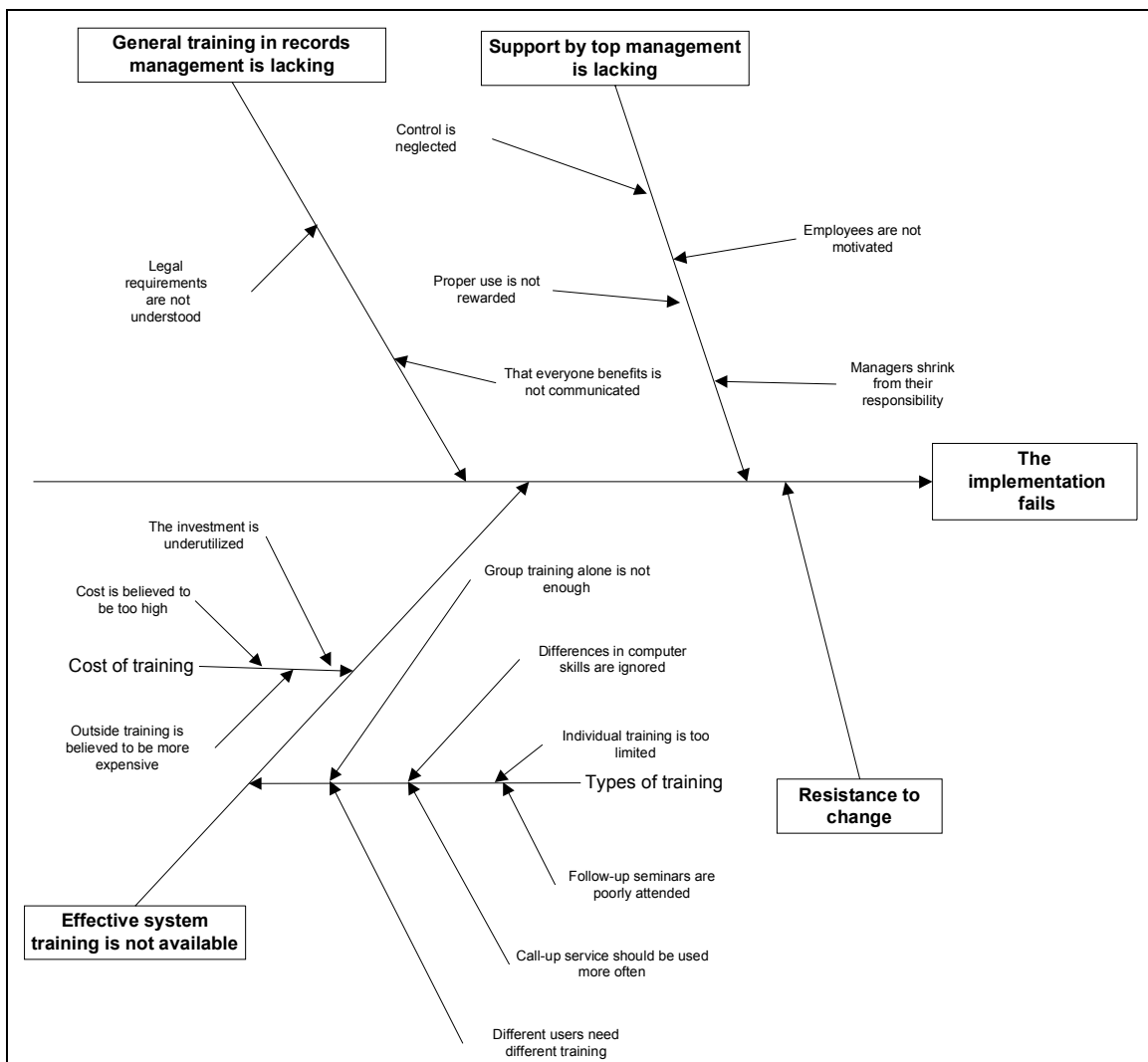
Figure 6.1. Cause and effect diagram showing why the implementation of ERMS can fail.

The diagram shows that the implementation in organizations frequently results in a failure due to the lack of top management support, lack of general training in RM, lack of effective system training, and resistance to change.

All of the four ERMS in the eight organizations had been in use for several years. It was, therefore, likely that some experience had been gained regarding the implementation process and how the system had been developed and adapted to the organization, both the RM culture and the computer environment in the organization. Some indication could be obtained prior to the research that these organizations had experienced variable success in implementation. If the participating organizations for this research had been chosen at random from the customer lists of the software providers, the conclusion could have been a much higher rate of failure for the implementation. The consultant/teachers at the software providers indicated quite often that implementation was not succeeding at their customers, as pictured in Figure 6.1. The figure is an analysis of the data collected in the Computer Co. during the participant observation (a meeting). The figure also comprehensively reflects the findings of the previous analysis.

The four organizations that were studied in detail offered the possibility to study how they differed in the implementation process, as have been shown. In addition they offered the possibility to study how employees used ERMS in their work. That is what will be examined more closely in the next chapter, chapter 7. The chapter will report the study of which methods the employees used to classify and register records before they saved them in the system, and will examine how they searched for records and which methods they used to retrieve them when needed.

7 The Use of ERMS

The previous chapters examined what the research participants found to be the objectives of introducing ERMS in their organizations, secondly, how certain implementation factors were dealt with in the participating organizations, and furthermore, what were the outcomes of implementing ERMS compared to the objectives in the different organizations.

This chapter examines how the employees used ERMS in their work and how they entered into ERMS the information contained in the records of the organization: Incoming and outgoing correspondence – including faxes and e-mail – internal and external supporting material, minutes from meetings, agreements, contracts, internal memos and reports, plans, films, photographs, drawings, and other related records. These records could be on any format (medium), paper, film or electronic. The research attempted to discover whether the employees were in fact capturing the records that should be stored into ERMS in a satisfactory manner, using the options that ERMS offer to facilitate later retrieval.

In this chapter the examination is limited to the ways information was captured and stored in ERMS to preserve it for later use by present and future employees. ERMS have various important features that are of value, such as access control, security issues and protection of privacy, but these are not covered in the analysis in this chapter. Here the emphasis is on how employees were in fact using ERMS to preserve recorded knowledge and how they searched for it when it was needed. Finally, this actual use is compared with the options provided by the systems to see to what extent the features offered in ERMS were being fully utilized.

The interviews sometimes took place in meeting rooms, but also occasionally at the employee's workstation. The interviewees provided comprehensive information about the form and type of records that they captured, both in-house and from outside. This part of the research is covered in sections 7.1 and 7.2. In these sections the views of the records managers, other employees and the consultants/teachers at the software providers are presented.

Some employees demonstrated how they registered and searched for records at their workstations. These tasks could also be examined during the participant observations in the four organizations that were studied in detail. The information obtained was not

comprehensive, but nevertheless, supports the opinions that the records managers expressed regarding the use of ERMS by the employees in their organizations. These findings are covered in sections 7.3 and 7.4 and provide the views of the records managers and the consultants/teachers at the software providers.

In section 7.5 other themes that were discovered during the analysis are covered. Here only the views of the records managers and the consultants/teachers are covered. Finally, in section 7.6, the discussion turns to how employees felt working with ERMS and whether they appreciated or resisted using the system.

During the interviews eight main themes were explored regarding how employees used ERMS:

1. Forms and types of records created in-house captured into ERMS.
2. Forms and types of records received from others captured into ERMS.
3. Methods of registering records into ERMS, the registration parameters.
4. Methods of searching for and retrieving records in ERMS, the search parameters.
5. Monitoring the status of inquiries/cases in ERMS.
6. Standard forms of documents (templates) in ERMS.
7. Information from other systems/databases sought and brought into ERMS.
8. The feelings of employees towards working with ERMS and their appreciation or resistance regarding using the systems.

These eight themes will be covered in the following sections in the order mentioned above.

7.1 Forms and Types of Records Created In-House Captured into ERMS

Records come in different forms and are of different types. The form of a record refers to the outer appearance and formal characteristics of the record, whereas the type of the record refers to the content. Records of the same form can differ considerably in their content, whereas records of the same type are alike in content. An annual report is, for example, a type of a record. The content is the same from one company to another. E-mail, on the other hand, is a form of a record. It can deal with any subject from a simple discussion or a joke irrelevant to the rest of the employees to confidential and classified information of great value to the organization. It can also occur in different formats, electronic or printed out on paper.

It seems that employees often find it difficult to distinguish between the form and the type of a record. As an example they find it difficult to decide whether a letter is a form or a type of a record. For that reason ERMS are equipped with drop-down lists, one for the type and another for the form, that define these two by listing the different forms and types.

For the purpose of this research a letter is defined as a form of a record, as is done in ERMS, due to its varying content, as is e-mail, e-mail attachments, records in another electronic format other than letters, e-mail or e-mail attachments, faxes, films, photographs, drawings, maps and similar documents. A letter has the formal signature of the sender on the original whereas e-mail does not. Types of records, on the other hand, include cases (inquiries from clients or customers and replies to such queries), minutes of meetings, reports (on a particular function of the organization, a project, financial status or transactions), plans (for example, budgets and project outlines), agreements, contracts, material published by the organization both for in-house and outside use (for example, policy statements, handbooks, brochures, catalogues, newsletters, and annual reports), certificates and memos.

The research studied which records created in-house were captured into ERMS according to form and type. This was studied from four different angles:

1. Records created in-house that should be captured into ERMS, according to the records manager in each organization.
2. Records captured into ERMS that were created in-house by the interviewees themselves in each of the four organizations that were studied in detail.
3. Records captured into ERMS that were created in-house by the interviewees in the eight organizations that had bought ERMS, according to job function.
4. Records by form and type that were created in-house and usually captured into ERMS by their customers, according to the opinions of the consultants/teachers of the software providers.

All of the eight records managers thought that records created in-house in the form of letters, e-mail, e-mail attachments, records in another electronic format other than letters, e-mail or e-mail attachments, and faxes should be captured into ERMS. In the Municipal Office and the Construction Firm there was a considerable number of records in the form of films, photographs and drawings. It was the opinion of the records managers in these two organizations that these forms of records should be captured into ERMS as well. The other

organizations did not have these records and it is therefore not relevant to list these records for capture into ERMS for the organizations concerned. Table 7.1 shows which forms of records created in-house should be captured into ERMS according to the records managers of the eight organizations that had bought ERMS and participated in the research.

Table 7.1. Forms of records created in-house that should be captured into ERMS, according to the records managers.

Organization	*Letters*	*E-mail*	*E-mail Attachments*	*Records on another electronic format*	*Faxes*	*Films*	*Photo-graphs*	*Drawings, maps and similar documents*	*Other*
Government Institution	✔	✔	✔	✔	✔	N/R	N/R	N/R	✔
City Organization	✔	✔	✔	✔	✔	N/R	✔	✔	N/R
Financial Institute	✔	✔	✔	✔	✔	N/R	N/R	N/R	✔
Manufacturing Firm	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Public Services Office	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Food Processing	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Municipal Office	✔	✔	✔	✔	✔	✔	✔	✔	N/R
Construction Firm	✔	✔	✔	✔	✔	✔	✔	✔	N/R

N/R = Not relevant. These records did not exist in the organization. Two organizations also had other forms of records that were not relevant for the rest of the organizations.

All of the eight records managers thought that the records of the following types, created in-house, should be captured into ERMS: cases, minutes of meetings, reports, plans, agreements, contracts, material published by the organization, and memos. In the Public Services Office a part of the records that were created in-house were certificates of different types. The opinion of the records manager in this organization was that this type of records should also be captured into ERMS. The other organizations did not issue any certificates. Certificates were, therefore, not a relevant type of records in their case. Table 7.2 shows which types of records created in-house should be captured into ERMS according to the records managers of the organizations that had bought ERMS and participated in the research.

Table 7.2. Types of records created in-house that should be captured into ERMS, according to the records managers.

Organization	Cases	Minutes of meetings	Reports	Plans	Agreements, contracts	Material published by the organization	Certificates	Memos	Other
Government Institution	✔	✔	✔	✔	✔	✔	N/R	✔	N/R
City Organization	✔	✔	✔	✔	✔	✔	N/R	✔	N/R
Financial Institute	✔	✔	✔	✔	✔	✔	N/R	✔	N/R
Manufacturing Firm	✔	✔	✔	✔	✔	✔	N/R	✔	✔
Public Services Office	✔	✔	✔	✔	✔	✔	✔	✔	N/R
Food Processing	✔	✔	✔	✔	✔	✔	N/R	✔	✔
Municipal Office	✔	✔	✔	✔	✔	✔	N/R	✔	N/R
Construction Firm	✔	✔	✔	✔	✔	✔	N/R	✔	N/R

N/R = Not relevant. The organization did not issue any certificates. Two other organizations also had other types of records that were not relevant for the rest of the organizations.

The records managers were all familiar with the accepted definition of a record, for example the definition of a record according to the Icelandic National Archives Act, no. 66/1985, '… records are any documents, written or in any other format, that contain information and have been created by an organization or an individual, regardless of whether they are written documents, maps, photographs, films, microforms, sound recordings, punch cards, magnetic tapes or any similar material.' They all believed, and rightly, that all documents that fall under the definition of a record should be captured in ERMS.

The interviewees in the four organizations that were studied in detail were asked about the form of the records that they themselves created in-house: which records according to form did they capture into ERMS. Table 7.3 shows the number of the interviewees working on capturing different forms of records in each of the four organizations.

Table 7.3. Forms of records created in-house, captured into ERMS. Number of interviewees in each of the four organizations that captured records by form.

Organization	Letters	E-mail	E-mail attachments (other than letters)	Records on another electronic format	Faxes	Films	Photo-graphs	Drawings, maps and similar documents	Other
Government Institution	8/11	5/11	2/11	2/11	1/1*	N/R	N/R	N/R	0/1*
City Organization	3/7	1/7	1/7	1/7	1/1*	N/R	0/3*	0/3*	N/R
Financial Institute	8/8	7/8	4/8	4/8	1/1*	N/R	N/R	N/R	0/1*
Manufacturing Firm	3/8	1/8	1/8	1/8	1/1*	N/R	N/R	N/R	N/R

N/R = Not relevant. These records did not exist in the organization. Two organizations also had other forms of records that were not relevant for the rest of the organizations.
*The denominator shows the number of employees that were supposed to capture this form of record into the ERMS. It is not relevant to use the total number of employees interviewed as many of them were not supposed to capture records into the ERMS. Very few employees created faxes. E-mail had taken its place in these organizations for the most part. The records manager, or another designated employee, took care of entering faxes.

All of the interviewees at the Financial Institute and most of the interviewees at the Government Institution did capture letters that they created themselves into their ERMS. These were the two organizations where the implementation was most successful of those four that were studied in detail. The other two, the City Organization and the Manufacturing Firm, had the worst performance record. Only three out of eight employees who were supposed to capture letters did so in both organizations. These two organizations were those with the poorest implementation success of the eight organizations studied.

E-mail and e-mail attachments and records in another electronic format were not treated with the same respect as letters. The number of employees that captured these forms created in-house into ERMS was drastically fewer for the two worst performers, the City Organization and the Manufacturing Firm, where only one out of eight employees that were supposed to capture e-mail into ERMS did so. These employees seemed to believe that e-mail and e-mail attachments had already been captured as they could retrieve the most recent ones in the e-mail software itself. The e-mail, however, never became a part of the case file in ERMS and eventually may well have become lost when e-mail was deleted from the in- and outbox in the e-mail software. This practice was opposite to what the records managers would have liked to see, as shown in Table 7.1. All fax messages were captured into the ERMS but only one employee had that responsibility in each organization. Three out of the four organizations had other forms of records, like photographs and drawings, that should have been captured but this was not being done.

The interviewees in the four organizations that were studied in detail were asked about the type of records that they themselves created in-house: which records according to type did they capture into ERMS. Table 7.4 shows the number of the interviewees working on capturing different types of records in each of the four organizations.

Table 7.4. Types of records created in-house, captured into ERMS. Number of interviewees in each of the four organizations that captured records by type.

Organization	Cases	Minutes of meetings	Reports	Plans	Agreements, contracts	Material published by the organization	Certificates	Memos	Other
Government Institution	8/11	7/7*	5/7*	6/6*	2/2*	1/1*	N/R	8/11	N/R
City Organization	3/7	2/4*	1/3*	1/3*	1/3*	0/1*	N/R	2/8	N/R
Financial Institute	8/8	3/3*	2/2*	3/3*	1/2*	1/1*	N/R	7/8	N/R
Manufacturing Firm	3/8	2/3*	2/3*	1/3*	1/3*	0/1*	N/R	2/8	0/2*

N/R = Not relevant. The organizations did not issue any certificates. One organization had also another type of records that was not relevant for the rest of the organizations.
*The denominator shows the number of employees that were supposed to capture this type of record into the ERMS. It is not relevant to use the total number of employees interviewed as many of them were not supposed to capture records into the ERMS.

All of the interviewees at the Financial Institute and most of the interviewees at the Government Institution did capture cases that they created themselves into ERMS. In the City Organization and the Manufacturing Firm only three out of eight employees that were supposed to capture cases did so in both organizations. These two organizations were those with the poorest implementation success of the eight organizations studied.

Other types of records created in-house were captured rather frequently into ERMS. There were relatively few employees responsible for this function. In the case of memos the frequency of capturing was similar to that of cases and, again, this practice was not in harmony with what the records managers would like to have seen in the City Organization and the Manufacturing Firm, as shown in Table 7.2.

All of the interviewees in the eight organizations that had bought ERMS were asked about the form of the records that they themselves created in-house: Which records according to form did they capture into ERMS. Table 7.5 shows the number of interviewees, grouped according to job function, who were working on capturing different forms of records in the eight organizations.

Table 7.5. Forms of records created in-house, captured into ERMS. Number of interviewees in the eight organizations, according to job function, that captured records by form.

Employees	*Letters*	*E-mail*	*E-mail attachments*	*Records on another electronic format*	*Faxes*	*Films*	*Photo-graphs*	*Drawings, maps and similar documents*	*Other*
Records managers	8/8	8/8	7/8	7/8	8/8	N/R	N/R	N/R	N/R
Managers	4/8	2/8	0/8	2/8	N/R	N/R	N/R	N/R	N/R
Computer specialists	2/4	2/4	2/4	2/4	N/R	N/R	N/R	N/R	N/R
Specialists	5/8	3/8	2/8	3/8	N/R	N/R	0/2*	0/2*	0/1*
General employees	7/10	4/10	2/10	2/10	N/R	N/R	0/1*	0/1*	0/1*

N/R = Not responsible. An employee in this position was not responsible for capturing a record of this form into the ERMS.
 *The denominator shows the number of employees that were supposed to capture this form of record into the ERMS. It is not relevant to use the total number of employees in each job function as many of them were not supposed to capture these records into the ERMS.

All of the records managers did capture letters that they created themselves. Only 50% of the managers and computer specialists did so, but specialists and general employees showed better performance. The managers received in some cases help from their secretaries or the records manager to capture letters into ERMS, especially in the City Organization and the Manufacturing Firm. This does not change the fact that they were expected to do the capturing themselves as it saves time, money and labour. The situation regarding the specialists was different because they had no automatic claim to any help.

E-mail and e-mail attachment and records in another electronic format were not treated with the same respect as letters. Only the records managers did not make a distinction and treated e-mail with the same respect. One records manager, however, did not capture e-mail attachments and records on another electronic format into ERMS. The number of employees that captured these forms, created in-house, into ERMS was drastically lower for all other job functions. This was opposite to what the records managers would have liked to see their co-workers do, as shown in Table 7.1. All fax messages were captured into ERMS but only one employee, the records manager, had that responsibility in each organization. Some organizations had other forms of records, like photographs and drawings that should be captured into ERMS by specialists and general employees, but they were not doing so.

All of the interviewees in the eight organizations that had bought ERMS were asked about the type of records that they themselves created in-house: which records according to type did they capture into ERMS. Table 7.6 shows the number of interviewees, grouped

according to job function, working on capturing different types of records in the eight organizations.

Table 7.6. Types of records created in-house, captured into ERMS. Number of interviewees in the eight organizations, according to job function, that captured records by type.

Employees	Cases	Minutes of meetings	Reports	Plans	Agreements, contracts	Material published by the organization	Certificates	Memos	Other
Records managers	8/8	6/6*	5/5*	5/5*	4/4*	N/R	N/R	8/8	N/R
Managers	4/8	2/4*	2/4*	3/4*	1/3*	N/R	N/R	4/8	N/R
Computer specialists	2/4	1/1*	1/2*	1/3*	0/2*	N/R	N/R	2/4	N/R
Specialists	5/8	3/5*	2/5*	3/5*	1/2*	1/3*	N/R	4/8	0/1*
General employees	7/10	2/3*	1/2*	0/1*	1/1*	1/1*	N/R	6/10	0/1*

N/R = Not responsible. An employee in this position was not responsible for capturing a record of this type into the ERMS.
 *The denominator shows the number of employees that were supposed to capture this type of record into the ERMS. It was not relevant to use the total number of employees in each job function as many of them were not supposed to capture these records into the ERMS.

All of the records managers did capture cases that they created themselves into the ERMS. Only 50% of the managers and computer specialists did so, but specialists and general employees showed a better performance.

The records managers did not make a distinction and treated all types of records with the same respect. Other types of records created in-house were captured rather frequently into ERMS. There were relatively few employees responsible for this function. However, in the case of memos the frequency of capturing was similar to that of cases. This is not quite what the records managers would have liked to see, as shown in Table 7.2.

All of the five consultants/teachers at the software providers thought that their customers that had successfully implemented ERMS captured the various forms of records mentioned earlier, except films, photos and drawings, created in-house. Their views are in agreement with what the records managers preferred, as shown in Appendix 6, Table 1.

All of the five consultants/teachers at the software providers thought that records of the following types, created in-house, should be captured into ERMS by their customers: cases, minutes of meetings, reports, plans, agreements, contracts, material published by the organization and memos. Appendix 6, Table 2 presents the types of records created in-house that they believed that their customers usually captured into ERMS when they were

used as expected. Their opinions agree with the views of the records managers, as shown in Table 7.2.

Here above it has been discussed which forms and types of records, created in-house, the employees of the organizations were capturing into the ERMS. A question is whether the same applies to the forms and types of records received. How these records were captured into ERMS is covered in the next section.

7.2 Forms and Types of Records Received from Outside to be Captured into ERMS

The research covered as well which records received by employees were captured into ERMS according to form and type. This was studied in the same way as in the previous section.

All of the eight records managers thought that the various major forms of records should be captured into ERMS. In the City Organization, the Municipal Office and the Construction Firm there was a considerable number of records in the form of photographs and drawings. It was the opinion of the records managers in these three organizations that these forms of records should be captured into ERMS as well. The other organizations did not have these records. Table 7.7 shows the forms of records received that should be captured into ERMS according to the records managers of the eight organizations.

Table 7.7. Forms of records received that should be captured into ERMS, according to the records managers.

Organization	*Letters on paper or in electronic format (scanned or only registered)*	*E-mail*	*E-mail attachments (other than letters)*	*Records in another electronic format*	*Faxes*	*Films*	*Photo-graphs*	*Drawings, maps and similar documents*	*Other*
Government Institution	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
City Organization	✔	✔	✔	✔	✔	N/R	✔	✔	N/R
Financial Institute	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Manufacturing Firm	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Public Services Office	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Food Processing	✔	✔	✔	✔	✔	N/R	N/R	N/R	N/R
Municipal Office	✔	✔	✔	✔	✔	N/R	✔	✔	✔
Construction Firm	✔	✔	✔	✔	✔	N/R	✔	✔	N/R

N/R = Not relevant. These records did not exist in the organization. One organization also received records in another form that was not relevant for the rest of the organizations.

All of the eight records managers thought that the records of the following types, if received, should be captured into ERMS: cases, minutes of meetings, reports, plans, agreements, contracts, material published by the organization and memos. All of the organizations received cases on paper or in electronic format, and agreements and contracts, but regarding other types of records, it varied according to the activity which types of records they received. Table 7.8 shows which types of records received should be captured into ERMS according to the records managers of the organizations that had bought ERMS and participated in the research.

Table 7.8. Types of records received that should be captured into ERMS, according to the records managers.

Organization	Cases (on paper or in electronic format)	Minutes of meetings	Reports	Plans	Agreements, contracts	Certificates	Memos	Other
Government Institution	✔	N/R	✔	✔	✔	N/R	N/R	N/R
City Organization	✔	✔	✔	✔	✔	N/R	✔	N/R
Financial Institute	✔	N/R	N/R	N/R	✔	N/R	N/R	N/R
Manufacturing Firm	✔	N/R	N/R	N/R	✔	✔	N/R	N/R
Public Services Office	✔	N/R	✔	✔	✔	N/R	N/R	N/R
Food Processing	✔	N/R	N/R	N/R	✔	✔	N/R	N/R
Municipal Office	✔	N/R	✔	✔	✔	N/R	N/R	✔
Construction Firm	✔	✔	N/R	N/R	✔	N/R	✔	N/R

N/R = Not relevant. The organization was not receiving this type of record.

The interviewees in the four organizations that were studied in detail were asked which form of records they captured into ERMS. Table 7.9 shows the number of the interviewees working on capturing different forms of records in each of the four organizations.

Table 7.9. Forms of records received, captured into ERMS. Number of interviewees in each of the four organizations that captured records by form.

Organization	Letters on paper (scanned or only registered)	E-mail	E-mail attachments	Records in another electronic format	Faxes	Films	Photo-graphs	Drawings, maps and similar documents	Other
Government Institution	1/1**	1/1**	1/1**	1/1**	1/1*	N/R	N/R	N/R	N/R
City Organization	1/1**	1/7	1/7	1/7	1/1*	N/R	0/3*	0/3*	N/R
Financial Institute	8/8	6/8	4/8	4/8	1/1*	N/R	N/R	N/R	N/R
Manufacturing Firm	2/8	1/8	1/8	1/8	1/1*	N/R	N/R	N/R	N/R

N/R = Not relevant. These records were not received by the organization.
*The denominator shows the number of employees that were supposed to capture this form of record into the ERMS. It was not relevant to use the total number of employees interviewed as many of them were not supposed to capture records into the ERMS. Very few employees received a fax. E-mail had taken its place in these organizations for the most part. The records manager, or another designated employee, took care of entering a fax into the ERMS
** These records were received directly by the records manager in the Government Institution. She was responsible for capturing these forms of records or their metadata (in the case of letters in paper format) into the ERMS. Other employees did not need to concern themselves with capturing these record forms. - Letters in paper format were also directed to the records manager in the City Organization. The records manager took care of capturing letters on paper or their metadata into the ERMS.

All of the interviewees at the Financial Institute did capture letters that they received into the ERMS. In two organizations, the Government Institution and the City Organization, the records manager was responsible for capturing all letters on paper format received into the ERMS, or their metadata. It can, therefore, be assumed that these forms of records were conscientiously entered into the system. The Manufacturing Firm had the worst performance record. Only two out of eight employees supposed to capture letters did so in the organization. This was the organization with the poorest implementation success of the eight organizations studied.

E-mail and e-mail attachment and records in another electronic format were again not treated with the same respect as letters. The number of employees that captured these forms into ERMS was much lower, and drastically so for the two worst performers, the City Organization and the Manufacturing Firm, where only one out of eight employees that were supposed to capture received e-mail into the ERMS did so. This is in contradiction to what the records managers would have liked to see captured into ERMS, as shown in Table 7.7. This problem was solved at the Government Institution by making the records manager herself responsible for capturing these forms of records into the ERMS.

One employee was responsible for capturing all faxes into ERMS in each organization. One out of the four organizations had other forms of records, like photographs and drawings, that should be captured into the ERMS but this was not being done.

The interviewees in the four organizations that were studied in detail were asked about the type of records that they received: which records according to type did they capture into ERMS. Table 7.10 shows the number of the interviewees working on capturing different types of records in each of the four organizations.

Table 7.10. Types of records received, captured into ERMS. Number of interviewees in each of the four organizations that captured records by type.

Organization	Cases (on paper or in electronic format)	Minutes of meetings	Reports	Plans	Agreements, contracts	Certificates	Memos	Other
Government Institution	1/1**	N/R	1/1**	1/1**	1/1**	N/R	N/R	N/R
City Organization	3/7	1/2*	1/3*	1/3*	1/3*	N/R	1/2*	N/R
Financial Institute	8/8	N/R	N/R	N/R	1/2*	N/R	N/R	N/R
Manufacturing Firm	3/8	N/R	N/R	N/R	1/3*	1/2*	N/R	N/R

N/R = Not relevant. The organization did not receive this type of record.
*The denominator shows the number of employees that were supposed to capture this type of record into ERMS. It was not relevant to use the total number of employees interviewed as many of them were not supposed to capture records into ERMS.
** These records were received directly by the records manager in the Government Institution. She was responsible for capturing these types of records or their metadata into the ERMS. Other employees did not need to concern themselves with capturing these record types.

All of the interviewees at the Financial Institute did capture cases that they received into the ERMS. The capture of cases at the Government Institution was the responsibility of the records manager. It can, therefore, be assumed that all cases were captured into ERMS in both organizations. The other two, the City Organization and the Manufacturing Firm, did not show the same performance record. Only three out of eight employees supposed to capture cases did so in both organizations. These two organizations were those with the worst implementation success of all of the eight organizations studied.

Other types of records received were all captured into the ERMS in the Government Institution where the records manager entered these record types into the system. In the other three organizations the situation was not as good. There were relatively few employees responsible for this function and many of these types of records were not received in the different organizations. These records were only occasionally captured into ERMS as only one out of two or three employees did what was expected of them. This was not the performance that the records managers expected of their co-workers, as shown in Table 7.8.

All of the interviewees in the eight organizations that had bought ERMS were asked about which form of records that they received they actually captured into ERMS. Table 7.11 shows the number of interviewees, grouped according to job function, working on capturing different forms of records in the eight organizations.

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Table 7.11. Forms of records received, captured into ERMS. Number of interviewees, in the eight organizations, according to job function, that captured records by form.

Employees	*Letters on paper (scanned or only registered)*	*E-mail*	*E-mail attachments*	*Records in another electronic format*	*Faxes*	*Films*	*Photo-graphs*	*Drawings, maps and similar documents*	*Other*
Records managers	8/8	8/8	7/8	7/8	8/8	N/R	N/R	N/R	N/R
Managers	0/3*	2/5*	0/5*	2/5*	N/R	N/R	N/R	N/R	N/R
Computer specialists	0/2*	2/3*	2/3*	2/3*	N/R	N/R	N/R	N/R	N/R
Specialists	2/3*	3/5	2/5	3/5	NR	N/R	0/2*	0/2*	N/R
General employees	3/6*	4/7	2/7	2/7	N/R	N/R	0/1*	0/1*	N/R

N/R = Not responsible. An employee in this position was not responsible for capturing a record of this form into ERMS.
 *The denominator shows the number of employees that were supposed to capture this form of record into ERMS. It was not relevant to use the total number of employees in each job function as many of them were not supposed to capture these records into ERMS

All of the records managers did capture letters that they received themselves into ERMS. None of the managers and computer specialists did so, but specialists and general employees showed a much better performance.

E-mail and e-mail attachments and records in another electronic format were entered more frequently into the system than received letters on paper, perhaps because it was more convenient. Only the records managers made the effort and treated e-mail and letters with the same respect. One records manager, however, did not capture e-mail attachments and records in another electronic format into the ERMS. The number of employees that captured these forms into ERMS was rather low in all other job categories. This was not according to the preferences of the records managers, as shown in Table 7.7. The records manager, who had this responsibility in each organization, captured all fax messages received. Some organizations had other forms of records, like photographs and drawings, that should have been captured into ERMS by specialists and general employees but they were not living up to expectations.

All of the interviewees in the eight organizations that had bought an ERMS were asked about which type of records that they received they actually entered in the system. Table 7.12 shows the number of interviewees, grouped according to job function, working on capturing different types of records in the eight organizations.

Table 7.12. Types of records received, captured into ERMS. Number of interviewees, in the eight organizations, according to job function, that captured records by type.

Employees	Cases on paper or in electronic format	Minutes of meetings	Reports	Plans	Agreements, contracts	Certificates	Memos	Other
Records managers	8/8	N/R	4/4*	3/3*	4/4*	N/R	N/R	N/R
Managers	2/5*	N/R	1/1*	1/1*	1/3*	N/R	N/R	N/R
Computer specialists	2/3*	N/R	N/R	N/R	0/2*	N/R	N/R	N/R
Specialists	3/5*	1/2*	1/3*	1/3*	1/3*	N/R	1/2*	N/R
General employees	4/7*	N/R	N/R	N/R	N/R	1/2*	N/R	N/R

N/R = Not responsible. An employee in this position was not responsible for capturing a record of this type into the ERMS.
 *The denominator shows the number of employees that were supposed to capture this type of record into the ERMS. It was not relevant to use the total number of employees in each job function as many of them were not supposed to capture these records into the ERMS.

All of the records managers did capture into ERMS cases that they received. Only 50% of the managers and computer specialists as a group did so, but specialists and general employees showed a slightly better performance.

The records managers again treated all types of records with the same respect. Other types of records received were captured occasionally into ERMS. There were relatively few employees responsible for capturing these records and very few did so.

All of the five consultants/teachers at the software providers thought that their customers usually captured received records in the various form into ERMS when these systems had been fully implemented and were being properly used. In their view, this was unfortunately not the general case. Appendix 6, Table 3 contains the forms of received records that they believed that their customers should have captured into ERMS. This is in agreement with what the records managers would have liked to see carried out, as shown in Table 7.7.

All of the consultants/teachers thought that the following types of received records, that is cases, minutes of meetings, reports, plans, agreements, certificates and memos should usually be captured into ERMS by their customers, if properly implemented. Their views are presented in Appendix 6, Table 4. Again, they were describing a preferred state that agrees with what the records managers would have liked to see take place, as shown in Table 7.8.

It was covered above which forms and types of received records the employees of the organizations were capturing into ERMS. The next section will be look at which

methods and which registration parameters the employees used when they captured records into ERMS.

7.3 Methods of Registering Records into ERMS, the Registration Parameters

ERMS offer various ways to register records: By name of the receiver/sender, date (day, or time period, date of creation, modification, disposal, or registration of the record), subject (derived from a standard thesaurus), format of a record, type of record, number/name of a class in an FCS, and by case number.

The research investigated which registration parameters in ERMS the employees were using for both records created in-house as well as records received. These two versions were studied by interviewing the records managers and the consultants/teachers, making up four different sets of parameters:

1. Registration parameters in ERMS for records created in-house most commonly used by the employees, according to the records managers.
2. Registration parameters in ERMS for records created in-house most commonly used by the employees, according to the consultants/teachers at the software providers.
3. Registration parameters in ERMS for received records most commonly used by the employees, according to the records managers.
4. Registration parameters in ERMS for received records most commonly used by the employees, according to the consultants/teachers at the software providers.

In the interviews with the records managers at the eight organizations and the consultants/teachers at the five software providers that were selling ERMS, information was systematically collected about their views of the methods employees used to register records into ERMS. Other employees at the four organizations that were studied in detail also provided information regarding these methods, but it was not comprehensive enough. That is why only the views of the records managers and the consultants/teachers concerning these methods are reported on. The information that these employees contributed to this part of the research, that is the registration parameters that they used, was nevertheless in full agreement with the information provided by the records managers and the consultants/teachers.

All of the eight records managers were asked about the registration parameters in ERMS that in their opinion were most commonly used by the employees in their organizations for records created in-house. The information concerning the registration parameters for records created in-house according to the records managers is shown in Table 7.13.

Table 7.13. Registration parameters in ERMS for records created in-house most commonly used by the employees, according to the records managers. Ranking is according to frequency, one meaning most common.

Organization	Name of sender/receiver	Date	*Subject	*Form of records	*Type of records	*Number/name of a class in FCS	Case number
Government Institution	A/R	A/R	1	2	3	N/O	A/R
City Organization	A/R	A/R	2	1	3	N/O	A/R
Financial Institute	A/R	A/R	2	1	3	N/O	A/R
Manufacturing Firm	A/R	A/R	3	1	2	N/O	A/R
Public Services Office	A/R	A/R	1	2	3	N/O	A/R
Food Processing	A/R	A/R	1	2	3	N/O	A/R
Municipal Office	A/R	A/R	1	2	3	N/O	A/R
Construction Firm	A/R	A/R	3	1	2	N/O	A/R
Mean rank			*1.75*	*1.50*	*2.75*		

A/R = Automatic registration for records created in-house.
N/O = No option. The employee must select a class in the FCS in order to be able to save the record.
* There was a drop-down list that the employee could select from.

A number of important parameters were registered automatically, like the name of the sender or the receiver, the date and the case number. Employees had no option and were required to select a class in the FCS in order to be able to save the record. They had the option, however, to select the subject, the form and the type of the record from three different drop-down lists. This selection was the choice of the user, and the employee might have selected one or more parameters or even none. The form of the record is most important. It was the most frequently selected parameter, according to the records managers, with the largest number of employees most often selecting the form of the record in the first place (four responses). The form was also most often mentioned as the second most frequent option (four responses) as being most often selected as the registration parameter according to the records managers. This conclusion is further exemplified by the

lowest mean rank of 1.5. The subject ranked second with a mean rank of 1.75, which is very close to the value (1.5) of the first ranked parameter. The type of the record was most often given third place in terms of frequency (six responses) among the parameters. Its mean rank 2.75 was clearly lower than that of the other two options.

All of the five consultants/teachers at the software providers selling ERMS were asked about the registration parameters in ERMS that were most frequently used by their customers for records created in-house. Information concerning the registration parameters for records created in-house according to the consultants/teachers is shown in Appendix 6, Table 5. The form of the record was again the most popular parameter with the largest number of consultants/teachers ranking that parameter as most important. This ranking of the consultants gave the lowest mean rank among the options. The subject ranked as before as second with a mean rank of 1.80, and the type of record was selected most often as the least frequently used registration parameter (mean rank of 2.80).

Next, the records received will be looked at. The eight records managers were also asked about the registration parameters most commonly used by the employees in their organizations for records received from others. This information is shown in Table 7.14.

Table 7.14. Registration parameters in ERMS for records received most commonly used by the employees, according to the records managers. Ranking is according to frequency, one meaning most common.

Organization	Name of sender/receiver	Date	*Subject	*Form of records	*Type of records	*Number/name of a class in FCS	Case number
Government Institution	N/O	N/O	N/R	N/R	N/R	N/O	N/O
City Organization	N/O	N/O	2	1	3	N/O	N/O
Financial Institute	N/O	N/O	2	1	3	N/O	N/O
Manufacturing Firm	N/O	N/O	3	1	2	N/O	N/O
Public Services Office	N/O	N/O	1	2	3	N/O	N/O
Food Processing	N/O	N/O	1	2	3	N/O	N/O
Municipal Office	N/O	N/O	1	2	3	N/O	N/O
Construction Firm	N/O	N/O	3	1	2	N/O	N/O
Mean rank			*1.86*	*1.43*	*2.71*		

N/R = Not relevant for Government Institution. The records manager (or her employees) was responsible for registering all received records both on paper and electronic format.
N/O = No option. The employee must select the parameter in order to be able to save the record.
* There was a drop-down list that the employee could select from.

A number of important parameters that were registered automatically for the records created in-house did now have to be registered manually for the records received in order to save these records. Employees had no option and had to select the name of the sender or the receiver, the date, class in the FCS and the case number in order to be able to save the record. They could, on the other hand, optionally have selected from three different drop-down lists the subject, the form and the type of the record. The form of the record was again most frequently selected in the first place (four responses) and second place (three responses) with a mean rank of 1.43. The subject ranked in second place (mean rank of 1.86) and the type of the record was selected most often in third place.

The five consultants/teachers at the software providers came to a similar conclusion as the records managers regarding records received, as is shown in Appendix 6, Table 6. The form of the record was the most popular parameter. The subject ranked as number two, and the type of record was most often given third place.

The reason for registering certain parameters is to facilitate retrieving the record later. The next section will cover which methods and which search parameters the employees used for retrieving records in ERMS.

7.4 Methods of Searching for and Retrieving Records in ERMS, the Search Parameters

ERMS offer various ways to search for records: by name of the receiver/sender, date (day, or time period, date of creation, modification, disposal, or registration of the record), subject (derived from a standard thesaurus), form of a record, type of a record, free text search, number/name of a class in an FCS, case number, recent records (created or received) and by frequently used records.

The research investigated which search parameters in ERMS the employees were most commonly using for records captured in the system. In particular it was attempted to find out if employees used conditional search (using e.g. and/or/not) or mixed search (using e.g. subject, form and date) to retrieve records. This was studied by interviewing the records managers and the consultants/teachers. Notes were taken regarding the methods that employees used when searching for information. General employees provided also information on how they searched for records. This information, although not

comprehensive, was in general agreement with the information obtained by interviewing the two groups. Other groups did not provide additional information on this point.

The eight records managers were asked about the search parameters in ERMS that were most commonly used by the employees in their organizations. The findings are shown in Table 7.15.

Table 7.15. Search parameters in ERMS most commonly used by the employees, according to the records managers. Ranking is according to frequency, one meaning most common.

Organization	Name of sender or receiver	Date	Subject	Form of records	Type of records	Free text search	Number/name of a class in FCS	Case number	Recent records	Frequently used records
Government Institution	1	2	4	6	7	3	8	9	2	5
City Organization	1	2	4	3	5	2	6	7	2	N/R
Financial Institute	1	2	4	3	5	2	7	8	2	6
Manufacturing Firm	1	3	6	4	5	2	7	8	N/R	N/R
Public Services Office	1	2	3	4	5	3	4	5	3	4
Food Processing	1	2	4	5	6	2	8	9	3	7
Municipal Office	1	2	2	2	2	2	7	8	2	2
Construction Firm	1	2	5	3	4	3	6	8	4	7
Total	8	17	32	30	39	19	53	62	18	31
Mean rank	1.0	2.1	4.0	3.8	4.9	2.4	6.6	7.8	2.6	5.2

N/R = Not relevant. It was not possible to search using this method in the ERMS in the organization in question.
In those cases where the same figure appears for more than one parameter, their use was about the same in frequency. The lower the total for the column, the higher the preference for using that search parameter, as further indicated by the mean rank.

It is clear that the name of the sender or the receiver was the most commonly used search parameter and the second common was the date. It is not necessary to know the exact date. It is also possible to browse through all records received or created during a specified period. To be able to search in recent records seems to have been a good feature as it was almost as frequently used as the date. The date was in fact used as a search parameter with a time frame of recent records. The possibility to use a free text search stood out as well and was the third most popular option.

The next alternative was the form of the record. Employees seemed to remember whether they were searching for a letter or e-mail. The subject was also helpful. It is difficult to tell which was preferred, the frequency of use or the record type, as the former search possibility could not be used in two of the organizations. The mean rank indicates,

however, that the type of record was more commonly used as a search parameter. The number or the name of the class in the FCS comes late in the order of preference, and the case number was a search parameter not frequently used.

All of the five consultants/teachers at the software providers were also asked about the most commonly used search parameters. The name of the sender or the receiver was again the most commonly used search parameter and the second most common was the date. To be able to search in recent records was again a convenient feature (the fourth option) when the exact date was not known and the period was close in time. The possibility to use a free text search was again the third option in order of preference. Their conclusions are presented in more detail in Appendix 6, Table 7.

The fifth alternative and with the same rank were the subject and the form of the record, that is whether it was a letter, e-mail or other. Frequency of use could not be in one of the ERMS offered. When this limitation is taken into account it can be seen by examining the mean rank that the type of records was a more common search parameter than frequency of use. The number or the name of the class in FCS came late in the order of preference again, and the case number was the search parameter that came last. The consultants/teachers at the software providers seemed to be overall of the same opinion as the records managers in the eight organizations.

According to the records managers and the consultants/teachers at the software providers, employees most often used just one search parameter, for example, only the name of the receiver or the sender. They occasionally did a mixed search, that is, used more than one search parameter, such as the name of the receiver or the sender and the date. When employees used a free text search they made the search conditional by using, for example, and/or/not.

The eight records managers and the five consultants/teachers were asked if employees used conditional or mixed search and to what extent. They were asked whether the employees used these features always, often, sometimes, seldom or never? Information concerning the use by employees of conditional and mixed search, according to the records managers, is shown in Table 7.16.

Table 7.16. The use of a conditional or mixed search by employees, according to the records managers.

Organization	Often	Sometimes	Seldom
Government Institution		✔	
City Organization			✔
Financial Institute		✔	
Manufacturing Firm			✔
Public Services Office			✔
Food Processing	✔		
Municipal Office		✔	
Construction Firm		✔	

Employees that used ERMS did not regularly use a conditional or mixed search. It was used often in only one organization. In the other seven organizations it was not being used often. The replies indicated that for the most part employees only sometimes or seldom used these two search methods. It is likely that they only used them when a simple search did not produce results or was not believed to do so.

The understanding of the consultants of the use of conditional and mixed search by the employees in their customer organizations is shown in Table 7.17.

Table 7.17. The use of a conditional or mixed search by employees of their customers, according to the consultants/teachers at the software providers selling the ERMS.

Software Provider	Often	Sometimes	Seldom
Computer Service		✔	
Computer Co.	✔		
Solutions		✔	
Knowledge		✔	
Image Group			✔

Using conditional or mixed search, according to the consultants/teachers, did not happen very often. Only one consultant believed that employees in that customer group used this search method often. The consultants/teachers at the software providers seemed to be, again, in general of the same opinion as the records managers in the eight organizations.

During the interviews, especially in those with the records managers and the consultants/teachers at the software providers, themes other than capturing and searching for records were discovered regarding the use of ERMS. These themes are discussed in the next section.

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7.5 Other Themes on the Use of ERMS

ERMS make it possible to practice RM of a high standard in organizations, in addition to the possibilities of capturing, preserving and searching for records and information in the systems. During the interviews, especially in those with the records managers and the consultants/teachers at the software providers, the following themes were explored:

1. Monitoring the status of an inquiry/case in ERMS.
2. Standard outlook of documents (templates) in ERMS.
3. Information from other systems/databases sought and brought into ERMS.

ERMS make it possible to check or monitor the status of an inquiry or a case in the systems when they are part of groupware as are all of the four systems studied. It is possible to answer such questions as: Who is supposed to handle the case? When is the case supposed to be taken care of? Has the case been completed? When was the case finished?

ERMS offer the possibility to produce standardized templates that are used for writing documents and records. In the systems one can find certain templates for records created in-house, for example, letters in Icelandic, letters in English, fax messages, e-mail, memos, minutes of meetings, agreements and contracts. This is done for the purpose of having a uniform outlook for records created in-house that are up to the standard of the organization. In addition there are certain parameters that are registered automatically into the system, for example the name of the receiver, the date, the subject line and the name of the sender. This feature facilitates the registration of the document and makes it less time consuming. It makes a subsequent search easier and more productive.

ERMS furthermore provide certain possibilities for seeking and bringing information from other systems or databases into ERMS. This information can be from either inside the organization – from internal databases containing for example employee records, accounting records, customer files, the quality management systems, FCS and the organization's library catalogue – or from outside the organization – in databases such as the National Register of Persons, the National Real Estate Registry, the Reykjavik GIS (geographical information system), and the LIS (land information system).

The eight records managers were asked about the work practices of employees regarding the three themes mentioned above. Information concerning the themes according to the records managers is shown in Table 7.18.

Table 7.18. Did employees monitor the status of an inquiry, use standard templates and seek information from other systems or databases? The replies of the records managers.

Organization	*Monitoring status of an inquiry/case*	*Standard looks of documents (templates)*	*Information sought from inside systems/databases*	*Information sought from outside systems/databases*
Government Institution	Yes	Yes	Yes	Yes
City Organization	Yes	Yes	No	No
Financial Institute	Yes	No	Yes	Yes
Manufacturing Firm	No	No	No	No
Public Services Office	Yes	No	No	No
Food Processing	Yes	Yes	Yes	Yes
Municipal Office	Yes	No	No	No
Construction Firm	Yes	No	Yes	Yes

Managers and middle managers in the organizations had the opportunity to monitor or check the status of cases. In all of the organizations except one, the Manufacturing Firm, did the managers use this function to their advantage. The Manufacturing Firm, remember, was the one where implementation had the poorest success and where the support by top management was lacking to the greatest extent.

It is not necessary to have documents be produced in standard looks (templates) in order to use ERMS. It is, however, an added value that unfortunately not all organizations take advantage of. A handbook on the creation of records with standard templates is needed in order to do so. Only three of the organizations had put together a handbook with rules and standard looks for documents and records and made that a part of ERMS. There was an interest in some of the other organizations to have such a handbook, according to the records managers, but it takes time and money, they said.

Employees in only 50% of the organizations used the possibility to seek information from other databases, either internal or external. These employees sought information both internally in the organization and externally. Employees in the other organizations neither sought information internally nor externally.

The five consultants/teachers at the software providers were asked about the use of these three functions mentioned above by their customers. They were asked to try to estimate how large a proportion of their customer groups used these functions, as shown in Table 7.19.

Table 7.19. Did employees monitor the status of an inquiry, use standard templates and seek information from other systems or databases? The replies given by the consultants/teachers regarding their customers.

Software Provider	Monitoring status of an inquiry/case	Standard looks of documents (templates)	Information sought from inside systems/databases	Information sought from outside systems/databases
Computer Service	Yes, approx. 90%	Yes, approx. 30%	Yes, D/T/T	Yes, D/T/T
Computer Co.	Yes, approx. 90%	Yes, approx. 25%	Yes, D/T/T	Yes, D/T/T
Solutions	Yes, D/T/T	D/N/K	Yes, D/T/T	D/N/K
Knowledge	Yes, approx. 90%	Yes, approx. 20%	D/N/K	D/N/K
Image Group	Yes, approx. 90%	Yes, approx. 30%	Yes, D/T/T	Yes, D/T/T

Yes, D/T/T = Yes, but difficult to tell approximately how many in %.
D/N/K = Do not know.

According to the consultants/teachers, managers and middle managers in organizations seemed to a large extent to make use of the opportunity to monitor or check the status of cases. About 90% of their customers did so where information was available.

It is not necessary to have standard looks of documents (templates) in order to use ERMS, as mentioned earlier. However, the consultants estimated that 20% to 30% of their customers had produced such handbooks with rules and standard looks (templates) for documents and records. These templates could then be accessed in the ERMS.

Employees in the customer organizations used the possibility to seek information from other databases. However, the consultants were not able to give an approximation of the proportion of their customers using this opportunity.

The previous sections of this chapter analysed how employees worked in ERMS and which functions they used. The next section will examine how the employees felt using and working in ERMS.

7.6 How Do Employees Feel About Working in ERMS?

It is important when new technology is being introduced in organizations and work procedures are being changed that employees feel at ease when they use the new technology and are receptive to new ways of doing things. It is important that technology supports employees' tasks and that the employees do not oppose and resist the change.

The interviewees expressed during the interviews their opinions regarding their feelings about working in ERMS. These opinions are discussed in the following sections. They can be grouped into four categories:

1. The user-friendliness of ERMS.
2. Informal alternatives to RM than using ERMS
3. Insecurity regarding computer use.
4. Superiors monitoring and fellow employees seeing work performed in ERMS.

7.6.1 The User-Friendliness of ERMS

User-friendliness means that the employees should be able, with limited knowledge of computers, to learn and adopt the new work procedures and to use the system correctly. ERMS must be user-friendly concerning the following work procedures: word processing, classification of records, cataloguing or registering of records, saving records, searching for and retrieving records and the distribution of records and information.

All of the interviewees in the organizations that had bought an ERMS (38 people) were asked about how they liked the user interface concerning the work procedures mentioned above. All of them had an opinion on the user interface. Table 7.20 lists the number of employees, according to organizations, whether they felt that ERMS were user-friendly or not.

Table 7.20. User-friendliness of ERMS in the eight organizations.

Organization	*The ERMS was user-friendly*	*The ERMS was not user-friendly*	*Total number of employees interviewed*
Government Institution (system D)	10	1	*11*
City Organization (system F)	2	5	*7*
Financial Institute (system E)	8	0	*8*
Manufacturing Firm (system G)	3	5	*8*
Public Services Office (system D)	1	0	*1*
Food Processing (system F)	1	0	*1*
Municipal Office (system E)	1	0	*1*
Construction Firm (system G)	1	0	*1*
Total	*27*	*11*	*38*

The first four organizations listed in Table 7.20 were studied in detail. They fell into two groups. Employees of two of the organizations, the Government Institution and the Financial Institute, found the ERMS user-friendly, with nine out of eleven and eight out of eight being of that opinion. These were the two organizations of the four studied in detail with the highest rate of use among the users expecting to use ERMS, 75% and 90% respectively.

The employees in the other two organizations, the City Organization and the Manufacturing Firm, displayed a different attitude. In the City Organization five out of seven employees found ERMS not user-friendly and in the Manufacturing Firm the ratio was five out of eight. These were the two organizations of the four studied with the lowest rate of use, 25% and 15% respectively.

In the last four organizations listed in Table 7.20 only the views of the records managers were obtained. They all found ERMS to be user-friendly, as did the records managers in all of the other four organizations.

All of the eight records managers, four of the eight managers, four of the four computer specialists, four of the eight specialists, and seven of the ten general employees said that they felt that ERMS was user-friendly, as shown in Table 7.21.

Table 7.21. User-friendliness of the ERMS, according to job functions, in the eight organizations that had bought an ERMS.

Employees	*ERMS was user-friendly*	*ERMS was not user-friendly*	*Total*
Records managers	8	0	8
Managers	4	4	8
Computer specialists	4	0	4
Specialists	4	4	8
General employees	7	3	10
Total	*27*	*11*	*38*

The employees that can be expected to have the greatest skills in working with computers, the computer specialists and the records managers, all found ERMS to be user-friendly. Of the other employees, the managers and the specialists fell into two equally large groups as to whether they found ERMS user-friendly or not, but the general employees for the most part found the systems user-friendly. These findings are in line with how these employee groups captured records that they created themselves, as shown in Tables 7.5 and 7.6. The only exception was the computer specialists. All of them found ERMS user-friendly, but only half of them were capturing records into the system.

The four ERMS seem to show a different outcome regarding user-friendliness, as shown in Table 7.22.

Table 7.22. User-friendliness of the four ERMS, according to users of each system, in the eight organizations that had bought an ERMS.

System D	System F	System E	System G
11 of the employees found ERMS user-friendly	3 of the employees found ERMS user-friendly	9 of the employees found ERMS user-friendly	4 of the employees found ERMS user-friendly
1 of the employees found ERMS not user-friendly	5 of the employees found ERMS not user-friendly	0 of the employees found ERMS not user-friendly	5 of the employees found ERMS not user-friendly
Total of 12	*Total of 8*	*Total of 9*	*Total of 9*

System F and System G were claimed to be not as user-friendly as the other two. Here it must be borne in mind that the two organizations where implementation was the least successful, the City Organization and the Manufacturing Firm, employed these systems. There was no information available regarding the attitude of the employees in the other two organizations using the same systems, the Food Processing and the Construction Firm, except for the records managers. The records managers in both of these organizations found ERMS user-friendly, as did in fact the records managers in the City Organization and the Manufacturing Firm. The records managers were admittedly experienced users, but the systems were not that different regarding the user interface. On closer examination the system with the best rating, System E, may even, if anything, have had a slightly inferior user interface. A closer examination also revealed that the incorporation of FCS into the ERMS had only been implemented to a limited extent in the City Organization and the Manufacturing Firm. There seems to be, therefore, some indication that the employees might have been blaming the system when the system was not entirely at fault.

All of the 11 employees that did not find ERMS user-friendly mentioned that the FCS part of the ERMS was too complicated and difficult to use. It is, therefore, important to involve the users in the design of the FCS to ensure that it is easy to understand (Smyth, 2005; Williams, 2005). A good FCS designed in this way may already exist prior to implementing the ERMS. If not, the participation of the users should be sought in the design and adaptation. The FCS is an important organizing tool for records and information. Its classification is functional and it is written with the nature and functions of the organization in mind (Cisco & Jackson, 2005; ISO, 2001a; ISO, 2001b, Jeffrey-Cook, 2005; Morelli, 2005). FCS should cover the capturing of all records for storage, on paper or in an electronic format. However, it is possible to provide the users with only a selected part of the system that covers just the class of records that they normally work with to

simplify its use. This is frequently done in bookkeeping to give an example from another system. The clerk may only know the few accounts that he/she uses and may lack an overview of the whole system of accounts. This limited knowledge, nevertheless, does not hamper the work being performed.

The respondents mentioned, for example, that they did not always know which class should be selected for the different subjects of records. "I become a little confused when I look at this FCS. I feel that it is possible to classify the subject of the record under many categories," said Marias, a specialist at the Manufacturing Firm. "The worst thing about all this is this FCS," said Viktor, a specialist in the Government Institution, and Hans, a manager in the City Organization, said:

> Ragna knows a lot about this FCS, and she classifies everything for me. I know that this is a necessary function, but I find it too complicated and time consuming. I know though that I am to blame. I have never taken enough time to learn this properly.

The way that the FCS is installed in ERMS differs in the various organizations. In some organizations every employee does see the whole FCS when he/she gets the registration or safe menu on the screen, that is every main and sub class. Other organizations have elected to show only by default the class or classes that the records belong to that the employee in question is working with. When the data collection took place, Knowledge, the company that sells System E, designed its system in this way and installed it in this manner at most of their clients, among others the Financial Institute and the Municipal Office. The Image Group had installed their System G in the same way at a few clients, among them the Manufacturing Firm. Solutions, which in fact had not sold their ERMS for use in the eight organizations that participated in the research, did install their System O in the same manner at all of their clients. Markus, the consultant/teacher at Solutions, said that this was what their customers appreciated. He said that he felt himself that these FCS were too complicated:

> I find these FCS so complicated. It is not for a normal person to understand these systems. The employees become completely confused. They do not know which class to select. If the FCS is just in the background, behind the screen, then they just don't know that it exists. All records are automatically classified into the correct class. In a

way the records have been classified for the employees in advance according to subject and into the correct class.

Such automatic classification is only possible if a person is only creating or capturing records that belong to the same subject class in FCS. If a person is only working with a few subject classes, these can also be selected in advance for the user and shown as the only option for capturing the records. It cannot be avoided, however, that some users, like secretaries of managers and the records managers, must have access to the complete FCS. All of the consultants/teachers at the software providers agreed that the FCS was the main obstacle to the proper capturing of records. They agreed that this work had to be done in advance as much as possible to aid the user. It was their intention to develop this part of the system to the fullest extent possible.

All of the eight records managers agreed that it was difficult to have the employees classify the records and to use the FCS. Dora, the records manager at the Financial Institute said that it was superb how Knowledge (System E) had solved this problem. As an example, employees that only work with a single type of records, like Beta, a clerk typist, who only handles bonds and debentures, such employees only need to save records in one or two classes and do not need to see the FCS as a whole. The records managers also realized that it was not possible to simplify the system so much for all employees. Many employees were working with a variety of records that belonged to many and different classes in the FCS and each record should only have one place in the system. Members of this group were especially managers and their secretaries, and then of course the records managers. These employees had to have access to the whole FCS. Inga, the records manager in the Municipal Office, said for example:

I, as a records manager, and we here in my department must naturally be able to view all of the FCS. This applies to others as well, managers and their assistants, like the mayor and the city secretary. But it is just great when it is possible to assign subject classes to employees in advance, as is done for those who only handle building permits.

Those employees that mentioned that ERMS was not user-friendly when one was registering records all worked at the Manufacturing Firm. Andres, a general office

employee and a clerk, said for example: "What I find most confusing is that the selection is so great, and I do not always know what is the difference between a class or a type of a record or a form of a record when looking at the menu." The reason for this confusion could be found in the interview with Nina, the records manager, as she explained:

> Our problem here is that they [the managers] do not want to spend money on this. We have, for example, not finished making up the drop-down lists for form and type. The difference between form and type has not been defined clearly enough and that is why people become confused. Sometimes you have both form and type on the same list as well.

When the employees that did not find ERMS user-friendly were asked further about what they objected to regarding the user-friendliness, two respondents mentioned that they did not like to use the word processing function in ERMS. Both complained about having to use the *Lotus Notes* word processing function. They were familiar with using *Word* and found this word processing software much better. It should be mentioned that these replies were received at the outset of the data collection. At the end of the data collection period, in the summer of 2004, all of the software providers had taken steps in the eight organizations that had bought ERMS to make it possible for employees to work in the *Microsoft Office Package* even though ERMS was developed in *Lotus Notes*.

When employees that believed that ERMS was not user-friendly were asked about how they were searching for and retrieving records and information, they made few comments. It was obvious that these employees did not use ERMS for this purpose. Even though they had tried a little to classify and register records in ERMS, they used other methods for capturing and saving their records and used other search methods than those offered in ERMS.

7.6.2 Informal Alternatives to RM than Using ERMS

It is interesting to know which informal methods employees used if they did not want to or were unable to use ERMS. These findings in the organizations that participated in the research are in general agreement with the status of RM in the organizations that I have worked for as a consultant in establishing professional RM, including designing an FCS for the organization. These organizations now number a little over 100.

All of the employees that did not use the ERMS were asked which alternatives they used for creating, classifying, saving, registering, and searching for records. They all used the *Microsoft Office Package* for the creation of records, for example *Word, Excel* and *PowerPoint*, as did as well most of those using ERMS. When creating or replying to e-mail they used the e-mail software of the organization, in most cases *Microsoft Outlook*.

The employees not using ERMS used various different methods to classify and save the records that they kept close at hand, both records created in-house as well as records received from others. They used the inbox and outbox in the e-mail software for storing e-mail. Some did not classify it at all, but others used some system of their own. The employees did not usually store attachments received separately, but kept these with the e-mail in the e-mail software.

Records that most employees created in-house using, for example, *Word*, *Excel*, and *PowerPoint* were saved on the shared drive of the computer system of the organization. Some used various department or division drives. The records did not receive any uniform classification before storage when these methods were used. Each employee classified his/her records as he or she saw fit. Some even stored their records on the hard disk in their private computers or on floppy disks or CDs, and classified the records according to their own private scheme. These employees usually used a subject for the classification that they felt would be used in later retrieval. It differed how systematic the assigning of subject names was with the employees that were neither using the ERMS nor the FCS. Two methods, however, were the most common: (1) the name of a party, company, individual, or organization, or an abbreviation that easily indicated the party in question, and (2) the name of the type of the record, for example, financial report, memo, agreement or a fairly obvious abbreviation.

When employees had to search for electronic records that they themselves had created, they usually first tried to think of the subject name that they had given to the record in question. With that name in mind, they searched in their computer for the record. Employees normally said that it was relatively easy to retrieve records that they needed. However, when asked whether their fellow employees could find these records without their help, the reply was usually negative.

When employees were searching for e-mail received, they said that they usually used the search options in the e-mail software, and also sometimes for the outgoing e-mail that they themselves had created. Most employees stated that they could always find all of the e-mail that they received or sent. Some believed that it took too long to do so. When asked if their fellow employees could retrieve e-mail on their computers in their absence, if they had access, the reply was usually negative. The organization of records in the e-mail software was such that it was only expected that they themselves could find the records, not other employees.

When employees, that neither used the ERMS nor the FCS were asked about the saving, classification and registration of records on paper that they received from others and kept privately, it was revealed that these records were not stored in a uniform manner. These records were stored in file cabinets, file drawers or binders, not classified and not registered. Employees were asked how well they managed to retrieve these records. Most employees said that they could retrieve the records when needed. Many were, however, of the opinion that this search for records could take too long a time. When asked if they believed that other employees would find it easy to find these records in their absence, the reply was usually negative.

When employees were asked about the reasons why they did not use ERMS, they stated that the main reason was that they had not received the necessary education and training to use the system. This point is covered in section 6.3.

It was also felt of interest to study whether some kind of insecurity regarding technical issues or the presence of what might be called techno-phobia resulted in the fact that employees did not use the ERMS. This factor ties closely in with education and training and must be taken into consideration before and during training. In the next section this possible techno-phobia will be discussed.

7.6.3 Insecurity Regarding Computer Use

During the data collection, both during the participant observations and the interviews, the interviewees that did not seem to use ERMS and did not find ERMS user-friendly were asked if they were possibly afraid of using this new technology and whether they felt it to be threatening. No one was willing to admit that this was possibly the case. The research

method used was admittedly not the most appropriate for finding this out. However, the interviewees could count on full anonymity and did not have to be afraid of such revelations becoming known to their superiors or co-workers. Nevertheless, it could not even be slightly detected that this insecurity might play a part. Surveys showing wide ownership and use of computers in Iceland, as will be discussed later, may indicate that this insecurity, as far as it may have existed, is a thing of the past.

The employees put the blame of not using ERMS rather on insufficient training (see section 6.3) and claimed as well that the systems were not user-friendly (see section 7.6.1) or impossible to use. Lack of training can also lead to the conclusion that the systems are not user-friendly even though they are found to be easy to use when employees have received just minimum training. The employees interviewed also mentioned that they did not see that implementation of ERMS would produce benefits, either for themselves or for the organization. They did not, in other words believe in ERMS and implementation of the system. These employees mentioned that they had become tired of constantly having to learn to use new technology, new systems and to employ new work procedures. Some mentioned also that they were tired of attending training classes and tired of constant changes that did not accomplish anything as far as they could see. Employees saw new management fads being introduced and work processes being changed, even though the old ones worked fine in their opinion. Demands on the job have grown and the workload was claimed to be heavier than it used to be. It is, therefore, understandable that employees want proof that the changes are genuine and for the better before they welcome these with open arms.

As the employees did not subscribe to being afraid of the new technology, the next step was to examine the field notes in order to find if there was any difference to be detected between the users and non-users according to gender, age or education. The interviewees in the eight organizations numbered 38 individuals and ranged in age between 20 and 64 years. They were almost evenly split between the two genders as 18 were female and 20 male, though seven of the records managers were female and only one was male. Of the interviewees 25 had received some university level education (tertiary education) and 13 had completed upper secondary education.

Table 7.23 shows the age groups of the users and non-users.

Table 7.23. Employees' use of ERMS by age.

Age	20 – 44	45 – 64	Total
Use	15 (75%)	11 (61%)	26 (68%)
Non-use	5 (25%)	7 (39%)	12 (32%)
Total	20 (100%)	18 (100%)	38 (100%)

The sample was not large, but the numbers seem to indicate that the older the workers were, the more likely they were to be non-users. Only 25% of the youngest age group were non-users, but the proportion grew to 39% for the older age group. If two of the non-users in the older age group became users, then the split would be the same between users and non-users in the two age groups, in other words, small changes can have a significant effect.

It could be detected during the interviews that older employees were more negative towards changes and having constantly to learn how to use new systems and to attend training sessions. Comments like: "We are always changing things around here. Nothing is ever allowed to stay the same" could be heard from some of the older employees.

Table 7.24 shows the use and non-use of ERMS by gender.

Table 7.24. Employees' use of ERMS by gender.

Gender	Female	Male	Total
Use	14 (78%)	12 (60%)	26 (68%)
Non-use	4 (22%)	8 (40%)	12 (32%)
Total	18 (100%)	20 (100%)	38 (100%)

Here again the size of the sample presented the same problem. It cannot be rejected or confirmed with statistical significance whether there is an association between gender and the level of use. The figures show, however, that the proportion of users was higher among the females compared to the males. This is also further explained by the job positions that the females held. They might not have been in a position to make a choice as to whether they used the ERMS or not, whereas the managers, who were predominantly males, were able to delegate the use to others.

Table 7.25 shows the use and non-use of ERMS by education.

Table 7.25. Employees' use of ERMS by education.

Education	Tertiary	Upper secondary	Total
Use	17 (68%)	9 (69%)	26 (68%)
Non-use	8 (32%)	4 (31%)	12 (32%)
Total	25 (100%)	13 (100%)	38 (100%)

The level of education did not differentiate the use of ERMS. The percentage was virtually the same between users with university level education (68%) and those with only upper secondary education (69%).

Surveys of the ownership and use of computers in Iceland conducted by the official statistical bureau in Iceland, Statistics Iceland, shed light on how confident and familiar the general population is in working with computers. The widespread ownership and use of computers as revealed in these surveys indicates that insecurity in working with computers has become almost totally a thing of the past.

In February 2004 Statistics Iceland in co-operation with Eurostat, conducted a survey on the use of ICT (Information Communication Technology) by households and individuals with a gross sample size of 2,000 individuals aged 16 – 74 years. The response rate was 84%. The main results were that 86% of Icelandic households had a computer and four out of every five (80%) had access to the Internet. The use of a computer and the Internet was widespread in 2004; 85% of all individuals 16 – 74 years used a computer (86% in 2003) and four out of every five were Internet-users (Statistics Iceland, 2004a; Statistics Iceland, 2004b).

It is interesting to compare the use of computers by individuals according to the results of the Statistics Iceland 2004 survey especially since the main data collection in the present research was also conducted during 2004. In the age group 16 – 44 years (in the present research 20 – 44 years) the proportion of computer users was 91% to 98% of individuals that had used a computer in the preceding three months. In the two age groups 45 – 64 years of age (one group in this research) 67% to 84% of individuals had used a computer in the preceding three months, as shown in Figure 7.1.
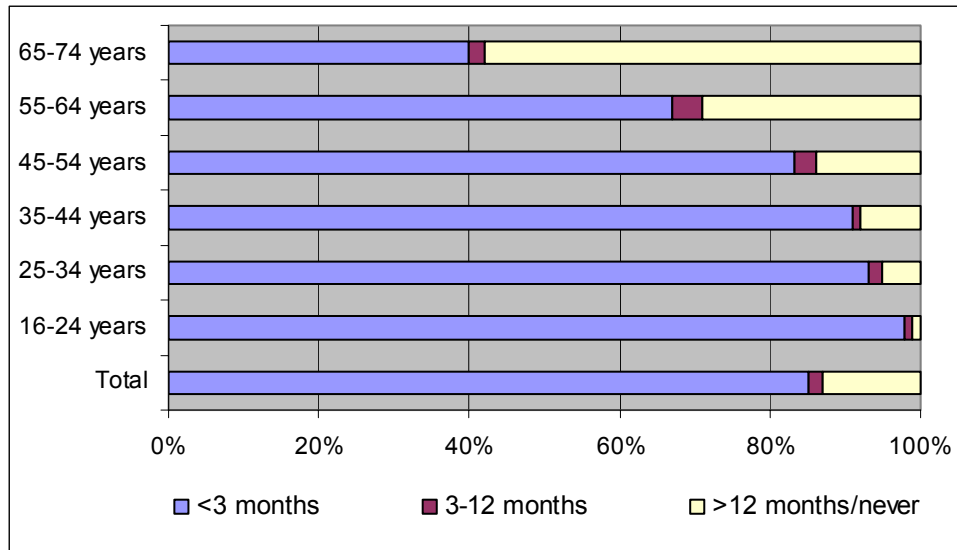
Figure 7.1. Individuals' use of a computer by age in 2004. Source: Statistics Iceland (2004b; p. 8).

The use of computers diminished with age. Nevertheless, a large proportion of those 55 to 64 years of age, or 67%, had used a computer within the preceding three months. Here it must be borne in mind that this was a sample of the general population and a large number may not use computers at work. The level of computer use was, therefore, remarkably high, which would indicate that computers have become a tool of everyday use, making insecurity in computer use a thing of the past.

In May 2003 Statistics Iceland, in co-operation with Eurostat, conducted a survey on the use of ICT and e-commerce by enterprises. The census was drawn from the PAYE register (income tax register) of the Tax Authorities. The gross sample size of 1,243 covered all enterprises with at least ten employees in October 2002 in selected activities. The response rate varied from 62% to 82% according to industry.

The main results of the survey were that the vast majority of Icelandic enterprises (99%) used computers and 97% had access to the Internet. High-speed Internet connections were the most popular (81%). A full 70% of all enterprises had their own web site in the year 2003 and 81% of enterprises with Internet access updated their security devices (Statistics Iceland, 2004c). This widespread use of computers in industry would imply that computers are now normal working tools that employees must know how to operate in order to perform their office jobs. Insecurity in the use of computers should, therefore, be

rather rare in an office environment and should not hinder the implementation of computer software like ERMS.

This widespread use of computers has also opened the eyes of individuals to the fact that their travels on the Internet can be tracked. Regarding ERMS, every employee should be aware that his or her work could be monitored and observed by others. It is a groupware, and information and records are shared among those that have access. The question arises: Does this nature of the system scare users away? This question will be considered in the next section.

7.6.4 Monitoring by Superiors and the Possibility of Fellow Employees Seeing Work Performed in ERMS

It is well known that individuals are concerned about improper and unauthorized use of personal information about themselves (Smith, Milberg & Burke, 1996). Some employees do also not feel comfortable in allowing their co-workers an access to their records and letting them see which projects they are working on or how they are performing their job.

The four ERMS are solutions in groupware that makes monitoring of use possible. During the data collection the interviewees were asked what they thought about others being able to observe or monitor their work in the system (see also sections 5.6 and 6.1.1). The great majority, 33 of the participants, either felt positively or were indifferent toward possibly having their work being observed in ERMS. However, five of the participants expressed a negative feeling as is shown in Table 7.26. It seems that the managers and those involved with computers and records management did not feel uncomfortable if their use of ERMS was monitored, whereas other groups were not unanimous in this respect.

Table 7.26. Being monitored and observed in ERMS, feelings according to job function, in the eight organizations that had bought an ERMS.

	Positive	Neither/Nor	Negative	Total
Employees				
Records managers	8	0	0	8
Managers	8	0	0	8
Computer specialists	4	0	0	4
Specialists	4	1	3	8
General employees	3	5	2	10
Total	**27**	**6**	**5**	**38**

All of the top management, all of the records managers and all of the computer specialists were in agreement that the managers should be able to monitor the use of ERMS by the employees and they all said that they did not worry that other employees could see the records that they themselves created "as long as these records were not confidential or covered delicate business secrets," as Adam, a manager at the Financial Institute, mentioned. It was mentioned both by Thor, the records manager at the Food Processing, and Alma, the records manager at the Construction Firm that they believed that employees would try to do a better job in their records creation if they knew that the records that they created and saved into ERMS would be reviewed by others.

When the eight specialists were asked about what they thought about others being able to see the records that they created, one could detect that they were rather positive. One of them expressed no opinion, but Sven, a specialist/accountant at the Financial Institute, Bjorn, a specialist/technician, and Karen, a specialist/architect, both at the City Organization, emphasized strongly that they did not feel comfortable knowing that their own use might be monitored and admitted that this was part of the reason why they sometimes tried to avoid using ERMS.

Five of the ten general office employees did not express any opinion as to how they felt being monitored or observed, and three of the general office employees did not seem to have much concern in this respect and were particularly positive. Two of the ten seemed, however, to be rather negative towards being monitored on a daily basis. Frida, a general office employee/senior secretary, at the Financial Institute, who was very industrious in using the ERMS, said for example that she understood fully the benefits of the groupware function, but mentioned nevertheless that she sometimes felt uncomfortable saving records that she had written: "Yes, sometimes uncomfortable, I am so afraid that the records do not always look right and contain spelling errors and bad grammar, and then everyone can see it."

When the consultants/teachers at the software providers were asked how they believed employees of their customers felt about being monitored and observed when they were using ERMS, they all mentioned that they had discovered cases where they had detected that these employees found the situation uncomfortable. Andrea at Image Group said for example:

And I can mention for example Jon at LG Group. He said: 'Can everyone then see everything what I am doing? I would not like that at all.' I often observe that people just do not like working in a groupware and would prefer working using their own drives and to store their records preferably in closed paper files.

The consultants/teachers felt that most employees were positively disposed towards the groupware function and had no worries that their fellow employees could see what they were working on or see the records that they created. This is a similar finding as was discovered among our 38 participants, as shown in Table 7.26.

Icelandic is a difficult language to master due to grammar and spelling. Some employees seemed not to be at ease having their co-workers detect such errors. Secondly, some employees felt that if their output or efficiency were being monitored, their feelings became negative. They believed that their superiors thought that they were not doing their job when they were not working with ERMS. Finally, there is the feeling of privacy. If the records deal with sensitive or personal matters, employees sometimes seemed to feel uneasy if access to such records was open. It is, however, possible to limit access to certain types of records or vary access by job function, or by persons.

Employees make a distinction between private and public domains at work. Their desk is private, the bulletin board is public. In using groupware they also make a distinction between their private workspace and areas that anyone can access. Employees tend to regard documents that are being drafted as private until the writing is finished and the record is ready for being sent or distributed. These feelings were clearly discovered during this study and have been discovered in other studies as well (Bansler & Havn, 2006; Mark, 2002).

The debate on the surveillance of individuals in society has grown in recent years. Terrorist activity, where the victims have taken no part in the hate crusade and are just losing their lives from being in the wrong place at the wrong time has had this effect. Surveillance cameras can now be seen in many public places and buildings and in private companies as well. People are aware of this monitoring and are pre-warned. The debate regarding this monitoring not only concerns the surveillance of individuals but also the fact that individuals are finding it, in the end, simply normal and even wonderful that

surveillance has become a reality. To quote the final words of Winston Smith in the novel *1984* by George Orwell: 'But it was all right, everything was all right, the struggle was finished. He had won the victory over himself. He loved Big Brother.' (Orwell, 1949/1977; p. 297). People may, therefore, find monitoring more acceptable than they may have done several years ago, if they know when and where they are being monitored and the surveillance is not constant.

Conclusions of research conducted in Iceland suggest that employees of companies employing advanced or high technology feel in many ways worse, both physically and mentally, than employees of companies using conventional technology. One aspect that characterises the work environment of employees of high technology companies is a phenomenon sometimes called EPM (Electronic Performance Monitoring). EPM includes, for example, regular measurements of the output or work performed by employees, surveillance of e-mail, monitoring cameras at places of work, and control of Internet use by employees.

In a study in Iceland on EPM a list of questions was distributed to 1,369 employees in six selected companies. The data collection took place from February 2003 to April 2003. In total 979 employees replied to the questions, making the response rate 72%. The views of the employees covered, among other things, the possibility that managers could gather electronic information about their employees. The findings showed the conclusion that: (1) less than 30% said that it was good or rather good that managers could collect information about their work; (2) more than 50% said that they rather disliked and very much disliked it; and finally (3) about 20% of employees said that they had no opinion (Rafnsdottir & Gudmundsdottir, 2004).

The monitoring of work performed by employees in ERMS would by most definitions not fall under electronic surveillance. True, output by employees can to some extent be measured, and the feeling may exist that employees thought that their superiors believed that they were not doing anything if they were not working in the system, as some of the respondents mentioned in this research. The overview of the processing of cases, who was processing the case and how far had the processing progressed has more of the features of a management information system than a monitoring system. It is, therefore, understandable that the participants in this research did not find these features as

objectionable as the monitoring observed by the respondents in the study by Rafnsdottir and Gudmundsdottir.

Research in other countries that has been undertaken to discover the effects of electronic surveillance on the well-being of employees points as well to the fact that such surveillance can cause considerable stress among employees (Smith, Carayon, Sanders, Lim & LeGrande, 1992; Aiello & Kolb, 1995). This agrees with the findings in the present study that some employees did not feel comfortable that their co-workers could examine the records that they created. It made them stressful, for example, that their spelling and grammar might not be up to standard.

7.7 Discussions with Previous Findings

This chapter examined how employees were using ERMS in terms of the options offered the user, and how employees felt using such systems in their daily work. First, it was examined how employees should capture records that they create in-house by form and type and how they in fact did. Then the same variables were looked at for the records received. Secondly, which parameters were being used to register and save records were examined, and subsequently how records created or received were searched for. Finally, it was examined how the employees felt working in ERMS. The user-friendliness of ERMS was looked at, the ways of working outside the system, insecurity regarding computer use, how the employees felt at being possibly monitored, and how they felt regarding sharing knowledge of their work with their fellow employees.

The records managers were questioned to identify the forms and types of records created in-house that were to be captured into ERMS. In short, it can be stated that records in the form of letters, e-mail, e-mail attachments, other electronic formats, faxes, films, photographs, drawings and so on should be captured into ERMS. The same applied to record types like cases, minutes from meetings, reports, plans, agreements, contracts, certificates, memos and other types, including material published by the organization.

The actual situation was not quite what the records managers would have liked. The organizations differed mainly in how conscientious their employees were in capturing letters into ERMS. The situation was poor in this respect in the two organizations with the lowest level of expected users working in ERMS, that is, the City Organization and the

Manufacturing Firm, but much better in the Government Institution, and very good in the Financial Institute with every user capturing letters into the ERMS. The organizations showed a similar pattern regarding the capture of e-mail, but the situation was worse. When it came to faxes, the records managers in all four organizations were responsible for capturing these into ERMS. A similar situation existed with some types of records, like minutes from meetings, plans, drawings, and agreements and contracts. Here again there was a division of labour and only a few individuals were supposed to capture these types of records into ERMS. The records managers were the ones responsible for this function as could be seen when the capturing of records was examined by job function. They seemed to capture records comprehensively into ERMS.

E-mail stood out as the record form that employees neglected to capture into the ERMS. Outgoing e-mail was frequently not captured into ERMS, even in the Government Institution that otherwise followed good RM practices. E-mail that was not captured into ERMS was not printed out and captured in that manner to become a part of the file for paper records. In many organizations all e-mail is eventually deleted from the electronic mail systems to make room for new incoming and outgoing e-mail. This means that an important part of the records of the organization is becoming lost every day with no hope of salvation, although some organizations may make back-up copies of their mail system. However, searching for such records that have not been captured in any systematic manner is no easy task.

E-mail seems to be a problem not only in relation to ERMS but to ERM in general. In the survey that the Iceland National Archives made of ERM in public organizations in 2004, as discussed in section 2.7.1, the majority of respondents neither registered nor filed e-mail as part of these systems. E-mail records were filed with the employee in question outside of the system, according to 63% of those responding (National Archives, 2005).

This situation was similar in the USA. In the survey conducted by Cohasset Associates (Williams, 2004) reviewed earlier, see section 2.7.1, 59% of the respondent's organizations did not have any formal e-mail retention policy and 65% of the respondents reported that electronic records were not included in their organization's records holds. The capturing of electronic records in large industrial companies was equally disturbing: e-mail messages were automatically deleted after one year, even as soon as after 14 days in these

companies (Saffady, 2002). E-mail is the modern way to communicate and it is of great concern if those e-mail records that are of value are not being preserved for posterity. The absence of e-mail leaves a huge gap in the organizational memory of any organization.

When it comes to records by form and type that were received by the organizations the role of the records managers became more important. The records managers received many of these records and saw to it that they were captured into ERMS. A major exception in this case was again e-mail that did not enter the organization through one channel. The Government Institution received all e-mail through one channel and subsequently distributed it to the persons that it was addressed to. It thus became possible to capture incoming e-mail into ERMS centrally. This method made it also possible to ensure that important e-mail was replied to and did not sit in a computer for a long time without an answer just because that person forgot to put on the 'out of office notice' when leaving on a five week vacation in the wilderness.

When employees registered records that they created into ERMS a number of important parameters were registered automatically, such as the name of the sender or the receiver, the date and the case number. The creator of the record must have selected a class in the FCS in order to be able to save the record, but further registration was optional. Three drop-down lists could be used to select one or more parameters, such as the subject and the form and the type of the record. Of these three options the form was most often selected but subject came as a close second. The type of record was not as frequently selected. A very similar profile emerged for the records received by the organizations.

The registration parameters are important because they aid the user in searching for the record at a later date. ERMS offer many ways for this search: by name of the receiver/sender, date (of creation, modification, disposal, or registration), subject (as derived from a standard thesaurus), form or type of a record, free text search, number/name of a class in an FCS, case number, recent records and by frequently used records. The name of the sender or the receiver was by far the most commonly used search parameter. The date came second and also connected to a name, with the option to search in recent records. The function of being able to screen recent records by name and date is a useful feature, now employed in many e-mail systems as well. The third option was free text search.

Employees seemed to remember whether they were looking for a letter or e-mail. They were just as likely to use the form as the search parameter as they were to select the subject in order to find the record. A search for frequently used records could not be used in the ERMS in two of the organizations. Given that limitation, it was not quite as commonly used as searching for the record type. The file number or class in the FCS came toward the end in the order of frequency, with the case number being last in line. The findings in the eight organizations were in general agreement with the experience of the consultants/teachers as they believed the situation to be at their customers. Employees that used ERMS used conditional or mixed search only when a simple search did not produce results, and that did not happen very often.

About 90% of managers seemed to use the opportunity offered in the ERMS to monitor or check the status of cases. A growing number of organizations have produced handbooks on RM with rules and standard looks for documents (templates). Some 20% to 30% of organizations had already done so.

All of the records managers found ERMS user-friendly. Most of their fellow employees agreed with them. In two of the organizations, the City Organization and the Manufacturing Firm, the organizations with the lowest rate of expected users using the ERMS, 25% and 15% respectively, a large proportion of the users claimed that their system was not user-friendly. Eleven employees found ERMS not user-friendly and all mentioned that the FCS part of the system was too complicated and difficult to use. Ten of these worked in these two organizations. The FCS had only been incorporated into the ERMS at these two organizations to a limited extent which may explain their views.

The complexity of FCS can for many employees be solved with a different set up. Not all employees need to work with the whole FCS and only a small part of the FCS will suffice. This presentation of the FCS may be part of the success of System E at the Financial Institute, although that system did not have a user interface that was in any way superior to the other systems. The FCS was not developed by Knowledge for System E but internally in the Financial Institute by own staff, the records manager with the participation of other employees. This is an important point.

The participation of the users in designing and implementing FCS is an important success factor in the implementation. The FCS should be implemented separately with the

participation of the users, both in the design and training in use. This has been my experience in writing FCS for a large number of organizations. The same applies to FCS for ERMS (Smyth, 2005; Williams, 2005). A classification scheme that mirrors the functions of the whole organization may appear complicated if the users are not shown how it is constructed and how it should be used. Participation in writing the FCS provides for this understanding. The participation ensures as well that a vocabulary is chosen for the scheme that the employees use and understand. An English vocabulary for Englishmen may even be foreign if it is not the terminology commonly used in the profession and people do not understand the keywords in the index to the FCS (Maguire, 2005). Finally, it should be underlined that the classification scheme should be functional which makes it easily adaptable to changes in the organization, making rewriting unnecessary when reorganizations take place (Gregory, 2005).

When the employees gave up using ERMS they worked outside it, using informal methods of their own. Most of these employees used the *Microsoft Office Package* and their own private filing methods. This works for a while. However, if FCS is not used, in the end neither the classifier nor the co-workers will be able to retrieve the records that they are looking for.

How the users used ERMS and their opinions of the user-friendliness of the ERMS is presented in Table 7.27.

Table 7.27. The use and user-friendliness of ERMS in the four organizations.

The use and the user-friendliness of ERMS	Government Institution	City Organization	Financial Institute	Manufacturing Firm
Proportion of users that captured records by form:				
Letters created	73%	43%	100%	38%
E-mail created	45%	14%	88%	13%
Received letters	N/R	N/R	N/R	25%
Received e-mail	N/R	14%	75%	13%
ERMS was user-friendly				
Yes	91%	29%	100%	38%
No	9%	71%	0%	62%

N/R = Not relevant. Only one person in the organization was responsible for this function.

Eight out of eleven users captured letters created in the Government Institution, or 73%. In the Financial Institute this proportion jumps to 100%. E-mail created was not captured into ERMS to the same extent as letters. The division of labour distorted this picture for the most part regarding received letters and e-mail as the records managers took care of capturing letters into ERMS in three of the organizations, and in the Government Institution that applied to e-mail as well. The proportion of users capturing these records would therefore be very low, but the proportion of these records being entered into ERMS is very high as the records managers were taking care of the job 100%. As can be seen from this there can be a great difference in how widespread the use of ERMS is and how large a proportion of the records is captured into the system. Capturing records is supposed to be a distributed effort. The benefits of the systems are only partly used if just a limited number of employees are active users, even though all of the records find their way into the system.

The opinions that the employees had of ERMS had a strong relation to how active they were in capturing letters into the system. Usually the higher the proportion of users was that captured letters into ERMS the larger was the number that found the system user-friendly. Cause and effect in this case cannot be stated, but the ability to use the system due to training seemed to explain better how active the users were and how well they liked they system.

People working in offices in Iceland seem to be computer literate in general, as indicated by surveys. It was difficult to detect any insecurity in computer use or that employees might have been afraid to use ERMS. There was some indication, however, that the older the workers were, the more likely they were to be non-users of the system. Females were more frequent users, possibly because they might not have been in a position to choose whether to use ERMS or not, whereas the managers, who were predominantly males, were able to delegate the use to others.

Employees, with very few exceptions, did not seem to object that their work in ERMS was being monitored or observed by others. They seemed to regard this more as a management tool and a part of the groupware function. There was little difference whether managers called and asked how a case was progressing or just checked in the system about the status. Some, for example, when painting a picture, do not like the audience to see it until it is finished. Others, when writing a report do not want to show it as a draft. This can be overcome by not allowing access until the report is finished. Still the author may be insecure regarding grammar and style, and that seemed to be the only concern that people seemed to have about allowing others access to their finished non-confidential records. This is a situation far from the surveillance society that George Orwell predicted and the EPM that is of concern to many observers of the office scene today.

8 General Summary and the Main Conclusions of the Research

This research was conducted to obtain new and reliable knowledge on the implementation and use of ERMS in Icelandic organizations. No such research had been conducted in Iceland before, and only a few descriptive accounts have recently become available on the implementation of such systems in other countries (see section 2.7.2), although some studies of implementing similar or related systems can be found (see section 2.7.3).

My experience has been, after being a consultant in RM in Iceland for twenty years and being involved in the introduction of ERMS to organizations in Iceland for the last ten years, that these systems were often not being used as intended, mainly due to failure in the implementation. The participant observation of the meeting of seven people at the Computer Co. reflected my experience (see Figure 6.1). Iceland does not seem to be an island in terms of this experience as vendors in other countries are said to have been presenting the same few case studies of successful ERMS implementations at RM conferences during the past five years (Ryan, 2005). Records are increasingly becoming electronic and ERMS are the future tools to manage these records. No prior studies are available on how ERMS are being used by employees. There were, therefore, ample reasons to study the implementation process in order to deepen knowledge of which factors largely influenced on the implementation and use of ERMS.

This study aimed at discovering the perceived objectives of introducing ERMS and was designed to gain an understanding of how they were being implemented. A further aim was to discover whether and how employees were actually using the systems. Finally, it aimed at examining the association between the successful implementations and positive outcomes, that is, the level and the quality of use of ERMS by employees.

Of the many important findings revealed by the study, the following were the main findings in a nutshell:

- The support by top management was important for the successful implementation of ERMS. The support by the managers was exemplified in their interest and control of the project, their own use of the system and their motivation and rewards given the employees in using ERMS. Managerial support, however, was not sufficient for the success of the project. What was necessary as well was the co-operation of the IT and RM function in the system development and in the training of the users who must also receive basic training in RM and the system. The users should participate in the

implementation process as appropriate, especially in adapting the FCS to the ERMS. As suggested by the Gestalt approach it was not enough to examine the individual factors alone, but their total relationship had to be taken into account (Maier, 1973).

- There was a strong correlation between the successful implementation factors and positive outcomes of the process. These positive outcomes were a high level of use of the ERMS, better work procedures in RM, meeting legal obligations, increased output or productivity and finally, meeting the expectations of the implementation. The study revealed no difference regarding the success of the implementation in terms of whether the organization was public or private. Nor did it matter which system was being implemented. The result could be a success or a failure. Success depended on how well each system was implemented.

- The study revealed how employees used ERMS, how they registered records into the system and what search parameters they used to search for records. The study covered both records created in-house and those received. The study showed that e-mail was regarded more as a documented conversation and had not yet gained the status of a record although the content actually was a record. E-mail was, therefore, often not captured into ERMS to the extent that it should be. This finding agreed with other surveys (National Archives, 2005; Williams, 2004; Saffady, 2002). Training determines how widespread the level of use was among the employees, but their participation in the adaptation of the FCS to the ERMS determined how skilful they were in registering and searching for information in the ERMS and how user-friendly they regarded the system to be. Employees did not object to their work being monitored and their completed work being shared with their fellow workers, although they might have some second thoughts whether their spelling and grammar was up to standard.

The findings of each chapter have been discussed in the closing of every chapter. Therefore, the main findings are only briefly focused on.

The managers of the eight organizations studied mentioned eight objectives of implementing ERMS in their organization. These were increased productivity, improved customer/client service, anticipated cost savings, reduced space required to store documents, integrated work procedures, gaining a better overview of cases and better meeting legal requirements. There seemed to be little difference between public and private organizations regarding most objectives except that the public organizations were more concerned with saving space to store documents and recent legislation granting individuals access to information about themselves was only applicable to public organizations.

When the number of positive implementation factors was compared with the proportion of expected users using ERMS a positive correlation was found, as is shown in

Table 8.1. The greater the number of positive implementation factors, the higher was the proportion of expected users. The records managers estimated this proportion. Their estimate was in line with the findings regarding the capture of letters created by users in the four organizations, as shown in Table 8.1, which was revealed during the study of the use of ERMS in the four organizations studied in detail.

Table 8.1. The implementation and use of ERMS in the organizations.

Implementation of ERMS	*Government Institution*	*City Organization*	*Financial Institute*	*Manufacturing Firm*	*Public Services Office*	*Food Processing*	*Municipal Office*	*Construction Firm*
Most expectations met	*Yes*	*No*	*Yes*	*No*	*T/S/E*	*Yes*	*T/S/E*	*T/S/E*
Number of positive implementation factors within:								
Support by top management	*2*	*0*	*3*	*0*	*0*	*3*	*0*	*3*
Records managers participation	*3*	*1*	*3*	*0*	*1*	*2*	*2*	*2*
Education and training	*3*	*1*	*5*	*1*	*3*	*5*	*4*	*3*
Number of positive implementation factors in total	*8*	*2*	*11*	*1*	*4*	*10*	*6*	*8*
Number of positive outcomes in each organization	*4*	*0*	*5*	*0*	*3*	*5*	*3*	*4*
Rank order for inputs	3	6	1	7	5	2	4	3
Rank order for outcomes	3	6	1	7	4	1	4	3
Rank order of the eight organizations	*3*	*7*	*1*	*8*	*6*	*2*	*5*	*3*
Estimated proportion of expected users actually using ERMS	*75%*	*25%*	*90%*	*15%*	*60%*	*80%*	*40% (60%)*	*70%*
Proportion of users that captured records by form:								
Letters created	73%	43%	100%	38%				
E-mail created	45%	14%	88%	13%				
Received letters	N/R	N/R	N/R	25%				
Received e-mail	N/R	13%	75%	13%				
ERMS was user-friendly	91%	29%	100%	38%				
FCS successfully implemented	Yes	No	Yes	No	Yes/No	Yes	Yes/No	Yes

T/S/E = To some extent.
N/R = Not relevant. Only one person in the organization was responsible for this function.
Yes/No = About 50% successful.

There were mainly three factors that determined whether the implementation of ERMS was successful or not. These were the support by top management, the participation of the records managers and users in adapting ERMS to the organization, especially fitting the

FCS to the ERMS according to the needs of the organization, and thirdly, the provision for adequate and proper training in general RM and in using ERMS.

It was confirmed in the study that the support of top management was crucial for a successful implementation. If top management did not take an interest in the project, it might never be realized. In those cases, as in the Financial Institute, the Government Institution, the Food Processing and the Construction Firm, where top management took an active interest in the implementation and used ERMS themselves the level of use was highest. This conclusion was in agreement with other research on the implementation of information systems (Gregory, 2005; McKenney et al., 1995; Armstrong & Sambamurthy, 1999). Three of these organizations also used motivation and rewards effectively to increase the level of use.

In two of the organizations studied in detail the implementation received hardly any support by top management. The managers themselves rarely used ERMS or not at all. Nevertheless, the proportion of expected users actually using ERMS reached 15% in the Manufacturing Firm and 25% in the City Organization. The explanation is that general employees were expected to use the systems although their superiors did not provide an example to follow and did not use ERMS themselves.

Top management influenced as well other parts of the implementation process. It was a management decision how extensively the records managers were involved in the system specifications, the choice of the system and subsequent adaptation to the organization. The study revealed that it was important that the records managers participated in the system specification and the subsequent development during implementation. Which system was chosen did not matter as much as long as it met specification. However, what seemed to matter even more was the level of participation of the expected users themselves, the general office employees. When they were genuinely involved in the development and adaptation they were creating a tool that they not only could but also wanted to use in their work.

An FCS may already exist or must be designed for the ERMS. Whenever the FCS is designed a very important part in its development is participation of the users in the design and writing of FCS in order for them to understand its construction and be familiar with the vocabulary used. The adaptation of the FCS to the ERMS was lacking in both the City

Organization and the Manufacturing Firm. Both organizations had an FCS for their ERMS but the users had not been involved in designing the classification systems and the FCS were never fully implemented. Descriptive cases of implementing ERMS in Britain have identified this factor as well (Gregory, 2005; Maguire, 2005; Smyth, 2005; Williams, 2005)

The implementation could not be a success without system training and some training in RM. Just offering general seminars was not enough, as was evidenced in the City Organization and the Manufacturing Firm. Individual training on the job, follow-up courses and support were necessary in order to obtain a wide level of use. The training functioned best when the computer department and the records managers participated in the training and some training in RM was offered to the general employees. Other studies have shown as well the importance of training in implementation of information systems (Dennis, Pootheri & Natarajan, 1998; Farwell et al., 1992; Fjermestad & Hiltz, Winter 2000-2001; Markus & Benjamin, 2003).

There was a strong correlation between the positive implementation factors and the proportion of expected users of ERMS. The proportion of expected users of ERMS was used as the best measurement of whether the implementation of the system was a success or not. The higher the proportion, the greater was the success. All of the organizations except the one with the lowest user level, the Manufacturing Firm, showed an improvement in work procedures in RM after the implementation. The same findings in the same organizations were discovered regarding better records security and quicker access to records due to implementing ERMS. This improvement placed the organizations in a better position to meet the legal requirements that they were subject to.

It was unfortunate that in none of the organizations had output and productivity been measured before and after the implementation of ERMS. In three of the organizations there was a believed increase in productivity of implementing ERMS but exact figures could not be stated. This information was not available for the other organizations. An investigation measuring changes in productivity would probably have given similar results as in other studies where significant savings in time spent for searching for information, waiting for information and in filing time were reported (EDRM Benefits the DTI, 2005). It is, however, known whether the implementation of ERMS met most expectations in the eight

organizations. The degree to which ERMS met expectations depended on how successfully the systems were implemented.

There was a strong correlation between the positive implementation factors and the user-friendliness of the systems. If the systems were poorly implemented they seemed to be regarded as not user-friendly. Lack of training could have hampered the ability to use the systems. There were also factors in the implementation, such as tailoring the design and vocabulary of FCS to the needs of the users that could have helped employees to become greater users. If the employees did not succeed or did not want to succeed in using the system it might have been easiest to blame it on the ERMS, i.e. that it was lacking in user-friendliness.

The study gave valuable information on how employees used ERMS. It identified the records created in-house by form and type that should be and were captured into ERMS. The same was done for records received. Methods for registering records into ERMS, the registration parameters, were identified, as well as the search parameters that employees used to search for records.

The registration parameters aid the user in searching for the record at a later date. ERMS offer many ways for this search. The name of the sender or the receiver was by far the most commonly used search parameter. The date came second and also connected to a name, with the option to search in recently created or received records. The function of being able to screen recent records by name and date was a useful feature, now employed in many e-mail systems as well. The third option was free text search.

Employees seemed to recall whether they were searching for a letter or e-mail. They were as likely to use the form as the search parameter as they were to select the subject in order to find the record. A search for frequently used records could not be used in ERMS in two of the organizations. Given that limitation, it was not quite as commonly used as searching for the record type. The file number or class in FCS came toward the end in the order of frequency, with the case number being selected last. Employees that used ERMS used conditional or mixed search only when a simple search did not produce results, and that did not happen very often.

E-mail was the form that employees most often neglected to capture into ERMS. Outgoing e-mail was frequently not entered into ERMS. It was also not printed out and

captured in that manner to become a part of the file for paper records. The capture of e-mail still varied positively with the number of positive implementation factors with the organizations, with the highest rate of use of ERMS performing best in capturing e-mail.

The ERMS studied allow for sharing records and for employees to co-operate as a group. The study revealed little evidence that employees seemed to object that their finished records could be monitored or observed by others. It was, therefore, the conclusion of this research that ERMS can be a highly effective tool for constructive group work and professional RM if they were properly implemented and the users have been trained in their use, proving true the hypotheses that were put forward at the end of chapter two.

The findings discussed above do not only have relevance for implementing ERMS in Icelandic organizations, but may be of value for middle sized organizations in Western Europe, North America and Australia as well. The practice of RM, the wide use of electronic records and the organizational culture regarding work, co-operation and competition is most likely not that different in these other parts of the world so that these findings may well be of direct relevance. Other cases and studies of implementing similar or related systems indicate that this may be the case (see sections 2.7.2 and 2.7.3). This study also provides valuable information for the composition of a survey questionnaire that could be used to investigate further the implementation and use of ERMS in Iceland as well as in other parts of the world. Such a survey involving records managers on both sides of the Atlantic and in Australia could give these findings a more universal validity and provide an interesting comparison between the countries and continents.

The study provided also information on issues that can be further explored and developed, both based on discoveries during the research and in comparison with the work of other scholars. One issue is developing a recipe for training for ERMS adoption. Broad guidelines are provided in this thesis, but a more detailed programme could be worked out taking into view other writings in the field, such as the diffusion literature and its specific discussion of IT adoption as regards organizational learning (Attewell, 1992; Fichman & Kemerer, 1997a; Fischman & Kemerer, 1997b). In this context it would be beneficial to establish contacts to share experiences and exchange ideas with others in the field who have for some time been working on writing a best practice model for education and

training in ERM and in designing teaching modules in ERM (McLeod, Hare & Johare, 2004; Valtonen et. al., 1998).

Another issue for further development could be a detailed model for successful ERMS implementation based on the findings of this study. All the elements are there in the study and the data, but need to be sculptured into a model of how the adoption process can become most successful. I am indebted to Elizabeth Yakel, one of the two external evaluators, for her encouragement in pursuing these new avenues for further work on these topics.

In terms of knowledge, the more we learn, the more we want to know. This study can still provide us with added knowledge as we look closer and examine in more detail some of the findings as mentioned above. Although this study involves Icelandic organizations, it can nevertheless be the first stepping-stone in the pursuit of knowledge of the situation regarding ERMS implementation and use in other countries as the search for new knowledge continues.

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APPENDIX 1 – Interview Guide 1: For Records Managers

Objectives and the System Implementation:
- What were the main objectives of implementing the system?
- Did you as a Records Manager of the organization provide input into the adaptation and the implementation of the system, as
    - Project leader?
    - Member of the project team?
    - Consultant?
    - Other?
- Who was in charge of the project?
- Was the support of the IT people provided for?
- Was there a resistance to change and to starting to use the system on the part of the employees?
    - Are you trying to resolve this resistance?
- When employees are working in a system like yours their co-workers have access to their records. Other employees can also see which projects they are working on. Are employees comfortable with this? What is your opinion regarding this in your organization?
- Was top management support obtained?
- What can you tell me about the motivation and the rewards of the employees that were to use and that are using the system?
- Were the aims, the reasons and the need for the system explained clearly to the employees concerned before the implementation?
- What can you tell me about the training of the employees in using the system?
- Is there some control in place to make sure that employees work in the system and do not continue with the old work procedures?
    - Was a formal date set when the old work procedures were to be discontinued and the new ones should take over?

Outcomes and Expectations:
- How large a proportion of the employees supposed to use the system do you think are using it in a satisfactory manner?
- How has the system changed the way your organization conducts its business?
    - How have the work procedures regarding records changed after starting to use the system?
- Do you think that there is more information security after starting to use the system?
    - Do you find everything you are looking for?
    - Does anything get lost?
- Is it easier to find information after starting to use the system?
- Do you think that your organization is meeting legal requirements better after starting to use the system?
- Has output/productivity been measured before and after the introduction of the system?
- Has the performance of the system met your expectations?
    - Has the system been implemented as originally planned?
    - Is there something that you would like to tell me about that?
    - Is there something that you think should have been done otherwise?

The Use of the System:
- Which forms of records created *in-house* should be captured into the system and how large a proportion of the users do you think register and save these forms into the system?
    - Letters
    - E-mail
    - E-mail attachments
    - Records in another electronic format
    - Faxes
    - Films

- – Photographs
- – Drawings, maps and similar documents
- – Other, please specify
- Which types of *in-house* records should be captured into the system and how large a proportion of the users do you think register and save these types into the system?
    - – Cases
    - – Minutes of meetings
    - – Reports
    - – Plans
    - – Agreements, contracts
    - – Material published by the organization
    - – Certificates
    - – Memos
    - – Other, please specify
- Who registers *received* records into the system?
    - – One assigned individual
    - – The person responsible for the central file in the organization/department
    - – The employee working on the case in question
    - – Others, who?
    - – (If there was an answer to the last three subsections go to next two sections)
- Which forms of records *received* should be captured into the system and how large a proportion of the users do you think register and save these forms into the system?
    - – Letters on paper or in electronic format (scanned or only registered)
    - – E-mail
    - – E-mail attachments (other than letters)
    - – Records in another electronic format
    - – Faxes
    - – Films
    - – Photographs
    - – Drawings, maps and similar records
    - – Other, please specify
- Which types of records *received* should be captured into the system and how large a proportion of the users do you think register and save these types into the system?
    - – Cases (on paper or in electronic format)
    - – Minutes of meetings
    - – Reports
    - – Plans
    - – Agreements, contracts
    - – Certificates
    - – Memos
    - – Other, please specify
- Are the following *registration* and *search* parameters in the system used and how large a proportion of the users do you think are using these parameters?
    - – By name of sender or receiver (organization or individual)
    - – Date
    - – Subject matter
    - – Number/name of a class in FCS
    - – Forms of records
    - – Types of records
    - – Case number
    - – Free text search (only relevant for search)
    - – Recent records (only relevant for search)
    - – Frequently used records (only relevant for search)
- Is the function of monitoring the status of an inquiry/case in the system used by the managers?

- Is the function of standard forms for documents (templates) used and how large a proportion of the users do you think are using this function?
- Do the employees seek information from other databases *outside* the organization?
    – The National Registry
    – Other, please specify
- Do the employees seek information from other systems/databases *inside* the organization?
    – Registry of employees
    – Human resources system
    – Accounting records
    – Product development system
    – Customer Relationship Management (CRM)
    – Customer accounts
    – Marketing system
    – Quality system
    – Environment management system
    – Subject classification system for records
    – Library system
    – System for the collection of photographs and films
    – System for the collection of memorabilia and artefacts
    – Forms control system
    – Other, please specify
- How large a proportion of the users of the system do register into the system their own records in a satisfactory manner by themselves?
- Are the classification, indexing and registration of records into the system regularly audited and are the necessary corrections made? (If the answer is yes – then) By whom?

Policy and Procedures:
- I would like to ask you if the organization has a policy or standardised procedures concerning the system. (If the answer is yes – then) Are they in written form or on the intranet? (If so, ask for a copy).
- Are there any handbooks or manuals on the system? (If the answer is yes – ask for a copy).

Demographics:
- Do you think that there is a difference between groups of users in using the system in a satisfactory manner?
    – Male
    – Female
    – Younger employees (44 and younger)
    – Older employees (over 44)
    – Full time employees
    – Part time employees
    – Top management
    – Middle management
    – Specialists
    – General office
    – Other, please specify

End of Interview:
- Is there something else that you would like to inform me of about the use of the system?
- I think that is all for the moment. Would you mind if I call you or e-mail you if something occurs to me concerning the use of the system?

APPENDIX 2 – Interview Guide 2: For Managers

Objectives and the System Implementation:
- What were the main objectives of implementing the system?
    – Increased productivity
    – Improved customer/client service
    – Anticipated cost savings
    – Reduced space required to store documents
    – Integrated work procedures
    – To gain a better overview of the processing of cases
    – Legal requirements
    – Other
- Did the Records Manager of your organization provide input into the adaptation and the implementation of the system as
    – Project leader?
    – Member of the project team?
    – Consultant?
    – **Other?**
- Who was in charge of the project?
- Was support of the IT people provided for?
- Was there a resistance to change and to starting to use the system on the part of the employees?
    – Are you trying to resolve this resistance?
- Was top management support obtained?
- What can you tell me about the motivation and the rewards of the employees that were to use and that are using the system?
- Were the aims, the reasons and the need for the system explained clearly to the employees concerned before the implementation?
- What can you tell me about the training of the employees in using the system?
- Is there some control in place to make sure that employees work in the system and do not continue with the old?
    – Was a formal date set when the old work procedures were to be discontinued and the new ones should take over?

Outcomes and Expectations:
- How large a proportion of the employees supposed to use the system do you think are using it in a satisfactory manner?
- Has the system improved productivity?
- Has the system improved your customer/client service?
- Has the system resulted in cost savings?
- Has the system changed the way your organization conducts its business?
    – How have the work procedures regarding records changed after starting to use the system?
- Do you think that there is more information security after starting to use the system?
    – Do you find everything you are looking for?
    – Does anything get lost?
- Is it easier to find information after starting to use the system?
- Do you think that your organization is meeting legal requirements better after starting to use the system?
- Has output/productivity been measured before and after the introduction of the system?
- Has the performance of the system met your expectations?
    – Has the system been implemented as originally planned?
    – Is there something that you would like to tell me about that?
    – Is there something that you think should have been done otherwise?

*When asking the manager about his/her daily use and work in the system – go to **Interview Guide 4.***

End of Interview:

- Is there something else that you would like to inform me of about the use of the system?
- I think that is all for the moment. Would you mind if I call you or e-mail you if something occurs to me concerning the use of the system?

APPENDIX 3 – Interview Guide 3: For Computer Specialists

Objectives and the System Implementation:
- What were the main objectives of implementing the system?
- Did the Records Manager of the organization provide input into the adaptation and the implementation of the system as
    - Project leader?
    - Member of the project team?
    - Consultant?
    - Other?
- Who was in charge of the project?
- Do you think that the system fits well into the technical/computer environment of the organization and is the IT Department satisfied with the selection of the system?
- Was there a resistance to change and to starting to use the system on the part of the employees?
- Was top management support obtained?
- What can you tell me about the training of the employees in using the system?
- Is there some control in place to make sure that employees work in the system and do not continue with the old work procedures?
    - Was a formal date set when the old work procedures were to be discontinued and the new ones should take over?

Outcomes and Expectations:
- How large a proportion of the employees supposed to use the system do you think are using it in a satisfactory manner?
- How has the system changed the way your organization conducts its business?
    - How has the work procedures regarding records changed after starting to use the system?
- Do you think that there is more information security after starting to use the system?
    - Do you find everything you are looking for?
    - Does anything get lost?
- Is it easier to find information after starting to use system?
- Do you think that your organization is meeting legal requirements better after starting to use the system?
- Has the performance of the system met your expectations?
    - Has the system been implemented as originally planned?
    - Is there something that you would like to tell me about that?
    - Is there something that you think that should have been done otherwise?

*When asking the computer specialist about his/her daily use and work in the system – go to **Interview Guide 4.***

End of Interview:
- Is there something else that you would like to inform me of about the use of the system?
- I think that is all for the moment. Would you mind if I call you or e-mail you if something occurs to me concerning the use of the system?

APPENDIX 4 – Interview Guide 4: For General Office Employees and Specialists

Objectives and the System Implementation:

- Do you know what were the main objectives of implementing the system?
- Do you think that it is all right – or are you comfortable in allowing your co-workers access to your records and letting them see which projects you are working on?
- Do you get support from the top management in using the system?
- What can you tell me about the motivation and the rewards of the employees that were to and that are using the system?
- Were the aims, the reasons and the need for the system explained clearly to you before the implementation?
- Did you receive some training in the use of the system? (If the answer is yes – then) Was the quality of training satisfactory? Let me explain this more clearly, tell me about:
  - General introduction to records management and explanation of the need to introduce the system
  - Training in seminars
  - Personal training where the instructor comes to your work station
  - Instructions over the phone from the vendor of the system
  - Instructions over the phone from the Records Manager
  - Instructions by e-mail from the vendor of the system
  - Instructions by e-mail from the Records Manager
  - Instructions and learning from your co-workers
  - Other training, what type?

Outcomes and Expectations:

- How has the system changed the way your organization conducts its business?
  - How have the work procedures regarding records changed after starting to use the system?
- Do you think that there is more information security after starting to use the system?
  - Do you find everything you are looking for?
  - Does anything get lost?
- Is it easier to find information after starting to use the system?
- Do you think that your organization is meeting legal requirements better after starting to use the system?
- Has the performance of the system met your expectations?
  - Has the system been implemented as originally planned?
  - Is there something that you would like to tell me about that?
  - Is there something that you think that should have been done otherwise?

The Use of the System:

- Which forms of records created *in-house* do you register and save into the system?
  - Letters
  - E-mail
  - E-mail attachments
  - Records in another electronic format
  - Faxes
  - Films
  - Photographs
  - Drawings, maps and similar documents
  - Other, please specify
- Which types of *in-house* records do you register and save into the system?
  - Cases
  - Minutes of meetings

- – Reports
- – Plans
- – Agreements, contracts
- – Material published by the organization
- – Certificates
- – Memos
- – Other, please specify
- Which forms of records *received* do you register and save into the system?
  - – Letters on paper or in electronic format (scanned or only registered)
  - – E-mail
  - – E-mail attachments (other than letters)
  - – Records in another electronic format
  - – Faxes
  - – Films
  - – Photographs
  - – Drawings, maps and similar records
  - – Other, please specify
- Which types of records *received* do you register and save into the system?
  - – Cases (on paper or in electronic format)
  - – Minutes of meetings
  - – Reports
  - – Plans
  - – Agreements, contracts
  - – Certificates
  - – Memos
  - – Other, please specify
- Which of the following *registration* and *search* parameters in the system do you use?
  - – By name of sender or receiver (organization or individual)
  - – Date
  - – Subject matter
  - – Number/name of a class in FCS
  - – Forms of records
  - – Types of records
  - – Case number
  - – Free text search (only relevant for search)
  - – Recent records (only relevant for search)
  - – Frequently used records (only relevant for search)
- Do you use the standard forms for documents (templates) that are available in the system?
- Do you seek information from other databases *outside* the organization?
  - – The National Registry
  - – Other, please specify
- Do you seek information from other systems/databases *inside* the organization?
  - – Registry of employees
  - – Human resources system
  - – Accounting records
  - – Product development system
  - – Customer Relationship Management (CRM)
  - – Customer accounts
  - – Marketing system
  - – Quality system
  - – Environment management system
  - – Subject classification system for records
  - – Library system
  - – System for the collection of photographs and films
  - – System for the collection of memorabilia and artefacts

- Forms control system
- Other, please specify
- Do you know if the classification, indexing and registration of records into the system are regularly audited and if so are the necessary corrections made? (If the answer is yes – then) By whom?

End of Interview:
- Is there something else that you would like to inform me of about the use of the system?
- I think that is all for the moment. Would you mind if I call you or e-mail you if something occurs to me concerning the use of the system?

APPENDIX 5 – Interview Guide 5: For Consultants/Teachers of the Vendors

Objectives and the System Implementation:
- What are the most common reasons or the main objectives of implementing your system in the organizations?
- Do the Records Managers of the organizations usually provide input into the adaptation and the implementation of the system as
    – Project leaders?
    – Members of the project team?
    – Consultants?
    – Others?
- Is there a resistance to change and to starting to use the system on the part of the employees in the organizations?
- Are employees that are working in a system like yours uncomfortable in allowing their co-workers access to their records and letting them see which projects they are working on?
- Is top management support usually obtained?
- What can you tell me about the motivation and the rewards of the employees in the organizations that are to use and that are using the system?
- Are the aims, the reasons and the need for the system usually explained clearly to the employees concerned before the implementation?
- What can you tell me about the training of the employees in using the system?
- Is there usually some control in place to make sure that employees work in the system and do not continue with the old work procedures?
    – Is it common that a formal date is set when the old work procedures are to be discontinued and the new ones shall take over?

Outcomes and Expectations:
- How large a proportion of the employees in the organizations supposed to use the system do you think are using it in a satisfactory manner? Please give me some examples – good and bad.
- Do you know if it is common that output/productivity is being measured before and after the introduction of your system?

The Use of the System:

- Which forms of records created *in-house* do the users in the organizations usually register and save into the system?
    – Letters
    – E-mail
    – E-mail attachments
    – Records on another electronic format
    – Faxes
    – Films
    – Photographs
    – Drawings, maps and similar records
    – Other, please specify
- Which types of *in-house* records do the users in the organizations usually register and save into the system?
    – Cases
    – Minutes of meetings
    – Reports
    – Plans
    – Agreements, contracts
    – Material published by the organization

- Certificates
- Memos
- Other, please specify
- I suppose that it is different who in the organizations registers *received* documents into the system. Could you please give me some examples?
  - One assigned individual
  - The person responsible for the central file in the organization/department
  - The employee working on the case in question
  - Others, who?
- Which forms of records *received* do the users in the organizations usually register and save into the system?
  - Letters on paper or in electronic format (scanned or only registered)
  - E-mail
  - E-mail attachments (other than letters)
  - Records in another electronic format
  - Faxes
  - Films
  - Photographs
  - Drawings, maps and similar records
  - Other, please specify
- Which types of records *received* do the users in the organizations usually register and save into the system?
  - Cases (on paper or in electronic format)
  - Minutes of meetings
  - Reports
  - Plans
  - Agreements, contracts
  - Certificates
  - Memos
  - Other, please specify
- Are the following *registration* and *search* parameters in the system used by the employees of the organizations?
  - By name of sender or receiver (organization or individual)
  - Date
  - Subject matter
  - Subject class (in a subject classification system for records)
  - Free text search
  - Forms of documents (see 12 and 15 above)
  - Types of documents (see 13 and 16 above)
- Is the function of monitoring the status of an inquiry/case in the system used by the managers of the organizations?
- Is the function of standard forms for documents (templates) used by the employees of the organizations?
- Do the employees of the organizations seek information from other databases *outside* the organization?
  - The National Registry
  - Other, please specify
- Do the employees of the organizations seek information from other systems or databases *inside* the organization?
  - Registry of employees
  - Human resources system
  - Accounting records
  - Product development system
  - Customer Relationship Management (CRM)
  - Customer accounts

- – Marketing system
- – Quality system
- – Environment management system
- – Subject classification system for records
- – Library system
- – System for the collection of photographs and films
- – System for the collection of memorabilia and artefacts
- – Forms control system
- – Other, please specify
- How large a proportion of the users of your system do register the system their own records in a satisfactory manner by themselves? Please give me some examples – good and bad.

Demographics:
- Do you think that there is a difference between groups of users in using the system in a satisfactory manner?
  - – Male
  - – Female
  - – Younger employees (44 and younger)
  - – Older employees (over 44)
  - – Full time employees
  - – Part time employees
  - – Top management
  - – Middle management
  - – Specialists
  - – General office
  - – Other, please specify

End of Interview:
- Is there something else that you would like to inform me of about the use of the system?
- I think that is all for the moment. Would you mind if I call you or e-mail you if something occurs to me concerning the use of the system?

APPENDIX 6 – The Views of the Consultants/Teachers at the Software Providers

Appendix 6, Table 1. Forms of records created in-house that their customers usually captured into ERMS, according to the consultants/teachers.

Software Provider	Letters	E-mail	E-mail Attachments	Records on another electronic format	Faxes	Films	Photo-graphs	Drawings, maps and similar documents	Other
Computer Service	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K	✔
Computer Co.	✔	✔	✔	✔	✔	D/N/K	✔	✔	✔
Solutions	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K	D/N/K
Knowledge	✔	✔	✔	✔	✔	✔	✔	✔	✔
Image Group	✔	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K

D/N/K = Do not know.

Appendix 6, Table 2. Types of records created in-house that their customers usually captured into ERMS, according to the consultants/teachers.

Software Provider	Cases	Minutes of meetings	Reports	Plans	Agreements, contracts	Material published by the organization	Certificates	Memos	Other
Computer Service	✔	✔	✔	✔	✔	✔	✔	✔	✔
Computer Co.	✔	✔	✔	✔	✔	✔	✔	✔	✔
Solutions	✔	✔	✔	✔	✔	✔	D/N/K	✔	D/N/K
Knowledge	✔	✔	✔	✔	✔	✔	✔	✔	✔
Image Group	✔	✔	✔	✔	✔	✔	✔	✔	✔

D/N/K = Do not know.

Appendix 6, Table 3. Forms of records received that their customers usually captured into ERMS, according to the consultants/teachers.

Software Provider	Letters on paper (scanned or only registered)	E-mail	E-mail attachments	Records in another electronic format	Faxes	Films	Photo-graphs	Drawings, maps and similar documents	Other
Computer Service	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K	D/N/K
Computer Co.	✔	✔	✔	✔	✔	D/N/K	✔	✔	D/N/K
Solutions	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K	D/N/K
Knowledge	✔	✔	✔	✔	✔	✔	D/N/K	D/N/K	✔
Image Group	✔	✔	✔	✔	✔	✔	D/N/K	D/N/K	D/N/K

D/N/K = Do not know.

Appendix 6, Table 4. Types of records received that their customers usually captured into ERMS, according to the consultants/teachers.

Software provider	Cases on a paper or an electronic format)	Minutes of meetings	Reports	Plans	Agreements, contracts	Certificates	Memos	Other
Computer Service	✔	✔	✔	✔	✔	D/N/K	D/N/K	✔
Computer Co.	✔	✔	✔	✔	✔	D/N/K	✔	D/N/K
Solutions	✔		✔	D/N/K	✔	D/N/K	D/N/K	D/N/K
Knowledge	✔	✔	✔	✔	✔	D/N/K	✔	✔
Image Group	✔	✔	✔	✔	✔	✔	✔	✔

D/N/K = Do not know.

Appendix 6, Table 5. Registration parameters in ERMS for records created in-house most commonly used by their customers, according to the consultants/teachers. Ranking is according to frequency, one meaning most common.

Software Provider	Name of sender/receiver	Date	*Subject	*Form of records	*Type of records	*Number/name of a class in FCS	Case number
Computer Service	A/R	A/R	1	2	3	N/O	A/R
Computer Co.	A/R	A/R	2	1	3	N/O	A/R
Solutions	A/R	A/R	3	1	2	N/O	A/R
Knowledge	A/R	A/R	2	1	3	N/O	A/R
Image Group	A/R	A/R	1	2	3	N/O	A/R
Mean rank			1.80	1.40	2.80		

A/R = Automatic registration for records created in-house.
N/O = No option. The employee must select a class in the FCS in order to be able to save the record. Was relevant for many customers of the software providers. Not all customers had FCS. If they did, the registration had been a must.
* There was a drop-down list that the employee could select from. This was not relevant for every customer, and some customers did not have all these three lists. The outcome is based on those customers that had all three lists.

Appendix 6, Table 6. Registration parameters in ERMS for records received most commonly used by their customers, according to the consultants/teachers. Ranking is according to frequency, one meaning most common.

Software Provider	Name of sender/receiver	Date	*Subject	*Form of records	*Type of records	*Number/name of a class in FCS	Case number
Computer Service	N/O	N/O	1	2	3	N/O/F	N/O/C
Computer Co.	N/O	N/O	2	1	3	N/O/F	N/O/C
Solutions	N/O	N/O	3	1	2	N/O/F	N/O/C
Knowledge	N/O	N/O	2	1	3	N/O/F	N/O/C
Image Group	N/O	N/O	1	2	3	N/O/F	N/O/C
Mean rank			1.80	1.40	2.80		

N/O = No option. The employee must select the parameter in order to be able to save the record.
N/O/F = No option in the case of FCS. Was relevant for many customers of the software providers. Not all customers had FCS. If they did, the registration had been a must.
N/O/C = No option in the case of case number. Not relevant for all customers but if relevant the registration had been a must.
* There was a drop-down list that the employee can select from. This was not relevant for every customer, and some customers did not have all these three lists. The outcome is based on those customers that had all three lists.

Appendix 6, Table 7. Search parameters in ERMS most commonly used by their customers, according to the consultants/teachers. Ranking is according to frequency, one meaning most common.

Software Provider	Name of sender or receiver	Date	Subject	Form of records	Type of records	Free text search	Number/name of a class in FCS	Case number	Recent records	Frequently used records
Computer Service	1	2	5	6	7	3	8	9	4	6
Computer Co.	1	2	4	3	5	2	6	7	3	5
Solutions	1	2	6	4	5	2	7	8	3	N/R
Knowledge	1	2	2	3	5	2	7	8	2	6
Image Group	1	2	3	4	5	2	7	8	3	6
Total	5	10	20	20	27	11	35	40	14	23
Mean rank	1.0	2.0	4.0	4.0	5.4	2.2	7	8	2.8	5.8

N/R = Not relevant. It was not possible to search using this method in the ERMS market by Solutions.
In those cases where the same figure appears for more than one parameter, their use was about the same in frequency. The lower the total for the column, the higher the preference for using that search parameter.