

ELECTRONIC RECORDS MANAGEMENT SYSTEMS

The Human Factor

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Abstract: The purpose of this paper is to present the findings of a research conducted in Iceland during the period 2001-2005 and in 2008 on how employees view their use of Electronic Records Management Systems (ERMS). Qualitative methodology was used. Four organizations were studied in detail and other four provided a comparison. Open-ended interviews and participant observations were the basic elements of the study. The research discovered the basic issues in the user-friendliness of ERMS, the substitutes that employees turned to if they did not welcome ERMS, and how they felt that their work could be shared and observed by others. Employees seemed to regard ERMS as a groupware for constructive group work and not as an obtrusive part of a surveillance society. The research indicated training as the most important factor in making employees confident in their use of ERMS. The research identifies that most important implementation factors and the issues that must be dealt with to make employees more content, confident and proficient users of ERMS.

1 INTRODUCTION

ERMS are information systems designed to capture and manage records in any format according to the organization's record-keeping principles.

The implementation and use of ERMS was studied in recent research that was conducted in a number of Icelandic organizations. The data collection took place during the period 2001-2005 in eight organizations, four public and four private organizations. A follow-up was made in 2008.

One of the aims of the study was to discover how employees felt working with ERMS and that is the focus of this paper. It examines:

1. Whether employees found the ERMS user-friendly or not.
2. What employees used as a substitute if they did not use ERMS.
3. Whether employees objected that their work in ERMS was being monitored or observed by others.

There was a strong relationship between the important implementation factors and the level of use (Gunnlaugsdottir, 2008a; 2008b).

The following discussion is organized into five sections starting with a presentation of the

methodology used. The interviewees expressed their feelings regarding their work in ERMS. They are grouped into four categories: The user-friendliness of ERMS, informal alternatives to records management (RM) other than using ERMS, and monitoring by superiors and fellow employees seeing work performed in ERMS. The paper concludes with a general discussion of the findings.

2 METHODOLOGY AND ERMS

The aim of this part of the research was to discover how employees in eight organizations in Iceland felt about working with ERMS. A qualitative methodology with a triangular approach was chosen for conducting the research (Denzin and Lincoln, 2003; Gorman and Clayton, 1997) although it was attempted to use quantitative measurements, as suggested by Silverman (2005), whenever qualitative data lent themselves to such interpretations. Two different methods were used in the field. Open-ended interviews were conducted with employees (King, 1999; Kvale, 1996) and participant observations were undertaken (Bogdan

and Biklen, 2003).

The main data collection took place during the period September 2001 to April 2005. The total number of interviewees in the eight organizations was 38. The interviewees were eight records managers, eight managers, four computer specialists, eight specialist and ten general office employees. A detailed data collection took place in four organizations which were given the pseudonyms: Government Institution, City Organization, Financial Institute and Manufacturing Firm. In these organizations a number of employees were interviewed and participant observations took place where offices of employees were visited. In the other four organisations that were given the names: Public Services Office, Food Processing, Municipal Office and Construction Firm, only the records managers were interviewed. The workstations that were visited during the participant observations were 140 in total. Follow-up interviews were conducted with the records managers in the eight organizations in the beginning of 2008.

The eight organizations had bought four different ERMS (D, E, F and G) with two organizations using the same system. All of the four systems had been evaluated and were believed to meet all of the important requirements of the *DoD5015.2-STD* (2002) – latest edition (2007), the requirements for approved RM procedures according to the *ISO 15489* standard for RM (ISO, 2001a; 2001b), and Icelandic law. They all meet the requirements of being ERMS (ARMA International, 2004; CECA, 2001). These ERMS were all equipped with a classification scheme, ‘the foundation of any ERMS’ (CECA, 2008, p. 23). All of the four ERMS offered opportunities for group work and co-operation between employees (Coleman, 1999; Gunnlaugsdottir, 2003; 2004; Orlikowski and Barley, 2001).

3 THE USER-FRIENDLINESS OF ERMS

People working in Iceland are computer literate in general as indicated by surveys. That should make it easier for organizations to implement electronic information systems such as ERMS. Almost 90% of all individuals 16-74 years use a computer and the Internet (Statistics Iceland, 2007) and almost 100% of Icelandic enterprises use computers and have access to the Internet (Statistics Iceland, 2006).

User-friendliness means that 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. Table 1 lists the number of employees, according to organizations, whether they felt that ERMS was user-friendly or not.

Table 1: User-friendliness of ERMS in the eight organizations.

Organization: *Public **Private	User- friendly	Not user- friendly	Total
*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 1 were studied in detail. Employees in two of the organizations, the Government Institution and the Financial Institute, found ERMS user-friendly, with ten 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 expected to use ERMS, 75% and 90% respectively (see Table 4). 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 in detail with the lowest rate of use, 25% and 15% respectively (see Table 4).

The four ERMS seem to show a different outcome regarding user-friendliness, as shown in Table 2.

Table 2: User-friendliness of the four ERMS according to users of each system.

User-friendliness	Sys. D	Sys. F	Sys. E	Sys. G	Total
User-friendly	11	3	9	4	27
Not user-friendly	1	5	0	5	11
Total	12	8	9	9	38

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 the 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 were admittedly experienced users, but the four systems were not that different regarding the user interface. On closer examination the system with the best user acceptance, System E, may even, if anything, have had a slightly inferior user interface. This system was used at the Financial Institute which had the most successful implementation (see Table 4).

4 INFORMAL ALTERNATIVES TO RM OTHER THAN USING ERMS

ERMS is intended to ensure systematic and uniform classification and capture of records in any format (paper, film and electronic) and support efficient retrieval of records and information. The forms of records that should be captured into ERMS are for example: Letters, e-mail, e-mail attachments, records in another electronic format other than letters, e-mail and e-mail attachments, faxes, films,

photographs, drawings and maps. Using ERMS in a correct manner prevents variable methods in record-keeping. That diminishes possibilities of mistakes and loss of information (Gunnlaugsdottir, 2008c).

During the interviews and the participant observations it could be detected that employees not using ERMS used various different methods to classify, save, search for and retrieve records, both records that they created themselves 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. When employees were searching for e-mail received, they said that they usually used the search option 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.

Records that most employees created in-house 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 name 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 not using ERMS. 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 tried first 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 that did not use ERMS 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 retrieve 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. Studies of groupware and similar systems have 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, especially without good and proper training. When the technology does not help the individuals to accomplish dynamic ends and solve problems, 'they abandon it, or work around it, or change it, or think about changing their ends' (Orlikowski, 2000, pp. 423-424).

5 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. Some employees also feel uncomfortable in allowing their co-workers access to their records and letting them see which projects they are working on or how they are performing their job (Smith, Milberg and Burke, 1996; Townsend and Bennett, 2003).

The four ERMS are solutions in groupware that makes monitoring of use possible. 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 3.

Table 3: Being monitored and observed in ERMS, feelings according to job functions in the eight organizations.

Employees	Positive	Neither/Nor	Negative	Total
Records managers	8	0	0	8
Managers	8	0	0	8
Computer specialists	4	0	0	4
Specialists	4	1	3	8
General office employees	3	5	2	10
Total	27	6	5	38

All of the top management, 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.

Four of the specialists were positive about others being able to see the records that they created, one of them expressed no opinion, but three of them (one at the Financial Institute and two at the City Organization) emphasized strongly that they did not feel comfortable knowing that their own use might be monitored. They 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. One of them said that she sometimes felt uncomfortable saving records that she had written into ERMS because she was afraid that the records might contain spelling errors and bad grammar that she did not want everyone to see.

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 was being monitored, their feelings became negative. They believed that their superiors thought that they were not doing their job when they were not working in ERMS. Finally, there is the feeling of privacy. If the records deal with sensitive or personal matters, employees sometimes seemed to be 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 person. The above points could be detected both during the interviews and the participant observations.

Studies that have been undertaken to discover the effects of electronic surveillance on the well-being of employees, point to the fact that such surveillance can cause considerable stress among employees (Aiello and Kolb, 1995; Rafnsdottir and Gudmundsdottir, 2004; Smith, Carayon, Sanders, Lim and LeGrande, 1992). Monitoring of work performed by employees in ERMS would by most definitions not fall under electronic surveillance. 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. 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.

6 DISCUSSIONS AND CONCLUSIONS

In the study it was examined how employees felt working in ERMS. It covered the user-friendliness of ERMS, the ways of working outside the system, how the employees felt being possibly monitored, and how they felt regarding sharing their work with their fellow employees.

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 as shown in Table 4. Table 4 shows the relationship between the implementation and the user-friendliness of ERMS in the eight

organizations. The implementation itself is covered in detail in a separate article (Gunnlaugsdottir, 2008a). A short summary is nevertheless in order here.

When the number of positive implementation factors (11 in total) was compared with the proportion of expected users a positive relationship was found. The greater the number of positive implementation factors, the higher was the proportion of expected users. There were mainly three elements that determined the success of the implementation: Support by top management, participation of the records managers in the project, and adequate and proper training.

Figure 1 shows the three elements and the 11 implementation factors.

Support by top management exemplified by:	Records manager's participation in:	Training with different approaches:
Their interest in the project	System selection	Education and training in RM
Their own use of ERMS	System development	ERMS seminars
Their motivation of employees	Adapting ERMS to the organization	ERMS individual training
		ERMS support and training by IT department
		ERMS follow-up courses
Three factors	Three factors	Five factors

Figure 1: The three elements and the 11 implementation factors.

These 11 positive implementation factors explain the success rate of the implementation as presented in detail in Table 4.

The Financial Institute revealed 11 positive implementation factors identified out of 11 possible. There the proportion of expected users actually using ERMS was 90% and everybody claimed that the system was user-friendly. On the other hand, at the Manufacturing Firm there was only one positive implementation factor, the proportion of expected users just reached 15%, and 62% of respondents claimed that ERMS was not user-friendly.

When the employees gave up using ERMS they worked outside it, using informal methods of their own. The consequence of this was that their co-workers were unable to retrieve information and records.

Employees, with very few exceptions, did not seem to object that their work in ERMS was being

Table 4: 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	Constructing Firm
Number of positive implementation factors:								
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
*Estimated proportion of expected users actually using ERMS (%)**	75 (85)	25	90	15 (50)	60	80	40 (60)	70 (80)
ERMS was user-friendly (%):								
Yes	91	29	100	38				
No	9	71	0	62				

Notes: *The level of use was based on a careful evaluation and estimate made by the records managers. **These are the original findings. During 2008 these results were updated as shown within brackets and discussed in this section.

monitored or observed by others. They thought of ERMS as a practical and successful management tool and a part of the groupware function rather than electronic surveillance in the negative sense of that concept.

Follow-up interviews were conducted with the records managers in the eight organizations in 2008. The records managers in four of the organizations, City Organization, Financial Institute, Public Services Office and Food Processing believed that they could not detect an increase in the estimated proportion of expected users actually using ERMS.

The records managers in the other four, Government Institution, Manufacturing Firm, Municipal Office and Construction Firm reported that there had been an increase. The records manager at the Government Institution believed that the proportion was now about 85% (was 75%). She attributed this increase to a training project in general RM that was undertaken during 2007. She underlined especially the importance that employees were now much more aware of the legal environment that the institution was a part of than before and that it had to meet requirements dictated by law.

The records manager at the Manufacturing Firm confirmed that a substantial increase had taken

place. Now, the estimated proportion of expected users was about 50% (was 15%). The explanation that he gave was that a considerable increase had occurred in the use by both top and middle management. About one third of these were now using the system. He believed that the increase was also due to a training effort undertaken that covered both general training in RM and individual system training. The records manager at the Municipal Office said that the use had increased to about 60% (was 40%). Increased use by managers was the main reason. The records manager at the Construction Firm said that the proportion had now reached about 80% (was 70%). This good result was due to training courses that were held and covered general training in RM where the users did learn that organized and proper use of ERMS resulted in more efficiency for the firm. The employees could now find information quicker and with greater certainty.

The follow-up interviews brought also out another interesting fact. The training that was undertaken subsequent to the original study seemed to make the claims disappear that the system was lacking in user-friendliness. This point was especially underlined at the Manufacturing Firm where the level of use had increased from 15% to 50%.

It is of interest to investigate further the importance of training for the implementation and use of ERMS. A larger sample, properly constructed, could reveal the statistical significance of the relationship. However, there is a strong central tendency of social forms. Hence, a large sample is not needed to detect the importance of training for effective implementation and use of ERMS.

During the initial study, there was some reason to believe that some employees may have been blaming the system for their inability to use ERMS when in fact the reason was lack of training. This suspicion detected during the participant observation was confirmed in the follow-up during 2008. If the employees lacked in their ability to use the system, the fault lay with the system, not themselves, and their lack of training. Improved training subsequently turned disbelievers into active users.

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