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Efficiency of electronic records management systems: Turkey and example of Ministry of Development

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Abstract

It is necessary to produce, file, index, use and archive records of an institution by evaluating, disposing or transferring them in order to enable the institution to fulfil its obligations regarding its administrative and operational processes. Records Management and Archiving applications are tools employed in recording and written communication processes. The public institutions, need information systems, which enable them to manage the records systematically, produce within their business processes and conduct such processes in electronic media. Legislation and standards are being set forth for regulating intra- and inter-institutional electronic communications such as official correspondence regulations of Turkey, institutional e-mail web services, e-correspondence package, etc. Besides, activities ,which must be performed for the purpose of realizing business-yield enhancing properties of ERM systems, shall be evaluated in this paper. An electronic records management (ERM) application of an institution shall provide optimal benefit to the extent that it serves to enhance business efficiency, rather than monitoring inbound and outbound records traffic of that institution. For this purpose, a preliminary evaluation has been undertaken, regarding measurable benefits of an ERM application in the example of a public institution. We administered a questionnaire to the executive officials who use the system as well as those who are in charge of records for the purpose of revealing administrative level benefits of the ERM application, used by Republic of Turkey, Ministry of Development.

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1. Introduction

Nowadays, institutions intend to carry e-records practices into action and to set up e-records management and archiving system. On being evaluated the works towards institutional informatics policies since 2001 in Turkey, it is expressed among the commonly dealt problems that information exchange is not conducted on electronic media. (Information Society Strategy…,2006; Information Society Strategy Action Plan…,2006; e-Dönüşüm Türkiye …, 2005; e-Dönüşüm Türkiye…, 2003; e-Dönüşüm Türkiye…, 2006). Within the frame of Information Society Strategy (2006-2010) prepared for implementing at National level, the works were planned towards creating "Common Services Establishment" which involves all the public institutions and organizations. In this respect, Ministry of Development initialized the works to conduct the official correspondences among the public institutions and organizations to be done on e-media. The main purpose is to realize the official document communication among the public institutions and organizations on a completely paperless platform. For this purpose, the activities conducted with the coordination of Ministry of Development are being maintained under the name of e-Correspondence Project. Within the concept of e-Correspondence Project, both the requirements of the public organizations were analyzed, and the private sector companies, which develop applications in this field are asked for the opinions. The e-correspondence package including the system of encryption and high data identification was created for the purpose that the incoming and outgoing correspondences are interchanged in a confident platform. The tests fitting for the correspondence purpose were done by the 6 major public organizations aiming at the application of the created e-correspondence package system. In these tests, Electronic Records Management Systems (ERMS), through web services, transmitted the e-correspondence packages to IEM (Institutional e-Mail) service provider, and still with the web services, by interrogating the pending packages, if any, which were delivered to be appeared on the screen of the ERMS records-keepers. The institutions participating in the pilot scheme of the Ministry of Development actively put into practice the e-correspondence process, all communications among the organizations were ready to be conducted on electronic media. ERM system applied in the Ministry is thought to contribute to the productivity of the management in addition to sharing, producing, receiving, filing, evaluating and ensuring both the organizational and the inter-organizational effective use and sharing of the records created in business processes. On starting from this idea, a work was decided to be done towards researching the effectiveness of the ERM application yields at institutional level.

In the first part of the study shall include the comparative analysis aiming at measuring the productivity of the Ministry of Development ERM application. In the second part of the study shall include the survey results in which the research of the effectiveness of ERM applications. On assessing both findings of the studies separately, an institutional level result relating to the productivity value will be tried to reach.

2. The Reason of the Resarch and the Problem

"The most important success factors for DM systems almost irrespective of business sector, included faster task completion, improving quality and reducing cost, the least significant being meeting statutory requirements, improving document security and improving cash flow", McLeod used this expression for the basic acquisition supplied by ERM or EDM (McLeod. 1996). In the studies involving the digital data which constitute evidence for the effectiveness towards individuals, society and studies supplied by ERM application; (BRE/CICA, 1999; Nucleus Research, 2001; Winston, 2003; Nucleus Research, 2004; Records Management Society Bulletin, 2005; Johnston & Bowen, 2005; Marketscope for enterprise records management 2008; 2009; 2010), these effectiveness as well as undergirded by the partial digital data, the measurable data comparable to the previous state of ERM application can't be reported in detail. Especially, for the present system and the digital data relating to operation process before starting the ERM applications are not kept electronically, the access to the retrospective quantitative data is either impossible or too limited. The acquisitions relating to the process after running of the ERM application can merely be measured through the dependent variables as to the system. However, in the present study, some backward data could be reached for the fact that the data of Records Tracking System (RTS) used before ERM were transferred to ERM system. These data are considered to be comparable with the present process performance on ERM System. As well as the thought constituting the basis of the study, at the same time, the

survey of the efficiency of the executives' administrative works relating to the records process were included into the scope of the study too.

3. Methodology

In the first part of the study, the variables were determined for the purpose of the comparison ERM application of the Ministry of Development with the previous RTS in terms of performance.

- Number of writings
- Number of transfer (assignment)
- Average Transfer Time
- Number of Signature
- Average Time of Signature (completion of approval)

In the second part of the study, a survey work on the institution executives and archive personnel was also conducted. The following compilation of data, being measurable, previously focused by the literature, were targeted with the survey work.

- Individual effectiveness supplied by ERM Application.
- Institutional effectiveness
- Social effectiveness (Johnston & Bowen, 2005)

The data of the web survey, which were distributed to, and answered by, a total of 59 people were evaluated in the Excel program. Accordingly, the work was completed in line with the findings.

4. The Case of the Ministry of Development, The Survey on the Electronic Records Management System (MD-er)

In this section, the detailed information relating to the promotion and the processing of the Ministry of Development Electronic Records Management System (MB-er) was excluded from the scope of the study. Therefore, the study conducted to measure the functional performance of the system was preferred.

In the Ministry of Development, before MD-er, there was a structure in which the records' flow on electronic platform and its physically deliverance were recorded. The structure known as Records Tracking System (RTS) was used in parallel with trace registration notebook. This system provided an electronically receipt of registration for the process which had been conducted on paper. That to take care of the new design of the system, as much as possible the protection of the users' habits of the system interfaces in a positive way and to draw on the contributions of the existing users of this system which had been used by the administrators, the administrator assistants, the records and archive personnel, were adopted as principle. Furthermore, although not included documents, the information (metadata) recorded by RTS were envisaged to transfer to the new system. The forms used as a standard in the institution and the workflows relating to these forms were revised and brought into existence in the new system. This situation led to a reduction in the number of transfers and approvals in the internal processes.

4.1. E-Correspondence package

Since the publishing date of the MD-er e-Correspondence Project package definition, e-correspondence package with .eyp extension has been produced for every outgoing text. This package, in the scope of pilot study, has been sent to the other institutions that are ready, and could be opened without having any problem.

4.2. Simplifications at bureaucratic process

Workflows could be reviewed with the MD-er and, with the use of the opportunities provided by electronic media, some processes could be made more efficient.

In the process of the personnel appointment to home or abroad, after the required "approval" was taken, this approval, with the assignment of the relevant unit chiefs (a total of 3 steps), was transferred to the officer as a duty, which would launch the necessary steps. In the newly defined process, as soon as the necessary approval has been taken, it will fall into the section of pending works of the relevant officer as the executing post, when appointment letter is written, and it will transmit to the persons who have to be aware of this as the information. Thus both the process is accelerated and the workload on the managers is reduced.

4.3. Survey results and analysis about the impact of productivity

4.3.1. Evaluation of the system efficiency according to the records

After the launch of ERM application in early 2011, the average transfer time for outgoing correspondence was same as the previous year, in 2012, approximately %10 decreases was seen and a near-doubling increase of the average transfer number was observed. This situation was interpreted as that the transfer time was accelerated and a contribution was made to the effectivity with ERM. The increase number of transfer is an indicator that, the information, by increasing the spread throughout the institution, reached out to a wider mass (see Table 1).

Table 1. Information relating to the incoming external correspondence

Year (1)	Number of writings (2)	Total number of transfers (3)	Average transfer time (Day) (4)	Average transfer number (3/2)
2012	18,041	206,671	2.56	11.45
2011	15,967	169,550	2.81	10.61
2010	17,369	97,046	2.79	5.59
2009	17,773	102,054	4.33	5.74
2008	17,979	102,682	7.04	5.71

After ERM application, the average processing time was observed to decrease greatly for the internal correspondence. This situation shows that, ERM in the same way, speeded up the approval and transfer time and made a positive contribution to the effectiveness (see Table 2).

Table 2. Information on the internal correspondence

Year (1)	Number of writings (2)	Total number of process (3)	Average processing time (Day) (4)	Average process number (3/2)
2012	5,359	65,887	3.06	12.29
2011	5,049	52,426	3.60	10.38
2010	6,334	71,576	6.19	11.30
2009	6,343	133,113	11.55	20.99
2008	6,095	63,832	46.15	10.47

After implementation of ERM application, the average completion time for external correspondence was seen to decrease dramatically. With that the correspondences, not being delayed in the production and approval process, is made ready to be delivered to the relevant is thought to affect productivity significantly in terms of gaining time. (see Table 3).

Table 3. Information on outgoing external correspondence

Year (1)	Number of writings (2)	Total number of signature (3)	Average completion time (Day) (4)	Average number of signatures (3/2)
2012	7,174	25,941	0.83	3.62
2011	4,773	19,830	2.16	4.15
2010	5,543	21,047	4.40	3.80
2009	5,252	18,251	5.63	3.48
2008	5,342	16,477	5.52	3.08

4.3.2. Efficiency evaluation of the findings

In the Ministry of Development, a questionnaire consisting of 11 questions was organized to take the views of the ERMS users. The questionnaire was applied to the upper and mid-level managers, and in addition to these groups, the document and archive personnel who are directly affected by this application, were also asked the same questions. In the Ministry, 5 general manager out of 8, 28 head of department out of 42 and 6 Archive officers out of 9 answered the questionnaire. Accordingly, the participation rate was 66% (see Table 4).

Table 4. Rates of participation in the questionnaire

	Total number	Number of the responders	Rate of responders	Rate of the unresponsive
General Director	8	5	63%	37%
Head of Department	42	28	67%	33%
Records/Archive Personnel	9	6	67%	33%
Total participation rate	59	39	66%	34%

4.3.3. Personal Benefits

The user groups gave a 100% approval of the benefits of ERMS from a personal point of view. Of these benefits, accessing to documents and facilitating the process were the leading ones (85%). In addition, the documents/archive personnel approved %100 for the benefit of encountering less complaints and conflicts when accessing to the information about the documents. It can be interpreted that the ERMS makes the documents/archive personnel feel safer regarding the issue on which they reached a consensus. The heads of departments prioritized the benefit of having a better, faster and easier process (89%) (see Fig. 1).
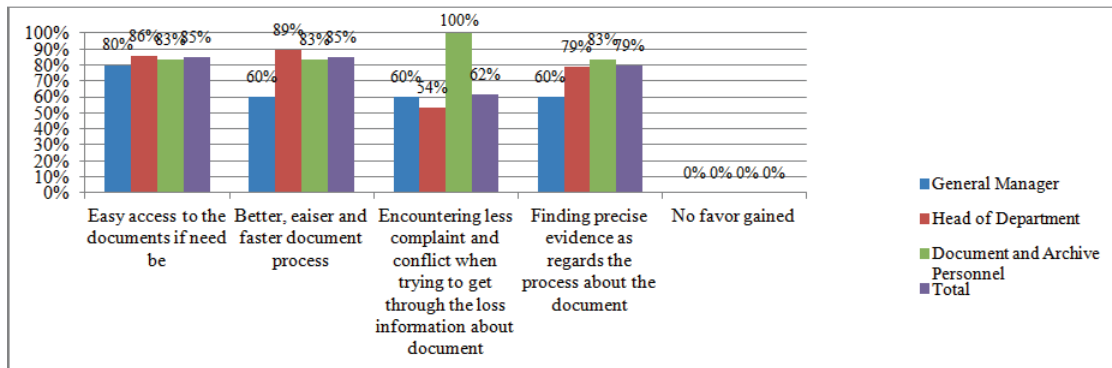

Fig. 1. Personal Benefits

4.3.4. Institutional Benefits

From the user groups' point of view, that ERMS's made positive contributions was approved 100%. When looking into the institutional benefits, of the highlighted benefits, it can be seen that to get documentary formal communication easier and to get record system healthy were given 92% approval. Over being given 50% approval for all institutional benefits, which were listed in the questionnaire can be interpreted as that ERMS is accepted very beneficial in terms of the institution. (see Fig. 2-3).
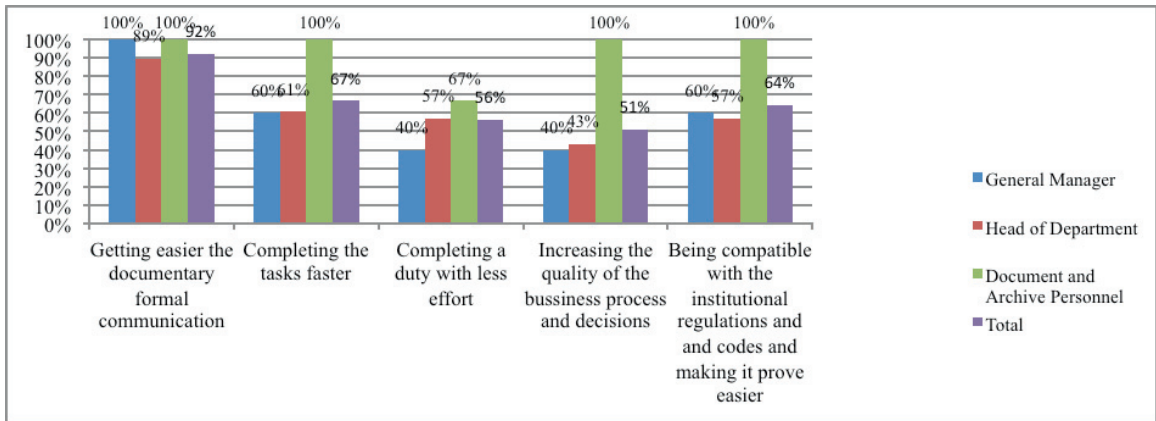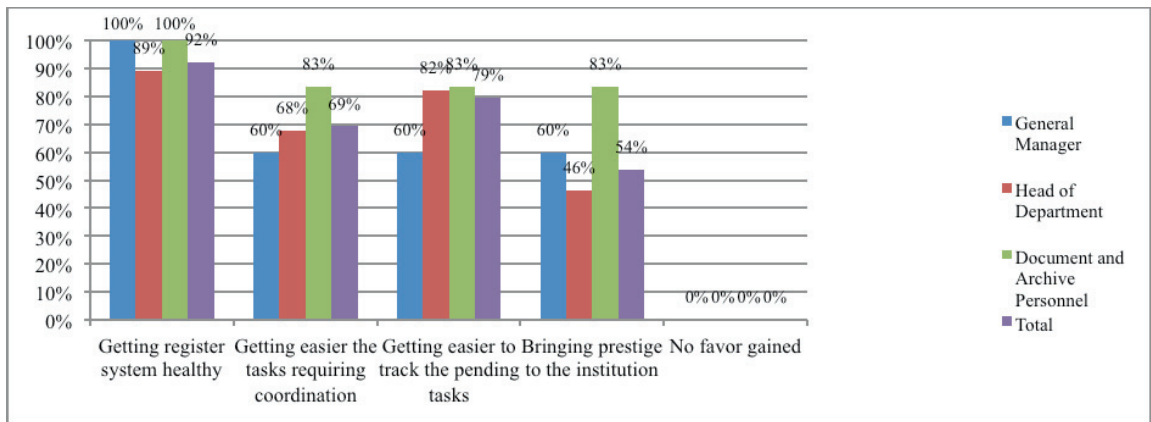

Fig. 2. Institutional Benefits (1)

Fig. 3. Institutional Benefits (2)

4.3.5. Social benefits

Of the user groups, only 14% of the head of departments expressed that ERMS is not beneficial in institutional terms. According to all users, the ones who think that ERMS is beneficial in social terms, constitute a high rate of 90%. Of the social benefits, the highlighted benefit is the correspondence being compatible with the formats, which is defined in the regulations (see Fig. 4). The relatively low rates of the social benefits is evaluated to stem from that the Ministry of Development tasks are not directly relevant to the citizens, but to the other public organizations.
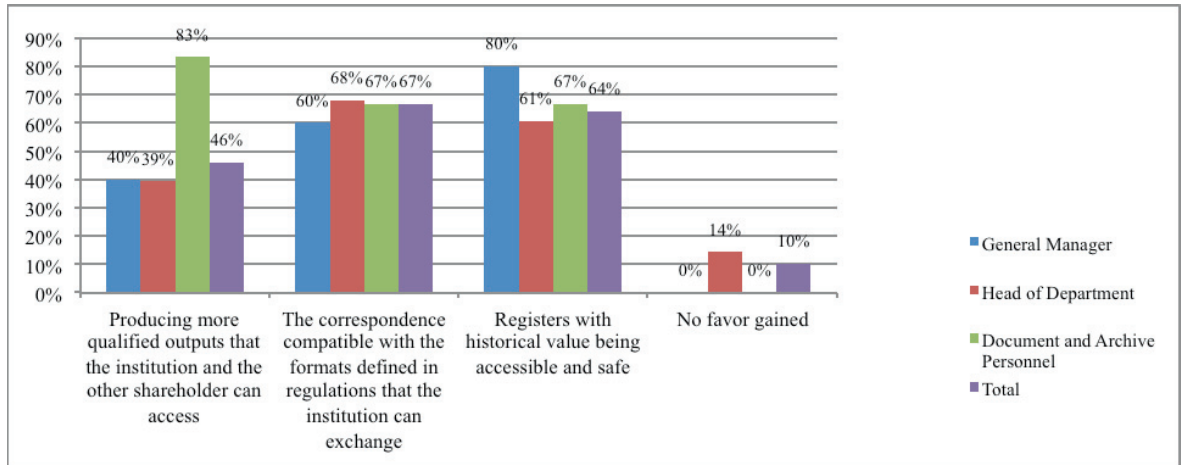
Fig. 4. Social Benefits

4.4. Evaluation of the findings

It is clearly understood from the benefit analysis of ERMS that all the user groups have agreed upon the significant benefits of the system. In the questionnaire, the expressions relating to the robustness, reliability, healthiness and accessible features of the system were asked by using 5-point scale, and for all these elements, 4 and around the average results of 4 were obtained (see Fig. 5). These results were interpreted as that ERMS, for being beneficial to the users, should be a reliable system on which the document processes can be made easily, the access to the records should be easy and the document tracking and record system should be healthy. Furthermore, the end of the year at which MD-er application was activated, according to the questionnaire applied to the Ministry personnel, the satisfaction rate from the in-house IT services has increased, from the previous year number of 71% to 77%, by 6 points. In addition to the share of a lot of information system and service, it can be told of the positive contribution of MD-er in this increase.
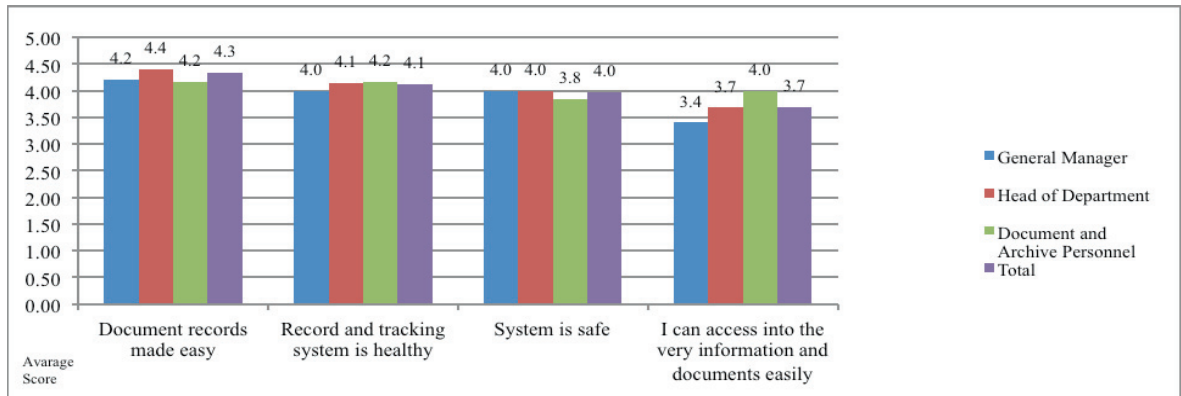

Fig. 5. User Reviews for MD-er

5. Conclusion: suggestions for more efficient ERMS and the State

The contribution of the successful ERMS to the in-house productivity is clearly seen. For having this expected contribution made to the functioning of all the institutional structure, it is essential that the official document

communications among the institutions be made on fully electronic media as well. Turkey, by making a great progress in this field, made the necessary definitions and technical infrastructure be ready within the scope of the e-correspondence project. In parallel with this, the appropriate legal and technical infrastructure was established on the transmission infrastructure too. After this, the regulation of which preparatory work has been completed should be brought into existence. By means of this, the document processes in which more efficient and totally paperless environment is functioned nationwide will be achieved.

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