

# IMPLEMENTATION OF ELECTRONIC DOCUMENT MANAGEMENT SYSTEM (EDMS) IN MACEDONIAN COMPANIES

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## *Abstract*

Modern working conditions and the great possibilities of electronic communications have a major impact on the need for digital management of the growing number of information. This business information can be in different format: text, tables, graphs, presentations, project documentation, e-mail, audio, video and multimedia contents, etc. Basically, in most cases that are unstructured data, which makes it difficult to use them.

The paperwork in companies that has been generated in last decade mostly is generated in an electronic form and is not functionally related to the existing printed documentation. This situation creates a high probability of loss or permanent destruction of a number of significant data. Also, companies have problem with irrational spending of human and material resources and inefficient operations. From this aspect, companies has a need for the application of an Electronic document management system. The application of information technology for document management allows organizations and institutions to increase productivity, efficiency and competitiveness in today's dynamic environment.

The main aim of this paper is to understand the significance and level of implementation of the Electronic document management system (EDMS) in various organizations and institutions in the Republic North Macedonia. For that purpose, a survey was conducted that included organizations and institutions from several regions in North Macedonia, from different industries. In the paper will be presented most important aspect of this research through qualitative and quantitative analysis.

***Key words: information technology, document management, standards, competitiveness***

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## Introduction

Documents are an integral part of any organization, whether it is a business organization, a financial institution, a public service institution, a government organization etc. Documents is part of business processes and depending of the way of their distribution depends the efficiency of the business processes. Traditional document management is known as passive file management. Most users ignore organizational rules regarding document storage. Once users receive the documents relevant to their activity, they tend to gather that information. Traditional document management is paper based, with possible loss, fragmentation of information and inaccessibility of information. Because of that, the volume and distribution of documents increases. Documents are edited, archived, classified and stored in accordance with predefined rulebooks and regulations. They usually take up a lot of archive space. When all the paperwork is in paper form, especially in large enterprises where we have multiple departments and services, this is often a problem and creates difficulties. The risks of inappropriate DMS implementation are high costs of finding records and information, failure to comply with set standards, inaccurate data in the system, wrong decisions and reduced competitiveness.<sup>4</sup>

Document management systems enable document capture, editing, digital archiving, and document retrieval at the whole organization level. Also, Document Management System (DMS) is a system (based on computer programs in case of digital document management) used for tracking, managing and storing documents and at the same time reduces the amount of paper documentation. With the implementation of document management systems, it is possible to avoid a number of problems that reduce productivity and increase operating costs. Some of these problems can be:

- employees spend too much time searching for documents stored in an inadequate way,
- employees work with the wrong version of documents because at the same time several versions of the same document exist in circulation;
- decisions are made on the basis of outdated or incorrect information,
- unavailability of some documents and information that employees need,
- multiple storage of the same documents, etc.

Implementation of document management systems must be primarily a strategic decision because documents must be treated as strategic resources, and the critical processes involved in them must be optimized. This should integrate document management, business process automation, web content management, scanning and digitization of paper documents, as well as digital archives at the entire organization level. Apart from improving business processes, organizations must implement document management systems and due to legal regulations (Sarbanes-Oxley, Basel 2, etc.) Such rules have as starting points: information management, data security, transparency data flow and control of data and documents. Working in accordance with those rules is necessary a document management system implemented at the whole organization level.

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<sup>4</sup> G.Pećarina: Interaktivni PDF obrasci, Document Management, Zagreb, 2007

## **Basic features and meaning of Electronic document management system**

The standard features of a good Document management system should include many functionalities but most important are: object searching, markup functionality, printing, document workflows and lifecycles, document security, document links, document status reporting, issuance/distribution document management and remote access. The purpose of document management is to share information, but also, ensuring the availability of documents. The solution to this situation is an Electronic document management system.

Every company needs some kind of Electronic Document Management System (EDMS) in order to control increasing volume of documents. Companies often oppose "this need" because of the cost and complexity of the EDMS implementation process. Namely, the effective use of EDMS requires great changes in working practices, although most technical aspects are resolved by adopting low-cost databases and easy integration with the Windows environment. Effective EDMS should not only control documents but also provide access to them throughout the company, and even to clients or other project participants through Internet or Extranet. EDMS should also centralize data in easily accessible environment, enabling users to easily store, access, and modify information.

EDMS helps users more easily to perform their work and ensure data security and confidentiality, as well as managing business processes. Many of these functions save time, simplify work, protect the investment made in creating these documents, enforce quality standards and provide control. EDMS has many advantages as:

- Generally efficient location and delivery of documentation
- Ability to manage documents and data regardless of originating system or format
- Ability to integrate computerized and paper based systems
- Control of access, distribution and modification of documents
- Provision of document editing and mark-up tools

Electronic Document Management System is now becoming one of the fastest growing back office technologies as many companies are beginning to understand that information in electronic format is not only more immediately accessible but it is also more secure and manageable. Some of the more obvious benefits of these systems are<sup>5</sup>:

- Reduce document access and retrieval times - process transactions are quicker, increase productivity and improve customer services
- Provide secure back-up and disaster recovery compliance – much of data is held on vulnerable media that would not survive a disaster, once it's all stored electronically it can be easily backed up

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<sup>5</sup> [https://www.documentsandrecords.com/facts\\_about\\_electronic\\_document\\_management.html](https://www.documentsandrecords.com/facts_about_electronic_document_management.html)

- Make better use of office space – no more need for multiple filing cabinets and document storage cupboards thus reducing office costs
- Help with legal compliance issues – for example the Sarbanes-Oxley Act requires an efficient document retention policy which EDM will help provide
- Improve document security – much of our paper-based information is very sensitive and yet it is not held securely
- Reduce work and document duplication – no more need to make numerous photocopies for distribution
- Reduce paper and printing costs as well as postage

It can be concluded that with the implementation of EDMS the costs of working with the company documentation are significantly reduced, processes are optimized, there is no need to archive printed documentation, it save time for finding documents, it eliminate the loss of documents, and the current version is always available. Proper Electronic document management systems can bring many benefits to the company, but also, and personal benefits in terms of improving business processes and increasing business efficiency.

### **Implementation of Electronic document management system in companies and institution in R. North Macedonia**

In the research for implementation of Electronic document management system in companies and institutions in the Republic North Macedonia was conducted a survey using an anonymous structured questionnaire. The research covered 138 companies and institutions in the Republic North Macedonia. The companies covered by this research were from different industries: financial institutions, public services institutions, manufacturing companies, government organizations and other organizations and institutions (wholesale, educational institutions, trading companies and services, postal service, telecommunications etc). Namely, the largest percentage of respondents are public services institution with 28%, manufacturing companies with 28% and other organizations(wholesale, educational institutions, trading companies and services, postal service, telecommunications etc), also, with 28%. Government organizations with 13% and financial institutions with 4% follow these. This research shows that, 32% of the respondents have 5-10 years of working experience with documents, 29% of the respondents have 5 years of experience, 25% of the respondents have over 20 years and 14% of the respondents have 11-20 years of working experience with documents.

Due to the limited size of this paper, will presented only those issues of crucial importance for the research.

The first question concerns the volume of paper documentation that are in companies and institutions in North Macedonia. This means whether that paper documentation is increasing or decreasing. The results show that significant part of companies or 54% have some reduction in the volume of paper records. This is primarily due to the technology development and implementation of new methods and techniques for gathering and storage of information no matter if they have implemented Electronic document management system. This is shown in Figure 1.

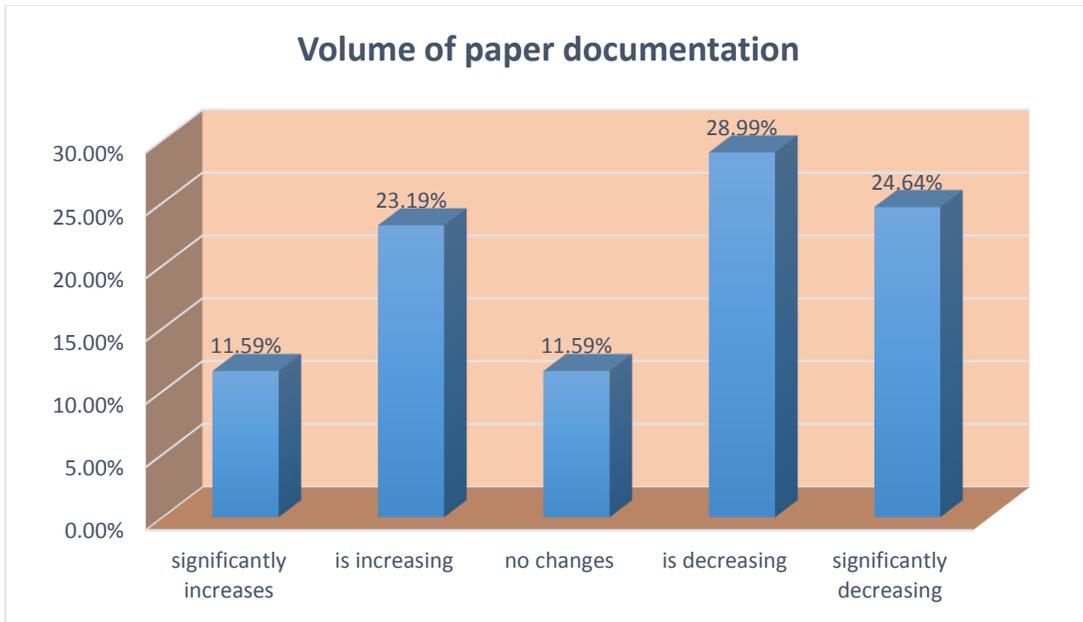


Figure 1. Volume of paper documentation in companies and institution in North Macedonia

The results of the previous question also confirm the answers to the following question, which refers to the volume of electronic documentation in companies and institutions in North Macedonia. Most of the companies and institutions, or 84%, stated that the volume of their electronic documentation is increasing which corresponds to the conclusion of the previous question that companies use advanced techniques for gathering and storage of information. Only a small part of the respondents answered that their electronic documentation is not increasing. These results are presented on the following figure:

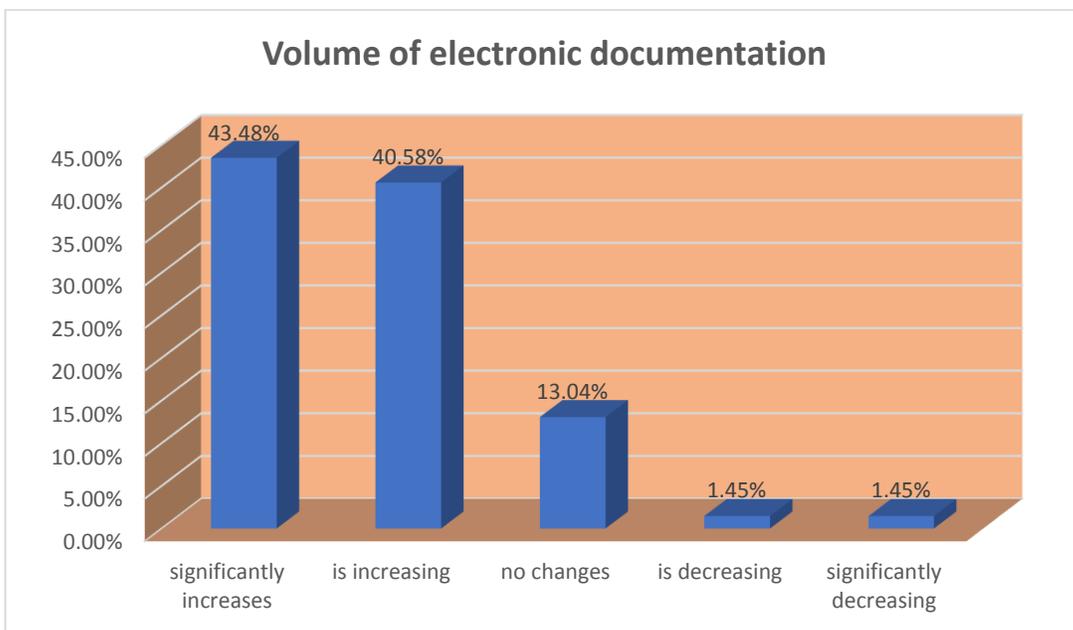


Figure 2. Volume of electronic documentation in companies and institution in North Macedonia

When comparing and analyzing the answers to the previous two questions it can be concluded that the reduction in paper documentation is followed by an increase in electronic documentation. This means that a growing number of companies and institutions in North Macedonia use electronic tools for gathering and storing information. This is possible by the increasing development of technology and the modern way of communication between businesses. Most of the communication in today's world means using of ICT tools and most of the business reports resulting from business processes and business applications are in electronic form. It does not necessarily mean that each of these companies or institutions has implemented EDMS, but the modern way of working implies application of new methods and techniques for collecting, storing and managing information.

Very interesting is the question for the application of standards in the management of documents and records in companies and institutions in North Macedonia. Perhaps the most important and basic standards for documents and records management are ISO 15489 and ISO 9001. These standards should be followed by every company and institution for more efficient management of their own documents and records. ISO 15489 Records management, the first global standard for records management, published in 2001. It was adopted in more than 50 countries and translated to over 15 languages. After a three-year period of review and consultation, a revised version of ISO 15489 Part 1 issued in 2016. It includes core concepts and following principles<sup>6</sup>:

- records, records systems and metadata for records;
- policies, assigned responsibilities, monitoring and training supporting the effective management of records;
- recurrent analysis of business context and the identification of records requirements;
- records controls; and
- processes for creating, capturing and managing records.

The ISO 9001:2015 standard has removed the distinction between documents and records. Both now called “documented information”. As per ISO’s definition, the term “documented information” refers to information that must be controlled and maintained. Therefore, it expects that you also maintain and control the medium as well as the information. Documented information is used as evidence of conformance. According to this standard organizations must establish a documented procedure to<sup>7</sup>:

- approving documents for adequacy prior to issue
- review, updating as necessary, and re-approve documents
- identifying the changes and current document revision status
- making relevant documents available at points of use
- ensuring the documents to remain legible and readily identifiable
- identifying external documents and control their distribution
- preventing obsolete documents from unintended use

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<sup>6</sup> <https://committee.iso.org/sites/tc46sc11/home/projects/published/iso-15489-records-management.html>

<sup>7</sup> <https://the9000store.com/articles/iso-9000-tips-document-control-requirements/>

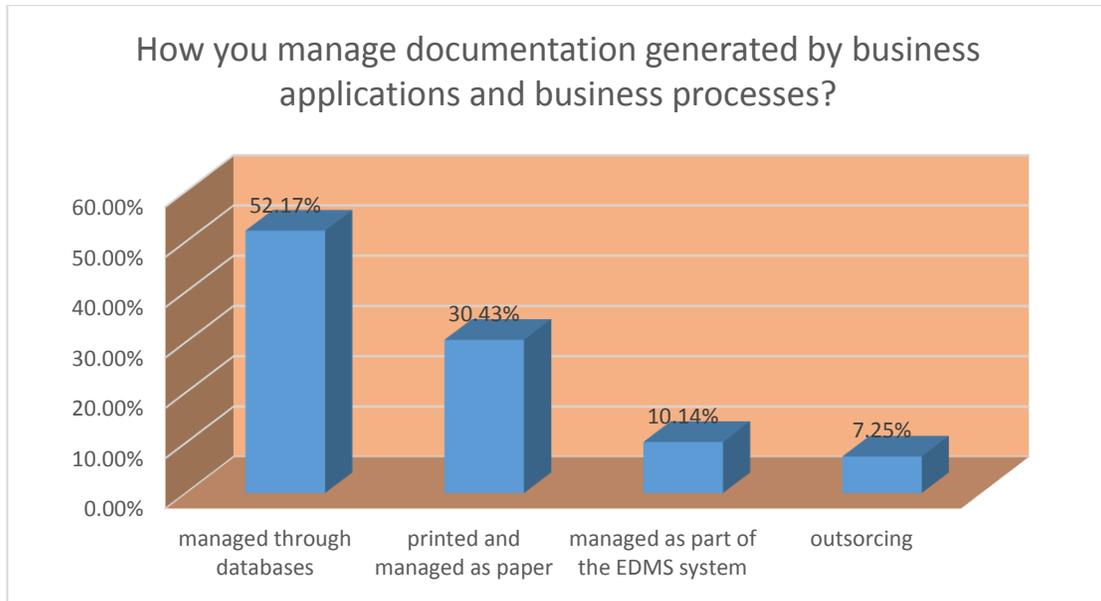
- applying suitable identification if obsolete documents are retained

The results obtained on the question whether Macedonian companies and institutions follow the world standards for documents and records management is shown in Figure 3. According to these results, unfortunately only 45% of Macedonian companies and institutions follow and comply with these world standards. The rest of the respondents are not familiar with standards or not follow the standards related to documents and records management.



Figure 3. Using standards for documents and records management

Regarding the question “How you managed the documentation generated by business applications and business processes”, most of the organizations, i.e. 52% responded that the records generated by business applications and business processes are managed by the business application databases. On the other side 31% of respondents answered that documentation are managed as a paper, 10% responded that it was managed as part of EDMS, and only 7% responded that it was outsourced. Of concern is the fact that documentation is managed as part of the Electronic document management system in only in 10% of the researched organizations. The answers are shown in the following graph:



**Figure 4. Managing of documentation**

From the obtained results can be concluded that only, a small number of companies and institutions in North Macedonia have implemented EDMS. This means that only those 10% who responded that the documentation is managed as part of the EDMS system had implemented Electronic document management system in their operations. Therefore, very few companies have implemented EDMS, although the benefits of using this system are numerous. Companies and institutions are aware of the benefits of using such a system but its implementation is lacking, which may be subject to further research. When referring to the benefits that would be gained by using EDMS, companies and institutions stated that those benefits are of great importance that can be seen from Figure 5. According to the answers most of organizations for most important benefits is considered increased productivity and better customer services with 23%. Other benefits for companies and institutions are: reducing costs with 18,46%, reduce paper storage space with 14,62%, better processing overview with 13,85% and integrated work procedures with 5,38%.

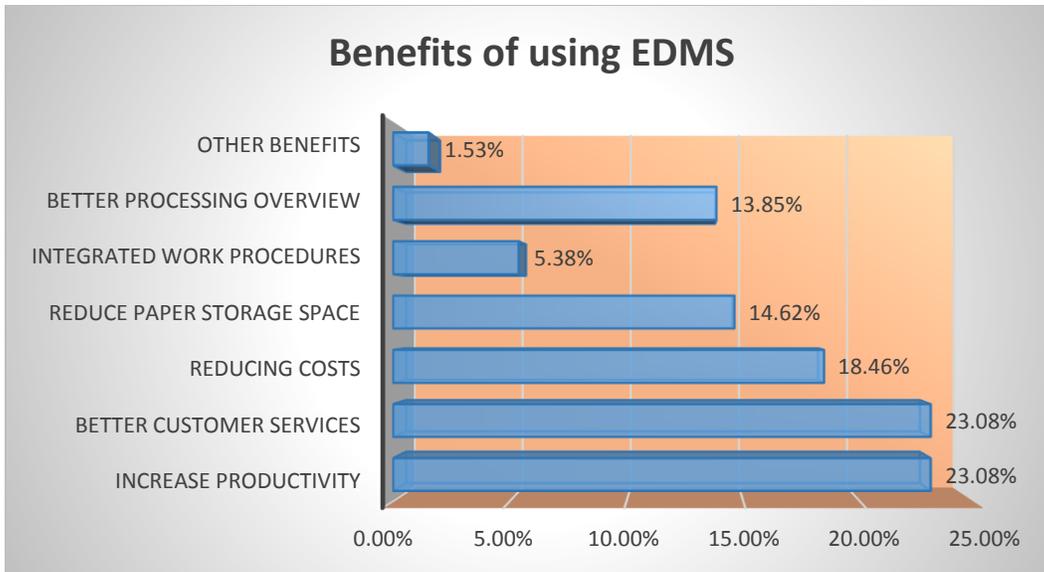


Figure 5. Benefits of using EDMS

However, the support of top management for the implementation of Electronic document management system in companies and institutions in North Macedonia is very encouraging. According to the research, there is a high level of support from the top management for implementation of EDMS, 68.12%. This would mean that most companies and institutions intend to run such a system that would help them in many ways, such as increasing the productivity of their employees, reducing costs, eliminating the storage space of paper documentation, integrating workflows etc.

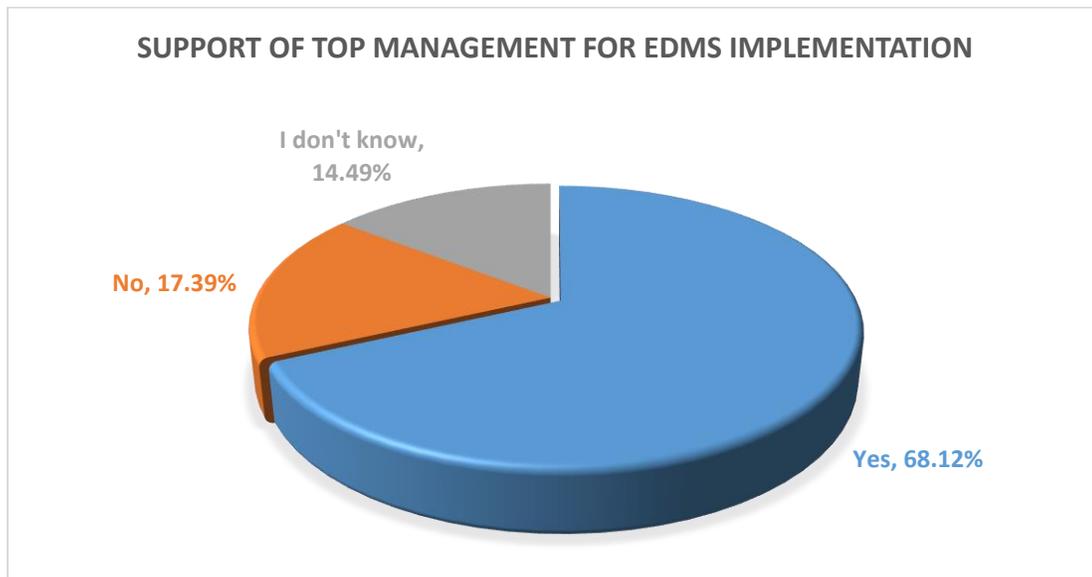


Figure 5. Support of top management for EDMS implementation

## **Conclusion**

The increasing automation and modernization of business processes in organizations means generating large number of electronic documents and records that obtained in a variety of formats: textual documents created in digital form with the help of various word processing tools, scanned paper documents, web pages, tables and graphs, presentations, project documentation, e-mails, audio, video and multimedia content. Due to such a large amount of documentation, it becomes necessary properly manage with such documentation in order to increase employee productivity, optimize workflows, reduce costs etc.

Often in companies and institutions that have not, implemented EDMS there is a high chance of errors or delays in processing documents. This is due to the enormous amount of documentation in organizations that cannot processed without the use of modern software solutions. Therefore, the implementation of Electronic document management system becomes a necessity for any company if it wants to overcome the problems related to documents and records management.

General conclusion from the research for implementation Electronic document management system in companies and institutions in the Republic North Macedonia is that are made some initial steps in this domain, but it is at a very low level. Namely, organizations are aware of the necessity of applying such a system in terms of quality, efficiency and effectiveness of operation, but still do not apply it at all, or insufficiently. This confirmed by the results obtained with this research.

Although most of the companies and institutions in North Macedonia have increased electronic documentation, only 10% of them have some form of Electronic document management system. This means that only a handful of organizations manage documents and records through EDMS. Organizations are aware for the benefits of such an advanced document and records management system, but its implementation is lacking. However, the high support from the top management for the implementation of Electronic document management system points to the fact that companies and institutions in North Macedonia will soon decide to introduce this system into their operations.

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