

# The Era of Electronic Documents and the Challenges Facing Their Management

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## The Era of Electronic Documents and the Challenges Facing Their Management

### *ABSTRACT*

The rapid evolution of computer science and information technology during the past 30 years has led to a revolution in the way of creating electronic documents and information exchanges. Once monolithic, now document is made dynamic in terms of diversification opportunities of commercial exchanges. The central role played by the documents, for the implementation of business processes across different organizations, already enjoys a growing awareness and recognition larger. Standard ISO 15489, Records Management, puts documents at the heart of business processes and promotes their pursuit of an electronic management system that develops them on these premises. The digitization of documents and their creation since inception in electronic form, facilitates the work of the public regarding research in various fields. Therefore, electronic tools of research are not a goal in itself: they are here to allow and assist the researcher and the applicant to identify more quickly the original documents, which are useful for research or his research.

**Key words:** Archives, Records Management, Evolution

## L'era dei documenti elettronici e le sfide da affrontare nella loro gestione

### *SINTESI*

La rapida evoluzione della tecnologia informatica e della scienza dell'informazione nel corso degli ultimi 30 anni ha portato ad una rivoluzione nel modo di creazione dei documenti elettronici e degli scambi di informazioni. Una volta monolitico, ora il documento è reso dinamico in termini di opportunità di diversificazione degli scambi commerciali. Il ruolo centrale svolto dai documenti, per l'attuazione dei processi di business tra le diverse organizzazioni, gode già di una crescente consapevolezza e del riconoscimento più grande. La norma ISO 15489, Records Management, mette i documenti al centro dei processi di business e promuove la loro ricerca in un sistema di gestione elettronica che li sviluppa su queste premesse. La digitalizzazione dei documenti e la loro creazione fin dalla nascita in forma elettronica, facilita il lavoro di ricerca dell'utenza in vari campi. Gli strumenti elettronici di ricerca non sono pertanto un obiettivo in sé: sono qui per consentire ed assistere il ricercatore e il richiedente ad identificare più rapidamente i documenti originali, che sono utili per la sua ricerca.

**Parole chiave:** archivi, gestione documentale, evoluzione

## Era elektronskega gradiva in izzivi upravljanja

### *IZVLEČEK*

Hitri razvoj računalništva in informacijske tehnologije v zadnjih 30 letih, je privedel do revolucije pri ustvarjanju elektronskih dokumentov in izmenjavi informacij. Nekoč monoliten, je danes dokument ustvarjen dinamično, v smislu možnosti razpršenosti komercialnih izmenjav. Javnost se že širše zaveda centralne vloge dokumentov za izvedbo poslovnih dejanj v različnih organizacijah. Standard ISO 15489 - upravljanje z dokumenti, postavlja dokumente v osrčje poslovnega procesa ter spodbuja elektronski sistem za upravljanje. Digitalizacija dokumentov in njihovo ustvarjanje v izvorni elektronski obliki olajšuje delo javnosti pri raziskavah na različnih področjih. Tako elektronska orodja za poizvedovanje niso glavni cilj; orodja so namreč tu, da dovoljujejo in pomagajo raziskovalcem in uporabnikom hitreje priti do originalnih dokumentov, ki so koristni za njihovo raziskovanje.

**Ključne besede:** arhivi, upravljanje z zapisi, razvoj

Epoka e dokumenteve elektronike dhe sfidat me të cilat përballemi për menaxhimin e tyre

### ABSTRAKT

Evolucioni i shpejtë i shkencës kompjuterike dhe i teknologjisë informative, gjatë 30 viteve të fundit ka çuar në një revolucion për mënyrën e krijimit të dokumenteve elektronike dhe të shkëmbimeve të informacioneve. Dikur monolit, tani dokumenti është bërë dinamik sa i përket shumëfishimit të mundësive të shkëmbimeve afariste. Roli qendror i luajtur nga dokumentet, për realizimin e proceseve të biznesit nëpër organizata të ndryshme, tashmë gëzon një pranim dhe njohje gjithnjë e më të madhe. Standardi ISO 15489, Menaxhimit Records, i vë dokumentet në zemër të proceseve të biznesit dhe promovon rrugëtimin e tyre drejt një sistemi të menaxhimit elektronik të tyre që zhvillohet mbi këto premisa. Digjitalizimi i dokumenteve dhe krijimi i tyre që nga fillimi në formë elektronike, e lehtëson punën e publikut të gjerë sa i përket hulumtimeve në fusha të ndryshme. Prandaj, mjetet elektronike të hulumtimit nuk janë një synim në vetvete: ato janë këtu për të lejuar dhe ndihmuar hulumtuesin dhe kërkuesin që të identifikojë më shpejt dokumentet origjinale, të cilat janë të dobishme për kërkimin apo hulumtimin e tij.

**Fjalët kyçe:** Arkiva, Menaxhimi i të dhënave, Evolution

## Introduction

In a world where the production of documents was before a furious growth that are either on paper or digital carriers pushing us to think about managing them better and more adequate. To be more calm and more sure to store these documents without damaging their holder (bearer paper) should be digitalized. These last 25 years the flow of paper documents particularly those in digital have become challenge of every modern society that wants to preserve its memory undamaged.

Technical improvements of equipment and reduction of cost production have helped the popularization of analog information transfer in digital form.

The digitization of documents is an equipment to disseminate documents via a non-material way.

Primarily, there is a real picture, photographed or printed on paper, this is a document, sometimes with centuries old, which we will add a new life: it can be transmitted through communication networks (painting “web”) and sent to the other side of the world, without losing quality of itself.

The most significant example is that of newspapers. So, for everyday printing of Times they were needed 17 tons of lead and other tons of paper to distribute in New York and all over the world. Now, a single click in the morning and the famous paper appear before us.

In our archives until now have been digitized a large number of old documents, microfilms and various photographs. Hard work that makes digitizing staff, consisting by only of a professional archivist is colossal.

It is well known that if need to be improved this situation requires commitment of all the factors as politic as well as economic to help improve the situation.

## Objectives

### Description of the subject:

In good conservation policy, reproduction of documents by microfilming and scanning, can be considered as a true measure of preventive conservation as it allows to stop temporarily or permanently communication and consultation of original documents. While digitization is less widespread because of sustainability issues stakeholders and technologies, it is especially favorable for communication and wide distribution of the content of documents.

Purpose:

Is the presentation of basic techniques for rational use of reproduction tools: microfilming and digitizing.

For microfilming must:

- To distinguish different types of microfilm;
- Understand different uses of microfilm;
- Recognize the material to create microfilming workshop;
- To programmed microfilming of documents;
- To preserve microfilms under the procedures.

For digitalization must:

- To be recognized typology of documents parallel to digitalization process;
- To define material means of adequate digitizing documents;
- To determine ways of colors of digitization objective factors and the type of document;
- To practice the digitization of all kinds of written documents or iconographic;
- To set recording formats depending on use;
- To make all these it must be provided basic knowledge of informatics.

## Definitions

Before we propagated into the details of my presentation, I must to do the virtual hierarchy of document types that we are called to handle. These virtual documents are those created by the computer, so are all digital documents.

### Digital data

Are all documents (physical) digitized and computational documents, stored on a digital carrier. These called as electronic documents.

We call them digital because the computer is designed to operate with a language characterized by two binary digits 0 and 1 that represents a passing or not passing through the processor.

Digital records in my opinion contain two types of documents:

Computer data source which is virtual and the base of which can be found in physical bearer (Leisinger, 1975).

Digital data that are copies of existing physical documents that exist in an archive center.

### Computer data

Computational records are documents primarily generated by a computer or have access to the archive center in digital form through a computer system remote transmitter or recording in electronic carrier (CD ROM, DVD ....)

These are actually text files, database, calculation results, bank data, publications files through a computer, or different files (Recueil de normes françaises, 1992).

Some of these records may contain scanned documents of files, but in this case will only hold the form in which they have entered into center of the archive: digital form (the archive has not physical original document).

As for the photos from digital camera, also will incorporate and this in the group of computer data, because essentially the original model used to generate (Roper, 1990) (immediate scenes of reality) no longer exists, and each drawing on paper is copy (and not source).

### Digital data

These are digital forms of physical documents reproduced as files with points (pixels) that their natural original exists.

These digital documents are received through a device called scanner, which translates analog realities (light from the original) digital signals.

### **Digitalization, a technique with old base**

A device enables the conversion of the original image into electrical signals. This device is called scanner. Scanner is a machine that looks like new, but its predecessors dating from 19<sup>th</sup> century.

The basic principle is the transformation scanning a physical document into electrical impulses through a transmission code.

### **Transmission of written documents in files or slides**

The first device able to transmit images to the two values, black and white, is autographic telegraph (1862), invented by Abbe Caselli and perfect by Meyer. Today called fax (fax), it serves to transmit text and images that are tracked in a letter.

Autographic telegraph binary signals emitted passing through telegraph lines (at that time, the phone did not exist). Binary signals are: 1 = passage running 0 = not running.

So it can be seen better than binary coding is the operating principle of the processors at the heart of computers. It is a process applied to the digitization of images "lines", which are called "bi-tonal". Principle of Caselli is re-transmitted in current machines.

Transformation of drawing into electrical signals occurs on the Caselli autographic pathelgraphie with a direct electrical contact, which at that time simply lacked a performance: photoelectric cells which can analyze the light reflected from each original and return them into electrical signals without physical contact.

### **Photo transmission in the distance**

From the beginning of the XX century, scientists have discovered properties of selenium, the starting point of research on cells photographic analysis, what allowed the Frenchman Edouard Belin to complete the development of a device in 1925 that enable the transmission, such as wireless cable as well as wirelessly hertz images.

Thanks to "Belinograf" (SCOM, 1983) the press for decades published photos of taken news immediately from all over the world.

The epilogue of the story intercontinental transmission of images through an electronic line has more than a century, but is expected to the end of XX century to see his democratization!

### **Objectives of digitizing**

It is clear that can't be digitized all documents that will be it. We should note the fact that why we do the digitalization of documents?

Digitalization is due to:

- Various purposes,
- Use of obtained files,
- Monitoring of Document.

### **Digitizing goals can be:**

In a more general way to preserve the original that is threatened be degraded physically (natural aging process), to distribute documents printed in high definition (publication of books), to distribute documents stored according to archival standards, to destroy the worthless paper documents or graphic material, to reduce the amount of physical documents.

Each of these cases will lead to different approaches, influencing directly into resolve and loyalty of digital documents.

The resolution deals with analytical purity of the document, which means the possibility to show the final details.

Loyalty relates with coloration and with the appearance of the document. Degradation of the coloration affects the truth or validity of the document for the use formats records and documents containing data on the digits that we must be careful that digitization not be nothing but loyal follow of data.

### Using the final file

Using the final file is crucial to choose the quality of digitization, but above all must prevail, insights archivist who should be well practiced in his profession and tracking of documents that will be different truth in the future. There can be transmitted a low-resolution document in high resolution so cannot be edited if a high fidelity CD recording of a concert broadcast from a transistor radio (SCOM, 1983)!

### The portability

Adequate and well Digitalization will be based on recordings of compressed formats, whose natural size will not require subsequent compression, or on the disk where it is stored or for sending to the network.

### Distribution (delivery) of scanned documents

Depending on our needs and use that we want to do, we can distribute scanned documents into different categories, knowing that some of these will vary in several categories at the same time and these are:

- texts that can be read without any graphics application
- texts and images that can be consulted without graphic requirement,
- books and documents for download,
- iconographic documents digitized to preserve or reproduce;
- iconographic documents on the web (Web) (Favier and Neirinck, 1993).

#### Category 1: texts that can be read without any graphics requirement

This is a typical case of administrative or business documents that are on the Internet or that are digitized to be preserved in the archive of the deadlines set by law. For these documents, the main criterion is portability (small size) allowing a faster flow distribution networks on the Internet. Compression of these documents has the appearance of fax with normal quality. There are only black and white, but these are reproduced as Line or bitonal.

#### Category 2: texts and images that can be consulted without graphics requirement.

These are documents that are on the Internet to enable a quick consultation by internet users, or internal network (intranet). Here we are dealing with a degradation of image with low resolution and tight. These are documents that are acceptable on the screen, but their impression is weak. As an example of these would be cited documents consulted in the archive centers, minutes, reports and online newspapers.

Also, here are included low-resolution documents created by any amateur where integrated images which are part of archival documents with iconographic subsidiary based.

#### Category 3: documents or books for downloads.

Some archive centers or libraries throw the data on the Internet for public activities or old books free which have justice theme, to enable downloading and printing by the user; loss of definition is allowed for the images, but their readership must be preserved. This is an intermediate situation between plain text and print quality.

The same technique can be used to put on the intranet documents that aim advisory and that may be in common use. It is possible that these documents are protected individually using the keys and passwords for some recording formats.

**Category 4:** digitized iconographic documents to preserve or to be doubled.

Documents of which we consider to make a digital copy, either because they are at risk of physical destruction, either due to their degradation. These can be digitized without losing their content of the data and quality criteria better of their typology.

For iconographic copy stored due to physical degradation (color photos), it will be resolved coloration advanced ways to keep the original nuances. Maintaining the slide should allow at least printing on paper 18x24 cm.

**Category 5:** iconographic documents of the web (Web)

This category includes low-resolutions images that enable the making available on the Internet for users of the internet, education, etc. ... and the images used as icons to access high resolutions pictures of a phototeques with high resolution online.

File formats are the formats of “image” and are not multi-page document: each image is treated separately to be then integrated into the final document. The resolution is low and serious degradation are acceptable by compression. These files are usually from a sub-sample arising from the digitized document “source” or “owner”.

### Mixed Uses

Many of these categories can be applied simultaneously on a document that is subject to multiple use facility.

This is the case when dealing with a thematic exhibition in which the same files will be used in:

- a brochure with color;
- a placards;
- a website with documents and downloaded images (Leisinger, 1975).

Digitization done in the same time according to certain criteria and the highest quality, then is generated with pictures of lower quality for their transmission on the Internet, via an image processing software. This is called sub-sample image.

### The digitization of archival records in Kosovo

Besides scientific and technical processing of archival records is a challenge in itself their digitalization which for us is very important because the large flow of documents which are preserve in our archives and repeated requests to accept new documents.

### Problems of digitalization

In our archives until now were digitized a large number of old documents, microfilms and various files. Hard work that makes digitizing staff consisting only of a professional archivist is colossal.

It is well known that if we need to improve this situation requires commitment of all the factors such as politic as well as economic to help improving of the situation.

That the work go according to time must be employed at least 6 people who will help the archivist in question to confront with the challenges ahead for the digitization of archival documents is an immediate need. Unfortunately Archives of Kosovo is faced with many problems of different nature:

1. The major requirements for the submission of documents for further safeguards;
2. Provision of personnel;
3. The provision of financial resources.

1.1. It is known that the last war and the transition from one political system to another, are the main obstacles to the progress of work in Archivistic. This is illustrated by the fact that the war destroyed the enough documents and damaged a large number of them, that archivists in general doubted their commitment in the processing and digitalization.

Apart from the problems of war it is also a challenge in itself change of the political system in general. The transition from a one-party system to the much party that led to change of the country's economic policies. Many public factories were closed and a considerable number of companies changed the way of management, what did the production of documents to change the form and the old ones should at all costs be accepted on archive, unprocessed or semi-processed.

1.2. To deal with the problem of digitization must engage much larger number of professional archivists in digitalization. Unfortunately the employment of young archivists has been blocked by political authorities due to administrative overload.

1.3. To make the work of digitization of documents in a professional manner will need the financial means that will enable the provision of new technology which varies from day to day.

When we consider all that was said above, we can conclude that the work is done in the digitization of documents is extremely professional and has given better results than expected. According to the statistics that exist in the sector of digitization over 500,000 slides are digitized and dedicated commitment to this direction it is about greed.

We hope that in the future approach to these problems will be more the all-inclusive and shall be given a deserved place in the archival services.

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## SUMMARY

I think that the archives and work performed in them are of a slightly different nature from other activities, but are very important. I say important because it keeps the written heritage assets that are guidelines for creating a modern society. Therefore digitization of these assets is and will be an immediate issue because only in this way we can save and preserve the originals from damage and their degradation. Fortunately the whole society in which we are living this issue has been in long-term development plan. The digitization of documents has started to become in many municipal centers what helps the archival activity to have a clear vision for the documents that are created and stored in these centers. SAKA work in preserving and digitizing is primary and are being efforts that for the current problems to find a fortunate solution. This solution consists in providing professional staff, the provision of modern equipment for the performance of work related to the digitization and ensuring sufficient means to convey rehabilitation and training organized throughout the world in this field. Hoping that Kosovo Archive be ranked to the rank of modern archives as soon as possible, but to achieve this we need professional help, material from archives and archivists associations from around the world.

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