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FOREWORD OF THE EDITOR-IN-CHIEF

Today's society is facing major changes in the social, economic, and above all technological development, where new information technologies play an important role. Archivists must pay special attention to those changes that affect the implementation of certain procedures of archival theory and practice, which are not few.

We process these procedures within our research, since they are closely related to the issues of security, and especially to the dignity of archivists who work in all areas of archival theory and practice, as well as in archival science research.

Social and technological changes are encountered in archival science in particular when recording or when taking archival material from valorised creators to competent archives. Namely, social changes bring about differences, changes and the creation of new fonds with changed creators, which is the actual creation of new archival fonds. This fact means a certain problem for the principle of provenance, because in terms of recording and informing about the fonds, we need to consider interruptions of the time definitions of a certain creator, but at the same time we know very well that it is actual archival material of an older and not a new creator. Because of these changes, we have to define it in a new time period and also list it under a new creator. Basically, this is actually one archival fond, which we have to reclassify, especially when it is accepted into the competent archive. This problem is reflected in the inventories and records of individual funds, both at the level of the competent archive, as well as in the records of funds for the entire country (SIRANET and VARR (Virtual Archival Reading Room (VAČ)).

Along with all this, we are also faced with the questions of some safety principles. Of course, it is about material protection, i.e. the implementation of all the principles and requirements of long-term protection of archival material on the one hand, and the security of data in and out of archival material on the other hand. Both systems are relatively well-developed in archival theory and practice and archival science according to

the research to date. There is also extensive literature as well as legal and other by-laws, standards, where we find the basis for the implementation of the two systems mentioned above.

Dignity in archival studies, archival science, and archival theory and practice can only be discussed by leaning on some legal foundations and perhaps on the Code of Ethics of Archivists or the Declaration on Archival Studies.

Dignity can be attached to persons - archivists who work in professional, competent archives or in the archive services of creators. They can also create dignity by performing their tasks at a high, professional, scientific or study-research level.

The variety in terms of multidisciplinarity and interdisciplinarity of the contents of the archival material enables them to do so. Whether archivists can expect improvements in terms of dignity in light of social and technological development, especially in the environments where they work, I cannot confirm for sure, but I would like to emphasize that neglecting the dignity of archivists is inappropriate.

Archivists can also create their own dignity by acquiring official degrees and the titles associated with it, depending on the level of study.

The assertion of dignity can also be tied to the definition of archival science as an independent, academic, multidisciplinary science, which does not come by itself. According to current archival legislation, by-laws, standards and the like, archival experts must ensure their implementation and thus gain reputation and dignity. We have generally favourable legislation for archivists, but the question remains whether it is actually implemented at all levels, even in the so-called real world.

I associate the word dignity with a positive attitude towards consideration, respect, mutual understanding, multidisciplinarity, interdisciplinarity and similar attitudes.

All the mentioned definitions and such a presentation of dignity can mean "modus vivendi" (way of life) between archivists and users and providers of archival services, especially in certain situations, as a possibility of coop-

eration. This all complies with legal regulations, proper material protection, and above all, everything must be based on the awareness that ensuring dignity in archival theory and practice will also ensure favourable conditions for the preservation of archival material as cultural heritage in the national and international environment.

Allow me to conclude with the Latin saying "Cuilibet in arte sua credendum" which means "everyone must be believed in their profession". I should add, also believe in our archival science.

dr. Peter Pavel Klasinc,
dean of study programs of Archival Sciences at AMEU-ECM

Bogdan Florin Popovici[1]

ARCHIVING BY DESIGN. ABOUT A RECENT TREND IN ELECTRONIC RECORDS MANAGEMENT IN EUROPE

Abstract

Purpose: *This paper examines the "archiving by design" methodology, recently rather frequently referenced in European professional area.*

Method: *The concept and its main characteristics are analysed and compared with other professional ideas, methodologies and standards and critically examined on its novelties and approaches.*

Results: *The analysis and comparison allowed to localize the "archiving by design" place among the records management activities and to identify roots of professional ideas in other standards or methodologies. It also reveals new evolutions on how management of records is approached and how better solutions for recordkeeping can be identified.*

Conclusions: *Archiving by design is a methodology available for those who want to take care of their records. It may not be THE solution for dealing with records management, but it is a way to cope with it. It may offer better solutions than general standards, since it is tailored on the records creator's needs, but the implementation of solutions and the outcome resides on the willingness and capacity of the beneficiary to use those solutions.*

Keywords*: archiving by design, records management, information governance, recordkeeping*

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1. INTRODUCTION

In recent years, references to "archiving by design" have been present in many professional discussions from the recordkeeping domain. Since I have seen many fashionable solutions to the issue of electronic records, I was curious to find out more about and understand this approach. This paper is therefore the result of this attempt to examine the topic, as well as to understand its content, goals and to have some preliminary thoughts about it.

The present paper will consist of four parts. In the first one I shall attempt to analyse various definitions of this model, then to check on various similarities with other approaches in the past. Next, I shall focus on the proposed guidelines by 'Archiving by Design' Workgroup of the European Archival Group (EAG), in order to illustrate the proposed methodology and I shall conclude with some opinions about the potential and obstacles of this approach, as I see them now.

2. WHAT IS "ARCHIVING BY DESIGN"?

Depending on various projects where the archiving by design approach was employed, there are several definitions which may help understanding the concept. In a whitepaper produced by the above-mentioned subgroup of EAG it is stated that *"During the design or adjustment of information systems, the appropriate measures are taken to ensure that the information becomes, and stays, sustainably accessible"* (EAG-Subgroup, 2023b). The consultant Vincent Hoolt defines AbD as a "*method whereby you define measures and requirements during the development of information systems that ensure the sustainable accessibility of the records in the system. It will allow you to manage the records in line with the core principles of sustainable accessibility"* (Hoolt, 2018). Erik Saaman, strategic advisor at the National Archives of the Netherlands, understands the concept as *„designing information systems to support the work process in such a way that the long-term accessibility of that information is taken into account from the outset. This integrated approach to archiving helps to bridge the gap that often exists between the work process and the archiving process"* (Saaman, 2018). In a presentation given to EAG

meeting in Vienna in 2018, Marens Engelhard says that archiving by design "*...provide[s] conditions for long term accessibility of information in the design phase of information systems*" (Engelhard, 2018).

As it can be noticed, there are two keywords in every definition above. One first concept in the definitions is the "sustainable accessibility", that is the access to records in time. The EAG whitepaper indicates a set of requirements for this accessibility to be achieved: *findable* (information can be found quickly and easily by anyone with the proper rights), *available* (information is available to (re)use as far as legally allowed), *readable* (information can be processed by agents), *interpretable* (the meaning of information is clear and it is known by whom it was created, in which context and for which purpose), *reliable* (information is trusted and complete and based on correct data), *future proof* (information is resilient to changes over time in organization, technology or processes) and *sufficient* (enough information should be captured, according to user needs), though it seems there was not a consensus if the last requirement should be included or not (EAG_Subgroup, 2023a).

These requirements seem close to what was defined as FAIR principles for scientific data: Findable, Accessible, Interoperable and Reusable (Go Fair, s. d.) and also reminds of ISO 15489 characteristics for authoritative records (ISO 15489-1, 2016). It is to be emphasized that similarity is not always at semantic level, but as meanings covered by the terms used (e.g., findability, availability can be seen as parts of usability).

Archiving by Design accessibility	**FAIR principle for Data**	**ISO 15489 for records**
Readable	Findable	Authentic
Available	Accessible	Integer
Findable	Interoperable	Reliable
Interpretable	Reusable	Usable
Reliable		
Future proof		
Sufficient		

Despite accessibility being at the core of definitions, some imprecisions are to be highlighted. Thus, there is no indication about differentiation in preservation terms. Using the "long term" or "future proof" may mean "indefinite",

but in practice it may very well not be the case. It is not clear if the short-term records (read information) are in the scope of archiving by design. Secondly, there is no indication about the reasons for access: if it is intended for the primary or secondary usage (in Schellenbergian meaning). Indeed, even OAIS standard use the "designated community" (that is hard to define for national archives, which have a broad range of users and reasons for access). But "interpretable" or "sufficient" for whom and for what purposes—are the kind of questions that do not have an answer within the archiving by design methodology. Making references to the "changes over time in organisation", it seems the focus is on those records within the original context and not considers the case of records accumulated by other institutions.

Apart from what *sustainable access* would imply, a change of emphasis is visible in describing "archivable" information characteristics. Comparing with ISO 15489, for instance, there is a shift from the focus on the quality of information (read *records*) to the quality of it being accessible in the long run. What matters is to have access to the information, irrespective its status or its diplomatic form of transmission. The concern is not so much the quality of evidence (which is present in part, by *reliable* feature), but on the relevance for beneficiary of the information. It is not the place to assess this shift in detail, but it seems more a practical, user perspective, somehow different from the recordkeeping professionals' one so far.

A second keyword present in all definitions is the "information system". It is a clear statement that the realm of the method does not cover (only) specialized systems for managing digital records, but all system producing digital information. Also, by using constant reference to information system "design" or "development", it is an indication this approach should be used for the IT systems or the old ones that go through a significant upgrading process. It is a method to assess the (recordkeeping) needs to be embedded in the information systems, and not a guideline to archive existing digital information.

A last point I would like to address is about the terminology—the usage of the term "archiving". In archival science, in English, *archiving* may mean: "1. all actions relating to the selection and care of records of enduring value; 2. the storage and preservation of records of enduring value; 3. (in computing) the

offline storage of data from an information system when that data is no longer required for active use". (SAA Dictionary, s.v."archiving"). It is obvious from the definitions above that *archiving by design* is not employed with the first two meanings. The only one closer to the definitions is the third one, which reflects a rather technical perspective. On the other hand, it is true that in many European languages "archiving" is used to designate the inactive records set aside. However, since these other languages are not English, it remains questionable if "archiving" is properly used, from a linguistic point of view.

3. IS THIS NEW?

Archiving by design is a rather recent trend in European countries, but the concept is barely a new one, at least from the recordkeeping professionals' point of view. The idea that recordkeeping must be involved from the first phases of the digital records lifecycle was present for decades. In 1997, in an ICA guide on electronic records, it is stated that: "*In the field of electronic records it is important that archival requirements are addressed during the design of information systems, and that electronic records are carefully controlled throughout their life cycle*" (ICA Committee On Electronic Records, 1997, 21). In 2008, also in an ICA document, it is asserted that: "*Business information has to be kept and must remain accessible to authorised users for as long as required. Design and deployment of business information software must ensure that records can be searched for, retrieved and rendered in accessible formats and media for as long as is required for business and legal purposes. In this context, organisations should avoid the misuse of digital rights management technology and encryption*" (ICA, 2008, 9)

In 2015, Tasmanian Archive and Heritage Office issued several information managerial advices, that contain (at number 17) recommendations for "recordkeeping by design". Sustaining that "*Planning for the management of information as an asset in business systems is far easier if it is done by design as part of the planning and system specification process. Retrofitting recordkeeping requirements into existing business systems is difficult, sometimes not technically possible, and usually expensive.*", the authors defined recordkeeping by design as "a*n approach to recordkeeping that enables it to be built into the design and architecture of information systems, business*

processes and network infrastructure."[2] (Tasmania Government, Office of The State Archivist, s. d.)

In 2018, a posting on the New South Wales Archives blog was titled: '*Record-keeping by design' – opportunities for local government* (The State Archives and Records Authority of New South Wales, s. d.). Recently, in September 2023, a white paper *Records management by design – some considerations*, written by ISO TC 46/SC 11 Archives/Records management, listed a series of standards developed by this ISO group during last decade, suggesting that even without naming it explicitly, the existing standards converge toward a similar approach[3] (ISO TC 46/SC 11 Archives/Records management, s. d.) (Sea also for the set of standards for analysis: Katuu, 2023, 2)

The idea of implementing recordkeeping controls in business systems rather than using specialised systems for managing records is neither new. At least from 2010, MoReq as one possible solutions recommended "the business system as records system": "the adoption of records controls by the business system itself" (DLM Forum, 2011, 18-19). DoD 8180.1, the US specification for electronic records management, was indicating that the acquisition, development, enhancement and the retirement of an IT system must incorporate the records management curation preservation of serrations over records lifespans. All records contained in an IT system or service, managed in accordance with record schedules, which includes positions, must be approved by the NARA authorities (US Department of Defence, 2023, 7).

2 It is worth presenting an extended quotation: "*Taking a "recordkeeping by design" approach aims to ensure that recordkeeping is considered before, at the start of, and throughout the development and implementation of business systems that create and manage records. This approach involves a level of intentionality regarding records management, which indicates a genuine desire to actively manage records well. A "by design" approach to records management enables IT professionals and those responsible for delivering services to the user community to approach records management as a design feature of agency process and activities, rather than a compliance burden to be endured or to which lip-service is given. It shifts the records management focus to risk prevention rather than compliance, using an innovative approach that is anchored in genuine recognition of the importance of records and information. By focusing on the design and operation of information systems throughout their lifecycle, a 'by design' approach supports efforts to address information risk. Better recordkeeping functionality means that costly records management retrofitting will not be required, generating significant cost savings. A 'by design' approach forces leaders and project managers to direct their attention to the policy and operational objectives information projects are intended to achieve, in a way that recognizes records management requirements.*"

3 The listed standards are: ISO 16175-1:2020 Processes and functional requirements for software for managing records — Part 1: Functional requirements and associated guidance for any applications that manage digital records; ISO 15489-1:2016 Records management - Part 1: Concepts and principles; ISO/TR 21946:2018 Appraisal for managing records; ISO/TR 26122 Work process analysis for records; ISO/TR 18128 Risk assessment for records processes and systems; ISO/TR 21965:2019 Records management in enterprise architecture.

4. EUROPEAN APPROACH

Within the European Union, several National Archives have undertaken various interactions with records creators based on archiving by design methodology. The Netherlands National Archives presented their experiences back in 2018 (Engelhard, 2018). Also, the National Archives of Norway had an inspiring experience in dealing with records creators needs, that was shared during the ICA Conference in Rome, 2022 (Sjøvoll et al., 2022). In 2019, the European Archival Group decided in Helsinki to establish a subgroup for "archiving by design". The results of this subgroup, which integrates various European experiences, led to the publication of a white paper and a drafted set of guidelines for the implementation of archiving by design scan (EAG_Subgroup, 2023).

While the whitepaper presents the problem addressed and the solution proposed by archiving by design methodology, the *Guidelines for using the archiving by design scan* goes into details, presenting specific steps to carry out. What is understood as *scan* is in fact an analysis, a survey of the creator's recordkeeping needs. The document proposes 5 steps: Setup and preparations; Documentation; Scan checklist; Workshops or interview(s); Conclusions and recommendations. The preparation includes steps like identifying the key roles, the work processes and information systems associated with them and work planification for the survey. The documentation phase includes the examination of relevant strategic documents, like the one describing the organization's business, the legal aspects, the technical documentations etc. The purpose is to gather information about certain topics, which are listed in the scan checklist. This information will be supplemented by interactions with keypersons from the creator's side (interviews, workshops etc.). The results of these processes will be a set of recommendations on how to best design a system what would fit organizational needs.

What I found particularly interesting is the checklist, because it reveals what is considered relevant from a technical-professional point of view. In the guidelines, 10 areas of interest are defined: information model, information valuer, retention plan, search and representation, preferred/ open formats, metadata, destruction, export, right of access, security. In

order to see if there is a shift of interest in the management of electronic records, I have chosen several standards or specifications which have as subject either electronic recordkeeping requirements for software or authoritative standards in the field of records management:

- DOD 8180.1 – US DoD information technology planning for electronic records management.
- ISO 16175-1:2020 – functional requirements and associated guidance for any applications that manage digital records (ISO 16175, 2020)
- ISO 15489-1:2016 – concepts and principles for records management
- MoReq2010 – Modular Requirements for Records Systems

ABD	DODM 8180.1 (2023)	ISO 16175-1:2020	ISO 154589:2016	MOREQ2010
information model	capture	creation, capture & import records classification managing business classification schemes	creating records capturing records records classification and indexing	record service classification service
information value			appraisal	
retention plan	retention planning disposition	retention, review, transfer	disposition	disposal scheduling service disposal holding service
search and representation	find and update	search, retrieval, presentation, use and interoperability		searching and reporting service
preferred/ open formats		migration	migrating and converting records	
metadata	metadata	metadata capture	metadata	model metadata service
destruction		destruction		
export		export		export service
right of access	access control	access restrictions and permissions	access control use and reuse	user and group service model role service
security		authenticity and security duplication, extraction & redaction		
	reporting and metrics	reporting		
	storage	storage	storing records	
	maintenance	metadata management		

Cross-examining the areas of interest for each of the documents above, one can remark there are several shared areas of interest. Assessing the value of information and developing a plan for retention is common to all documents. Archiving by design methodology is concerned particularly about destruction process, which is only included in ISO 16175. Search and representation, the metadata and the access control or security are other common areas.

Identification of the formats for records is one part of a bigger topic of migration for preservation. This is why it may look strange that the interest is only on formats and not on other aspects to maintain long term accessibility. On the same topic, export is common for other 2 specifications—an important point to avoid technological captivity.

One noticeable area that the methodology puts aside is the process of creation/accumulation of records. Capturing the records—which is common to all other specifications, is no longer considered relevant in archiving by design methodology. It is preferred to do a general survey to establish the information model, with no individualization of the way information is produced or received by the organization; it suffices that the information exists and it needs to be governed. Also, "archiving by design" pays no interest to storage of records. In my opinion, already presented (Popovici, 2022), as long as carrier is no longer relevant for the individualization of electronic records (Duranti & Thibodeau, 2006), the approach is pertinent.

An analysis of what is included and what is missing, I argue that "archiving by design" is focusing not as much on the management, but on information as such: information that exists (and for how long it exists), that can be retrieved by those who have the right to do it, with a slight interest in technological survival. Hence, my opinion is that this focus may place "archiving by design" rather in the area of information governance, than in the traditional records management. It is not focused on records and the quality of those records—as it is the case with traditional records management, but on managing the information that exists within one organization.

5. SOME OPINIONS ON THE METHODOLOGY

For more than two decades, I have had the privilege to witness several trends in the realm of digital records: starting with document management solutions in the 1990s, then with electronic records management systems with dedicated specifications like MoReq, then modules in content management and many others. Looking back, few of them remained as planned and resisted to the challenge of time and innovation, albeit they were (presented as) top solutions at their time. Hence, it is somehow natural to critically evaluate the "archiving by design" methodology.

It is obvious that "archiving by design" is not a magic wand, helping to solve all problems with digital records/archives. It was not claimed or intended to be. Eric Saaman, advisor for National Archives of the Netherlands, admitted that "*it does not provide any specific guidance on how you should do the archiving".* He further noted that „*Digital archiving (...) cannot be resolved by formulating a total solution in advance and then implementing it according to a set plan. The problems are too diffuse for that, the causes too wide-ranging, the interests are contradictory, and we do not know exactly what an effective solution looks like".* On the other hand, as it was shown above, to cope properly with digital records means to get involved from the inception of their existence. "Archiving by design" does this, placing itself in initial recordkeeping analysis or, as it is recently promoted, appraisal (see ISO/TR 21946: 2018).

One important limit for "archiving by design" methodology is that it deals with (re)new(ed) systems. Basically, it talks to the future. If a creator has already deployed systems with digital information, the methodology is less, if at all, useful for proper records management or information governance. Until the next technological cycle, other tools or methods should be employed.

Another situation that limits its usability may be determined by specific societal context. In my experience, many (if not most) organisations prefer to purchase business software, not to support (and experiment) their development. In the end, it is a focus on core business; a strong incentive must exist to support the development of a new product rather than to buy and make it work. In such cases, the space for recordkeeping controls implementation is limited by the space offered by producers of the

software. If there are functions or customisations available, then records requirements, identified by "archiving by design" methodology, may be implemented. If not, a producer will not make major changes in its application, as to fulfil recordkeeping exigences.

Finally, I come to the organization willingness to cope with records: what is the size of budget available for recordkeeping? How much can be spent on customisation of a software, as to satisfy the "archiving" requirements? In my experience, there is little availability for organisation to invest too much in this area. And then we again come to the problem of awareness from the records producers, on the importance paid to their records and their management.

Archiving by design is, therefore, a methodological instrument available for those who want to take care of their records. It may not be THE solution for dealing with records management, but it is a way to facilitate it. It may offer better solutions than general standards, since it is tailored on the records creator's needs, but the implementation of solutions and the outcome still resides on the willingness and capacity of the beneficiary to use those solutions.

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TYPOLOGY: 1.01 Original scientific research

Peter Pavel Klasinc[1]

ARCHIVISTICS, ARCHIVAL SCIENCE AND ARTIFICIAL INTELLIGENCE

Abstract

Purpose: *Today, archivistics is defined as an independent, academic, multidisciplinary, and interdisciplinary science. Archival theory and practice, and with it archivistics and archival science, follow the changes introduced by new information technologies. These changes also affect the field of archival sciences by being introduced into research tasks, into digitization systems and through attempts to introduce artificial intelligence into archival science.*

Method/approach: *The author used a descriptive method for a historical review of the definitions of the terms archivistics and archival science, and conducted an experiment on how these terms are defined by artificial intelligence on three different platforms (Chat GPT, You.com, Copilot for Microsoft 365). He analysed the results of the experiment and compared the comparative method with established definitions over time.*

Results: *The results of the experiment showed that modern archival theory and practice is much more complex than it was decades ago. Archival science is undoubtedly interdisciplinary and multidisciplinary, as well as academic. It is connected with other sciences, which indirectly and directly raise the reputation of archives and archival services among creators.*

Conclusions/findings: *In the context of modern terminology solutions, one should clearly separate archivistics as a set of practical knowledge that must be known for successful implementation of complex procedures in the field of archival activity from archival science, which investigates, defines, or tests many theoretical, practical, and other research questions, and which may also be limited to international, national and other existing or planned frameworks.*

Keywords: *archivistics, archival theory and practice, archival science, artificial intelligence, terminology.*

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1. INTRODUCTION

Archival activity, and with it the entire archival theory and practice, is in a whirlwind, which requires archival professionals to consider many professional considerations and thus also updated or new archival-terminological solutions. All this has a significant impact on the future of archival activity in the broadest sense of the word, and in this context also on the development of the concept of *archival science*, including the mission of archival institutions, archival services for creators, the social status of archival professionals, forms, and quantities of preserved archival material and its general accessibility and universal applicability. In this connection, many new fundamental questions arise in addition to the existing ones, among other things the universal definition of the concept of *archival science* in the context of the modern information society and related modern information-technological conditions. These and similar questions are becoming very relevant, especially if the answers to them are generated with the help of artificial intelligence or generative artificial intelligence (for more, see STRIP Tovarne Prihodnosti, 2023).

The contemporary archival challenges are also closely related to the current question of the emergence of digitization and thus the automation of archival professional procedures with the most modern means, which can influence the development of efforts to intensively apply the most modern archival expertise, especially in the management system of archival and documentary material. The answer to this question is not clear-cut, therefore the understanding and quantification of these influences in the field of archival theory and practice has consequences both in the segment of the design and management of archival material and documentary material in the archival services of the creators and, consequently, also on the valorisation, acquisition, preservation, and use of archival material in the individual archives.

The complexity of the problems and related solutions arising from digitization processes throughout the entire life cycle of documents requires more complex and clearly defined methods of professional editing work in archives (Novak, 2021). Related to this are professional work processes

in competent archives, as well as in archival services. At the same time, in those segments where digitization is already established, we perceive new archival professional challenges that require adjusted or even new research, new or adapted work methods, revised terminological solutions, etc., which can also directly affect the definition of the concept of *archival science*.

2. GENERAL DEFINITIONS OF THE TERM ARCHIVAL SCIENCE

Analysing the definition of the term *archivist*ics, which in some cases is a synonym for the term *archival science*, while in others, it is used for the entire routine of archival professional work in the field of archival activity, we can conclude that at first glance the two do not differ very much. From a methodological point of view, they try to define the object and goals of archival activity, and in doing so, they differ in the focus of defining the theoretical and practical approach in relation to the environment in which the activity is carried out. Differences between individual definitions can be detected in terms of different methodological approaches to defining and thus also understanding the concept in time and space, and in the context of technological progress (Melik & Jeraj, 2011).

Vilfan and Žontar (1973, 16) define *archivistics* as a science that studies all the work performed by archives in order to preserve archival material and make it serve its purpose. Due to the pragmatic approach to this definition of the term, they further defined and divided archival studies into 4 subsystems: archivistics in the narrower sense of the word, archival technique, history of archives and archival jurisprudence (Vilfan & Žontar, 1973, 16–17). By defining the term *archivistics*, they actually defined methods and goals, which are limited only to the operations of archives, as it was known in the late 60s and early 70s of the 20th century.

Žontar (1984, 12) defined the term somewhat differently, namely that the archivistics is the science of archival material. According to him, *archival science* is counted among the social sciences. He furthermore pointed out *archivistics* as a young science that began to take shape in the 19th century, but in Slovenia, it took its final shape only in the second half of the 20th

century (Žontar, 1984, 19). *Archivistics*, according to this definition, encompassed archival professional activities in archives, as well as with creators. In this context, the use of the concept of *science* was also important, because it defines both practical archival professional activities for carrying out archival activity and also archival theoretical research.

Kožar and Balta (2004, 135) defined *archivistics* as a social science that studies the development of the methodology of professional work in archival activity, the consolidation of professional and scientific principles, regulations, and standards in relation to archival material as the object of its work from its creation to evaluation of all forms of its values. The authors place *archivistics* within the framework of social sciences. Based on this definition, we can conclude that research in its subject area has found its place in the academic environment and that systematic studies of archival content have also begun to be carried out at all three study cycles at various universities and higher education institutions. The described trends can be observed in American archival theory and practice (Duranti & Franks, 2015, 84–86), as well as in Europe, e.g. Italy (Tato, 2013).

In Slovenia, the last decade has created what is necessary for a new definition of *archivistics* in the broadest sense: preparation of materials for the accreditation of study programs Archival studies at the first Bologna cycle; Archival sciences and records management at the 2nd Bologna cycle, and Archival sciences at the 3rd Bologna cycle at Alma Mater Europaea - European Center Maribor. In this context, *archivistics* has been defined as an independent, academic, multidisciplinary, and interdisciplinary science. In relation to the definition of the concept, the problem of placing it into broader classifications within the field of science and research also arose. Klasinc claims (2019) that it is therefore still an unpleasant surprise that we cannot decide whether archivistics is placed in the field of social sciences or natural sciences. Archivistics must be embedded in both areas due to the comprehensiveness and multidisciplinarity and interdisciplinarity, which is reflected in the archival material. In the systemization segment, the definition was already written down and more precisely justified by Kožar and Blata (2004) and more than 20 years earlier also by Jože Žontar (1984).

Picture 1: Brochures of the archival study programme at 2nd and 3rd Bologna cycle Alma Mater Europaea – ECM (AMEU, 2023; AMEU 2023a)

In the Dictionary of Archival Terminology maintained by the American Archival Society on its website, under the term *archivistics* there is a pointer to *archival sciences* (SAA, 2023a). Under the term *archival science*, it is written that it is a systematic body of theory that supports the practice of identifying, acquiring, authenticating, preserving, and providing access to records of lasting value (SAA, 2023b). Equating the concepts of archivistics with the concept of archival science can represent a semantic problem in the sense that there is no clear demarcation between direct archival professional and archival scientific-research activities, but all of these dynamically flow into each other. In practice, activities on and about archival contents in the context of archival activities take place both at the level of basic and applied research and their implementation. All of this is related to the training of archival professionals both within archival institutions and at the level of universities and higher education institutions.

A closer look at the use of the term *archival science* in American theory and practice shows that the term was already used in the period between the two wars. Holms (1938, 171-185) was one of the first to use it in the paper "*The Evaluation and Preservation of Business Archives*". By 1944, the term was used in at least 4 archival professional papers. Then again in 1963 and 1982 in one contribution each. We can trace a more intensive use of this term in the period from 1992 to the most recent time. The problem is that the definition itself does not indicate in which case the term is used as equivalent to the term archivistics and when as archival science. Thus, exactly the opposite of the European tradition of using this term.

In exactly the same way as the term is defined in the Dictionary of Archives Terminology (SAA, 2023b), it is also defined in the Multilingual Archival Terminology (ICA, s. d.). The same definition of the term can also be found in the terminological database, which was built as part of the InterPARES project (s. d.).

Košir (2002) draws attention to the legal aspects of the definition and use of the term *archivistics* and consequently also the term *archival science*, which shows the development of archival science over time and space and the related problems of perception of the term *archival science* at the international level. In doing so, he points out that the development of archival science itself is not complete (Košir, 2002), as a result of which we can understand that the definition of this term is in permanent development and upgrading. This depends on the general technological, social, political, and other developments, as indicated by many practical solutions to definitions throughout history (Košir, 2002; Melik & Jeraj, 2011; Duranti & Franks, 2015; Klasinc 2019).

Looking at a longer period of time, as well as according to specific cultural and geographical areas or according to different views on the definition of the term *archival science*, the term changes or. adapts to new facts, knowledge, or technological aspects. From this point of view, there is no doubt that the concept is dynamic from a substantive point of view, and it is impossible to universally define it at the current stage of archival science. From this comes the thesis that the definition of the concept is adjusted in

the face of greater technological and social improvements and conditions such as, for example. intensive digitization of archival material, which began to develop more widely in Europe in the 1980s. This fact can also be proven through definitions (Košir, 2002; Melik & Jeraj, 2011; Duranti & Franks, 2015; Klasinc 2019).

The theoretical and also the practical question arises of when is the right time to change the content of the definition of the subject concept. As an example, let us cite the change in archival doctrine and, consequently, the adjustment of the definition of archival science in the era of the information society. For example, regarding the relationship between information and archival science, "*we cannot talk about a specific information science within archival science, but only that archival science in its research introduces elements of information science into archival theory and practice, which enables archival professional tasks to be carried out on a high professional basis, but always on the roots and original solutions of archival theory and practice*" (Klasinc, 2003). This finding also suggests that prerequisites must be given for changes in the definition of the subject concept. The terminological solution itself must actually be established in the archival professional and scientific environment.

Today, it seems that modern archival theory and practice is facing new developments and thus also new challenges of redefining archival science. This cycle is directly defined by generative artificial intelligence, and indirectly by other levels of artificial intelligence such as robotics, entity recognition processing, smart cities, etc. In the continuation of this research, we checked the hypothesis whether generative artificial intelligence at the current stage of development defines the concept of archival science in such a way that it corresponds to generally accepted definitions.

3. ARCHIVAL SCIENCE IN THE LIGHT OF THE DEFINITION OF ARTIFICIAL INTELLIGENCE

In the context of archival science, we can define the solutions collectively known as Artificial Intelligence as those that help in generating and managing archival content, context and other relations established in archi-

val material, or use artificial intelligence for many activities in the field of management of archival institutions and archival services among the creators and thus also of the archival material. For the purposes of this paper, we set the same requirement to three different generative artificial intelligence platforms: *Define the term archival science.* Due to the broader reach of the inquiry and thus the assumption of objective results, a simple question was asked: *provide me the definition of the term archival science.*

Based on the above request, Copilot for Microsoft 365 gave the following definition of archival science: "*Archival science is a systematic body of theory that supports the practice of identifying, acquiring, authenticating, preserving, and providing access to records of continuing value. Records can be in various formats, such as documents, recordings, photographs, and data storage devices. Archival science emerged from diplomacy, the critical analysis of documents, and is taught in colleges and universities, usually under the umbrella of Information Science or paired with a history program*" (Microsoft, 2023).

A re-posted query with the same phrase gave a meaningfully comparable result, but the individual phrases and relations to the contents are positioned slightly differently. The second created definition reads as follows: "*Archival science is a field of study that deals with the creation and management of archives. Archives are collections of documents, recordings, photographs, and other materials that have lasting value and significance. Archival science aims to ensure the authenticity, preservation, and accessibility of archival records for various purposes and users. Archival science draws on theories and methods from disciplines such as history, information science, and diplomatics*" (Microsoft, 2023).

In response to the same question, Chat GPT defined archival science as "*Archival science, also known as archivistics, is the interdisciplinary field of study and practice concerned with the principles and methods of identifying, acquiring, organizing, preserving, and providing access to records and archives of enduring value. Archives encompass a wide range of materials, including documents, recordings, photographs, and digital records. Archival science aims to ensure the authenticity, reliability, and accessibility of records throughout their lifecycle, contributing to the preservation of cultural, historical, administrative,*

and legal memory. Archivists, professionals in archival science, play a pivotal role in managing and safeguarding records, facilitating research, and promoting accountability and transparency within society. The discipline often incorporates elements of information science, history, and cultural heritage studies" (Open AI, 2023).

Chat GPT's generative artificial intelligence created a different answer to the same question. The content of the second answer is *"Archival science, also known as archivistics, is the field of study and practice that involves the systematic management, organization, preservation, and accessibility of records and archives. It encompasses the principles and methods related to the identification, acquisition, appraisal, arrangement, description, and dissemination of records, regardless of their format (physical or digital). Archival science aims to ensure the long-term preservation of materials with enduring value, facilitating access for researchers, scholars, and the public. The discipline is integral to the preservation of cultural heritage, institutional memory, and historical documentation. Archivists, professionals in the field of archival science, play a key role in maintaining and providing access to the records that contribute to our understanding of the past"* (Open AI, 2023).

On the you.com platform, the system answers the same question that *"Archival science is a systematic body of theory and practice that supports the identification, acquisition, authentication, preservation, and provision of access to records and archives. It involves the management and preservation of records, both physical and digital, to ensure their long-term accessibility and usability.*

Archival science encompasses various activities, including the arrangement and description of records, the development and implementation of preservation strategies, the establishment of policies and procedures for records management, and the provision of reference services to users seeking access to archival materials.

Archival science plays a crucial role in preserving and providing access to historical records, government documents, organizational records, and other valuable materials that document human activities and societal memory.

Archival science is closely related to other disciplines such as library science, information science, and records management. However, it has its own distinct

focus on the unique challenges and requirements of managing and preserving records and archives.

Archival science is essential for ensuring the integrity, authenticity, and long-term preservation of records, as well as facilitating their use for research, education, and cultural heritage purposes« (you.com, 2023).

When the same question was asked again on the you.com platform, the system generated the same answer as for the first question.

If we summarize the results of the above experiment, we can conclude that the generative answers are more about different descriptions of archival activity and not so much about the definitions of *archival science* itself. The communication gap, which is created in this way, arises due to the insufficient differentiation of the contents of the concepts archivistics, archival science, archiving, as well as archival theory and practice. This is precisely why the definitions of the concept of archival science, which are created by various systems that operate on the basis of generative artificial intelligence, can represent a good starting point for creating a more comprehensive definition of the concept of archival science, which, despite technological support, must still be created by humans.

4. CONCLUSION

Contemporary archival theory and practice is much more complex than it was decades ago. Its complexity is not only reflected in the quantity and forms of archival material, or in the applied methods of archival professional and research work, but above all in the archival terminological solutions. These must be very clearly defined; preferably unique, and above all standardized at the international level. The requirement is all the more relevant, when generative artificial intelligence becomes even more advanced, and which will be used comprehensively and intensively by archival professionals in professional, educational and research work.

In the context of modern terminological solutions, *archivistics* should be clearly separated as a set of practical skills that must be known for the successful implementation of complex procedures in the field of archival activ-

ity, from *archival science*, which investigates, defines, or tests many theoretical, practical, and other research questions and, which may also be limited to international, national, and other existing or planned frameworks.

Archival science is undoubtedly interdisciplinary and multidisciplinary as well as academic. It is connected to other sciences, which indirectly and directly raise the reputation of archives and archival services among creators.

Many of them are closely related to the preservation and use of archival material. We especially highlight history, art history, historical geography, law, medicine, etc. We furthermore also take into account archival auxiliary sciences such as diplomacy, palaeography, sphragistics, heraldry, vexillology, archeography, genealogy, chronology, information and library sciences, records management, etc.

On the practical level, these relations are shaped differently and reach different intensities of expression in a certain time and space in different contexts of processing and usage of archival material. It is also known that the results of professional archival work are generally defined through preserved and accessible archival material, which is organized, catalogued and thus useful to the general public. This is precisely why we must define *archivistics* at the archival operational level in a slightly different way than *archival science* with its scientific research methods, connections and networks, research projects, scientific journals and, last but not least, the writing style of appropriate scientific or popular texts, etc.

The clarity and consistent use of modern concepts from the field of archival sciences and activities of archives and archival services among creators will certainly become the basis for adequate definitions of the contents of archival professional concepts, including *archivistics*, *archival science*, *archival theory and practice*, of course also with the help of generative artificial intelligence.

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TYPOLOGY: 1.01 Original scientific research

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INFLUENCE OF SEMANTIC WEB ON ARCHIVAL SCIENCE

Abstract

***Purpose**: The purpose of this paper is to describe the concept of the Semantic Web, as well as the technologies necessary for its implementation. The paper analyses current research on the use of Semantic Web technologies in the GLAM field. The aim is to find out what are the results of the research and what are the advantages and disadvantages of using Semantic Web technologies in the field of GLAM.*

***Method/approach**: A descriptive method was used to describe a brief history of the Web, the concept and technologies of the Semantic Web, and the Records in Contexts model. A literature review method was used to analyse previous research on the use of the Semantic Web in the field of GLAM (Galleries, Libraries, Archives, Museums) and in the field of archival studies.*

***Results**: Twenty articles from the databases ProQuest, SCOPUS, Emerald Insight and UNPAYWALL were analysed in the context of the Semantic Web and its application in the field of archival studies. Eleven articles related to GLAM and nine articles related to archives were identified and analysed.*

***Conclusions/findings**: More and more institutions in the field of GLAM are publishing their inventories online and, in this context, there is a growing body of research on the use of Semantic Web technologies to facilitate the identification of material and to increase accessibility and usability.*

***Keywords:** Semantic Web, Linked Data, Archives, Records in Context*

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1. INTRODUCTION

The Web, or the "World Wide Web" as we know it today, was invented in 1989 by the British scientist Sir Tim Berners-Lee. The original Web was designed to help scientists research. The basic feature of the web is a hypertext file that contains links to other files and can be viewed using a special tool or browser. The first website address was http://info.cern.ch/hypertext/WWW/TheProject.html and is still accessible on the web. By the end of 1993, there were about 500 web servers. The year 1994, or "Year of the Web", was particularly important for the development of the Web, with two conferences on Web technologies. By the end of 1994, there were 10,000 servers on the Web - 2,000 of which were commercial - and 10 million users (CERN, n. d.).

The concept of the Semantic Web was mentioned in an article written in 2000 by the creator of the Web, Sir Tim Berners Lee. He said that the goal of the Semantic Web is to be able to process data in a way that is similar to databases and mathematical formulas (Berners- Lee et al., 2000). As previously discussed, the foundation of the Web relies on the creation of hyperlinks between documents, yet no such links exist between data. The Web is primarily designed to facilitate human use, not computer applications and data management. For this reason, the Semantic Web, as an extension of the standard Web, allows the structure of the Web to be extended and machine-readable semantics to be created. In this way, we are creating a Web that makes sense and helps us find information, make decisions and solve problems.

To create the Semantic Web or the Web of Data, we need a large amount of data in a standard format that can be accessed and managed by the tools of the Semantic Web. In addition, it is not enough to have access to the data, but the links between the data must also be available (Song, 2014, 6). "*Linked Data refers to a set of best practices for publishing structured data on the Web*" (Linked Data, n. d.). Several technologies can be used to create linked data, but the three basic technologies are: XML, RDF and ontologies.

"Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behaviour of computer

programs which process them" (W3C, 2008). The foundation of XML comprises an entity that can possess connections to other entities and is a component of the XML file's physical arrangement. The logical structure consists of declarations, elements, comments, character references and processing commands (W3C, 2008). An RDF model is generated from the XML file.

"RDF is a data model used to organize semantic data in the Semantic Web" (Liu and Hong, 2021, 1). The output of the RDF model is a knowledge graph containing entities, attributes and relationships. The foundation of RDF and the Semantic Web are entity-attribute-relationship triples. *"In the knowledge graph, triples are called knowledge"* (Liu and Hong, 2021, 1).

"Ontology is the branch of metaphysics dealing with the nature of being" (Oxford reference, 2023). "*Ontologies define a common vocabulary that is used for sharing information in a certain domain. They consist of machine-interpretable definitions of concepts in the domain and the relationships among them. Developing ontologies is useful for the sharing of common understanding of the structure of information among people and software agents*" (Azwari, 2016, 20).

In 2012, the International Council on Archives (ICA) began work on a new standard for describing records based on archival principles. The first version of the new conceptual model, called Records in Contexts (RIC), was published in September 2016. A new full version of the conceptual model would follow five years later, in July 2021. The RIC consists of three documents: The Records in Contexts - Introduction to Archival Description (RiC-IAD), the Records in Contexts Conceptual Model version 0.2 (RiC-CM 0.2) and the Records in Contexts-Ontology (ICA RiC-O). The RIC model takes into account the latest developments in the field of information and communication technologies, as well as archival principles, and is based on the concepts and technologies of the Semantic Web and Linked Data.

2. METHODOLOGY AND LIMITATIONS OF THE RESEARCH

The purpose of this paper is to describe the concept of the Semantic Web and the technologies required to make it a reality. The paper analyses the use of Semantic Web technologies in the GLAM domain, aiming to deter-

mine the research in this area and the results, advantages, and disadvantages of using Semantic Web technologies.

The research examines scientific articles from various databases, including ProQuest, SCOPUS, Emerald Insight, and UNPAYWALL. The study was conducted using the Boolean AND operator to search for articles containing the keywords 'semantic web', 'GLAM', and 'archives' with the following inclusion and exclusion criteria.

Inclusion criteria:

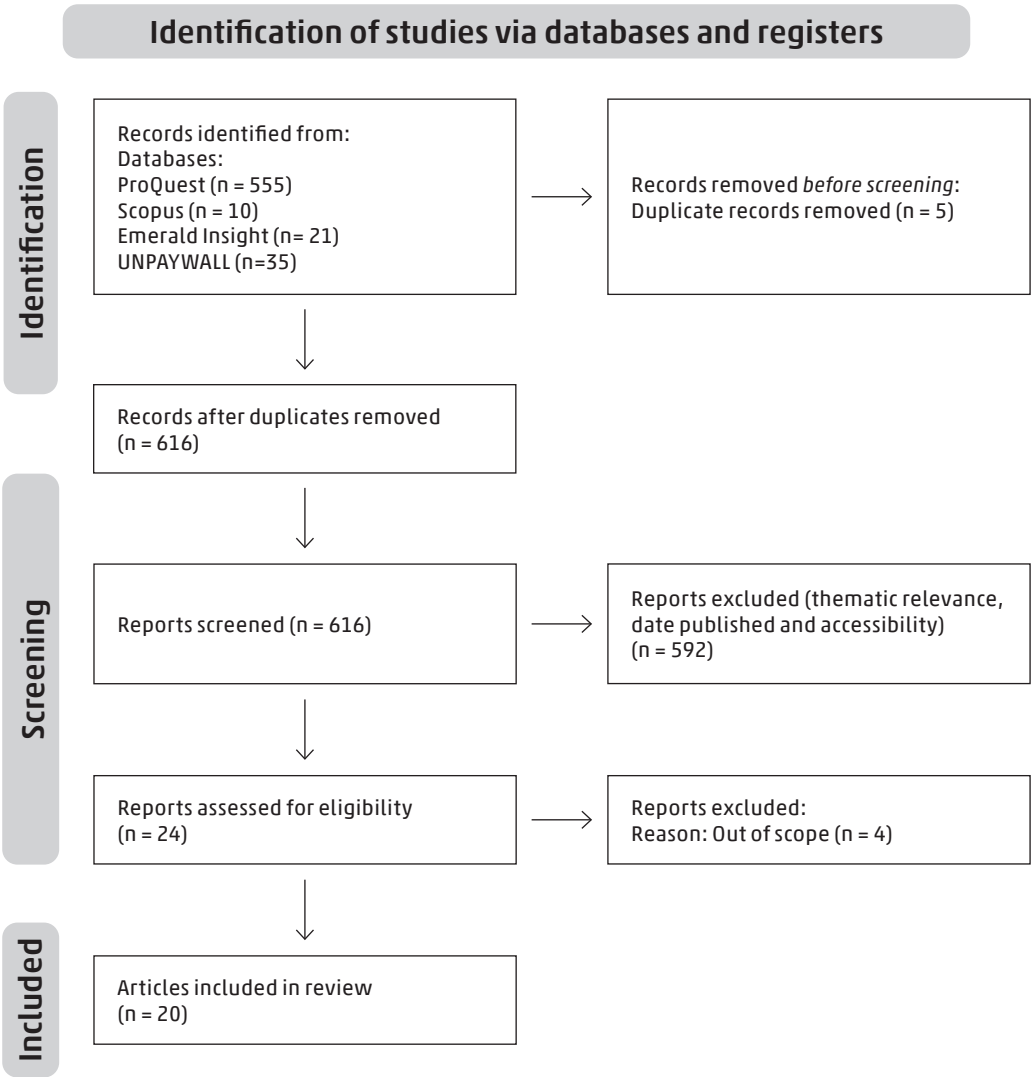
1. Published in English, Slovenian or Croatian languages
2. Published between 2013 and 2023
3. The accessibility of the full text
4. Thematic relevance

Exclusion criteria:

1. Published in other languages
2. Published before 2013
3. Only abstract is available
4. No relevance to the subject.

A total of 24 scientific articles were retrieved, four of which were excluded because they were not in line with the research topic (see Figure 1).

Figure 1: Prisma flow chart (Page et al., 2021, 5)



The analysed articles are presented in an organised manner, with a focus on those that describe the use of Semantic Web technologies in the 'GLAM' domain, encompassing galleries, libraries, archives, and museums. This is followed by an analysis of the articles that describe the use of Semantic Web technologies in archives.

3. THE IMPACT OF SEMANTIC WEB TECHNOLOGIES ON THE GLAM DOMAIN

"The web is emerging as a preferred platform to publish open data and to interlink it together. This has result in the Web of Documents to be emerged as Web of Data" (Lytras et al., 2019, 3).

"Memory institutions such as Galleries, Libraries, Archives and Museums (GLAM) are the main players that collect, organize, disseminate and preserve CHI[3] in various cultural domains" (Wijesundara and Sugimoto, 2018, 59).

During the past decade, there has been a substantial rise in the quantity of digital collections being published by GLAM institutions, remarked Gustavo Candela (2023, 2). These collections contain diverse materials such as maps, images, OCR text, sound, and video.

There has been a rising interest in implementing Semantic Web technologies in the GLAM sector, particularly in the utilization of linked data. Summers and Salo (2013, 5) believe that the reasons for this interest are part of the institutional missions of these organizations: collection, preservation and providing access to records. The authors emphasised the need to create descriptions of the cultural values held by the institutions and the need to share the elements of description. The authors also highlighted the specificity of archives compared to museums and libraries: "*there is too much material to be described at the item level, so description tends to be done at the higher, more abstract level of series or subseries*" (Summers and Salo, 2013, 5). For the authors, the area of enabling permanent identification and digital preservation is the most important area that libraries, archives and museums have in common with linked data. Cultural institutions are responsible for preserving cultural assets for use both now and in the future. "*An essential part of this custodial responsibility is the proper identification of the artifacts that make up their collections*" (Summers and Salo, 2013, 7).

"The application of the Semantic Web principles by GLAM organisations has several benefits including: i) the description of the information with machine-read-

3 CHI – Cultural Heritage Information

able, standard and controlled vocabularies; ii) the enrichment with external repositories; and iii) the reuse by third-party actors" (Candela, 2023, 1).

"Linked Data provides a viable means of archival datafication capable of implementing the FAIR[4] Guiding Principles, creating machine-readable, interoperable, extensible Archival Linked Data suited to interrogation and analysis using digital humanities research methods. Using Linked Data, archival data (catalogue data, metadata, data extracted from the contents of born-digital and digitised archives) can be embedded into the web, enriching and further contextualising archival data, and making it easier to discover, access, and utilise" (Hawkins, 2021, 321).

Mariana Ziku (2020, 2-3) highlighted the need to shift the GLAM field towards interdisciplinary and data-driven approaches. The author contends that the concept of the Semantic Web is driving the implementation of computational techniques in the management and analysis of cultural heritage, which is highlighting the importance of providing open, organized, and interoperable data.

Standards for the implementation of Semantic Web technologies have either been established or are presently being developed in cultural institutions. For libraries, the Library Reference Model (LRM) has been developed by IFLA.[5] Golub et al. (2021, 216) state that the LRM model corresponds to the ISO standard CIDOC-CRM[6], which was developed by the International Documentation Committee of the International Council of Museums (ICOM) in 2006. It is important to note that CIDOC-CRM concentrates on events and processes, whereas the IFLA LRM predominantly models process outcomes (Golub et al., 2021, 216).

Melo et al. (2023, 556) highlight that the RIC-O[7] and CIDOC-CRM ontologies are being used to represent archival information. The RIC-O model is an OWL[8] ontology that represents archival records and their contextual enti-

4 FAIR - the Findability, Accessibility, Interoperability, and Reuse. More information available at: https://www.go-fair.org/fair-principles/
5 IFLA – International Federation of Library Associations and Institutions
6 CIDOC-CRM - CIDOC Conceptual Reference Model
7 RIC – O - Record in Context Ontology
8 OWL - The W3C Web Ontology Language

ties. A tool has been developed to transform ICA[9] records from the French National Archives into a contextual standard known as ICA RiC. *"CIDOC-CRM, which is a model widely used in the Heritage domain, and based on well-documented experiments of modelling Museums, Archaeology, and Architecture domains"* (Melo et al., 2023, 556). Melo et al. (2023, 556) claim that the use of CIDOC-CRM can facilitate semantic integration and interoperability due to the wealth of platforms that provide information in the CIDOC-CRM standard across different domains. The use of the CIDOC-CRM model ensures that, firstly, there is a wealth of information available in the field of cultural heritage for integration and, secondly, there are numerous platforms available for the exploration and retrieval of migrated information (Melo et al., 2023, 576).

3.1 EXAMPLES OF THE USE OF SEMANTIC WEB TECHNOLOGIES IN THE GLAM DOMAIN

Due to the growing use of Linked Data and Semantic Web technologies, a rising number of research studies and projects within this sphere are now accessible. In Sweden, Golub et al. (2021) conducted research on the digital access to cultural heritage across 91 museums. The study utilized 21 different criteria to analyse the feasibility of retrieving information about museum materials. It has been found that users primarily search by subject, posing a significant obstacle for museums as users must be familiar with both the subject itself and the method of information-seeking utilised. This is compounded by the challenge of understanding the exact meaning of terms, synonyms, homonyms and multiple meanings. The authors conclude that "*there is a strong need for the implementation of established controlled vocabularies in museums more widely, not only in Sweden*" (Golub et al., 2021, 242).

Meghini et al. (2019) conducted research on the utilization of narratives on Europeana. The authors perceive the narrative *"as a semantic network, meaningful to the user, consisting of events related to one another, to the entities that compose the events (e.g., agents, places, time, physical objects) and to the digital objects through semantic relations"* (Meghini et al., 2019, 8). The

9 ICA – International Council on Archives

authors note that while the Europeana portal features a metadata-based search engine for digital objects, it does not currently support event-based search or user-friendly visualisation. Within the project, a tool for creating and visualising narratives or NBVT[10] has been developed. *"The NBVT takes as input resources inserted manually by the user or imported automatically from Wikidata"* (Meghini et al., 2019, 11). Wikidata utilizes Semantic Web and Linked Data technologies to systematically gather structured data from related projects, such as Wikipedia, Wikisource, and Wikibooks. Meghini et al. (2019, 11) reported that the portal hosts over 25 million entities and facilitates data export via Wikidata API and Wikdata Query Service, running SPARQL[11] in the background. The primary objective of the NBVT tool is to enrich libraries with a semantic event network, providing relevant context to the digital objects they hold.

Bianchini et al. (2021) provided an overview of VIAF, a crucial tool for identifying entities (people, locations, works and expressions) associated with a bibliographical domain. Bianchini et al. (2021, 2) concluded that for improved integration of libraries within the Semantic Web, it is necessary to incorporate larger stakeholder groups including non-national agencies, museums, archives and users, while employing a bottom-up approach. *"Wikidata is a freely available hosted platform that anyone—including libraries—can use to create, publish, and use Linked Open Data (LOD)"* (Bianchini et al., 2021, 2). Interest in using Wikidata to publish Linked Open Data (LOD) for GLAM (Galleries, Libraries, Archives and Museums) institutions is gradually increasing. *"Libraries' interest in Wikidata is usually focused on LOD and semantic discovery"* (Bianchini et al., 2021, 5". The authors say that libraries show great interest in Wikidata due to LOD and semantic insights. In this paper the comparison between VIAF and Wikidata is described in detail. Initially, VIAF and Wikidata datasets are analysed to compare VIAF and Wikidata clusters to establish their relationships. Based on relevant websites and literature, several general aspects are compared, including scope, aims and identification, and differences and similarities are explored and

10 NBVT - Narrative building and visualising tool
11 SPARQL - SPARQL Protocol and RDF Query Language (recursive acronym)

characterised. "*The semantic web has offered new important tools and chances to libraries, archives, museums and other cultural institutions, and their data are recognized as a relevant asset for building the backbone of the semantic web as to the control of entities of bibliographic and cultural interest. After eight years of existence, Wikidata is playing a relevant role in the publication, aggregation, and control of bibliographic and non-bibliographic information in the semantic web too*" (Bianchini et al., 2021, 23). The authors state that Wikidata relies on VIAF for identifying objects, and hence acknowledges the crucial position of VIAF as the initial system in the data identification scheme for each object (Bianchini et al., 2021, 23).

Gustavo Candela (2023) presented his creation of a structure called the "Data Foundry", which aims to transform metadata sets into the LOD format as it is published by the relevant GLAM institutions. The Moving Image Archive of the National Library of Scotland, the National Catalogue of Scotland and the Catalogue of Translated Literary Works of Scotland were the three datasets used by the framework. "*The evaluation showed that the framework can be useful for other organisations willing to publish datasets as LOD following best practices. Future work to be explored includes the evaluation of additional datasets, the improvement of the framework to include additional types of datasets such as OCR and the exploration of data spaces to include the final datasets*" (Candela, 2023, 11).

Semantic web technologies formed the foundation of the INCEPTION[12] project which was funded by the European Union. Iadanza et al. (2019, 381) highlighted that the development of a cloud platform is the main achievement of the project. The platform aims to achieve the project's objectives of accessing, understanding and enhancing European cultural heritage through enriched 3D models. The integration between Building Information Modelling (BIM) technological solutions and cutting-edge internet-based technologies underpins the project. The INCEPTION platform has been introduced by the authors as a medium for exchanging knowledge amongst professionals, students, scientists, curators, ordinary users, and others. "*The Semantic Web structure interlinks the platform with exter-*

12 INCEPTION – Inclusive Cultural Heritage in Europe through 3D semantic modelling

nal Cultural Heritage available linked data and makes it gradually enhanced by specific flexible data structures provided as project specific ontologies" (Iadanza et al. 2019, 381). *"A methodology of archiving digital data and linking them to the final product is one of the main outcomes. Before and during the creation of H-BIM, the nomenclature (vocabularies, thesaurus, etc.) is critical to maintain a common typology and to support interoperability"* (Iadanza et al. 2019, 387). In conclusion, the focus is on the discovery of solutions that enable the transformation of data in compliance with the technologies of the Semantic Web (Iadanza et al. 2019, 387).

In their 2018 paper, Yongming Wang and Sharon Q. Yang state that libraries have increasingly focused on implementing Semantic Web and linked data in the last decade. Their article offers theoretical foundations of the Semantic Web and Linked Data, along with a global survey of how libraries are transforming existing data into Linked Data formats. *"The road to Linked Data has been bumpy, but there is no way to turn back"* (Wang and Yang, 2018, 18). The authors predict that within the next five years, a significant majority of library data will transform into linked data because of its potential to aid unrestricted and straightforward exploration of online data. Libraries will face the challenge of retrieving bibliographic data from web browser search results. *"What libraries are trying to accomplish will benefit the society"* (Wang and Yang, 2018, 18).

Ranjgar et al. (2022) conducted a study that aimed to design a POI[13]-based data model suitable for cultural heritage organisations. Their work focused on the Sa'dabad complex in Iran, which after the 1979 revolution, underwent a transformation for the display of numerous cultural heritage objects and information relating to events from the monarchy era. The authors selected two museums, namely the Mellat Museum and the Museum of Fine Arts, to exemplify their objectives (Ranjgar et al., 2022, 4). The CIDOC-CRM standard is employed in producing a data model that connects historical data and POIs, while GeoSPARQL is utilised to generate spatial semantics. Ranjgar et al. (2022, 9) state that CIDOC-CRM has a distinct advantage as a top-level ontology, developed without a specific purpose

13 Points of interest

in mind. Ranjgar et al. (2022, 19) propose that additional investigation is necessary to explore the potential of integrating and enhancing the data model with open linked data and global knowledge bases.

4. EXAMPLES OF THE USE OF SEMANTIC WEB TECHNOLOGIES IN THE FIELD OF ARCHIVAL SCIENCE AND SCHOLARSHIP

"The QueryLab portal originates from the need to simultaneously query different archives available both locally and online, to facilitate and speed the process of searching data regardless of the language in which the content is expressed" (Artese and Gagliardi, 2022, 1). The paper outlines an ongoing study by authors Maria Teresa Artese and Isabella Gagliardi, which examines the integration of an ontology with the capacity to generate Linked Open Data for local heritage. The article presents an overview of QueryLab portal functionality, concerning tangible and intangible cultural material and offering tools for users with varying backgrounds and abilities. Artese and Gagliardi (2022, 4) state that QueryLab's design permits exploring various websites that include cultural heritage inventories. Such inventories come in different kinds: those available through web services and those only accessible via dedicated websites, the latter affecting the emergence of data silos. The authors (Artese and Gagliardi, 2022, 6) consider that mapping to appropriate ontologies and converting data into triples for publishing in the LOD cloud is crucial. The usability of the new QueryLab tool has shown to have a positive impact on search performance by visualising the results from various archives in different arrangements. The sharing, preservation and dissemination of cultural heritage is facilitated by the portal. *"We also intend to evaluate if and how the ontology allows to increase QueryLab content at the index level by integrating data exposed as LOD"* (Artese and Gagliardi, 2022, 18).

"In 1987, the French Ministry of Culture (Interdepartmental Service of Archives of France) developed the Thesaurus W. Standardized vocabularies for describing and indexing local administration records, in order to enable the French archival agencies to index descriptions of modern records created by local public services. The use of this thesaurus is mandatory for all territorial archives"

(Grimoüard, 2014, 206). The project aims to develop a machine-readable version of the indexing tool to be integrated into archival institutions' software. Grimoüard (2014, 208) argues that SKOS[14] is a concept-oriented system, placing a significant emphasis on the description of concepts and the connections between them. RDF language is used to describe concepts, allowing them to be combined with properties. The platform, originally designed for archival institutions, has become a significant aspect of the Ministry of Culture's information system on controlled vocabularies. Grimoüard's (2014, 211) research indicates that the benefits for users include easier discovery, evaluation and reuse of vocabularies that can be integrated into websites to enrich the available information.

Goy et al. (2019) propose that ontologies can enhance accessibility to cultural resources, including historical documents. In their study, the authors outline two collaborative projects, Harlock900 and PRiSMHA, with archives of cultural institutions that hold rich archival material, which demonstrate the utility of ontologies in this area. The authors contend that sufficient data, which has been suitably prepared, is not yet available to enable the implementation of contemporary technologies, including machine learning and artificial intelligence, within the domain of historical archives. *"When dealing with historical archives, metadata are usually very poor with respect to the needs of such techniques, and textual resources are frequently not obtainable"* (Goy et al., 2019, 288). The article aims to demonstrate that utilising a rich semantic model can lead to noteworthy enhancements in accessing archival resources, as noted by the authors. According to Goy et al. (2019), the two projects studied share an ideology that the proficiency of a system designed to avail historical resources can be elevated by enabling users to formulate queries based on concepts. The core functionality is bolstered by a semantic layer, exemplified by a semantic knowledge base (RDF triples), incorporating formal portrayals of the substance of archival documents. Two studies have "shown that this approach provides better results if compared with standard access systems" (Goy et al., 2019, 312).

14 Simple Knowledge Organization System

Javier Cha (2018) provides an introduction to the use of digital technologies in the field of cultural heritage in South Korea. *"In 2018, South Korea boasts large collections of heritage materials captured, archived and curated, using cutting-edge database technology"* (Cha, 2018. 228). The author enumerates various benefits of the archives in South Korea. These include an ontology of archival data that is available for online publishing, high-quality machine readability, the capacity to search through 336,267 court records that can be cited, an up-to-date database, and the use of contemporary technologies.

Semantic web technologies are utilised in the BBC[15] archive to enhance content accessibility. Raimond et al. (2013) centre their paper on the "BBC World Service" archive, which employs a mix of Semantic Web technologies, automated linking, feedback, and data visualisation.

Demidova et al. (2014) describe the ARCOMEM software tool, which is used by the European Parliaments of Greece and Austria to create political archives from web and social network sources. *"Through ARCOMEM, the Greek and Austrian parliaments aspire to transform their flat digital content archives to historical and community memories"* (Demidova et al., 2014, 434). According to the authors, entities, topics, opinions and events are the main logical concepts of the software tool (ETOE[16]). The evaluation results indicated the significant semantic data types relevant for retrieving and displaying data. The fundamental logical concepts were topics and their related entities. *"Topic-driven search was very well received and was the preferred starting point for most of the tasks that included exploration of data. Overall, the evaluation verified the ARCOMEM digital preservation approach regarding the provision of many types of semantic data that enables the successful exploration of political web and social media archives"* (Demidova et al., 2014, 452).

5. CONCLUSION

The analysis examines 20 articles on the use of Semantic Web technologies in the GLAM sector. The research reveals that cultural institutions have increas-

15 British Broadcasting Corporation
16 ETOE - Entities, Topics, Opinions, Events

ingly published their catalogues and inventories, and have embraced new technologies, including Artificial Intelligence, over the past decade. *"Not so long ago, the records that were created in all spheres of society and which public archives were accepting for preservation and use, were tangible; those were boxes of paper documents, photographs and maps. Modern digital technologies, as we experience them today, are changing the way of creating records. They are be-coming digital, and digital technologies are changing the way of their use and, above all, their quantity, which is growing exponentially"* (Hajtnik, 2019, 49). In order to successfully incorporate new technologies, cultural institutions must ensure that their data is machine-readable. This can be accomplished through the use of Semantic Web technologies, such as Linked Data.

In the field of GLAM, there are already established standards that facilitate the use of such technologies, including the ISO-approved CIDOC-CRM standard. The ICA has also recognised the necessity of utilising Semantic Web technologies and they are currently formulating a RIC conceptual framework for use in archives.

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TYPOLOGY: 1.01 Original scientific research

Adele Gorini[1]

PERSONAL DIGITAL ARCHIVES: STATE OF THE ART GUIDELINES IN NORTH AMERICA, AUSTRALASIA AND EUROPE

Abstract

Purpose: *The purpose of this article is to analyze the good-practice projects and guidelines about personal digital archives produced by organizations, institutions and other entities in North America, Australasia and Europe.*

Method/approach: *The analysis method builds on the literature review and on the analysis of selected sources focusing on official handbooks and websites for personal digital archiving.*

Results: *In 2023, digital personal archives were reconfirmed as a critically endangered category and attention to the issue was limited to the English and Dutch-speaking world. Citizens in many countries do not have an online reference point, such as institutional websites of libraries and research centers, where they can request and find information on how to manage their personal digital archives.*

Conclusions/findings: *Although almost everyone today produces digital documents, experiencing their loss or difficulty in retrieval, the possible solutions related to the management and preservation of one's digital materials are not yet fully understood or considered. Research centers and public libraries should bring a greater attention to the problem and spread the knowledge based on the results already produced by international organizations, that will arouse the interest of citizens in some accessible security measures.*

Keywords: *archives, digital archives, personal archives, personal memories, personal digital archives.*

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1. INTRODUCTION

In recent years the digitization of society has considerably accelerated, revolutionizing our daily lives in both private and working life, and making electronic devices ubiquitous and indispensable to every human activity. The shift in documentation creation from an analogue to a digital context has had the primary consequence of contributing to an unprecedented proliferation of personal information. In fact, in the digital era, unlike in the analogue era, information is always first transcribed and then transmitted, revealing the centrality of documents, and giving rise to a social, anthropological, and technological transformation that philosopher Maurizio Ferraris, professor of Theoretics at the University of Turin, has defined with the term *dochumanity* (Ferraris, 2021).

However, the ease with which digital documents can be created raises crucial questions about the durability and integrity of the data itself, and how to deal with the rapid obsolescence of the digital tools used to create and manage it. Indeed, the accessibility of digital objects is inextricably linked to the technological context in which they were conceived, and therefore to the hardware and software infrastructure, as well as to the people with the skills to maintain and use them.

The growing awareness of the fragility of digital information and the concern for its long-term preservation has led professionals to recognize that active and well-thought-out measures need to be taken if we want to continue to benefit from the opportunities offered by digital objects and tools.

Surfing the web today, it is easy to come across sites of national and international institutions and organizations dedicated to the preservation of digital cultural heritage and documentation produced by public administrations worldwide. However, it is not only the administrative bodies of each country or prominent personalities who produce digital documents that need to remain accessible and reliable over time, but also that of ordinary people. And it is ordinary people who are most at risk of losing their data, since they are often ill-equipped to deal with digital issues, if not completely unaware of them. This widespread incompetence jeopardizes

access to information not only for those who created it, but also for future generations who might be interested in studying our age.

The curiosity with which we look at our grandparents or parents' photographs, letters, and documents, for example, may be the same with which our children will look at ours. But these precious objects, today digital and no longer analogue, might be inaccessible and the loss of such an individual and collective memory could greatly harm the construction of an information base for generations to come.

If we think about it, it is a paradox: we live in the time of the data revolution and we might not leave any behind.

The following literature review will explore the broad area of personal digital archiving, shedding light on existing practices, emerging challenges, and possible future developments in this evolving field.

2. METHOD

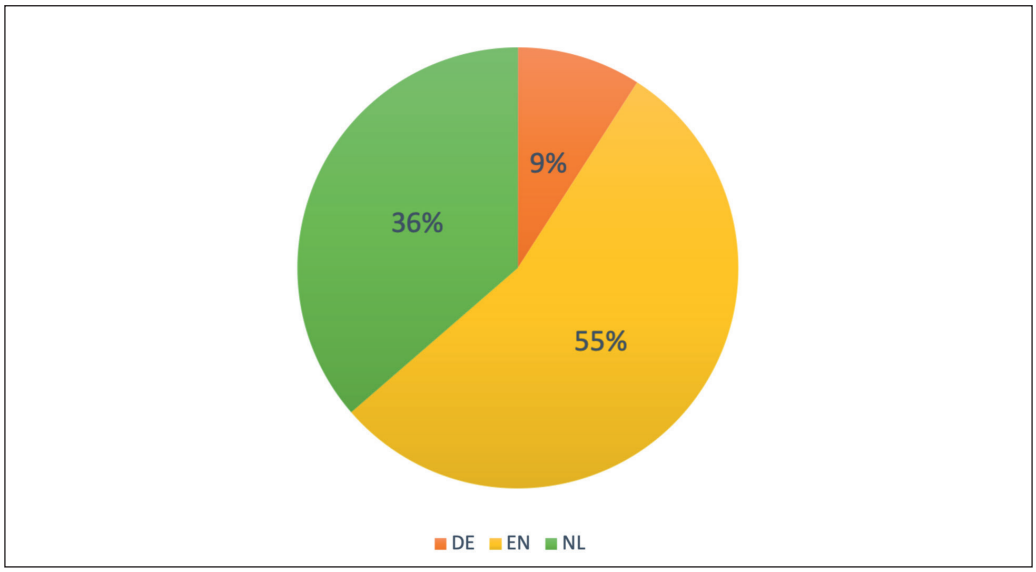
In the first part, this article aimed to explore and conduct a comprehensive review of the existing literature, examining scientific articles, academic documents and relevant online resources related to personal digital archiving. This phase enabled the identification of the state of art, key issues, and challenges in the field.

In the second part, the focus was on identifying and analyzing the most significant projects in the field of personal digital archiving, evaluating their effectiveness and comprehensibility for a non-specialist audience. Particular emphasis was placed on the ability of such projects to reach a wide audience, regardless of the users' technical knowledge, in order to assess their adoption on a wider scale.

The methodology of this research part focused on an in-depth analysis of websites available online in different countries specifically in America, Australasia, and Europe, to explore the landscape of projects related to personal digital archiving. The broad geographical scope of this survey allowed for a broad view of ongoing initiatives, highlighting cultural differences and variations in digital preservation strategies adopted by different communities.

However, despite efforts to include a wide range of geographical areas, the available information was particularly accessible and detailed for United States, United Kingdom, Flanders and the Netherlands, indicating that for many countries the issue of digital archiving has been almost non-existent or is still in its infancy.

Table 1: Graf of the languages used



Another aspect determined by the outcome of the research in geographical terms is the linguistic one (Table 1), where the English language has clearly prevailed over the others (55%), followed by the Dutch (36%) and German (9%). It is likely that the challenges encountered in researching material on personal digital preservation across various geographical areas were compounded by multiple linguistic barriers. These barriers include both the languages known to the researcher and the absence of established and equivalent terms for indicating personal digital archiving in other languages.[2]

Finally, the analysis of personal digital archiving web sites attempted to take into account the temporality of the information. Many of the re-

2 The researcher's linguistic capabilities inevitably influenced the accessibility of information, as language barriers can limit the ability to navigate and comprehend resources in different linguistic contexts. Additionally, the absence of standardized terms for Personal Digital Archiving in various languages may have further hindered the identification and retrieval of relevant materials.

sources consulted presented data and approaches from almost ten years ago, highlighting the need to carefully consider the dating of information available online. In order to maintain the relevance and practicality of the conclusions, it was decided to exclude projects whose documentation was too old and to focus instead on more recent and current initiatives. This decision aims to provide a more accurate and timelier overview of emerging methodologies and practices in this context.

3. RESULTS

3.1 PERSONAL DIGITAL ARCHIVES: AN ENDANGERED CATEGORY

A personal digital archive is the aggregate of digital information that an individual maintains for future uses (Sinn et al., 2017, 223), or in another world, is essentially a system of personal services and information objects that are created, received, and stored, and accessed by individuals through digital devices. Creating a personal digital archive is not confined to a select few; it's a privilege extended to everyone navigating the digital landscape.

Typically, these archives consist of digitized analog materials and born-digital objects. This second category is certainly the most substantial and includes different types of documents, such as: emails, text messages, instant messages, photographs, video, music, voice recordings, medical records, business or study information and other writings, drawings, spreadsheets, presentation, bank statements, bills, taxes, personal websites, and social media etc. The materials that form these aggregations are not only intentionally crafted and stored but are just as frequently generated casually or even inadvertently. These archives include both documents "saved on a personal computer or disks and those share online and stored remotely by a third-party service" (Redwine, 2015, 7), a factor that expands the concept of the archive as never before. In particular, three types of personal information can be identified: the first type of personal information is data that is in the possession of the individuals themselves and for their own use; the second type of personal information is data that belongs to other entities, such as hospitals or banks, that manage information about the individual. In this case, it is not the individual who

directly controls this information, but the institutions or related entities that share it with them. The third type of personal information relates to personal experiences that are not directly owned or stored by the individual, such as information about websites visited, which may be recorded by third parties or stored in online archives (Alam, 2022, 4).

The category of *Personal Records* was introduced to the *Bit list* in 2017 with a classification of 'Critically Endangered', which was reaffirmed in the latest published report (Digital Preservation Coalition, 2023, 54–55). It is also emphasized that the risk level can easily change from 'Critically Endangered' to '**Practically Extinct', which is the higher level of risk,** in the presence of aggravating conditions, such as:

> *"Storage on portable media or poor storage; dependence on devices or processes; dependence on obsolete or proprietary formats; storage media out of warranty; single copies; inappropriate dependence on service provider; inappropriate encryption or password protection; lack of awareness or planning; loss or lack of documentation; over-abundance; inability to act in a timely manner; confusion over intellectual property; lack of digital literacy."* (Digital Preservation Coalition, 2023, 54–55)

In the personal domain, there is a tendency to spread all the information across multiple systems, both because of the systematic marketing of new, increasingly sophisticated storage media, and a lack of knowledge about how the media themselves work. Storage mediums are not all the same but are typically characterized by very diverse technological features: some are magnetic, some are optic, and others are electronic. (Allegrezza, 2019a, 58). Moreover, more and more people are relying on cloud storage services, whose use is not so peaceful as it seems.

The uncontrolled use of repository systems gives rise to several problems. Firstly, it can cause the fragmentation of the document mass, which makes files untraceable: for example, we can no longer remember where we saved a completed document, which means that searching takes longer. Secondly, it is not certain that the information contained in the storage is still readable, due to the obsolescence both of the software and formats

used to create it and the omission of migration and refreshing operations (Ali et al., 2022, 137–138).

Finally, what makes the situation worse is the absent practice of good discarding operations. As this type of archives is characterized by an over-accumulation of documentation, most individuals are forced to resort to the delete option and discard some of their valuable digital assets to free up space on both physical and cloud storage. Due to the fact that files have been saved and encrypted cryptically, i.e. the names assigned to them are not meaningful to their content (Allegrezza, 2021), the possibility of deleting or not finding documents of interest increases exponentially.

3.2 OVERCOMING THE PROBLEMS

People should maintain their own personal information authoritative for few reasons:

- Affective reasons: thanks to our archives, we can look back or review our personal history and past events, recalling our personal feelings (Sinn et al., 2011, 138). Affective factors do not only concern us, but also our family and friends who could inherit our archive.
- Legal and practical reasons: the archive can be seen as a practical tool, which provides evidence of the work and research carried out, necessary to conduct our daily lives (Alam, 2022, 3). In addition, some documents may have a legal function as evidence in particular for the heirs (Harbinja, 2023).
- Historical reasons: as personal archives are an important way for individuals to express their perspectives, they become sources of great value for research by current or future scholars (Redwine, 2015, 9).

For helping people to achieve this goal there is a discipline for dealing with problems connected with digital tools: Digital Preservation. This relatively young branch of knowledge can be defined as "the series of managed activities necessary to ensure continued access to digital materials for as long as necessary" (Digital Preservation Coalition, 2015). Practicing digital preservation and, more specifically, personal digital archiving means trying to keep own personal records authentic, reliable, intact and usable

(Kastenhofer, 2015). Threatening the long preservation of computer documents are mainly hardware or software obsolescence, data corruption, cyber-attacks, natural disasters, and human errors. For these reasons, Digital Preservation is an ongoing process that involves both technological and cultural challenges.

Whereas in analogue personal archives the archival intervention usually takes place after the death of the producing subject, in digital archives the attention to materials is no longer a consequent activity of production but coincides with it. The longevity of information is only guaranteed if criteria for change and risk management are assumed from the outset. The failure to implement effective technology watch will result in a potential loss of access to digital resources and higher costs (Digital Preservation Coalition, 2015).

The tools provided by a well-done digital archiving process help to reduce most of the technical and technological risks. The first step is to break down personal digital archiving into four basic phases: identify, select, organize, and save. Starting from this schematic overview encourage people to engage in different core digital operations such as replication, early action, open formats, selection, and evaluation.

Anyway, all these activities pass by the educational aspect. It is clear, therefore, that only through raising awareness and training people, we can acquire the essential knowledge to adopt secure, sustainable and future-oriented digital archiving practices.

But who may help people in that? Where can ordinary people find good information for managing their archives?

3.3 WHERE TO FIND INFORMATION ON PERSONAL DIGITAL ARCHIVING

At first glance, regulations in the matter of personal digital archiving appear to be inadequate if compared to the attention given to governmental digital archives. In fact, on the one hand, in the public sector we are assisting in consistent growth in the number of norms regarding the creation, management and preservation of digital objects, spreading awareness at all levels: from the public employer which creates the document to that which will store it in the deposit. However, on the other hand, substantial

progress has been made also in the private sector in the attempt to offer precious advice to people on how to preserve personal records. In the first decade of the 21st century, organizations such as the Digital Preservation Coalition (DPC) and projects such as "PARADIGM" or "Memory Lab," along with initiatives by the Library of Congress in the United States, inaugurated a season of significant efforts in the field of promotion and preservation of personal digital files. Within a short time, initiatives on the websites of libraries, universities and cultural organizations have doubled. Today, much information and advice on personal digital archiving can be found online in the form of webinars or short videos on you-tube or in the text sections of websites. These projects, available for free online, seek to help people in the creation, management, and preservation of their digital records. This part of the article will try to list and illustrate the most significant ones (Table 2) in North America, Australasia, and Europe.

Table 2: Most significant project about personal digital archiving

Continent	State	Project name	Language	Promotive structure(s)
North America	Indiana	Personal Digital Archiving	EN	Purdue University
North America	Washington D.C.	Personal Archiving	EN	Library of Congress
North America	Michigan	Digital Archiving	EN	University of Michigan
North America	Illinois	Preservation Self-Assessment Program	EN	University of Illinois Urbana-Champaign
Australasia	Australia, New Zealand	Personal digital archive toolkit	EN	National and State Libraries Australasia
Europe	UK	Digital Preservation Handbook	EN	Digital Preservation Coalition
Europe	Belgium	Archiefbeheer voor ontwerpers en bedrijven	NL	Vlaams Architectuur instituut
Europe	Belgium	Digital Repair Cafe	NL	meemoo, Flemish Institute for Archives
Europe	Belgium, Netherland	Tracks	NL	Network of cultural organisations
Europe	Netherlands	Leren Preserven	NL	Digital Heritage Network
Europe	Germany, Austria	meinDigitalesArchiv.de	DE	Nestor

3.3.1 LIBRARY OF CONGRESS

Personal Archiving is a project of the Library of Congress, the largest library in the world located in Washington, which has offered advice on manag-

ing personal digital materials since 2007, when there were few resources on the topic. Over the years, there has been an evolution of this advice, and today there is a vast repertoire of information (NDIIPP, 2013). The approach taken was consistently geared towards providing background information to give non-experts in the field ideas to start with. Therefore, the main goal is to actively engage the public by reaching out directly to people, both newbies and experts, and collaborating with other organizations in the cultural sector to assist in the development of their public outreach programs. People can find detailed but accessible information on how to deal with the preservation of digital photographs, audio, video but also e-mails, websites, blogs and social media.[3]

3.3.2 PURDUE UNIVERSITY

Purdue University's Libraries and School of Information Studies has dedicated a specific area of its website to a project called *Personal Digital Archiving.* It is a small guide to the basics of preserving and securing one's personal digital archives which is divided into four parts: "The basics", "Preservation by format", "Secure storage" and "Computer history". The language used is simple and common, suitable for a heterogeneous and often unexperienced audience.[4]

3.3.3 UNIVERSITY OF MICHIGAN

The University of Michigan Library has a *Digital Archiving* section on its website that provides guidance on organizing, archiving, backing up and preserving your personal digital files in a variety of media formats, including text, photos, audio, and video.[5] The well-done and up-to-date guide is perfect for a non-expert audience as it uses simple but effective language. Also worth mentioning is the 'General Resources' section where people can find useful bibliographic references and downloadable online resources on the subject. These include a 2012 publication entitled *Preserving Personal Digital Files*, which is a downloadable guide from the University of Michigan Library to offer information about using digital preservation

3 Website available: https://digitalpreservation.gov/personalarchiving/?loclr=blogsig .
4 Website available: https://guides.lib.purdue.edu/PDA .
5 Website available https://guides.lib.umich.edu/c.php?g=992751.

best practices to keep your digital materials safe, so that you will be able to access them into the future (Sarah Wingo, 2012).

3.3.4 UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN LIBRARY

The *Preservation Self-Assessment Program (PSAP),* created by the University of Illinois Urbana-Champaign Library, is not really a personal digital archiving project, but it offers interesting insights for individuals and staff in smaller institutions who need to assess and care for the materials in their collections. Specifically, it is an assessment tool that also contains significant teaching components on audiovisual, cartographic, paper, photographic and photomechanical materials, as well as the following inorganic materials: ceramics, glass, stone, and metal. As a kind of bridge between analogue and digital archives, this project can be useful for the long-term conservation of many now disused media such as CDs and DVDs, where personal digital information may have been stored. [6]

3.3.5 NATIONAL AND STATE LIBRARIES AUSTRALASIA

The National and State Libraries Australasia (NSLA) is an incorporated association that brings together the national, state, and territory libraries of both Australia and New Zealand. The primary objective of their project *Personal digital archive toolkit* is to promote best practices in the management of digital documents generated within the private sector.[7] Through collaboration and shared expertise, NSLA works towards enhancing the preservation and accessibility of digital content, fostering a collective effort among the libraries in the Australasian region. This website page, first published in 2017 and recently reviewed in March 2023, uses plain words, easily understandable even for an untrained eye. For more detailed information, it refers to the Library of Congress sites and to other related resources present on the NSLA site, such as articles and webinars.

3.3.6 DIGITAL PRESERVATION COALITION

The Digital Preservation Coalition (DPC) is a not-for-profit membership organization based in the United Kingdom that focuses on advocating and

6 Website available: https://psap.library.illinois.edu/.
7 Website available at: https://www.nsla.org.au/resources/personal-digital-archive-toolkit/.

supporting the long-term preservation of digital materials. Established in 2001, the DPC brings together a diverse range of institutions, including national and university libraries, archives, commercial organizations, and government agencies. Their primary mission is to raise awareness about the importance of digital preservation and to provide a collaborative platform for sharing knowledge, expertise, and best practices in the field. The Coalition plays a crucial role in fostering a community-driven approach to address the challenges associated with the long-term access and sustainability of digital content, in particular, thanks to their *Digital Preservation Handbook*. This guide is available for free on the DPC website and is intended for a wide and diverse audience, from those who are only beginning to consider managing digital materials to practitioners who have already accumulated considerable theoretical and/or practical experience. It is structured in sections, which simultaneously facilitate reading for both expert and non-expert audiences, allowing quick and easy access to all. Unlike other texts, this handbook is available not only in English but also in other languages, as Italian and French, factor that broadens the audience of possible users of the information.[8] This document is really connected to the Redwine's report entitled *Personal Digital Archiving* (2015), which "aims to describe the issues facing individuals who want to preserve their digital objects, while providing recommendations for records creators and curators to take action" (O'Meara, 2017).

Surfing their website, one can under 'Collaborative Projects' discover the course titled *Novice to Know-How: Digital Preservation Skills for Beginners*, which is designed for individuals who are new to the subject. The course, part of The National Archives' innovative digital capacity building strategy, 'Plugged In, Powered Up,', initiates with a comprehensive introduction to digital preservation issues, outlining measures to tackle these challenges.[9] Subsequently, it delves into more detailed discussions on potential workflows, addressing considerations, outlining necessary steps, and exploring technological solutions. Notably, there is a focus on highlighting

8 Website available at: https://www.dpconline.org/handbook.
9 Website available at: https://www.dpconline.org/digipres/collaborative-projects/n2kh-project.

free and user-friendly options, accompanied by demonstrations of various tools. The course content incorporates a blend of video presentations, textual information, and interactive quizzes. On average, participants typically take two to three days to complete the learning pathway.

3.3.7 VLAAMS ARCHITECTUUR INSTITUUT

The Vlaams Architectuur Instituut (VAi) is an organization based in Flanders, Belgium, dedicated to the promotion and preservation of architectural heritage. One of its notable projects is the management of archives related to architecture, called *Digital archive preservation* (*Digitaal archief bewaren*).[10] Although their target audience is designers, the guidelines provided by the site may also be used to the general practice of personal digital archiving as the language and tone used are completely informal and easy to understand. The recommendations include the use of a central repository for all digital information to reduce the risk of data fragmentation, the protection of digital objects and the use of standardized file formats. For those wishing to broaden their knowledge, the site refers to two other projects: *Digital Repair Café* and *Tracks*.[11]

3.3.8 MEEMOO, FLEMISH INSTITUTE FOR ARCHIVES

Digital repair café is a service of AIDA, a collaboration between Amsab-ISG, ADVN, AMVB, AVG-CARHIF, CAVA, Letterenhuis, VAi, Archiefpunt and meemoo, with support of the Flemish government, and now operated by meemoo, Flemish Inistute for Archives, which helps people capturing content and data from obsolete media.[12] In the site can be find precious information about setup and workflow for inch 3.5 inch diskettes, 5.25 inch floppies, hard discs and jaz drives, magneto and optical discs, memory card etc. It should be noted that most of the schematic advice is given in English while the manuals and other overview content on the subject are in Dutch.

3.3.9 TRACK

Track is the result of a collaboration between several Dutch-speaking cultural institutes. It is designed like a suitcase that contains the tools art-

10 Website available: https://www.vai.be/advies/digitaal-archief-bewaren-1.
11 See paragraph 3.3.8 & 3.3.9.
12 Website available: https://automatic-ingest-digital-archives.github.io/Digital-Repair-Cafe/.

ists, arts organizations, and people in general need for the preservation of their own archive and/or collections.[13] Among the good advice is that on discarding, which is often wrongly impractical in digital archives, since it simplifies document search and management. Track's suggestion is to plan a 'trash day', where you focus only on making digital classification neat and accessible. Moreover, the attention is also focalized on how to do checksum and how to manage passwords securely. The well-designed interface makes the user experience intuitive, effective and efficient: on Track's website it's easy to quickly find the information you are looking for.

3.3.10 NETWERK DIGITAAL ERFGOED

In 2017 the Digital Heritage Network in collaboration with the National Coalition for Digital Preservation (merged into the Digital Heritage Network in 2018), and Het Nieuwe Instituut originated a course called *Leren preserveren* (Learning to preserve).[14] The training is offered in two variants: the collective fee course and the self-taught one, which is free. Since both course versions are dedicated to employees of Dutch national cultural institutions who do not yet have a deep background in digital archives, the educational program is also excellent for ordinary people. The online course addresses the pressing need for digital preservation knowledge and skills within collection management institutions in the Netherlands and consists of three modules:

a) The first module introduces the theme of sustainable access and the digital information object, illustrating its vulnerability.

b) The second module presents which people and actors play a role in sustainable access to the collection and which tasks and responsibilities arise from digital heritage management.

c) The third module gives advice on risk management and how to use the guidelines. Finally, participants are invited to try their hand at solving a digital problem.

13 Website available: https://www.projecttracks.be/overzicht-toolbox/digitaal-bewaren.
14 Website available: https://lerenpreserveren.nl/.

3.3.11 NESTOR

Since 2016 Nestor has been working intensively on the topic of 'Personal Digital Archiving' in Germany and Austria. Their meinDigitalesArchiv.de website provides tips on how to protect personal digital materials in the long term.[15] The website provides practical advice on how to safeguard and archive your personal digital documents, with a specific focus on topics such as digital inheritance and metadata usage. Additionally, experiences of individuals of various ages who had the need to adjust their document preservation methods were shared. Thanks to these practices, they have experienced tangible benefits over time. The language used is very informal and easy to understand also for beginners.

3.3.12 BECOMING OUR OWN ARCHIVIST AND THE ROLE OF INSTITUTIONS

Free websites and online courses offered by national and international institutions are vital to the future of personal digital archiving. They help ordinary people find the right ways to create, manage and preserve their digital heritage. Using simple and accessible language, these resources are easy to understand even for those unfamiliar with the subject. Their role in educating the community about the risks associated with the digital environment should not be underestimated, but rather strengthened. Dissemination of clear and accessible information is essential for raising public awareness and promoting safer and more effective practices in the area of personal digital archiving.

Discovering the world of personal digital archiving could become a game-changer for many everyday people but in the realm of private archives, challenges arise because the commitment required is voluntary rather than mandatory, unlike public archives governed by specific regulations and guidelines. That's why individuals must grasp the reasons behind investing their energies in this endeavor, understanding that putting in extra effort is not a waste of time but rather an aid for subsequent moments. With commitment and the use of straightforward guidelines, we, as citizens, will not be simply passive users and but will become our own archivists.

15 Available at: https://meindigitalesarchiv.de/.

Managing our own digital files correctly produces immediate benefits in our daily lives as we become less worried about data fragility, data loss and data reliability and the significance of this proactive engagement extends also to the facilitation of accessibility for future generations. By orchestrating the management of our digital archives, we not only simplify processes for heirs but also contribute to a streamlined and organized legacy, particularly in legal, financial, and historical contexts. The impact of personal digital archiving catalyzes a broader narrative wherein cultural institutions can seamlessly integrate themselves into the preservation of collective digital histories. This harmonious collaboration ensures a more comprehensive and accurate documentation of both personal and collective memories in the ever-evolving digital era.

However, there is still a long way to go. For *Bit List 2023*, the preservation of personal records is "a public awareness campaign issue and more tools need to be made easily available for people to be able to better preserve their own digital content" (Digital Preservation, 2023, 55). People are progressively recognizing the complexity of managing their digital archives and realizing that, to meet this challenge, they need archival skills, something not essential in the analogue age. It is within this need that the role of archivists must be placed, as they are now called upon to provide secure and reliable answers as never before. This demand offers significant opportunities for the development of the discipline: professionals in the field are responsible for initiating differentiated training courses to impart knowledge and skills to a wide audience, ranging from primary school children to senior citizens, aiming to create a mass "archival literacy". An effective training program should start by providing basic archival knowledge, including concepts such as digital document, digital file, archival record, digital document life cycle, and characteristics of personal and family archives in a digital environment (Allegrezza, 2019, 71–72). As archiving deals with history and, in the modern era, more and more with technology, it should be easily integrated into social studies curricula (Dickson & Gorzalski, 2013) as well as the technological ones. This integrated approach ensures that students gain not only an understanding of the history and significance of preserving

personal information but also the technological skills required to address the challenges of digital archive management. By doing so, it is possible to create a bridge between the past and the present, equipping individuals with the skills to effectively manage their digital information, thus contributing to the preservation of historical and cultural memory in contemporary society. These training initiatives are essential to raise the general level of archival knowledge in a changing digital environment but also to change people's perception of the archival profession (Patterson, 2016). Through educational initiatives, collaborations with the public and the adoption of innovative technologies, archivists can demonstrate the relevance of their efforts in the digital context. By working with the community, archivists can emphasize the value of digital archives as vital resources for understanding history, culture, individual and collective identity. This way, digital archives become a fertile ground for transforming the perception of archivists from passive custodians to active guardians of the global digital memory (Hawkins, 2013).

What we can observe is that, on the one hand, education on personal digital archiving in the United States is not only provided by the Library of Congress but also actively involves universities. This trend reflects a widespread recognition of the importance of personal management of digital documents and the need to instruct individuals on how to effectively preserve their digital assets. The involvement of universities in this educational effort highlights a holistic and collaborative approach to addressing the challenges of digital preservation. The education provided by both the Library of Congress and universities contributes to overcoming the information gap, enabling individuals to acquire essential skills for responsibly managing and safeguarding their digital archives.

On the other hand, in Europe, as well as in Australasia, the predominant focus on personal digital archiving appears to lean more towards cultural organizations dedicated to heritage rather than universities. Unlike the United States, where universities actively participate in educating individuals about personal digital archiving, the European world seems to rely more on cultural institutions that specialize in preserving and promot-

ing cultural heritage. This divergence in approach suggests that if Europe integrates these pinciples into academic curricula, more citizens will be prompted to proactively address the challenges and opportunities associated with management of their digital materials. This collaborative effort in educational institutions could foster a culture of responsible digital stewardship, ensuring that the skills and knowledge required for effective personal digital archiving become integral parts of academic learning.

3.4 LINGUISTIC AND OTHER CHALLENGES

It's worth noting that a significant number of countries have yet to formulate guidelines for their citizens. The linguistic differences in the realm of personal digital archiving pose a significant challenge. The majority of guidelines and advice is primarily provided in English, reflecting its predominant position as the *lingua franca* in digital and scientific communications. On the one hand, this approach secures a wide audience but on the other hand it should not dissuade national cultural organizations from providing guidelines in their own native language.

On this route in Europe there is a noteworthy presence of resources from Dutch institutions provided in their own language which offers a model for overcoming the problem of linguistic barriers, ensuring that a broader range of people can benefit from guidance on managing and preserving their digital archives.

Despite the case of Dutch speaking territories, linguistic diversity remains a challenge, and progress towards greater availability of resources in many languages is crucial to ensure fair and inclusive access to information in this constantly evolving context. When a culture embraces a concept, it often tends to create specific vocabulary to define it. This process reflects the dynamic nature of language and its ability to adapt and grow in response to the needs and experiences of the community. The adoption of a concept in a culture is frequently accompanied by the creation of unique terms and expressions that fully capture the meaning and specific context of that concept within that community. This lexical richness contributes to the precision and complete expression of cultural ideas and practices. This phenomenon was highlighted, for example, by Christian Kuhne, a student

from Germany, who pointed out that the lack of attention to the issue has meant that there was no official German translation of the term 'personal digital archiving' (Kuhne, 2016, 9), creating confusion in the treatment of the subject. Since Kuhne's statement Germany, thanks to the project of Nestor, made significant progresses creating a definition and guidelines which will help German speaking countries with a landmark on the matter of personal digital archiving.

To conclude, successfully managing personal digital archiving requires not only initial efforts but an ongoing commitment over time. This challenge becomes apparent when considering the tendency of institutions, even the most authoritative ones, to address this issue for only limited periods. Currently, many of these institutions (even Digital Preservation Coalition) present websites with outdated information, broken links, or even errors. In such a dynamic and ever-evolving context like personal digital archiving, consistency in updating information is of vital importance.

In the specific field of personal digital archiving, the need to maintain a constant flow of updated information is even more critical. Unlike other sectors, practices, tools, and technologies in the realm of personal digital archiving can evolve rapidly. Therefore, it is essential that online resources not only provide an initial overview but also undergo a continuous process of review and update.

Experience shows that the presence of errors, broken links, and outdated information can significantly compromise the credibility and utility of resources dedicated to personal digital archiving. A meticulous and continuous approach by highly qualified individuals is necessary to ensure that these resources are reliable, accurate, and aligned with the latest developments in the field.

In summary, the sustainability of personal digital archiving initiatives requires a constant commitment to the care and updating of online resources. Only in this way can reliable, up-to-date, and relevant information be provided to the public, contributing to a better understanding and adoption of personal digital archiving practices.

4. CONCLUSIONS

This article has attempted to give an overview of the subject of personal digital archiving through an analysis of existing literature, what is meant by personal digital archives, what documents they consist of, who produces them, what are the problems in this area and why it is worth preserving our data have all been defined.

Subsequently, the digital preservation and good practices in digital archiving were presented as the only way to overcome digital issues and make our information authoritative and long-lasting. It has been recognized that the creation and curation of personal digital archives not only contributes to preserving individual history, but also has practical implications: it simplifies access for heirs and cultural institutions interested in preserving these records, giving them reliability and durability.

The need for widespread education on digital content management for ordinary people was highlighted too and was connected with analysis of existing handbooks, websites, and guidelines accessible for free online. Significant projects in different countries, focusing on North America, Australasia and Europe were thoroughly explored.

It was then noted that there are currently several well-made guidelines and websites dedicated to this topic on an easy-to-understand form for a non-professional audience. However, the lack of updated resources, the discontinuity of efforts dedicated to personal digital archiving and the absence of guidelines in many languages - with English and Dutch prevailing in Europe - underscores the need for constant and international commitment to ensure a fair and inclusive access to crucial resources and ensure the preservation and accessibility of these valuable digital archives for future generations.

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TYPOLOGY: 1.01 Original scientific research

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RETHINKING APPROACHES TO ARCHIVAL THEORY AND PRACTICE IN UKRAINE IN THE CONTEXT OF DIGITAL TRANSFORMATION OF THE SOCIETY

Abstract

Purpose: *Digital transformation of the modern world has led to a radical change not only in the entire life cycle of documents, but also in the perception of archives by the society at the general and individual levels. The widespread use of information technologies in the process of creating documents, transferring, and saving information has made it much more accessible to a wide range of users.*

The philosophy of information society and online access to the digital resources of archives have expanded the scope of interaction between archives and users, led to rethinking of both, the technological aspects of the archivists' work as well as the theoretical problems of appraisal and organizing the archival fonds. In this article we consider the development of archival theory and practice in Ukraine from the perspective of digital transformation of the society as well as through the prism of the challenges faced by Ukrainian archivists in the preservation of documentary heritage under the threats of Russia's war against Ukraine.

Method/Approach: *The research methodology includes consistent adherence to the principles of interdisciplinarity and integrative scientific knowledge, historicism, continuity, comprehensiveness, as well as civilizational, synergistic, and systemic approaches with applying methods of analysis and synthesis, generalization of experience, expert assessments, social observations, and forecasts.*

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The research pays special attention to various concepts, such as digitalization of archives and records management, electronic archives and archival science, information aspects in the development of archival science.

Results: *The development of archival affairs in Ukraine is considered through the prism of Eurocentric approaches and value orientations, dominant in the society. It is determined that, despite Russia's full-scale war against Ukraine, the digital transformation of archives is actively ongoing, intended to enhance the preservation of archival information resources, as well as to ensure access to them for the protection of democracy and human rights, support of scientific research, development of the state and the civil society.*

Conclusions/findings: *the author formulated several proposals for further development of theoretical, methodological, and didactic principles of archival science in the digital age, along with the modernization of educational programs for new generations of archivists and records managers.*

Keywords*: Archival Science; archival practice; archives of Ukraine; digitization; challenges of Russia's war against Ukraine.*

1. INTRODUCTION

Over the past years we have seen substantial changes in the world caused by a global pandemic, climate change, deepening of economic problems and political contradictions. The challenges for Ukraine and the whole world deepened with the beginning of a full-scale Russia's war against Ukraine. All these changes are often beyond our control but affect our life and work, so we have to consider the lasting impact of them to the future of our profession and our activity.

One of the characteristic trends in the development of modern scientific studies is the increased interest in the conceptualization of both natural and humanitarian sciences, including archival science. Over the past decades informational technologies have radically affected the archival sphere in Ukraine. In this article we suggest to look at some key issues of the development of archival theory and practice in Ukraine under these changes, in particular: on the impact of the development of the informational society and digitization processes on Ukrainian archives, on the process of Ukrainian archives integration into the European archival field, as well as on the challenges of war and on the work of the Ukrainian archival community in war conditions, developing theoretical approaches and practices.

The research methodology includes consistent application of the principles of interdisciplinary and integrative scientific knowledge, historicism, continuity, comprehensiveness, civilizational and systemic approaches, the use of methods of analysis and synthesis, comparative studies, generalization of experience, expert assessments, and forecasts.

2. STRATEGIES AND CONSEPTIONS OF DEVELOPMENT

First of all, it should be noted that development of the archival field in Ukraine reflects the general transformational processes that are taking place in all spheres of Ukrainian society. One of the key documents that determined the main approaches and trajectories in accelerating the digital transformation of Ukrainian society was the *Conception of the development*

of the digital economy and society of Ukraine for 2018 – 2020 and the plan for its implementation accepted by the Cabinet of Ministers of Ukraine in January 2018 (CDDESU, 2018).

The Ukrainian government has determined that the main goal of digitization is to achieve digital transformation of existing and create new sectors of the economy, as well as the transformation of spheres of life into new, more efficient, and modern ones. Such an increase is possible only when ideas, actions, initiatives,x and programs related to digitalization are integrated into national, international, regional, and branch development strategies and programs. It was also emphasized that digital technologies should stimulate the development of an open information society as one of the essential factors in the development of democracy in the country.

Undoubtedly, the process of building an information society began in Ukraine much earlier, but in the last few years it gained significant acceleration, which in turn influenced the development of electronic governance, electronic record management and, accordingly, set new tasks and challenges for the archival institutions and archival science. In 2020, the *Strategy for the Development of Archival Affairs of Ukraine* was elaborated for the period until 2025 (SDAA, 2020) that prioritized the concept of digitization of Ukrainian archives as a defining segment of the reform of the entire archival field. Thus a new vision, tasks and approaches formulated in the Strategy, have been dictated by the challenges caused by the new generation technologies as well as global economic crisis and the COVID-19 pandemic. They also took into account the appeal of Ukrainian society for the affirmation of its national identity, historical memory and investment in the future, as well as the need for radical changes aimed at improving the quality and competitiveness of the archival field in new economic and socio-cultural conditions, the spread of a positive image of archival institutions, the requirement of openness and accessibility of archives and also the necessity for accelerated integration of Ukraine into the international cultural space. According to the Strategy, the mission of archival development is to constantly preserve information resources and provide equal opportunities and universal access to them to protect democracy and hu-

man rights, support the development of the state and civil society. At the same time, the level of access to archival information resources should adequately meet the needs of the development of the "knowledge society" in Ukraine.

New challenges for society arose as a result of Russia's full-scale war against Ukraine. They certainly affected the archival field as well, as they demanded the renewal of archival management approaches and practices, rethinking of the importance of archives in society, the role of archivists as custodians and creators of public memory, cultural values, and national identity in wartime conditions. The need to understand these challenges and processes led to the consolidation of the archival community representatives – archival managers, scientists, and practitioners.

Therefore, the continuation of the development and functioning of archival institutions of Ukraine in the conditions of war was a significant result of collective and individual efforts. Moreover, archival science in these difficult times for Ukraine continues to develop, as revealed by numerous publications in specialized journals, speeches in international symposia, and the participation of scholars in the elaboration of the Conception of the development of the archival field until 2026.

Among the main *strategic goals of the archival institutions*, the following were highlighted:

- Ensuring of information needs of the society. Equal access to information, knowledge and services that it includes acceleration of digitization of archival documents; online 24/7 access to archival information resources; improvement of the quality and availability of archival services; maintaining a positive image of archival institutions,
- modernization of the archival management system and creation of a new architecture of the network of archival institutions, Security of archives and archival resources,
- development of rules and procedures for the protection of archival information resources in the conditions of military operations, climate changes, and pandemics,

- Completion of the creation of an information and telecommunications system that will ensure centralized reception and transmission of electronic documents for permanent storage in compliance with the requirements of legislation and standards (*The Strategy for the development of Archival Affairs, 2020*).

The implementation of these strategic goals definitely requires scientific support and the development of archival science. In the conditions of a digital society, alongside traditional fields of knowledge or within them, new ones are born, designed to understand innovations of social development, including in the field of archives, where digital (electronic) archives are already functioning, and the array of electronic records is tremendously increasing year by year. It also raises the problems of integrity and a long-term preservation of documents, information security, protection of personal data and many others. The development of information technologies, the elaboration of new methods of creating, storing and transmitting information, lead to the fact that documents created in electronic form ("born-digital records") and digitized traditional documents ("digitized records") acquire the status of primary sources, require scientific analysis and comprehension, organization of storage, processing and usage of retrospective information encoded in them, elaboration of methods of detection and involvement in scientific research.

New fields of knowledge are being formed, in particular Electronic Records Management, Electronic Governance, Digital Humanities and Digital History. We can also observe the conceptualization of electronic archival and documentary studies in the general framework of Archival Science. The scientific rethinking of the essence of archival science, its place, role, and significance in the digital transformation of the society belongs to the extremely relevant problems of archival theory and practice. This relevance is motivated by several factors. First, the challenges of archival practice itself in the conditions of information society. Archives as centers of preservation of retrospective information from all spheres of society belong to the key institutions of states and are one of the significant criteria of their civilization, play an increasingly important role in ensuring the

information needs of society and every citizen. Their activities therefore require new approaches. The reevaluation of the theoretical framework and practices of archival science is also caused by the new scale of integration and prospects of international cooperation of national archival systems, the ever-wider inclusion of their information resources in the world of archival space.

In the implementation of these large-scale tasks, an important role is assigned to archival science, the theory and methodology of archival management, in particular, electronic archival science as a new segment of it, focused on the informatization of the archival field and new information technologies. It is worth to note, that in Ukraine, the studies in the field of archival theory and the elaboration of new approaches to archival practices are carried out by several scientific centres, among them:

- The Ukrainian Institute of Archival Affairs and Documentary Science,
- The Department of Archival Science and Special Branches of History at the Taras Shevchenko National University of Kyiv,
- The Institute of Archival Science at the V. Vernadskyi National Library of Ukraine.

Their activity is supported by the State Archival Service of Ukraine and by practitioners who work in the central, regional and branch archives of Ukraine.

We must emphasize that despite the threats of war we stand in the stream and move our professional literature forward. The main publications and discussions in the archival field accumulated in the scientific and practical journal *"Archives of Ukraine"*. Since the full-scale invasion, we have prepared and released 8 issues of the journal, on the pages of which 80 materials were published devoted to the problems of archival theory and practice, as well as reviews of archival holdings and documentary publications of archival sources.

The Ukrainian archival scholars elaborate theoretical framework for the activity of Ukrainian archival institutions in conditions of digital transformation of the society as well as develop new approaches for the work of archivists under the threats of war. *The main theoretical research and prac-*

tical recommendations were focused on the problems of digital recordkeeping and the electronic records management, archives management in the conditions of electronic government, conceptualization of electronic archival science, theoretical background and prospects of development of the archives brand management, improvement of planning documentation in the context of modernization of archival statistics, digitization of the cultural heritage objects in accordance with the European Union copyright and related rights legislation. Among other important problems that were raised by Ukrainian archival theorists during last years, topics such as digital marketing tools in the promotion of archival information, social media should be noted as an important tool in communication strategy of Ukrainian archives, theoretical framework and modern practices of the archivist's personal management, experience of Ukrainian archives in using and granting access to documents that contain personal data, digitalization of audiovisual heritage, formation of audiovisual archival collections, peculiarities of their description, preservation and integration into the global information space. All this research includes concepts together with their definitions, wide reference to relevant Ukrainian and foreign scholarly literature.

Among the theoretical developments in the field of archival management of electronic documents, new approaches to the theoretical mainstay of archival science in the conditions of information society, electronic records keeping and digitization processes, it is worth noting the articles by the following Ukrainian authors: Yu. Kovtaniuk, Ya. Kalakura, M. Paliienko, L. Didukh, N. Zalietok, T. Yemelianova. In particular, the work of Ya. Kalakura and M. Paliienko (2021) analyzes the development of archival theory in the digital environment and summarized that electronic archival science is a special field of knowledge in the system of archival science, a scientific and educational discipline of an interdisciplinary nature, which studies the history, theory, methodology and practice of electronic archival affairs, its legal foundations, principles, methods and technologies of creating documents on electronic media, their circulation, accounting and storage, use of information resources, activities of electronic archives and divisions,

their information systems, management of electronic document circulation within the competence of the archival service.

The problems of regulatory and methodological support for the functioning, storage and usage of electronic documents are in the focus of research of L. Didukh and N. Zalietok (2019) from the Ukrainian Research Institute of Archival Affairs and Documentary Science. The studies of the director of the Central State Audiovisual and Electronic Archives T. Yemelianova are dedicated to the problems of digitalization of audiovisual heritage, the solution of strategic tasks of creation and development of audiovisual archive collections, their digitization, preservation and integration into the global information space (Yemelianova, 2016). Some modern archival studies in Ukraine analyze digital marketing communication tools, which should be used for promotion of archival information and developing innovative forms of interaction between archives and society, creating and spreading a positive image of archives and profession (Bilushchak, 2020).

Archivists also provide methodological assistance to Ukrainian archives regarding online representation of digitized archival documents and ensuring their placement on European digitized cultural heritage platforms, in particular on the portal "Archives of Europe" (Khromov, 2020). Some authors develop proposals for creating an integrated search system for electronic identification of storage objects in the archives, aimed at strengthening control over the status, transfer and circulation of documents, improving their search in storage by using digital technologies and two-dimensional QR-codes. The mentioned project *«TOPAZ» («Topology of Archival Storage»)* consists of three levels of description and highlights the experience of the Central State Scientific and Technical Archives of Ukraine (Balyshev, M., 2020). It is necessary to emphasize that this central archive is located in Kharkiv, a city in the east of Ukraine that is constantly under fire and facing Russian ballistic missiles attacks. But despite war challenges, archivists are actively engaged in their profession. They are not only continuing their work, but also participate in research activities to expand knowledge and contribute to the professional field by implementing innovative approaches.

3. PRACTICAL IMPLEMENTATION OF ARCHIVES DIGITIZATION IN WARTIME

In the conditions of war, extremely important areas of activity of Ukrainian archivists are risk management, development and implementation of strategies for the preservation and digitization of documents.

Since risks for archives in wartime conditions are unpredictable, digitization makes it possible, if not to preserve documents, at least to preserve information which is crucial for the preservation of the national memory of the Ukrainians.

The Ukrainian archives systematically implement the *Program of digitization of archival information resources for the years 2022–2025*, which was approved by the order of the State Archival Service of Ukraine on December 29, 2021 No. 165 (PDAIR, 2021) (with changes determined by the orders of the State Archival Service on December 30, 2022 No. 104 and March 30, 2023 No. 46).

Despite Russia's open military aggression against Ukraine, state archives in 2022 showed a high rate of digitization. Thus 97% of the planned indicators for the digitization of storage units were fulfilled, and 115% – for the digitization of finding aides. In total, within the framework of the Program, in 2022, the state archives digitized 271,913 storage units (files) and 31,770 finding aids for documents of the National Archives Fonds (PRHSASU, 2023; ISAA, 2023).

The greatest results were demonstrated by the Central State Audiovisual and Electronic Archive (15,587 units of collections/audiovisual documents), the Central State Archive of Supreme Authorities and Administration of Ukraine (7,856 storage units), the Central State Historical Archives of Ukraine in Kyiv (7,291 storage units) and the Central State Historical Archives of Ukraine in Lviv (5,406 collection units). Among the regional archives, the State Archives of the Poltava Region showed the most impressive rates and volumes of digitization – 136,360 storage units) (PRHSASU, 2023; ISAA, 2023).

The best indicators in terms of the number of digitized documents and collections in the first half of 2023 among the central state archives of Ukraine were shown by the Central State Historical Archives of Ukraine in Kyiv –

7,944 storage units, the Central State Archive of Supreme Authorities and Administration of Ukraine – 3,510 units, and the Central State Audiovisual and Electronic Archive – 10,523 units of audio-visual documents (ISAA, 2023).

The results regarding the implementation of the Program of digitization can be found on archives' websites as well as their social media pages. Consequently, even in wartime, Ukrainian archives continue to be oriented not only towards preservation but also to use of information, and do everything possible to meet the users' needs.

At the same time, it should be noted that the problem lies not only in financing the processes of document digitization, but also in the unification of approaches and processes. The fact is that Ukrainian archives have been digitizing collections for a number of years, using different approaches, different techniques and software. Therefore, the main tasks were to find financial support, attract partners and create an integration resource.

On May 11, 2022, the State Archival Service of Ukraine presented the *Interarchival Search Portal* (ISP, 2022), which provides access through a single window to the digital resources of the archives 24/7. This website combines in single search space electronic resources of archives as well as separate thematic digital collections of documents that work on the ARCHIUM platform developed by the company Archival Information Systems (ARCHIUM, s. d.). The search has flexible settings and is carried out according to the full texts of the finding aids presented on local resources, namely: by the names of fonds, historical references to them, annotations to fonds and descriptions, titles of storage items and documents (if the latter are available), as well as among index positions, which are analogues of traditional archival catalogues.

We must note that *the Archival Information Systems* is the first and the largest company in Ukraine that works professionally and systematically in the field of mass digitization of archival and library collections, and also implements information technologies in these fields (AIS, s. d.). Currently, fonds of five central and two regional archives of Ukraine as well as the historical collection – the Digital archive of the Western Ukrainian People's

Republic – are presented on the ARCHIUM platform and on the Interarchival Search Portal.

Simultaneously, the rapid pace of digitization became possible with the support of foreign partners. In June 2020, a Memorandum of Cooperation was signed between the State Archival Service of Ukraine and the FamilySearch International Corporation (USA). Its goal was the digitization of documents of the National Archival Fonds of Ukraine, primarily of a genealogical nature, and the creation a digital fond for their usage. After a full-scale invasion, this cooperation took on even greater proportions. Currently, 20 central and regional archives of Ukraine carry out large-scale digitization of documents within the framework of cooperation with FamilySearch International.

At the same time, the new organizational structure and legal basis of the information society, the new awareness by archivists of their responsibility to the public not only for the preservation of retrospective documentary information, but also for ensuring full access to it is ongoing. All this was not only a challenge for the archival community, but also a certain important reference point that opened new horizons for the development of archives, expanded the intellectual framework of the profession.

In 2023, changes were made to the legal framework of the archival sphere, which created an opportunity for citizens to obtain informational documents based on scans or microfilms in the absence of originals (which were damaged, stolen, captured, illegally transferred during the war, etc.).

Director of the State Archives of the Kherson region, Iryna Lopushynska, said at the presentation "*War: (not)lost archives*" at the Information Agency Ukrinform on August 31, 2023 that 121,000 storage units were stolen from archives during the temporary occupation of Kherson by Russian troops. However, due to the fact that in 2018 the archive began to create a digital fond of usage, key documents from stolen units were digitized. Currently, in this archive about 1–1.5 thousand files are digitized per year (SASU, 2023).

On August 9, 2023, the State Archival Service of Ukraine in cooperation with the Ministry of Justice of Ukraine and the Ministry of Digital Transformation presented the pilot *project "e-Archive"* regarding the introduction of an electronic archive and the creation of appropriate conditions for the permanent storage of electronic documents of the National Archival Fonds and state electronic information resources.

4. CONCLUSIONS

Today, Ukrainian archivists have accumulated a unique experience of working in war and emergency situations. Digitization processes are actively ongoing in Ukrainian archives. The policy of the government, which announced a program for the digital transformation of the society, as well as changes in work in the conditions of a global pandemic, had a significant impact on these processes.

Over the past three years, cooperation with international partners and colleagues abroad has significantly deepened and expanded. Regarding the processes of digitalization and storage of archival information resources, we have had significant support from partners from the USA, Great Britain, Germany, Poland, and a number of other countries.

At the same time, we note that in the conditions of war and the lack of sufficient funding of the archival field, the processes of document digitization and the creation of relevant databases are not covered by the state budget of Ukraine. Therefore, today the issue of both financial (grant, fundraising) and technological assistance to Ukrainian archives is extremely urgent.

But no less important is the in-depth integration of Ukrainian archival science into the European and world space. And in this context cooperation with representatives of the scientific archival community, the International Council on Archives is very important for Ukrainian archivists. We need to continue encompassing and implementing the best European and world achievements and practices in archival field. For this reason, we need to activate participation in scientific grant projects. Professional contacts with the International Institute for Archival Science in Trieste and Maribor

have been extremely valuable for Ukrainian archivists during many years. Deepening of cooperation may involve sharing best practices, standards, or new technologies in archival field and training of archivists.

It is essential to underscore the importance of evolving contemporary educational programs for training archivists that should encompass both the theoretical components of classical archival science and the development of applied skills for working with electronic resources and engaging in digitization activities.

In this context, the cooperation of scientific and educational centers of archival science is quite significant, and among important colleagues and partners, we can single out the Archival Studies departments at Alma Mater Europaea – European Center Maribor and Taras Shevchenko National University of Kyiv. And within this framework, we have to support professor Peter Pavel Klasinc, who set up a paradigm that "*Archival science is an independent, academic, multidisciplinary and interdisciplinary science*" (Klasinc, 2019).

We must emphasize that despite the threats of war we stand in the stream, developing archival theory and practice, and are moving our profession forward. Regardless of Russia's full-scale war against Ukraine, the digital transformation of archives is actively ongoing, intended to enhance the preservation of archival information resources, as well as to ensure access to them for the protection of democracy and human rights, support of scientific research, development of the state and civil society.

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TYPOLOGY: 1.01 Original scientific research

Nadja Plazar[1]
Peter Pavel Klasinc[2]

RESEARCH OF DOCTORAL STUDENTS IN ARCHIVAL SCIENCE AT AMEU MARIBOR, CLASSIFICATION OF ARCHIVAL SEMINAR WORK BY STUDENTS OF ARCHIVAL SCIENCES AT AMEU MARIBOR

Abstract

Purpose: *The aim of the research is to review the seminar assignments in two methodological study courses of the 3rd cycle programme in Archival Sciences at Alma Mater Europaea Maribor (AMEU Maribor) and to find out whether the students were oriented towards researching historical topics, challenges of the contemporary archival profession or researching questions about further development of the archival profession.*

Method/approach: *After a detailed review, the paper topics of all 20 students of the 3rd cycle postgraduate programme in Archival Studies were classified into: historical topics, topics of the contemporary archival profession and science and topics dealing with the development of archival science and profession.*

Results: *It is found that the largest proportion of students, 11 out of 20 (55%), have chosen a topic in contemporary archival studies, while most of these topics also cover a development aspect. Another group, 8 out of 20 (40%), with seminar topics purely on the development of archival practice and only one seminar topic had a purely historical theme. Most students continue to develop the topic they started in the first year of their PhD to a doctoral thesis.*

Conclusions/findings: *As the PhD students are mostly already employed in the profession, it is therefore considered that the implementation of their research findings will contribute to the advancement of the profession of archival studies.*

Keywords: *archival science, doctoral studies, seminar essays.*

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1. INTRODUCTION

The Alma Mater Europaea Maribor (AMEU Maribor) website defines Archival Studies as an independent, academic, multidisciplinary and interdisciplinary science, which is facing new demands in the handling of archival material as the information society evolves. Under existing legislation, it is no longer just cultural heritage, but also a means of ensuring legal protection for individuals (AMEU, 2023).

In his article "Through some periods of Archivistics to the founding of the Institute and the journal Atlanti to the present day", Peter Pavel Klasinc writes that the beginnings of Archivistics can be considered to be the records (drawings) in the caves of Altamira in Spain and Lascaux in France (Klasinc, 2020). These were intended to provide information not only on how to hunt large animals and how to overcome fear, but at the same time the records were also a calendar. In the article, the author divides the development of Archival Science into eight periods, with the last period - in Slovenia - being marked by the establishment of the International Institute of Archival Sciences and the beginning of all three cycles of Archival Science studies, with the most important for the development of Archival Science as a science being the beginning of the doctoral studies (Klasinc, 2020).

At the same time, the AMEU Maribor website states that PhD students in the Archival Science programme will acquire the skills to use complementary sources to objectively understand, present and interpret archival content, and to take responsibility for and manage complex and challenging processes of archival theory and practice in both business and non-business, public and private sectors. (SAA, 2023)

It should be noted that PhD students will also acquire research competences in the field of archival science, which is particularly important for the development of archival science as a research discipline.

Archivists' education: There are many scientific articles in databases that show active research in the field of Archival sciences. Often, the authors of scientific articles are researchers working at high-profile universities who also participate as course instructors of archival studies. Interest-

ingly, the Society of American Archivists publishes recommendations on the design of objectives for graduate degree programmes in archival education on its website, and even proposes a draft curriculum that forms the basis of archival studies programmes at educational institutions in the USA (SAA, 2023).

Ljudmila Varlamova of the Russian State University for the Humanities notes that there have been many changes in the curriculum over the 90 years of archivist education, but that until now, education has always focused on two types of archivists: historian-archivists working in state historical archives and practitioner-archivists working in other archives. Both types could be trained at the Faculty of Archival Studies of the Moscow History and Archives Institute (MHAI), as well as elsewhere in Russia and in countries under its influence. The author argues that the ongoing development of science and technology is creating a need for different ways of archiving documents, and archival studies must adapt to this new situation. The author believes that the future of archival education lies in interdisciplinarity and, consequently, in the integration of some educational programmes (Varlamova, 2020).

Similarly, Magdalena Marosz believes that changes in archivist education are a consequence of the development of archival science as an academic discipline and the development of other sciences, information technology in particular. She believes that, in addition to archivists-historians, it would make sense to educate archivists at university level who will have knowledge and skills in modern documentation and who will also be familiar with sectoral legislation, as well as with administrative management. This would enable archivists to acquire greater competences in the field of information preservation (Marasz, 2020).

Magdalena Marosz (2020) also argues that the changed educational landscape also requires a different teacher-student relationship, where, in addition to the transfer of knowledge, it is also important to foster creative and critical thinking, which allows the problem-oriented learning. The teacher encourages students to search for information independently and gain the knowledge on how to solve problems (Marosz, 2020).

An interesting article by Karen J. Trivette (2022) entitled Archival Science? Existential Questions and Proposed Answers, in which the author challenges whether archival science is a real science. Through a literature review and a short qualitative study, the author confirms the hypothesis raised. She argues her claim by comparing research methodologies in archival science and other applied sciences and concludes that they do not differ. At the same time, she notes that archival science also brings together other sciences, such as: information science, media studies, history, etc.; she says that archival science is an 'amalgam' of many sciences (Trivette, 2022).

Alma Mater Europaea Maribor also offers studies in Archives and Records management at all study cycles, including doctoral studies from 2019.

Since the beginning of the PhD in Archival Science, authors were participating in the programme as a lecturer in two courses: The Methodology of Scientific Research (20 ECTS) in the first year and the Methodology of Preparing, Writing and Editing Scientific Papers (10 ECTS) in the second year.

In the first course, the student chooses the area of research that they intend to develop in the framework of the doctoral thesis and prepares a written thesis that includes a brief assessment of the research in the chosen area, as well as the purpose and objectives of the planned research and possible research questions or hypotheses. The written work shall cite at least 30 scientific works, of which 20 shall be from journals with an impact factor. In the second-year course, the student develops the topic chosen in the first year and complement it by describing the possible methods of work and the expected results and indicating the possibilities of their application. Most students continue to develop the topic they started in the first year of their PhD to a doctoral thesis.

Archival profession is facing many challenges with the development of informatics and other related disciplines, the aim of the present paper is therefore to review the topics of the student seminar papers in the previously described courses of the 3rd cycle programme in Archival Studies at AMEU Maribor and to find out whether they follow the challenges of the contemporary archival profession. Attention is paid to the question if the students are focused on researching historical topics, challenges of con-

temporary archival science or on research questions about the further development of the archival profession.

2. METHODOLOGIES

DESCRIPTION OF THE SAMPLE

Since the beginning of the study programme Archival Science at AMEU Maribor in 2019, 21 students have enrolled in it. In the academic year 2019/2020, ten students were enrolled in the first year, four students in 2020/2021, five students in 2021/2022 and two students in 2022/2023. Lectures were held at the faculty and, during the Covid 19 epidemics, online. Lectures and seminars were held in Slovenian and partly in English, with individual consultations in English for students who did not understand the language.

In the first course, the student chooses the area of research that he/she intends to develop in the framework of the doctoral thesis and prepares a written seminar paper that includes a brief assessment of the research in the chosen area, as well as the purpose and objectives of the planned research and possible research questions.

In the second year, students of the Methodology of Preparation, Production and Editing of Scientific Papers course continue researching their chosen topic, only some of them changed the topic after reading the scientific literature, reflecting and analysing the possibilities but most of them continue with the same topic. As in the first year, the now more developed topic, which included research questions and hypotheses, they present to colleagues and, after presentation and discussion among colleagues, turned into a seminar paper.

After a detailed review, the papers topics of all students of the 3rd level postgraduate programme in Archival Studies were classified into historical topics, topics of the contemporary archival profession and science and topics dealing with the development of archival science and profession. Seminar papers that cover the field of contemporary archival studies usually also contain elements of development (hybrid form).

The grouping took into account the seminar assignments in the course Methodology of Preparation, Production and Editing of Scientific Papers, a second-year study subject.

3. RESULTS

21 students enrolled during the four academic years (2019 to 2023), only one student did not meet the criteria for progression. Most students (15) continue to develop the topic they started in the first year threw second year and then to the doctoral thesis. Only five students changed their research topic in the second year of study, therefore the grouping took into account the seminar papers in the course Methodology of Preparation, Production and Editing of Scientific Papers, a second-year study subject.

Table 1: Research topics for students of the PhD in Archival Science at AMEU

Research topics	Number of seminar papers
Historical	1 (5%)
Contemporary archival profession	11 (55%)
Development of the archival profession	8 (40%)

After reviewing the research topics, we found that only one student chose a purely historical research topic. The majority, 11 students chose a topic in contemporary archival profession and science, while a still large proportion of students, 8, chose topics exploring the development of the archival science and profession.

4. DISCUSSION

To identify the topic of the seminar thesis, the topic in the 2nd year was taken into account, which is likely to be the topic of the PhD dissertation project proposal and consequently of the PhD thesis. Interestingly, in the second year of studies, 75% of students continued researching the same topic from the beginning of their studies and continued with it to the doctoral dissertation.

In their seminar papers, students address a number of challenges in contemporary archival science, such as: the security of special archives, how to ensure the effective preservation of medical records, how to ensure the long-term preservation of e-materials in pharmacy, how to efficiently retrieve archival material from documentary material, the direction in which archival science will evolve to keep pace with the development of new technologies, about public administration metadata and UI deployment options, security elements in special archives, about methodology of creating and managing digital historical representations in an objective way and others. The students are predominantly working as archivists, so the selection of their research topics is based on their knowledge of the profession and the challenges that come from the profession's skills. It is anticipated that the results of their research will be implemented in the profession.

In an interesting article written by Karen J. Trivette (2022) entitled „Archival Science? Existential Questions and Proposed Answers ", the author challenges if archival science is a real science. From the current findings we can deduct that archival science is a real science, as it is based on a well-established profession beginning in prehistoric times and has evolved to the present day (Klasinc, 2020). Archivists have been trained at universities (Campanelli et al., 2020; Varlamova, 2020) for more than 90 years and have been responsible for the development of the profession and sciences. Archivists are involved in a large amount of research, some of which is also carried out at AMEU Maribor as part of the Archivists in Science doctoral study programme.

5. CONCLUSIONS

Students of the Archival Science programme at AMEU Maribor start their research work already in the first academic year. The content of the seminar assignments has been reviewed in the courses Methodology of Scientific Research and Methodology of Preparation, Production and Editing of Scientific Papers, regular subjects of the first and second year of the study programme. It was found that the predominant topics deal with the challenges of the contemporary archival profession and its development. This

finding is important because in the seminar assignments students deal with the topic they usually choose for their doctoral dissertation. As the students are mostly employed in the profession, it is assumed that the implementation of their research findings will contribute to the development of the archival profession.

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TYPOLOGY: 1.01 Original scientific research

APPENDIX: BROCHURE ARCHIVAL SCIENCE 3rd BOLOGNA CYCLE, PHD STUDY PROGRAMME

Aavailable at: https://en.almamater.si/archival-sciences-c31#overview)

ALMA MATER EUROPAEA
ECM

ARCHIVAL SCIENCES

PhD

3rd Bologna cycle
PhD study programme

STUDY PROGRAMME

The study focuses on acquiring in-depth knowledge that enables independent, original and scientific research work in a wide field of archival theory, archival practice and archival science as an independent, academic, multidisciplinary and interdisciplinary science. Lessons learned are necessary for the planning, management and implementation of the most demanding scientific research projects and comparisons and analyses of research in the field of archival science, based on qualitative and quantitative and other research methods and models.

A wide research field within the doctoral study applies both to relations between documents and related entities, as well as with the archival records as a whole, with a special emphasis on authenticity, integrity, connectivity with record creators, records preservation, concepts of appraisal, the use and accessibility of archival records, as well as the storage and preservation of archival records in physical or electronic forms.

DURATION OF STUDIES:
3 years

ECTS CREDIT POINTS:
180 ECTS

OBTAINED TITLE:
Doctor of Archival Sciences

LOCATION OF STUDIES:
Slovenia

BEGINNING OF STUDIES:
October

STUDY METHOD:
Part-time study

3

COURSE SYLLABUS

YEAR 1	
Subject No.	
1st SEMESTER	
1	Relations of archival sciences
2	E-archiving and information infrastructure
2nd SEMESTER	
3	Methodologies of scholarly research
4	Doctoral seminar – preparation of doctoral dissertation disposition

YEAR 2	
Subject No.	
3rd SEMESTER	
5	Methodology of preparation, production and regulation of scientific work
6	Research methods in archival studies and preparation of doctoral dissertation
4th SEMESTER	
7	Individual scientific research work
8	Elective course I
9	Elective course II

YEAR 3	
Subject No.	
5th and 6th SEMESTER	
10	Preparation of doctoral dissertation

ELECTIVE COURSES	
Subject No.	
1	Records management systems and archiving
2	Organizational systems in archival science
3	Typology of archival records
4	Basic elements of archival law
5	Elements of conservation and restoration of archival records
6	Languages and monuments - use, editions and conservation
7	The main facts of cultural development of Slovenian territory
8	Use of archival records and protection of personal data
9	Preservation of electronic records in the private sector
10	Exploring the Web and Web Technology
11	Risk management in electronic archiving
12	Protection and maintenance of archival books and books in archives
13	Resources for Slovene Cultural History
14	Latin epigraphy
15	Latin palaeography
16	Archival records and legal interest
17	Protecting archival records in time of war and in cases of emergency

ENROLMENT CRITERIA

The following graduates can enrol in the Archival Sciences Doctoral Program :

- of second-level study programs,
- of study programs that train for occupations, regulated by EU directives or other uniform Masters study programs that are evaluated with 300 ECTS credits,
- of previous (before Bologna) study programs to acquire a specialization and previously completed higher education professional program, accepted before 11 June 2004; to these candidates study obligations will be stipulated in the range of 30 to 60 credits before enrolling in the study program,
- of study programs for acquiring a Master's degree in science or specialization after completing the study a program to acquire university education, adopted before 11 June 2004; these candidates at doctoral study programs will have recognized study programs commitments of at least 60 ECTS,
- of study programs for obtaining a university degree education, adopted before 11 June 2004.

Graduates from other national and foreign universities can enrol in accordance with the prescribed conditions as they apply to students of the Republic of Slovenia, after the official process of recognition of foreign education for continuing education at Alma Mater has established equivalence of previously acquired education abroad.

Doctoral study of Archival Sciences enable candidates to have access to the most demanding skills and research needs in the field of archival theory and practice that are based on national and international foundations and standards. The study follows modern, scientific and research fields that represent the highest quality of addressing questions from the field of contemporary archival science.

ALMA MATER EUROPAEA ECM

ABOUT ALMA MATER

Alma Mater Europaea is an international higher education institution with an office in Salzburg and study centres in larger towns in Europe. It was established by the European Academy of Sciences and Arts Salzburg, which connects over 1,900 scientists and artists, including 32 Nobel Prize Winners.

One of the most representative centres of Alma Mater is in Maribor – Alma Mater Europaea ECM.

ACCREDITATION

All Alma Mater Europaea - ECM study programmes are accredited by the Slovenian Quality Assurance Agency for Higher Education.

n·a·k·v·i·s
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s·q·a·a
Slovenian Quality Assurance Agency for Higher Education

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ATLANTI+
GUIDELINES FOR AUTHORS

1. GENERAL INFORMATION ABOUT ATLANTI+

ATLANTI+ is an international scientific journal for modern archival theory and practice with an international editorial board, jointly published by the International Institute of Archival Science Trieste – Maribor (hereinafter MIAZ) and Alma Mater Europaea – European Centre Maribor.

The journal ATLANTI + is a peer-reviewed journal that publishes only original scientific articles and is published twice a year.

2. LANGUAGE

ATLANTI+ publishes scientific articles in English only.

3. FORM AND LENGTH OF THE CONTRIBUTIONS

The author should use Times New Roman font size 12.

The length of the article should not be shorter than 8 typed pages (or 15,000 characters with spaces) and should not exceed 16 typed pages (or 30,000 characters with spaces) including tables, figures, and a list of references.

4. STRUCTURE

The article should contain an abstract and keywords in English and in the author's native language (if the article is written in the author's native language).

Information about the author of the article should be provided before the title of the article. It shall include the first and the last name of the author. Also needed are any academic and professional titles, the institution where the author works or is studying, the address and the email address at which the author can be reached by the editors and readers of the journal. The author should also include a short biography.

If there are several authors, they should come to an agreement and determine the order.

- **the title (subtitle)** should be short, concise, and informative, accurately defining the content of the article. Any subtitle must be separated from the title by a comma. The title and subtitle should use words that are suitable for indexing and searching.
- **the abstract** is a mandatory component of the article and must be compiled according to the IMRAD structure in accordance with ISO 214. The abstract should not exceed 250 words and should be written in the third person. The abstract should clearly define the purpose, design, methodology and approach, findings and results of the article, limitations as well as applicability and conclusions of the research. The author should specify up to 5 keywords or phrases that will be suitable for indexing and searching.

  Example:

  Abstract

  Purpose: Archival science and Museum science in museums are working in close cooperation. In the process of...

  Method/approach: The method used in our article is case study, with which we demonstrated the usefulness of archival science in museums in practice...

  Results: Description of archival records has an important role in museum archives and storage rooms, since it allows employees to...

  Conclusions/findings: Museum and Archival science work closely together in museums and they need each other... Due to this, it is possible for the archivist and curator documentarist to look for common solutions in the field of record/documentation management and storage.

  Keywords: *archival science, museum science, museum, museum storage room.*
- **The text of the article** should contain a minimum of 15,000 and a maximum of 30,000 characters with spaces. The text should be written in Times New Roman, font size 12. The level of paragraphs should reflect the organization of the article. The chapters of the contribution can be

divided into subsections, the numbering should be in accordance with the SIST ISO 2145 and SIST ISO 690 standards (eg. 1, 1.1, 1.1.1, etc.).

- **The list of references** follows the text of the article. In the bibliography, the author lists all used sources and literature in the article in accordance with APA citation (for instructions, see point 7 and Appendix 1).

5. FOOTNOTES

As a rule, footnotes are written below the line at the bottom of the page and numbered with Arabic numerals from the beginning to the end of the text of the article. **Footnotes are used for additional explanations of the text (author's comments) and are not intended to list and cite bibliographic references (the author can only indicate them).**

If the footnote refers to an entire sentence or paragraph, it should be placed after the end of the sentence punctuation mark. If the note refers to only part of the sentence, it should be placed before the final punctuation mark.

6. PICTORIAL AND GRAPHIC MATERIAL

The contribution may contain pictorial and graphic material and tables.

Each of them should be consecutively numbered from the beginning to the end of the text (Table 1, Table 2, Figure 1, Graph 1, Figure 2...).

Every table, spreadsheet, figure, graph must have a title. Titles of tables, charts and graphs should be written above it. Appropriate explanations (legend) should be added to the tables. The titles of the pictures should be written below the picture.

If the pictorial and graphic material is not the result of the author's work, the source from which the data was obtained must be indicated. Images must be scanned in a suitable resolution (at least 300 dpi) in .jpg, .tiff or .png format. **These sources should also be listed in the bibliography.**

7. CITATIONS AND REFERENCE LIST

Authors should use the APA Style and in-text citation for citing sources. More detailed examples are shown in the table in Annex 1

Key citation guidelines:

- Only publicly available sources should be cited.
- When citing in the text, the **last name of the author(s), the year of the source and the page number(s)**, separated by a comma, must be given (Carruci, 2006); Semlič Rajh (2018, 43) thinks.....
- Sources, cited as the example, shall be cited as below.
  (see Klasinc, 1999 or Ratti, 2001), (for more, see Johnsonn, 2006)
- To cite secondary sources, the author(s) and the year of the primary source are cited, followed by the author(s) and year of the secondary sources.
  (Line, 1979, as cited in Mihalič, 1984)
- When the source has no author or editor, the title of the source is given, followed by the year of publication.
  (*Merriam-Webster's*, 2003).
- Verbatim citations should be marked with quotation marks (" ") and page numbers, and the text should be in italics.
  In this case, this newly created material also becomes heritage, because *"similarly to analogue cultural heritage, it goes through the processes of creation, evaluation, collection, documentation, communication and permanent preservation"* (Šojat-Bikić, 2013, 151).

<u>Key guidelines for citing sources in the "References" chapter</u>

- The **Reference** chapter should only contain sources that are used and cited in the text. All information should be provided in the original language, unless provided in Cyrillic. In this case, the author should indicate the source in parentheses, also in Latin).
- If the sources used are from the same author and published in the same year, they are separated by the letters a, b, c... They should also be cited in the text in this way.
  (Novak, 2002a, 2002b), Novak (2002a, 2002b) presents . . .

- If the source used is still in print or has not yet been published, this is indicated where the year is usually given.
- For citation of sources accessible online, the above instructions shall used sensibly. However, it is necessary to add "Retrieved at" and an online link to the source or a doi link, followed by the date of access in brackets (e.g. (accessed on 15/05/2022).

8. SUBMISSION AND COPYRIGHT

The author can submit contributions that have not yet been published in another publication or are not in the process of being published in other publications. The author is fully responsible for the content of the article and the proofreading of the text. The contribution for publication should be compiled in accordance with the journal's instructions and scientific guidelines regarding the content, style, and structure of the article.

The author should send a grammatically and linguistically suitable text to the editors. **Texts that do not comply with the journal's instructions will be returned to the author by the editors and will require adjustments and corrections.**

The editor and technical editor review the appropriateness of citations and references in accordance with the journal's guidelines and decide whether:

a) the article can be sent to the review process,

b) return the article to the author and request appropriate modifications and only then forward the article for peer review.

All moral and copyright rights in case of publication belong to the author. In case of material copyrights, these are transferred to the publisher of the magazine - the International Institute of Archival Sciences Trieste - Maribor and Alma Mater Press by the author for all time, for all cases, for unlimited editions and for all media, non-exclusively, temporally and spatially. The author signs the permission to publish the article in Atlanti+ magazine, which must be submitted when submitting the article.

The author submits the article together with a signed permission to publish the article in electronic form to the email address of the journal's edi-

torial office (if there are several authors, the permission must be signed by all authors).

9. PEER REVIEW PROCEDURE:

The editorial board reviews all received submissions. If the articles are not prepared in accordance with the instructions and standards of the journal, the editorial board requests corrections and adjustments from the author. If the article is neither scientific nor professional, the editorial committee decides on publishing it or not.

Scientific and professional articles that have been written in accordance with the instructions and guidelines of the journal and the editors are included in the anonymous (double-blind) peer review process. Reviewers are selected by the editorial board.

The following components are looked at by the editorial board:

- **content**: general interest of the content, innovation...,
- **methodology**: adequacy of used methods, sampling, confirmation/rejection of hypotheses and assumptions...,
- **the structure and form of the contribution**,
- **consistent citation and citing of sources, notes, pictorial and graphic sources**...

According to the reviewer, the author either corrects or adjusts the article.

Anonymity of authors and reviewers during the review process is guaranteed. Articles will only be published if they have received a positive evaluation during the review process.

After the review, the reviewer determines the typology of the article and decides whether the article:

a) May be published as submitted to the editors,

b) Can be published after the author has made minor required corrections,

c) Needs to be corrected and sent to the editorial board for another review,

d) Unsuitable for publication.

10. TYPOLOGY

Based on the reviewer's opinion, the editorial board determines the typology of the article. The typology for managing bibliographies within COBISS is as follows:

1.01 Original scientific article

1.02 Review article

1.03 Short scientific article

1.04 Professional article

11. FINAL TEXT AND PREPARATION FOR PUBLICATION:

The author must send the final text via e-mail (in MS Word format) within the deadline set by the editors to the editors' e-mail address.

The editorial board prepares the text for publication and reserves the right to change the format of contributions and major design changes in agreement with the author.

EXAMPLES OF CITING SOURCES

THE TABLE CONTAINS EXAMPLES OF CITING SOURCES FOR EASIER ILLUSTRATION OF CITING EACH TYPE OF SOURCE IN DIFFERENT FORMATS FOR A CONTRIBUTION IN ATLANTI+ JOURNAL:

- The first column indicates the source type.
  The list of used sources must be placed at the end of the article; the sources must be listed as shown in the second column (**titles books/ magazines/documents** are written in italics - see the individual case)
- Explanations and more important highlights are written in the third column.
- The fourth column shows how each type of source should be cited within the text (e.g. Melik (1995, 15) notes that...; Stoler et al. (2020) claims..., (Vilfan and Žontar, 1973, 154) etc.)

BOOK Surname, first name. (year). Book Title: Subtitle. Place of publishing: Publishing house. Surname, first name. (ed.). (year). Book Title: Subtitle. Place of publishing: Publishing house.		Write the title (and subtitle) of the book in italics. In the case of two or more authors, we add the word „and" before the last author.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Book One author	Melik, J. (2011). *Osnove prava in pravne države za arhiviste*. Ljubljana: Arhiv Republike Slovenije.		(Melik, 1995);
Book Two authors	Vilfan, S. and Žontar, J. (1973). *Arhivistika. Arhivski priročniki: zvezek 2*. Ljubljana: Arhivsko društvo Slovenije.		(Vilfan and Žontar, 1973)
Book Three or more authors	Stoler, A. L., Gourgouris, S. and Lezra, J. (2020). *Thinking with Balibar: A Lexicon of Conceptual Practice*. New York: Fordham University Press.	**Three authors:** For the first citation in the text, write down the surnames of all authors, for all subsequent citations only the first author and add "et al." (the international abbreviation for "and others"). **More than three authors:** When citing a source, write down all authors in the list of sources used. When citing in the text, write down the last name of the first author and add „et al.".	(Stoler et al., 2020)

Book With editor(s)	Žontar, J. (ed.). (2000). *Pravo, zgodovina, arhivi. 1. Prispevki za zgodovino pravosodja.* Ljubljana: Arhiv Republike Slovenije.	In the list of sources, instead of the authors, we indicate the editor(s) and add an explanation in parentheses that they are the editors: „(ed.)". When citing in-text tags, with the remark editors, "ed." is not added.	(Žontar, 2000)
Book Without author/editor	*Publication manual of the American Psychological Association* (6th ed.). (2010). Washington: American Psychological Association.	In the text, we cite the first few words of the citation in the list of sources used (usually the beginning of the title or the entire title). When quoting in the text, write the title or the beginning of the title in quotation marks.	(Publication manual, 2010
Annual report of an organisation	Vrhovno sodišče Republike Slovenije. (2020). *Otvoritev sodnega leta 2020.* Ljubljana: Vrhovno sodišče RS.	If it is information about an organization or its work, the author can be just the organization itself.	(Vrhovno sodišče RS, 2020)
Dictionary Large number of authors/ editors	*Slovar slovenskega knjižnega jezika* [SSKJ]. (1994). Ljubljana: DZS.	In the text, we cite the first few words of the citation in the list of sources (usually the beginning of the title or the entire title)	(SSKJ, 1994)
Thesis	Kosi, M. (2016). *Izhodišča za invalidom uporabno digitalizirano arhivsko gradivo* (Master thesis). Ljubljana: Fakulteta za varnostne vede.		(Kosi, 2016)

ELECTRONIC BOOK Surname, first name. (year). E-Book Title: Subtitle. Place of publishing: Publishing house. Retrieved at http://xxxxxxxxxxx (accessed date of access). Surname, first name. (year). E-Book Title: Subtitle. Place of publishing: Publishing house. doi:xxxxxx/xxxxxxxxxxx (accessed date of access).		We cite them in the same way as printed books, except that we add a web link or a doi mark after the bibliographic data. The web link and the doi (Digital Object Identifier) must be written in bold, not underlined. Examples of citing sources for different numbers of authors are explained in the examples for books.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
E-book	Stichelbaut, B. (2015). *Forgotten and lost? : 1914-1918 : a guide to the archives : archival research of aerial photographic collections of the western front.* Ljubljana: Založba ZRC. Retrieved at http://www.dlib.si/details/URN:NBN:SI:doc-HO1BAQNR (accessed on15. 2. 2022).	For bibliographic data and phrase „retrieved at" we add a web link.	(Stichelbaut, 2015)
E-book with DOI	Stalla-Stichelbaut, B. (2015). *Forgotten and lost? 1914-1918 : a guide to the archives : archival research of aerial photographic collections of the western front.* Ljubljana: Založba ZRC. Doi: 10.3986/9789612548315 (accessed on 7. 4. 2022).	After the bibliographic data, we add "doi:" and the appropriate label..	(Stichelbaut, 2015)

Annual report of an organisation in e-form	Vrhovno sodišče Republike Slovenije [VS RS]. (2019). *Letno poročilo o poslovanju sodišča za leto 2019*. Ljubljana: Vrhovno sodišče Republike Slovenije Retrieved at http://www.sodisce.si/mma_bin.php?static_id=2020042009043956 (accessed on 27. 2. 2020).	If it is information about an organization or its work, the author can be the organization itself. If the name of the organization is long and the source is cited several times in the text, an abbreviation can be introduced in the first citation, which is then used in all subsequent citations. The abbreviation must also be given next to the name of the organization in the list of used resources.	(VS RS, 2019)
E-dictionary or encyclopaedia	*Fran: Slovarji Inštituta za slovenski jezik Frana Ramovša ZRC SAZU*. (2016). Ljubljana: Inštitut za slovenski jezik Frana Ramovša ZRC SAZU. Retrieved at http://www.fran.si/ (accessed on 2. 2. 2022).	When quoting in the text, write the title or the beginning of the title in in quotation marks.	(Fran, 2016)
E-version of a thesis	Pfajfar, V. (2018). *Digitalizacija arhivskega gradiva. Metodologija in standardizacija postopkov* (Magistrsko delo). Logatec: Alma Mater ECM. Retrieved at: https://d.cobiss.net/repository/si/files/2013301/106382/Pfajfar_Vanja_md_2018.pdf/terms (accessed on 6. 2. 2023).		(Pfajfar, 2018)

BOOK CHAPTER Surname, first name. (year). Chapter Title: Subtitle. In Initial of editor's name. Surname of the editor (ed.), Title of the book: Subtitle (pgs. first page of chapter - last page of chapter). Place of publishing: Publishing house.		In the list of sources used, the authors, year and title of the chapter are listed first. Then, after the word "In" (it stands for the introductory phrase, to indicate where the chapter is published), we provide information about the book and the pages on which the chapter is published. Write the title (and subtitle) of the book in italics. Examples of citing and citing sources for different numbers of authors are explained in the examples for books.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Chapter in a book With editor(s)	Melik, J. (2000). Organizacija rednih sodišč v prvi Jugoslaviji. In J. Žontar (ed.), *Pravo-zgodovina—arhivi: 1. Prispevki za zgodovino pravosodja* (pgs. 173–183). Ljubljana: Arhiv Republike Slovenije.		(Melik, 2000)
Article in conference proceedings With editor(s)	Semlič Rajh, Z. (2018). Standard ISO 15489-1:2016 in vrednotenje : kaj prinaša novi standard. V A. Škoro Babič (ur.), *6. Simpozij Arhivi v službi človeka - človek v službi arhivov*, (pgs. 43–51). Maribor: Alma Mater ECM.		(Semlič Rajh, 2018)

ARTICLE IN ELECTRONIC PROCEEDINGS Surname, first name. (Year). Article title: Subtitle. In Initial of editor's name. Last name of the editor (ed.), Title of the e-collection: Subtitle (pgs. First page of the chapter - last page of the chapter). Place of publishing: Publishing house. Retrieved at http://xxxxxxxxxxxx (accessed on date of access).		Write the title (and subtitle) of the collection in italics. We cite them in the same way as printed chapters, except that we add a web link or a doi tag after the bibliographic data. The web link and the doi (Digital Object Identifier) must be written in bold, not underlined. Examples of citing sources for different numbers of authors are explained in the examples for books.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Contribution in the e-proceedings of the conference with the editor(s); pages of the article in the e-proceedings are indicated	Jelenc, Bogomil. 2017. Elektronsko pisarniško poslovanje, prvi korak k elektronskemu arhiviranju. In N. Gostenčnik (ed.), *Tehnični in vsebinski problemi klasičnega in elektronskega arhiviranja. Digitalno in digitalizirano. Arhivsko gradivo včeraj, danes in jutri : zbornik mednarodne konference, Radenci, 5.-7. april 2017, Radenci, April 5-7, 2017* (pgs. 305-316). Maribor: Pokrajinski arhiv Maribor. Retrieved at http://www.pokarh-mb.si/uploaded/datoteke/Radenci/radenci_2017/22_jelenc_2017.pdf (accessed on 15. 9. 2022).	For bibliographic data and phrase "Retrieved at" we add a web link. The link must be written in black font and not underlined. If the pages in e-proceedings are numbered, we list those pages, too.	(Jelenc, 2017)
Contribution in the e-proceedings of the conference no editor; contribution pages in the e- are not listed in the proceedings	Huth, G. (2016). Appraising Digital Records. In *Appraisal and Acquisition Strategies: Proceedings of the 10th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management.* London: SCITEPRESS. Retrieved at https://dokumen.pub/appraisal-and-acquisition-strategies-9780931828003-0931828007.html (accessed on 24. 10. 2022)	The editor is not listed, so this information is not included in the citation. The pages are not listed in the e-proceedings, so this information is not available.	(Huth, 2016)

ARTICLE IN A PRINTED MAGAZINE/JOURNAL/DAILY NEWSPAPER Surname, first name. (year/date). Article Title: Subtitles. Title of magazine/journal, year (issue), first page of the article - last page of the article.		In the list of sources, the authors, year and title of the article are listed first. Then we state the title of the magazine/ journal, the year, the number and the pages, where the article is published. Write down the title and year of the magazine/journal in italics. For the titles of magazines/ journal in English, we capitalize all words except prepositions and conjunctions. This does not apply to titles of books and articles in English. Examples of citing sources for different numbers of authors are explained in the examples for books.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Article in printed journal with the year and the number.	Košir, M. (2002). Arhivistika – pot do samostojne znanstvene discipline. *Arhivi*, *25*(1), 295–301.	Write down the title and year of the journal in italics; write the magazine number in brackets.	(Košir, 2002)
Article in printed journal with the year and without the number.	Žontar, J. (1995). Zgodovina arhivistike na Slovenskem. *Arhivi, 18*. 13–17.	Write down the title and year of the magazine in italics.	(Žontar, 1995)
Article in printed journal without the year and without the number	Eastwood, T. (2002). Reflections on the Goal of Archival Appraisal in Democratic Societies. *Archivaria* (54), 59–71.	Write the title of the magazine in italics; write the magazine number in brackets.	(Eastwood, 2002)
Article in daily newspaper	Petrovec, D. (16. 1. 2017). Vrhunska znanost in črn otrok. *Dnevnik, 67*(12), 14.	In the list of sources, we indicate the exact date of the article; when quoting in the text, we mention only the year	(Petrovec, 2017)

An article in a daily newspaper without an author	Pomisleki glede prodaje NLB. (30. 3. 2017). *Dnevnik*, *67*(74), 3.	In the list of sources, we indicate the exact date of the article; when citing in the text, only the year is mentioned. In the text, we quote the first few words of the citation in the list of sources (usually the beginning of title or full title). When quoting in the text, write the title or the beginning of the title in quotation marks.	(»Pomisleki glede prodaje NLB«, 2017)

ARTICLE IN THE ELECTRONIC VERSION OF THE JOURNAL/DAILY NEWSPAPER Surname, first name. (year/date). Article Title: Subtitles. Title of journal/daily newspaper, year (issue), first page of the article - last page of the article. Retrieved at http://xxxxxxxxxxxx (accessed on date of access). Surname, first name. (year/date). Article Title: Subtitle. Title of magazine/magazine, year (issue), first page of the article - last page of the article. doi:xxxxxx/xxxxxxxxxxxx (accessed on date of access).		We cite them in the same way as articles in printed journals, except that we add a web link or a doi tag after the bibliographic data. The web link and the doi (Digital Object Identifier) must be written in bold, not underlined. Examples of citing sources for different numbers of authors are explained in the examples for books..	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Article in the electronic version of the journal	Duranti, L. (2010). Concepts and principles for the management of electronic records, or records management theory is archival diplomatics. *Records Management Journal*, *20*(1), 78–95. Retrieved at: http://dx.doi.org/10.1108/09565691011039852 (accessed on 13. August 2022).	For bibliographic data and phrase „Retrieved at" we add a web link. The link must be written in black font and not underlined. Follow the access date in parentheses for the link. Write the title of the magazine in italics.	(Duranti, 2010)
Article in the electronic version of the journal with DOI	Flynn, S. J. (2001). The Records Continuum Model in Context and its Implications for Archival Practice. *Journal of the Society of Arhivists*, *22*(1), 79–93. Retrieved at: https://doi.org/10.1 080/00379801 20037522 (accessed on 31 July 2022).	After the bibliographic data, we add „doi:" and the appropriate label. (doi – Digital Object Identifier) Write the title of the magazine in italics.	(Flyn, 2001)
Article in the electronic daily newspaper	Suhodolčan, B. (8. 3. 2023). (Pismo Bralca) Sončne elektrarne in cena električne energije. *Večer.* Retrieved at https://vecer.com/pogledi/pismo-bralca-soncne-elektrarne-in-cena-elektricne-energije-10328522 (accessed on 10. 3. 2023).	In the list of sources, we indicate the exact date of the article; when citing in the text, only the year. Write the address of the online newspaper in italics	(Suhodolčan, 2023)

Article on the online information portal	Širok, M. (6. 3. 2023). EU odločanje o prepovedi prodaje vozil z motorji na notranje izgorevanje preložil na nedoločen čas. *MMC RTV Slovenija*. Retrieved at https://www.rtvslo.si/evropska-unija/eu-odlocanje-o-prepovedi-prodaje-vozil-z-motorji-na-notranje-zgorevanje-prelozil-na-nedolocen-cas/660104 (accessed on 8.3.2023).	In the list of sources, we indicate the exact date of the article; when citing in the text, only the year is mentioned. We write the address of the information portal in italics, which we state as it is written on the website - do not copy the start of an online connection.	(Širok, 2023)
Article on the online information portal, author indicated by abbreviation	B. V. in K. S. (8. 3. 2023). ZN: Afganistanke najbolj zatirane ženske na svetu. *MMC RTV Slovenija.* Retrieved at https://www.rtvslo.si/svet/zn-afganistanke-najbolj-zatirane-zenske-na-svetu/660403 (accessed on 9. 3. 2023).	The abbreviation given as the author, is listed and cited in the order in which it is written with the article. In the list of sources, we indicate the exact date of the article; when quoting in the text, we mention only the year.	(B. V. in K. S., 2023)
Password in the dictionary, encyclopaedia on the website	Institut za slovenski jezik ZRC SAZU [Fran]. (2022a). *Hibrid*. Retrieved at: https://fran.si/iskanje?View=1&Query=hibrid (dostop 20. 1. 2022). Institut za slovenski jezik ZRC SAZU [Fran]. (2022b). *Teorija*. Retrieved at: https://fran.si/iskanje?FilteredDictionaryIds=130&View=1&Query=teorija (accessed on 3. 9. 2022).	When citing entries from dictionaries or encyclopaedias, we use the institution that published the dictionary/encyclopaedia as the author, and indicate the year in parentheses. For Internet resources, we use the year of the last website update. If we have several passwords and the same year, separate them with a, b, c. We write the title of the password in italics.	(Fran, 2022a) (Fran, 2022b)

OFFICIAL AND OTHER SOURCES			
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Law/Act official publication in the Official Gazette of the Republic of Slovenia	Zakon o varstvu dokumentarnega in arhivskega gradiva ter arhivih (ZVDAGA). (2006, 2014). *Uradni list RS*, (30/06, 51/14).	In the list of sources used, we indicate the original law with all amendments (year and number of the published amendment). When quoting in the text, we write only the year of the original law/act. If we quote the law/act in the text several times, we can also decide to use an abbreviation. Write „Uradni list RS" ("Official Gazette of RS") in italics.	(ZVDAGA, 2006)
Law/Act official publication in the Official Gazette of the Republic of Slovenia with officially revised text and changes	Kazenski zakonik (KZ-1-UPB2). (2012, 2015, 2016). *Uradni list RS,* (50/12, 54/15, 6/16, 38/16).	In the list of sources used, we indicate the year and number of the publication of the officially revised text and all changes published after this publication (year and number of the published change). When quoting in the text, we write only the year of the officially revised text. If we quote the law/act in the text several times, we can also decide to use an abbreviation. Write „Uradni list RS""("Official Gazette of RS") in italics.	(KZ-1-UPB2, 2012)
Amendments and additions to the law/act official publication in the Official Gazette of the Republic of Slovenia	Zakon o spremembah in dopolnitvah Zakona o varstvu dokumentarnega in arhivskega gradiva ter arhivih (ZVDAGA-A). (2014). *Uradni list RS*, št. 51/14.	If we want to note in the text when exactly a certain change in the law/act was adopted (e.g. amendment of one of the articles), we must quote and cite exactly this amendment to the law/act.	(ZVDAGA-A, 2014)

Law in book form usually with commentary by the group of authors	Pirc Musar, N., Bien, S., Bogataj, J., Prelesnik, M. in Žaucer, A. (2006). *Zakon o varstvu osebnih podatkov (ZVOP-1): S komentarjem (with commentary)*. Ljubljana: GV založba.	We cite the law/act in book form only if we cite a published commentary in the text.	(Pirc Musar et al., 2006)
Court decision/sentence	Ustavno sodišče RS. (2014). Odločba št. U-I-70/12 z dne 21. 3. 2014. (The Constitutional Court of the Republic of Slovenia. (2014). Decision no. U-I-70/12 of 21 March 2014.)	When citing a decision/sentence of the court in the list of sources, it is not written in italics texts.	(Ustavno sodišče RS, 2014) (Constitutional court of RS, 2014)
Standard	International Organization for Standardization (ISO). 2016. ISO 15489-1:2016: Information and Documentation - Records Management. Part 1: Concepts and Principles.		(ISO 15489-1:2016)

OTHER ELECTRONIC PUBLICATIONS		When stating the year or the date of the source in parentheses, we never state the date of accessing the source from the Internet, but the information about the publication of the source or its last change. If this information is not available, instead of the year we write the abbreviation „n.d.“, which means „no date“, in brackets.	
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Website/subpage of the organization without year or date of publication	Government of the Netherlands (s. d.). *About the government*. Retrieved at https://www.government.nl/government/about-the-government (accessed on 5. 1. 2023).	If it is information about an organization or its work, the author can be the organization itself. If there is no information about the year of publication or the last change of the website, we use the abbreviation “n. d.”. The title on the website is written in italics.	(Government of the Netherlands, n. d.)
Website/subpage of the organization with the year of publication indicated	Vrhovno sodišče Republike Slovenije [VS RS]. (2020). *Pravilnik o hrambi spisov in drugega dokumentarnega gradiva*. Retrieved at https://www.sodisce.si/mma_bin.php?static_id=2020110511401387 (accessed on 5. 3. 2021).	If it is information about an organization or its work, the author can be the organization itself. In parentheses, we indicate the year of the last modification of the website, which is indicated at the bottom of the page. Write down the online title in italics. If the name of the organization is long and the source is cited several times in the text, an abbreviation can be introduced in the first citation, which is then used in all subsequent citations. The abbreviation must also be given next to the name of the organization in the list of used resources.	(VS RS, 2020)

Website/subpage of the organization with the indicated publication date	Ministrstvo za kulturo. (7. 3. 2023). *Kultura za prihodnost: serija posvetov o viziji kulturne politike*. Retrieved at https://www.gov.si/novice/2023-03-07-kultura-za-prihodnost-serija-posvetov-o-viziji-kulturne-politike/ (accessed on 9. 3. 2023).	If it is information about an organization or its work, the author can be the organization itself. In the list of sources, we indicate the exact date of publication; when citing in the text, only the year is mentioned. Write down the online title in italics.	(Ministrstvo za kulturo, 2023)
Online video (such as. YouTube)	International Council on Archives [ICA]. (1. 3. 2022). *Artificial Intelligence in Archival Appraisal & Selection Webinar - Day 2* [Video]. Retrieved at https://www.youtube.com/watch?v=VOA-iLS3CQ_k (accessed on 15. 5. 2022).	We add an explanation of what kind of source it is in square brackets after the title. In the list of sources, we indicate the exact date of the publication; when citing in the text, only the year is mentioned.	(ICA, 2022)
Online presentation	Duranti, L. (5. 10. 2015). *Archival Diplomatics of Digital Records* [Presentation]. Retrieved at http://www.interpares.org/display_file.cfm?doc=ip1-2_canada_dissemination_ls_duranti_um_2010.pdf (accessed on 9. 6. 2021).	In square brackets after the title, we add an explanation of what kind of source it is. In the list of sources, we indicate the exact date of publication; when citing in the text, only the year is mentioned.	(Duranti, 2015)

ARCHIVAL MATERIALS Title of the document. (time of creation of the document). signature and fund or collection, technical unit number, name of institution or archive.			
TYPE OF SOURCE	CITATION IN THE LIST OF SORUCES	EXPLANATION	CITATION IN THE TEXT
Archival material in physical form	Poročilo o sodni stavki. (15. 3. 1923). SI_ZAC/0609 Okrožno sodišče Celje, a. š. 15. Zgodovinski arhiv Celje.	In the list of sources, we indicate the exact date of publication; when citing in the text, only the year is mentioned	(Poročilo o sodni stavki, 1923)
Archive material in digital format (or available in digital format)	Poročilo o sodni stavki. (15. 3. 1923). SI_ZAC/0609 Okrožno sodišče Celje, a. š. 15, Zgodovinski arhiv Celje. Retrieved at https://vac.sjas.gov.si (accessed on 15. 2. 2023).	In the list of sources, we indicate the exact date of the publication; when citing in the text, only the year is mentioned	(Poročilo o sodni stavki, 1923)

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