Building of integrated national archival network in Croatia: connecting administration, archives and public in practice

Summary

At the end of 2006, CSA started the construction of new archival information-evidence system ARHiNET which implementation enhanced the standardization of the work of archival institutions, and enabled establishment of a unique system for managing and using archival material, as well as data integration and exchange among the institutions that keep archival records. Functionalities concerning digital records ensure integration of traditional and digital archives and present concrete solutions based on practical work. All archives in Croatia work inside this system, as well as more than 450 records holders under the state archives supervision which started to actively use this system during last 5 years. Author of this article Vlatka Lemić leads ARHiNET project from 2006 as coordinator of its development and implementation.

Archival service in Croatia

Development of the modern archival service in Croatia began in the second half of the 20th century. Thereafter, archival service has acquired increasing institutional significance and it became established as a compulsory public service on the entire territory of contemporary Socialistic Republic of Croatia. Establishment of the sovereign Republic of Croatia implied large changes of social and political system and after that archival service also entered new era. It was followed by necessary institutional, legal and organisational changes of entire service, and role of state archives, especially central function of Croatian State Archives as national archives, has gained on importance.

In the same times, archival activities and work of state archives have been influenced by various processes: transition, democratization, globalization, modernization of state administration, dissemination of neo-liberal economy, fast development of information and communication technologies and establishment of information society and many others. Archives have been faced with enormous quantities of archival records on which they were not specifically focused in the previous period, and also with issues concerning transfer, arranging use, ownership relations and other problems concerning that material. Expansion of the framework of activities, development of new services and adaptation of traditional tasks to

market conditions and modern social trends, all additionally pointed out the old, so far unresolved problems – space, staff and financing – and led to the appearance of new ones.

All those processes have significantly affected all components of archival service: 1. state archives, 2. archival service management, 3. „archives" outside state archives network, and 4. archival records creators and owners.

Archival service in Croatia consists of state archives, other heritage institutions (libraries, museums, institutes, documentation centres and other institutions) in which archival material is kept (which can be considered as "archives outside state archives system"), creators and owners of the archival records and archival service management. Through the state archives' network, consisting of the Croatian State Archives and regional state archives, the archival service takes care of national archival heritage and ensures its protection and information integrity.

The tasks of the Croatian State Archives (CSA) as the central archival institution include planning of archival activities, coordination of the professional work of the archives and managing archival records information-documentation service on national level. As preconditions for the successful work of Croatian archives in the modern environment CSA management recognized few basic factors:

- o unification and standardization of business processes,
- o fulfillment of supervising function in relation to the creators,
- o development of information role of the archive and
- o implementation of a integrated national archival system.

In the context of joining the EU, basis of future service development was seen in its more rational organisation (legal framework, network), adoption of common professional standards (technical and intellectual) and in raising quality of services and provisions in archives (by using new technologies).

Those were the reasons that, at the end of 2006, CSA started the construction of new archival information-evidence system ARHiNET which enabled establishment of unique national integrated system of data exchange among the institutions that keep archival material as well as standardisation and increasing quality of archival services and products.

Building national archival network – integration of services and information system

Defining the CSA need for the creation of an integral information system of state archives in the Republic of Croatia as well as analysing former attempts in realisation of

similar projects, a task group was established, faced with the request for the invention of the optimal solution that would, in long term, ensure the system of collecting, processing and presenting data on archival records in Croatia.

Task group, consisting of experts from CSA and the Avicena Company from Split had set the basic guidelines which the system would have to support even before defining the project itself:
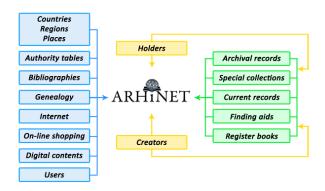
- o use of available and acceptable technologies,
- o creating the technological prerequisites for including all owners of the archival records into the integral system,
- o modulation, extensiveness and simple upgrading,
- o simplicity of use.

General objectives for the development and implementation of the integrated national archival information system were to enable establishment of unique national integrated system of data exchange among the institutions that keep archival material, as well as standardization and increasing quality of business processes, provision and services in archives. The introduction of an integral system of processing, describing and managing of archival records should also enable interconnection and coordination of all parts of the national archival service – state archives, other heritage institutions in which the archival material is kept, creators and owners of the archival records and the segment of archival service management. This would promote and facilitate wider accessibility and use of archival records and to ensure availability (for citizens) and transparency and accountability (for public administration).

By analyzing present situation considering implementation of information technologies and practice in Croatian archives, ARHiNET was crated and implemented as the national archival system with specific objectives:

- o establishment of the unique system based on international standards,
- o providing efficient and user oriented system of collecting, processing and presenting archival material,
- o inclusion of all important elements of archival records management and management of business processes in the archival institutions into one comprehensive system,
- o facilitating work of archival professionals,
- o standardizing and assuring quality of services and products provided by archives,

- ensuring preservation and presentation of data by using information-communication technologies,
- introducing new technologies and technological solutions in the archival institutions.

Picture 1: Concept of integration of data and services in archives
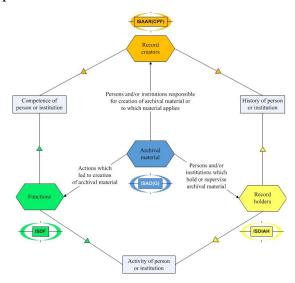
ARHiNET design and implementation

ARHiNET Project task group consists of archival experts from CSA and the IT specialists from Avicena Software Company. The task group had set the basic guidelines which the system should support: use of available and acceptable technologies; creating the technological prerequisites for including all owners of the archival records into the integral system; modulation, extensiveness and simple upgrading; simplicity of use.The task group is responsible for the development and planning of further activities; IT specialists provide software development and technical support while CSA provides the professional framework. System administrators (CSA officers) are in charge of organizing and planning implementation and education of users. CSA and other state archives provide education for the records creators under their supervision. Workshops and seminars for old and new system users are regularly organized.

Technical characteristics of ARHiNET system include WEB application with MS SQL server as a basis and C# computer language. Advantages of this solution are building the uniform base and uniform system of data protection with minimal costs (installation, maintenance and data backup). Its main characteristics are availability, reliability, flexibility and exstensivity with general and specific defined functionalities. System is created on modular basis which practically means design and implementation of particular modules as separate projects and their continuous connecting in a unique system. It made possible that
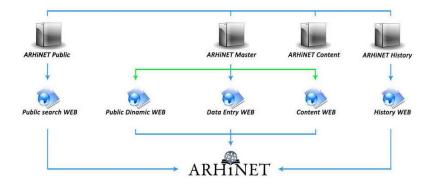
after only several months of system functioning, all state archives were actively participating in its work.

The ARHiNET enables description of archival material of any type and content (textual, graphic, cartographic, audiovisual, electronic, objects, photographs etc.) according to international standards for archival description as well as other relevant specifications. Every record is described with a set of general data elements, special data depending on type of records and related tables of additional data which are available in the form of special lists. They are defined in several basic, mutually linked data sets describing fonds and collections, records creators and records holders, that all together provide data integration and saving the content and context of all types of records.

Picture 2: Model of integration of descriptive entities and implementation of archival descriptive standards in ARHiNET

ARHiNET system structure comprises of two parts: the open one is intended for external users who want to search databases and catalogues and use other offered services, and the protected part, intended for the employees in archives and other institutions, in which all professional-business processes that define processing and management of archival material are taking place. The program solution consists of several databases organized according to the logic of records type and user type/roles that define access to particular records.

Picture 3: ARHiNET 2.0 structure

ARHiNET is created on modular basis which enables design and implementation of particular modules as separate projects in a relatively short period of time and their continuous integration into the unique information system. Advantages of such a solution are the creation of an integrated base and a unique system of data protection with minimal costs. Its main characteristics are availability, reliability, flexibility and exstensivity with general and specific defined functionalities.

Considering previous experiences regarding the duration of projects, it was decided to lead the system development in small steps, always considering the entirety of the information solution in its own complexity. That, practically, meant that the single solutions were defined in a relatively short period of time, and that they were presented and implemented after the testing phase. This strategy ensured a double benefit:

o Implementation of new technologies and information systems is quite stressful for the users, especially, concerning the computer literacy and former business logic of work. By releasing single solutions into operative use, the users were faced with the use of the information system on the simple level and they managed to overcome the basic logic of the information system.

o Regardless of its quality, realization of a project like this depends on users who will work in a system. Listening to the reactions of the users, the task group was gaining, on a daily basis, useful suggestions and observations that were later on implemented into the system. In this way, an optimal interaction of employers, that is, users and of the task group resulted in significant improvements, simplifications and acceleration of the business processes defined in the system.

The implementation and the use of the information system based on defining, designing and implementation on the modular principle ensured for the users of the system to accept the work on a program solution with less difficulty, and the training for the work in the system is accelerated because the basic logic of the work for the users was introduced through the first basic modules that were implemented. Unique database also simplified implementation of standards and best practices.

ARHiNET implementation and realisation

System development began in the second half of 2006 and the first version, containing converted data on archival holdings from various data bases was installed on the server of the CSA in October. Training provided for archivists to learn how to work with the new system was organized first in CSA and after that in regional archives and the sequence of operations was defined.
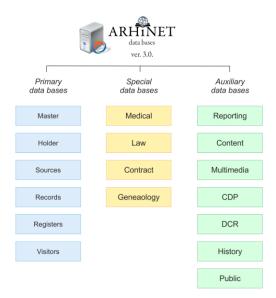
In October 2007 the online Register of archival fonds and collections of the Republic of Croatia, which is an integral part of the ARHiNET system, was opened to the public and an online access to the data on archival records kept in the archives, as well as other institutions which hold archival material was provided. ARHiNET currently contains data on 16.400 fonds and collections, 135.000 other archival units (series, files and items) and more than 32.000 records creators and owners, more than 5.700 finding aids and 3.000 bibliographical units on archival holdings, as well as more than 300.000 digital copies of particular documents. Data are being entered and continually updated on the basis of the submissions by records creators and owners under the supervision of the state archives.

Within a period of one year (from October 2006, when the system was installed on the server of the CSA till October 2007, when it was made public) all state archives joined the project, which stimulated the creation of an information-documentation service dealing with archival records on national level. The introduction of ARHiNET for other public and private record owners in October 2007 marked the second phase in its realization and the continuation of activities regarding integration and exchange of data among institutions creating and keeping archival material. Around 1.620 employees from more than 470 various institutions are currently registered in the system.

Designing, realization, introduction, use, maintenance and development of such complex program solution enclose permanent activities on system improvement, finding new functionalities and solutions, as well as upgrading of the present ones. During the past years of the system operating, more than 300 versions of program solutions have been developed

and put in production, and experiences gained from work and user education led to the development of the version 2.0 that was released in February 2009 and 3.0 released in 2011.

One of important segments of the system is to provide accessibility and preservation of digital content, as well as a description of digital material. Last development is directed toward upgrading present functionalities with options of online access to digital documents and their search and retrieval. During 2011 register of electronic records was implemented inside a system as a firs step for collecting data on types and quantities of digital born records made by various administrative bodies, and transfer of digital records to archives will be possible through ARHiNET CDP Model which is designed for digital preservation and access to digital data such as e.g. databases and multimedia records. It defines XML structure, datasets and files list which enables preservation of structure, content and context of digital record and their management and use in one unique system.

Picture 4: ARHiNET system development

Owing to the results achieved so far regarding development and implementation of ARHiNET, this project has gained active support by the Ministry of Culture of the Republic of Croatia, which accepted it as a national project. From 2008 ARHiNET is a part of the Operative plan concerning the implementation of the E-Croatia programme in a way that all users included in the project contribute not only to the standardization and improvement of service quality in the archives but to a transparent work of government and public administration too. It is also awarded with a Good Practice label in the framework of the European eGovernment Awards 2009 for innovations in the area enabling administrative efficiency and effectiveness.

ARHiNET impacts and possibilities

ARHiNET program solution enabled the inclusion of all records owners and creators in Croatia into a unique system of registering, processing and using of archival material, which represents a major turning point in the work of state archives and owners of archival records. For the records creators and the owners under the supervision of archives, ARHiNET facilitates listing of archival units in their possession, that is, to support the documentation management in records offices which are responsible for conducting it in consistence with the archival law and relevant regulations. The system also enables the processing of archival material simplify and automate data delivery to the competent archives. This contributes to the integration of the archival activity, standardization and unification of work of all segments of national archival service.

ARHiNET is a complete solution for the work of the archives since it not only processes archival records but also supports all types of documentation on archival material, use and digitalization of archival records and other associated with the management of archival records. It enables the integration of data and services of the archives and offers the users full access to information on filed archival records and their owners and creators

Through ARHiNET archival service promote professional standards and best practices in managing archival material. It provides processing the records and on-line publishing of descriptive metadata, based on international standards for archival description, in all archival institutions. This system also facilitates standardization and harmonization of practices and improves the accessibility of records.

The ARHiNET system has great potentials to be implemented in archival institutions, as well as in others institution which create and keep archival material because it enables managing of all types of records and provides earlier availability of data, as well as easy on-line access to digital content. It is already being used in all archives in Croatia and in over 450 other institutions (administrative bodies, faculties, institutes, business companies, courts of law, religious archives and other). Archival community and state administration showed interest in development and implementation of ARHiNET, so at the time it become functional it was presented as good-practice at many conferences in Croatia and abroad. ARHiNET software is used as a base for the making of archival portal in the framework of international project ENArC – European Network on Archival Cooperation.

AMS – Archive Management System

- *Archival material - ISAD(G) standard*
- *Archival material -items*
- *Special collections*
- *Register books*
- *Finding aids*
- *Bibliographical sources*
- *Records creators - ISAAR(CPF) standard*
- *Records holders - ISDIAH standard*
- *Functions – ISDF standard*
- *Microfilms*
- *Public*

Separate databases

- *ARHiNET CDP*
- *ARHiNET DCR*
- *ARHiNET Genealogy*
- *ARHiNET Medical*

HMS – Holder Management System

- *Objects and technical units*
- *Supervision of records centers*
- *Records centers*
- *Reporting system*
- *Archival service personnel*

Service modules

- *ARHiNET History*
- *ARHiNET Content*
- *ARHiNET Online shopping*
- *Localization*
- *Security*
- *Control panel*

User services - Visitors

- *User accounts*
- *Reading room*
- *Usage*
- *User inbox*

Picture 5: Functional and logical entities in ARHiNET system