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MANAGEMENT OF DIGITISATION PROJECTS IN MEMORY INSTITUTIONS

Оцифровка культурного наследия является новой сферой деятельности в библиотеках, музеях и архивах и объектом разнообразных дискуссий среди профессионалов. В данной статье изменения, произошедшие в институциях памяти в связи с использованием современных информационных технологий, анализируются в контексте управления проектами оцифровки культурного наследия, обращая особое внимание на проблематичные и противоречивые аспекты. Управление культурным наследием в цифровой среде трактуется как многогранный и сложный феномен, неограничивающийся управлением технологиями и новыми форматами.

The essential functions of libraries, museums and archives are preservation and spread of mankind cultural heritage reflected in documents and objects. Integration of cultural values into human lives depends on successful heritage safeguarding and presentation for use in these institutions that acquired a shared name of memory institutions expressing the commonalities in their social mission.

Memory institutions operate tangible and intangible heritage embedded in documents and objects and therefore face a challenge to prolong the life of material information medium that tends to decay over time. In most cases desintegration of the document leads to limitation of access, thus preventing the use. Traditional means of preservation as conservation and restoration are not sufficient solution of this issues in the light of increased need for live memory in the information society.

With the development and spread of information and communication technologies digitization – a new effective mean to solve preservation and access issues emerged. Digitization, as a creation of digital surrogates of material documents and objects, is remarkable for the following advantages:

- **Allows to prolong the lifecycle of cultural heritage materials without any restriction of access.** Using the document most patrons of memory institutions are interested in its content or slight analysis of illumination. These needs are satisfied effectively by digital surrogates. Therefore, access to the original can be granted only to few users (mostly researchers), who analyze those features of documents that cannot be reflected by digitized version (e.g. document material and its chemical characteristics, components and materials of document structure). Decreased usage of the original stabilize its physical condition.

- **Enables memory institutions to provide access to the documents that are not widely known.** Often digitization is the only way to introduce the document to the user when the physical condition of the original is critical. In such cases document is reconstructed and the digital surrogate can be accessed by users while the original is beign restored.

- **Integrates cultural heritage into human lives.** The main principle of digital information – simultaneous use for diverse purposes – is valid for digitized documents as well and enables memory institutions to expand the spectrum of their services thus promoting in-depth understanding of cultural heritage in the context of all human activities ranging from education, communication, family and community to national memory.

- **Broadens the scope of human experience and promotes better knowledge of various cultures.** Presentation of cultural heritage in the digital environment eliminates geografical obstacles. Even those persons who have no opportunity to visit the real institution and see the original can enjoy the observation of digital surrogate.

Digitization and associated advantages and challenges is a quite controversal topic in discussions of memory institutions professionals. In order to distance from pessimistic and enthusiastic opinions and provide more realistic view it is important to note that digitization is a complex phenomenon that brings significant changes into operation of memory institutions that are associated with both new opportunities and threats. Digitization should not be treated only as a solution or an issue but a new arena of cultural heritage management that requires different approach.

Changes in the management of cultural heritage are significantly influenced by the essential properties of the digital information as a new medium that marks a transition ″from atoms to bits“.

One of the critical features of digital information is **the absence of content dependency on medium**. The fact that any information can be stored in the digital format allows an integral approach to audio, video and textual documents that are traditionally handled separately in memory institutions. From the user point of view an integral representation of diverse information has a lot of advantages because traditional institutional or geographical barriers are overcome. Speaking about material documents it should be noted that separate handling is not user- but document-oriented. Digitization enabled significant changes and became one the reason for emergence of the memory institions metaphor that emphasizes co-operation between museums, libraries and archives performing essential functions. Today the collaboration between institutions are not limited to memory institutions themselves but expanding to broader networks including academic institutions, historical societies and businesses. From user perspective networks are effective solution providing services that meet increased requirements but it is also a challenge for partnering institutions with different organizational cultures and management experience.

Independency on the medium is closely related to the next property of endless transformation, or in other words, **repacking of digital information**. In the digital environment there are no ″end-product“ for the user but the raw material for new creative ideas. The same digitized document can be used in various contexts and for diverse purposes. For instance, if it is digitized photograph of historical monument it can be included into virtual exhibition, educational information package for secondary or higher schools, it could be used to create educational games etc. Information repacking vastly extends the spectrum of services provided by memory institutions and promotes creation of added value. Digitized cultural heritage is a pure intellectual product therefore the main functions of libraries, museums and archives are creation of new contexts, interpretation and explanation. New contexts reveal diverse aspects of the document or object and enrich associated impressions and perceptions. On the other hand, traditional role of the information specialist as a mediator between document and a user increases in the environment of immersive volumes of information. Flexibility of digital information empowers to tailor services effectively to the patrons‘ needs (The DIGICULT Report, 2002).

Access to digital information depends on **information technology that is characterized by rapid obsolescence and renewal processes**. Current research shows that 80 percent of nowaday technology will become obsolete in 10 years because of the rapid pace of innovations with a decreased two- or five-year period between new inventions (The DIGICULT Report, 2002). Obsolescence of information technology is one of the barriers of cultural heritage management in the digital environment. Digitization requires a lot of investment and obsolescence means that they will be repetitive. This feature of information technology impacted a traditional understanding of preservation that is unambigous for material documents and objects – optimal physical condition guarantees access. In the digital environment there is a new meaning that encompasses preservation of the document from the point of view of its integrality and preservation of access to the document that is provided by certain hardware and software (Conway, 2000). Changing meaning of cultural heritage preservation forces memory institutions not only to search for new methods, but also to consider rational management of resources and seek for additional financial support as the present funding doesn’t meet digitization requirements.

Information technology expansion into all spheres of human activities is resulted in its diversity that stipulated the emergence of **various standards for digital information management**. On the one hand, networks and the independency of digital information on the physical medium encourage information exchange on the local, national and international levels. On the other – strategical and technological factors complicate sharing of digitized collections. The main prerequisite for effective exchange is an interoperability of cultural heritage information systems that embraces various political, legal, semantical and technological aspects (Miller, 2000). Digitization initiatives are usually implemented using financial support of various international and local grants. Sponsoring organization often raises specific requirements to procedures and methods of digitization or memory institution creates its own rules and standards. Variety of standards, rules and norms becomes an obstacle for interinstitutional collaboration (Guidelines for Developing Good Digital Collection Projects, 2002).

Digital environment and changed handling practices force memory institutions to apply new approaches to the management of cultural heritage. Activities in libraries, museums and archives related to the digitization of cultural heritage can be discussed in a framework of the project management cycle that is comprised of decision-making, planning, organizing, management of human resources, control stages.

Decision-making is a preparatory stage that indicates whether a memory institution is going to undertake adigitization project. Strengths and weaknesses of the institution are weighed against opportunities and threats that can be brought by digitization. An institution aiming to implement a digitization project should have a strong motivation and sufficient intellectual and material resources. Long-term commitment and iterative investments should be considered. The most important rule for this stage is that digitization should be integrated into the mission and main goals of the institution that indicate most important priorities and shape all spectrum of activities undertaken. Insufficient organizational capabilities may endanger the successful and continuous implementation of other important activities that comprise social functions of libraries, museums and archives.

Planning stage is associated with revising an initial idea and turning it into a consistent set of decisions and actions. In the context of digitization the following problematic areas during the planning activities can be identified:

- Formulation of the main goal of the project;
- User segmentation;
- Document selection.

Research data reveals two broad orientations either to access or preservation(often both are combined) in determining main goal of the project. Choosing preservation or access (or balancing both) forces memory institutions to accept a certain philosophy of what can be defined as access and preservation in the digital environment that will further direct all decisions considering resource allocation. An example of clear and grounded approach could be found and the National Library of Czech Republic in Prague that have more than ten years experience in digitization. The library‘s digitization philosophy is based on the awareness of limited ability of digital surrogate to reflect all information of the original. Due to the peculiarities of digital format the digitized version of the document does not provide an information on document structure, materials, chemical properties etc. Therefore it is impossible to assure authencity as it is commonly understood in the memory institutions‘ community. On the other hand, in the digital environment the interaction with the document is limited to observing it. For this reason, human vision properties and requirements became guided the library in selection of appropriate technology (Knoll, Psohlavec, 1995).

User segmentation is one of the challenging fields for memory institutions which are confused by the opportunities of electronic networks that eliminate any geographical barriers. Concepts of availability and accessibility (Edelson, Gordin, 1995) help to make difference between basic prerequisites for use as information search system, organized digital surrogates and approach to the user as an individual with certain intentions, level

of knowledge, digital literacy and so on (e.g. scholars and pupils of secondary school have obviously different demands for the search systems and description of the digital surrogates).

The limited budget, varying value of documents and memory institution profile encourage libraries, museums and archives to estabslish a set of selection criteria for digitization. Several common selection principles are found in practice: evaluation of collection, properties of documents and usage. Evaluation of collection is the highest hierarchical level of selection when the overall idea is assessed. Usually such factors as collaboration with other memory institutions, local and national context and priorities impact digitization scope. When there is an agreement on the collection as an entity individual documents are examined in terms of their value, physical condition and properties. Usage is important but controversial criterion – it may show the popularity of the document on the other hand; but may indicate not only low popularity but also inappropriate access conditions or obstacles in case of rare usage (Smith, 2001).

Organizing is a set of activities aimed to allocate all intellectual, material and financial resources to implement digitization in effective manner. Memory institutions engaged in digitization project should consider material and financial potential of the organization and search for rational approaches. Lately collaboration between private sector and memory institutions became a popular solution to compensate the lack of competence, technological infrastructure or material facilities. Such co-operation provides numerous advantages as a clear price that facilitates planning further digitization activities, up-to-date technology and skills offered by private partner (Capture your collections, 2000). However, due to the lack of experience and tradition of such partnerships pitfalls of mutual misunderstanding should be considered.

Intellectual capital is a significant prerequisite for successful digitization projects. High demand for information technology specialists and limited capabilities of public sector institutions to attract them force libraries, museums and archives to accumulate in-house skill base exploiting various methods as, for instance, cascade training or collaboration with higher education and othe memory institutions (Digitisation projects – staff training, 2002). In the digital environment the boundaries of competences of memory institution professionals are blurring thus putting more pressure on staff in libraries, museums and archives. Therefore, **management of human resources** includes not only managing competences but also resistance of personnel to accept changes.

Aiming to provide quality services memory institutions should monitor their performance – this rule is valid for digitization projects as well. **Control** of achievements helps not only to correct mistakes but also develop in-depth experience becoming a learning organization. Most often three assessment methods are applied: input, output and outcome. Input evaluation is a traditional approach assessing organizational resources allocated for creation of the product or service (e.g., technology, collection etc.), while output deals with assessment of products or services for which a number of „raw materials“ were utilized. Outcome method represents a new trend to evaluate a broad context and results of memory institutions‘ performance focusing on positive changes that happened due to the initiated activities or programmes (Rudd, 2000). It is worth

noting, that in the digital environment libraries, museums and archives pay increasing attention and efforts to issues of usability of information technology-based systems.

In the field of cultural heritage digitization a narrow focus on technology and new formats is often provided. However, in order to understand a complex phenomenon of digitization a more comprehensive approach is necessary. Changing environment of memory institutions encompasses diverse factors underpinning application of information technology.

Technology itself doesn‘t offer any solutions to management of cultural heritage in the digital environment, it rather provides libraries, museums and archives with a powerful tool to perform their core functions in more effective manner. The success of digitization initiatives depends on how memory institutions will master it. There is a strong need to comprehend accumulated practical experience in order to manage digitization processes, preservation and dissemination of digitized content.

In many cases digitization is not a problem of information technology application but of rational management of diverse resources including human, material and financial assets.

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