

Czech Republic

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Coordination of the development of the information society in the Czech Republic from the cultural heritage preservation point of view can be seen from two perspectives and competences: of the Ministry of Informatics and of Ministry of Culture. These central governmental bodies implemented the policy of delivery of digital information and services into their strategically documents and developed legal and methodological instruments for their implementation. While Ministry of Informatics of the Czech Republic is a central governmental body for information and communication technologies, telecommunications and postal services and represents in the digitization policy "technological part and services"; the Ministry of Culture is a central governmental agency for art, culturally education activities and cultural heritage, representing "content part".

A. Users and content

The Ministry of Culture of the Czech Republic supports digitization initiatives through its political documents (*Cultural Policy of the Ministry of Culture of the Czech Republic, Concept of More Effective Care of Movable Cultural Heritage in the Czech Republic in 2003 – 2008, Concept of a More Effective Care for Cultural Monuments of the Czech Republic until 2005 and Concept for Libraries Development*) and its launched programs. All activities are defined in available instruments – laws (Act No. 122/2000 Coll. on Protection of Collections of Museum Character and Amendment to Certain Acts, Act No. 101/2001 Coll., on return of the illegal export of the cultural property, Act No. 483/2004 Coll. on standards, services and information accessibility, Act No. 20/1987 on the State Care of Monuments, Act No. 257/2001 Coll. on Libraries and Terms of Operating Public Library and Information Services (Library Act) defines and protects library documents (books etc.). Within these digitization

policies, intellectual property rights legislation and resources networking (concerning theoretical insights and conceptual changes), the Ministry of Culture ensures transformation of an information society to a knowledge society and ensures the understanding of the cultural heritage within information society. The Ministry of Culture creates strategic and political framework for understanding of the nature of the information society from the cultural point of view. Cultural heritage is a particularly rich resource for building of knowledge society through the use of the information and communication technologies opening its cultural contents and contributing to the creation of a market of "cultural experiences" in the heart of the society. Information technologies enable to enhance the attractive quality of the information potential of the use of the cultural heritage. The position of the cultural heritage within information society reveals the cultural, economic and political trends of the global society and enriches them with the new levels of reflection of the ongoing changes by trying to determine the conditions shaping this transition in a clearly identified category (cultural heritage). This process of enhancing knowledge is covered by the approaches named as "digital heritage and capital", "knowledge society" and "common public goods".

In cooperation with the Ministry of Informatics, that supports the technical possibilities – existence of communication infrastructures and digital literacy – the Ministry of Culture creates the specific financial programmes as complementary to those of financial heritage conservation programmes. The aim is to offer space for understanding of the specific ways in which economic processes gain importance in the digital cultural sector, with a view to ensure that such processes will meet the given cultural and social challenges and to support adoption of quantitative and qualitative approach to the specific uses of digital heritage in order to be able to establish the cultural policies that will lead to creation of quality cultural

landscape as a common public space guaranteeing equal access to all.

Documentation, archiving, conservation and presentation of cultural heritage transformed into the informational memory creates basis for further use of data, be it within or out of the virtual (cyber) space: cultural projects of knowledge, memory, creation and education. Education is thus a first laboratory of virtuality, whether it is in the form of art, knowledge, or meaning. Therefore coordination at national level stems from the national information networks and databases of cultural content.

1. The basis for the heritage preservation information system is the *Central Registry of Cultural Monuments in the Czech Republic*: register of the cultural monuments, administrated by the specialized organization; regional authorities and local authorities of municipalities with extended competence shall keep registries of cultural monuments located in their territorial districts. Entries in the aforementioned registries shall be made in accordance with extracts from the Central Registry. The specialized organization of the state care of monuments shall notify the owner of a cultural monument, the regional authority and the local authority of a municipality with extended competence of the registration of the cultural monument in the Central Registry, as well as of the fact that a particular object is no longer to be considered a cultural monument. In the case of immovable cultural monument, the specialized organization shall notify also the relevant construction administration authority. In the case of an archaeological find designated as a cultural monument, it shall notify also the Archaeological Institute of the Academy of Sciences of the Czech Republic.
2. SAL (*State Archeological List*) was initiated in 1991. Another strategic objective of the information system being developed is a digital map of an archaeological site on the territory of the Czech Republic within the environment of the Geographic Information System (GIS). During the years 1993 and 1996 the Institute for Monument Care obtained the technical equipment to digitalize maps provided on the basis of contracts by the regional archaeological institutes. These digital maps, linked with the database of the archaeological sites and supplemented with additional elements of the rapidly developing GIS (aerial and satellite photographs, digital terrain models, GPS) will create a comprehensive information system with wide potential practical use.

3. All museum collections owned by the state, regions or municipalities and a number of collections owned by other legal and private subjects are registered in the *Central Register of Collections (CRC)* in the Ministry of Culture. CRC is publicly available through an information system and contributes in this way to increase information awareness of museum collections and museums themselves. It also creates basic conditions for preservation of collections after the entry of the Czech Republic into the European Union.
4. Contemporary programme *Integrated Movable Cultural Heritage Protection System*, funded from the state budget, is specifically focused on the description of endangered cultural objects and already thousands of collection items, movable cultural heritage objects and objects of cultural value have been documented. The programme is recently divided into five sub-projects, with newly added category (No.5) and precisely defined supplemented element in No. 2:
 - Equipment of the museums and historic monuments (castles and churches) with alarm systems and mechanical barriers)
 - Uniform system of recording and documentation of cultural objects (this applies currently in particular to ecclesiastic objects)
 - Rescue purchases of cultural treasures and objects of cultural value into property of state and regional museums and other state collections
 - Protection against the ravages of certain climatic conditions or environment in general (equipment of the museum storages and permanent exhibitions, equipment of the museum conservation and restoration laboratories etc.)
 - International legal cooperation on illegal export of the cultural property (following the above mentioned law No. 101/2001 Coll.).
5. The Ministry of Culture also cooperates with the Czech Academy of Sciences – Centre for Documentation of Property Transfer of the Cultural Objects Belonging to Victims of World War II (primarily victims of the Holocaust). Another activity while implementing the Concept is to ensure that the restitution art database (publishing the works coming from the property of the victims of Holocaust) is updated on continuous basis
<<http://www.jewi-shmuseum.cz>>

6. *Central Register of Libraries*: Register run by the Ministry of Culture in cooperation with the National Library. Inscription into the database is according to the Act. No. 257/2001 Coll. on Libraries and Terms of Operating Public Library and Information Services (Library Act) and creates the system of state funding and financial support of preservation, quality principles of used information systems and public services. Special program of the Ministry of Culture for financial support of the libraries, approved by the Resolution of the Government of the Czech Republic No. 351 – Conception of state support of the information policy in education is the programme Public information services of libraries (VISK). Programme is open for all libraries registered according to the Act No. 257/2001 Coll. which main object is to provide librarian and informational services. This programme is implemented also in collaboration with the Ministry of Informatics in the framework of the National and Communication Policy eCzech 2006.

B. Technologies for digitisation

Technology and services

The Ministry of Informatics of the Czech Republic <<http://www.mi.cr.cz>> is a central government body for information and communications technologies, telecommunications and postal services (policy document: *The Ministry of Informatics and the Development of the information Society in the Czech Republic*, <http://www.mi.cr.cz/images/dokumenty/Mi_cr_brozura_EN.pdf>).

Among the priorities of the Ministry of Informatics are equal competitions in the telecommunications market, development of e-commerce and support to computer literacy in the Czech Republic.

The Ministry of Informatics drafted the State Information and Communications Policy e-Czech 2006, which was approved by the Government in March 2004. This strategy document on information society development until 2006 aims to meet the obligations towards the European Union while considering the specific needs of the Czech Republic regarding information society development at the same time.

The four priority areas of the State Information and Communications Policy are as follows:

1. *Affordable and secure communications services*

This area comprises the issues of the development of electronic communications market services, including liberalization and regulation of the market and enhancement of competition along the lines of the new European regulatory framework. A sufficiently extensive supply of quality, secure and also affordable services for wide population groups, for businesses and the public administration, is a prerequisite for stimulating the growth of the national economy and for its more efficient co-operation with foreign business entities, especially within the EU. It is necessary to support the availability of advanced infrastructure by all means. In the first place, that includes high-speed Internet access. That is the only way to enable the implementation of the other priorities of the information and communications policy.

Within this priority there is a special emphasis given to the priority *Public Internet Access*. The most extensive network of publicly accessible institutions currently offering Internet access consists of public libraries. About 1,700 public libraries have been connected to the Internet, and an average of 76% of inhabitants of the Czech Republic live in a place where the local library offers Internet access. All public libraries will be able to provide their services over the Internet as soon as 2006 and thanks to their focus and atmosphere this will make them one of the possible public administration contact points as well as a significant information centre. The other priority is *Legal use of information technologies*, which deals with the task of the Ministry of Informatics focused on education and drafting guidelines concerning secure and legal use of information technologies. The Ministry is among the sponsors of the Law on the Side of Authors initiative that associates representatives of government and organizations dealing with intellectual property protection. Fundamental information on secure and legal use of IT is also included in the curriculum of the *National Programme for Computer Literacy*.

2. *Information literacy*

Information literacy is regarded as an important factor for the development of a society, its economy, culture and overall prosperity. Information literacy is going to

become an increasingly important part of overall education and drive the quality of life of the population as well as opportunities for individuals. Technology and e-learning services will ensure wider accessibility of education, and consequently the Ministry of Informatics intends to support their deployment and use in schools, libraries, and public administration and in the education of the wider public. According to the results of the information literacy survey launched by the Ministry of Informatics in February 2005, 58% of the population has access to a computer and 50% of adult population has access to the Internet or e-mail. About 84% of people have access to a mobile telephone and 13% to a laptop computer. People use computers most often to search for information on the Internet (76%), for self-education (63%), playing music or movies (61%) or at work (53%). 31% of respondents do their shopping over the Internet and 26% used electronic banking.

Within this priority Ministry of Culture launched the *National Programme for Computer Literacy* in February 2003 with a view to enabling the wider public to learn the basics of working with computers and the Internet and helping those who have so far not had the opportunity to work with a computer to overcome their fear of new technologies, facilitate orientation in society and improve their position on the labor market. In 2005 the National Programme for Computer Literacy was extended to include special courses for the handicapped and a specialized course named *The Citizen, Official and Public Administration Portal*. Within the Ministry of Informatics operates the *Information Literacy Forum*, comprised of representatives of the public and private sectors and academia. The Forum aims to facilitate better awareness, coordination, and promotion of activities related to increasing computer and information literacy in the Czech Republic. The purpose of the group is also to monitor or participate in international projects, as the case may be, for instance the Internet Training Centres Initiative of the International Telecommunication Union (ITU), the launched projects of the European Commission and ICT education projects organized by Unesco.

3. Modern online public services

At the national level, the Ministry of Informatics is in charge of the development of public administration information systems and e-government, i.e. electronic public administration which, using modern information

and communications technologies, allows for better co-operation among public authorities. It also facilitates contacts between citizens and businesses on the one hand and the government on the other, making public administration more transparent and efficient. The main information source for the entire system of e-government services is the Public Administration Portal <www.portal.gov.cz>. The Public Administration Portal serves as a single gateway to the electronic official world of the Czech Republic for citizens, businesses and institutions, allowing them to communicate with public administration entities. The Portal concentrates all necessary information on central and local government authorities in one location, ensuring remote and free access to up-to-date and approved information and services of public administration bodies, including electronic transactions. In line with EU programmes and objectives relating to e-government, the purpose of the project is to help simplify administration, facilitate communication between citizens or entrepreneurs with public administration entities, ensure a simple and remotely accessible exchange of verified information and extend the transparency of and trust in the public administration. The public will gradually be able to gain access to the widest range of information related to a territory via the Internet Portal, supported by the Map service of the Public Administration Portal. A centrally operated system of the Trade Licence Register – Central Registration of Entrepreneurs, allows future interconnection with business register of other EU member states, including a possible connection to the system of European commercial registers.

4. Dynamic e-business environment

Under this priority, Ministry of Informatics supports the equal conditions for all market participants and all government intervention to be clear, transparent and technologically neutral. As the central body of public administration for electronic signatures, the Ministry of Informatics conducts regulatory, supervisory and accreditation activities with regard to electronic signature products and providers in the Czech Republic and supervises the Electronic Signatures Act. In terms of progress and the practical use of IT, the Czech Republic is still characterized by a significant difference between companies and households. The use of modern information and communications technologies by

households is insufficient compared to the EU average although the development has significantly accelerated in the last year. The level among companies is comparable to, or even above, the EU average. Among Central and Eastern European countries, the Czech Republic ranks among the best equipped to access electronic communications and IT services.

Technologies and common standards for digitization

The mostly used database system in museums and galleries is *Demus* (Documentation and Registration of Museum Collections), which corresponds with the recommendations of the international commission CIDOC ICOM and its data structure with the Object ID description rules. Demus has been developed by the Moravian Regional Museum in Brno. Another largely used system is *Bach*. Both systems enable registration of the collection records as well as linking to pictorial information about individual collection objects. Since 2004 the new Centre for Information Technologies started to operate within the Moravian Regional Museum in Brno. Its main aim is to create general standards, guidelines, as well as software tools and to provide technical support for digitization of all sources of cultural heritage, predominantly collected in the museums. The Centre based its activities on the previous practice (Demus) and takes into account publications and guidelines coming from the international projects, such as MINERVA Plus and CALIMERA, etc. In the area of library materials, there are two nationwide approaches based on largely adopted compound document standards. There are XML schemas (DTD) developed by the National Library and freely available for manuscripts and old printed books, digitized periodicals, and digitized monographs; a completely special DTD is used for structuring of historical texts (on TEI platform). These schemas are applied in the digital library applications Manuscriptorium <<http://www.manuscriptorium.com>> and Kramerius <<http://kramerius.nkp.cz>>. The digital libraries are being connected now to TEL (The European Library) and also to other portals via OAI-PMH and Z39.50 protocols. Special imaging technologies used are the DjVu format (mixed raster content technology) for digitized newspapers and digitized monographs (Kramerius) and MrSID (multiresolutional wavelet image) format and special Express Server for digitized

historical maps (Manuscriptorium). The same document schemas are also implemented in authoring and structuring tools used by institutions for free including a commercial digitization solution system for newspapers and modern monographs.

C. Sustainability of content

Digitization, or computerization is supporting digitization infrastructure for cultural heritage organizations of all kinds – libraries, museums, archives and natural and environmental bodies as essential contributors of content; services include: training, searching software, digital archiving services, data entry templates, and other resources for libraries, museums, archives and historical societies engaged in digitization of primary resource collections.

Sustainable funding for digital collections

All the activities are guided by the programmes of the Ministry of Culture, described above. These financial programmes represent state funding and business models. Except for them, cultural institutions are involved in the international EU programmes. The Czech Republic has closely coordinated its national policy and development strategy for electronic communications, ICTs and information society with European Union policies. The leading vision of development for the European Union until 2010 was set out by the Lisbon summit in the framework of which a number of activities are taking place also in the field of the information society, in particular under the umbrella of the joint eEurope 2005 Action Plan. A new initiative will follow under the name of i2010, which among other things integrates the audiovisual sector too. Those activities are discussed in the eEurope Advisory Group and its expert sections, where the Czech Republic is participating primarily through representatives of the Ministry of Informatics. Collaboration with the European Commission and its Directorate General Information Society and Media is from the perspective of the Ministry of Informatics ensured in following areas:

- The eEurope Advisory Group (strategic goals and priorities of development of the information society in the European Union in the framework of the "eEurope

2005 Action Plan: An information society for all" and monitoring or evaluating its implementation)

- The Communications Committee (COCOM) (legal regulations and recommendations for the sector of electronic communications, implementation of those documents by member states and adopting conclusions)
- The Radio Spectrum Committee (RSCOM) (legislation of the European Communities concerning the frequency spectrum and implementation of those documents by individual member states).

Since 1 January 2003 the Czech Republic has been participating in following EU programmes:

- The *IDA* (Interchange of Data between Administrations) programme
- The *eContent programme*; In 2005 this programme was followed by the new four-year *eContentPlus programme*.

Since 1 January 2004 the Czech Republic has been part of the following programmes:

- The *eTEN programme*
- The *Safer Internet Action Plan*. In 2005 the programme was followed by the new four-year *Safer InternetPlus programme*.

The Czech Republic has been able to draw finance from the *EU structural funds* since 1 May 2004. A cross-sectional topic, the information society is part of all operational programmes. It is included particularly in the Joint Regional Operational Programme, Operational Programme Human Resources Development, and Operational Programme Industry and Enterprise. The development of information and communications technologies in regions is primarily the subject of measure 2.2 of the Joint Regional Operational Programme. Its goal is to support investment in information and communications technologies for regional and local public administrations. This objective includes support of activities linked to public access to the Internet for citizens, among others, in libraries, community centres and schools.

D. Digital preservation

Ministry of Culture sees the problem of digital preservation as a set of processes and activities that ensure the continued access to information and all

kinds of records, scientific and cultural heritage existing in digital formats. Since constant input of effort, time and money to handle rapid technological and organizational advance is considered the main uncertain block for preserving digital information, the issue of digital preservation needs to be recognized on the political level much wider. Long-term, error-free storage of digital information, with means for interpretation and retrieval are the most highlighted aims of the process of safeguarding digital resources for the future of the knowledge society. Digital preservation challenges, including metadata policy, were taken over by the Centre for Information Technologies and Technical Museum in Brno.

The Ministry of Culture supports activities especially in the field of creating of high level recommendations and protocols based on solid frameworks providing accurate concepts and essential attributes of preservation in the digital information life cycle, and their implementation at all levels - technological, research, organizational and operational. Massive investment to the creation and purchase of digital content that are central to the work of most cultural and educational institutions, and as such form a significant part of our cultural and intellectual heritage, need to be sustainable: we want to maintain digital information intact, but we also want to access this information in a dynamic use context. Ministry of Culture supports also the interoperability of archiving and digital library systems, standards for archiving and preservation, social and economic models of archiving and digital libraries via its financial programmes as superstructure to record management and appraisal systems. Although the Ministry of Culture is aware of rapid change of digital information preservation landscape influenced by the current communication infrastructure – the Internet, personal computers, cable television, and data storage understands the critical, cumulative weakness in our information infrastructure, the common policy and approaches to direct and implement digital preservation strategies were not identified yet.

E. Monitoring

Monitoring of the digitization initiatives at national level are ensured by the Ministry of Culture via its financial programmes aimed at the digitization of

cultural heritage and is published on the website of the Ministry of Culture, as well as in the Annual Reports of the Ministry. This system ensures also the surveys of user-needs and indicators for future implementation and planning.

NRG and MINERVA Plus results at national level and their impact on the institutions

Participation of the Ministry of Culture to the NRG provides strong international and political support for all the initiatives in the field of cultural heritage preservation, digitization and presentation coordinated at national level. It also enables to build stronger awareness in the domain of cultural digitization and especially importance of creation of common standards and approaches for digitization and in digital preservation, in particular.

Possibility to participate in the international network facilitates for the representatives of the Czech cultural institutions to take part on the important professional and political discussions related to cultural heritage on the European level. During our participation in the project, more than ever, we got the chance to take part on the creation of new action plan for the digitization of the cultural heritage. It's nowadays existence means a lot for our chance to enhance our communication with political representation and, even more important, with our public. This enables us to mediate the message of high importance of providing rich and diverse digital resources that support education, tourism and the creative industries to professional and wider public. Supported by the European common policy in digitization of cultural heritage, the Ministry of Culture and cultural institutions in our country enhance the importance of having access to the digital cultural heritage of Europe.

Last but not least, benefits from the project – be it research results, networking, strengthening coordination, cooperation between Member States' digitization initiatives, etc. – increased awareness of importance of common standards for digitization and development of technical tools in the field of cultural heritage digitization. Direct access to the results of the research formed the basis for immediate updating of the information related especially to the guidance and digitization management at national level.

Diffusion and impact of the MINERVA Plus products and tools

During the second year of MINERVA Plus project we focused our activities especially on dissemination of all available information related to the digitization of cultural heritage, both at national and European levels. The special attention of the MINERVA Plus CZ - Working group was given to establishment of common platform for both general and professional public for fruitful discussions on cultural heritage digitization and related topics.

In cooperation with Association of Libraries and Librarians, National Library in Prague and National Technical Museum in Prague we organized the 6th international conference "Archives, Libraries and Museums in Digital Age 2005". The special aim of the conference was the presentation of digitization policy of EU, Ministry of Culture of the Czech Republic and presentation of different projects of digitization at national and European levels; during a special session we managed to highlight European approaches to digitization presented and accessible through programmes, initiatives and funds. All contributions will be published in post – prints of the conference thanks to the MINERVA Plus project.

Different approach to dissemination of the information was chosen for organization of international workshop for cultural institutions – presentation of possible ways of using digitization for conservation purposes in more processing atmosphere. The Ministry of Culture and MINERVA Plus CZ – Working Group was happy to host prof. Toshiro Kamiuchi, Ph.D from Japan, who presented new ways of using digitized information for preservation, conservation and presentation of cultural heritage. In order to attract the attention of directors of Czech museums in galleries on establishment of digitization priorities, we gave several presentations on EU cultural policies, funding possibilities and initiatives on Annual meeting of directors of museums and galleries.

According to the survey results of the EU cultural policy awareness between the cultural institutions, Ministry of Culture thanks to the project MINERVA Plus produced a CD-ROM including all the relevant information about the cultural policy of EU in digitization, possibilities of contribution to EU cultural project (with special attention to digitization of cultural heritage), presentation of successful projects, including all the translations of the materials as a result of MINERVA

Plus project, especially *Good Practices Guidelines* and *Quality Principles for Cultural Websites: a Handbook*.

Within a short time we distributed all CDs among the cultural institutions in the Czech Republic and Slovakia and gave consultations on the topic of digitization. All the information will be available on the website of the Ministry of Culture.

In the framework of the MINERVA Plus project we continuously supported the Centre for presentation of Cultural Heritage, based within the National Museum in Prague. Cooperation during the year 2005 was oriented towards creating dissemination policy in presentation of cultural heritage.