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### **Information Technologies in Russian Museums: Traditional and Contemporary Approaches**

#### **Summary**

The challenge is considered in two aspects:

IT as a tool to improve Museum Collection Processing Technology for Museum Staff (“Internal Use”, “Traditional Approach”)

IT as a tool to create Contemporary Access to Cultural Heritage for Public (“Public Service”, “Contemporary Approach”).

“Internal Use”. At the beginning computer programmes have been created to answer the museum specialists typical demands; so, the museum collection information systems were orientated to “internal use” (DB Collection creation, including text and digital images, reviewing, updating, expanding the information on each item, effective search process, data access etc.). Recently special technologies have been created in Russia to improve traditional system functional characteristics, for example - retrospective conversion of museum documents (a special industrial technology for digitising card catalogues, inventories and inventory books and creating special DB), Flying Lens Scanning Technology to get digital Images of high quality.

“Public Service”. The virtual presentation is the main basis for the public service goal. The first virtual presentation of cultural heritage appeared in Russia in 1990s. In 1994-95s multimedia technology came to Russia not only to large museums, but also to regional museums all over the country. A lot of presentations on CD, DVD and INTERNET have been produced. Entering into the 21<sup>st</sup> century, the New Russia tracks to the Open Information Society in close cooperation with other countries, and our goal is to present the Russian cultural heritage in its fullness – movable and unmovable, tangible and

intangible. Considering electronic publications as a very effective instrument to meet the challenge, we could mention two forms of presentation: “OUT OF MUSEUM” – CD, DVD, Internet sites; “IN MUSEUM” – electronic expositions, exhibitions using PCs, electronic kiosks, gas panels, projectors etc.

The museum transformation concept from Traditional Museum Model to Contemporary Museum Model is demonstrated by the example of the State Pushkin Fine Arts Museum.

### **Introduction**

I call my presentation “Information Technologies in Museum Activity: traditions and trends”. In compliance with actual ideas, I’d like to consider this challenge in two aspects:

IT as a tool to improve Museum Collection Processing Technology for Museum Staff (“Internal Use”), and I will call it as “Traditional Approach”;  
IT as a tool to create Contemporary Access to Cultural Heritage for Public (“Public Service”), and I will call it as “Contemporary Approach”;

I fully appreciate that it is stipulative definition; nevertheless I will follow this definition in my presentation.

One more preliminary remark: when I started, it became evident for me, what a difficult task is to present the integral picture; that’s why my presentation is constructed as a couple of examples.

In conclusion I will demonstrate as an example the Museum Concept Transformation from Traditional Museum Model to Contemporary Museum Model.

### **IT in Museum: “Internal Use”**

Let us begin with a little bit of History.

In 1976 doctor Jakob Sher from the State Hermitage used a Mainframe to create a Machine Catalogue for the fragment of Antique Bronze Collection; it was the first time when Computer Technology came to Russia.

In 1980-th Collection Databases (DB) have been created in large Museums, such as State Central Revolution Museum, State Russian Museum, State Hermitage and some others on basis of Mini-Computers and unique Programs.

In 1990-th Personal Computers (PC) appeared not only in large Museums, but in Regional Museums all over the Country. Computer Programs have been created to answer the Museum Specialists typical demands; so, the Museum Collection Information Systems (MCIS) were oriented “for internal use”. Today the business proposals in Russia include three models of MCIS: KAMIS ([www.kamis.ru](http://www.kamis.ru)), AIS-Museum ([www.givc.ru](http://www.givc.ru)), NIKA-

Museum.([www.cognitive.ru](http://www.cognitive.ru)). Itch of them satisfy the typical Museum claims and provide:

- DB Collection creation, including text and digital images,
- Reviewing, updating, expanding the information on itch Item,
- Effective Search Process, data access,
- Automatic Review of the Print-out Reports according to the Museum Instruction Demands (Acquisition Register, Inventory Cards etc.),
- Transformation of the Output Data into Standard Form (Word, HTML etc.).

Among the current systems shortcomings we are confronted with now, as an example, I'd like to attract attention to:

- Laborious Manual Data Input,
- High quality digital images creation.

Special technologies have been created in Russia to surmount these obstacles:

- Retrospective Conversion of Museum documents (RC),
- Flying Lens Scanning Technology (FLST).

### **Retrospective Conversion Technology**

Retrospective conversion of museum documents is a special industrial technology for digitizing of card catalogues, inventories and inventory books. Information will be presented in necessary format according to the approved list of fields. Company ELAR ([www.elar.ru](http://www.elar.ru)) provides professional RC service. RC includes the following stages:

- Expertise in Museum (Museum documentation, rules of information processing, database format etc.),
- Digitizing of document arrays. Scanning with specialized scanners (can be performed at the Client's territory or in Company RC Center),
- Processing. Qualified experts of the RC Center convert information from document images into database records according to the approved list of fields and processing rules. Diagnostics and multilevel verification process is also completed.

Many Russian Museums (including Regional Museums) use RC in their practice (State Russian Museum, State Saint Petersburg History Museum "Petropavlovskaya Krepost", National Museum of Tatarstan Republic etc.).

### **Flying Lens Scanning Technology**

The most interesting element in the Flying Lens Scanning (FLS) Technology applied technology is a special optical adapter, which is placed on a standard digital camera. Optical adapter is placed between camera and lens and it ensures the object scanning. As a result, there is an ability to receive a number of digital frames with proposed intersections sequentially.

The invented software for fragments connection includes a number of stages of digital cultivation: position optimization, geometrical transformation, shadow

correction of elementary frames. As a result, digital copies, which meet the requirements of artworks attribution experts, and can be used for high quality graphic arts works production as well. A special illuminator, application of which allows to avoid absolutely the destroying thermal light effect. As a result, digital copies meet the requirements of artworks attribution experts, and can be used for high quality graphic arts works production as well.

Epos Group Company ([www.eposgroup.ru](http://www.eposgroup.ru)) provides professional FLS service

### **IT in Museum: “Public Service”**

The Virtual Presentations (VP) is the main basis for the Public Service Goal. The First Virtual Presentations for Cultural Heritage appeared in Russia in 1990-th. Most of them used diskettes and were rather primitive.

In 1994-95 IT and Multimedia Technology came in Russia not only to large Museums, but also to regional museums all over the country. A lot of Cultural Heritage Multimedia Presentation on CD, DVD and in INTERNET have been produced.

Entering into the XXI age, the New Russia tracks to the Open Information Society in close cooperation with other countries, and our goal is to present the Russian Cultural Heritage in its fullness – Movable and Unmovable, Tangible and Intangible. So, the main IT function in Contemporary Museum is to provide Information Service and Access to Cultural Heritage for Museum Visitors, to transfer Museum into Cultural Center for production and dissemination of Knowledge, and we consider EP as a very effective instrument to meet the challenge.

In order to simplify in the subsequent text, I will use conditional EP classification by the form of presentation: “OUT OF MUSEUM” – CD, DVD, Internet sites; “IN MUSEUM” – Electronic Expositions, Exhibitions on the base of PC, Electronic Kiosks, Gas Panels, Projectors etc.

A new generation of Electronic Cultural Heritage Resources created on the base of the newest multimedia technology is available now. About 200 CD-ROM and more than 300 sites in INTERNET are presenting the Russian Cultural Heritage of different kind in different forms: about Historical, Arts, Science Museums, Federal and Regional Museums; about Galleries; about Artists; about Monuments and Landscapes; interpreted for general public; for pupils, students; for specialists etc. Some examples bellow.

### **CD-ROM Examples:**

CD-ROM “Tretyakov gallery” (Real Museum),  
 CD-ROM “Terra Musicalis” (Virtual Museum of Musical Instruments),  
 CD-ROM “Russian Portret” (Collection),  
 CD-ROM “Konstantin Rerich” (Artist),  
 CD-ROM “Antique Mythology” (Educational),

CD-ROM “Semeyskie Sabaykalya” (Intangible, folklore),

### **INTERNET Sites Examples:**

Russian Museums On-Line, [www.museum.ru](http://www.museum.ru)

State Historical Museum, [www.shm.ru/](http://www.shm.ru/)

State Pushkin Fine Arts Museum, [www.museum.ru/gmii/](http://www.museum.ru/gmii/)

State Russian Museum. [www.rusmuseum.ru/](http://www.rusmuseum.ru/)

Ribinsk Regional Museum <http://rmuseum.orbis.spb.ru:8081/>

Russian Architecture [www.archi.ru/index.htm](http://www.archi.ru/index.htm),

Imaginary museum “Virtual museum of Russian Primitive”:

[www.museum.ru/museum/primitiv/](http://www.museum.ru/museum/primitiv/)

Museum of Contemporary Russian Underground Art, site “Museum 2020”

<http://www.artfor.ru/museum2020/index.htm>

Project “Collection” – DB crated in partnership (20 Russian Museums presented fragments of their collection on the site) [www.collections.spb.ru](http://www.collections.spb.ru) ,

Project “HORIZONT” – site crated in partnership with Canadian Association (Landscape in Russian and Canadian Arts)

[www.virtualmuseum.ca/exhibitions/horizons](http://www.virtualmuseum.ca/exhibitions/horizons)

### **Museum Electronic Expositions Examples:**

State Russian Museum - Information about Museum; Palaces and Masterpieces;

State Historical Museum – Electronic Exhibition in Novo-Devitchiy Monastir Branch;

New Multimedia Regional Museum “Kalashnikov Museum”

### **Museum Concept Transformation Example:**

#### **From Plaster Casts Museum of XIX to Cultural Museum Centre of XXI**

The State Pushkin Museum of Fine Arts is one of the major art collections in Russia, and now it is on his way from the Plaster Casts Museum of XIX to the Cultural Museum Centre of XXI

The founder of the Museum and its first Director (1911-1918) was Ivan Tsvetaev, the Moscow University Professor; his idea was to present for people art history from the ancient times to the New Age in plaster casts, pictorial and galvanic copies.

Opened for public on May 31, 1912, the Musrum extended the collection in the period after 1923: a great number of paintings of Western European masters were turned to the Museum from some private and state collections. From 1949 to 1953 the Museum was occupied by the huge “Exposition of Gifts to Joseph Stalin”. The beginning of post Stalin era in the Museum was marked with the “Masterpieces from the Dresden Picture Gallery Exhibition” in 1955. From that time the Museum activity has been enlarged.

The beginning of post Stalin era in the Museum was marked with the demonstration in 1955 of masterpieces from the Dresden Picture Gallery. From that time the Museum activity has been enlarged. Now the Pushkin State Museum of Fine Arts represents its famous collection for Russia and Foreign people. The exposition of the Museum includes today a vast collection of plaster casts of famous sculptures (ancient, medieval and Renaissance), the famous collection of Egiptian Originals, and the collection of original works of art from all the Continents, including the unique French Painting Collection of the late XIX - early XX centuries (masterpieces of Monet, Renoir, Degas, Cezanne, Van Gogh, Gauguin, , Matisse, Picasso).

In the early ninetieth the cruel necessity arose to modernize the Museum activity in the context of the cultural and technological changes. New Museum Departments have been organized. The Private Collections Museum was opened on January 24, 1994; the Educational Plaster Casts Art Museum was founded in 1996 in the premises of the Russian State Humanity University; the Museum in the Flat of the famous Russian musician Sviatoslav Rikhter, has been opened.

It became evident, that the only way to make the Museum resources accessible for people is to use IT. In 1989 the Computer Department was organized in Museum, and the first Computer Collection Management System has been developed and used in some Museum departments. As early as in the middle of ninetieth the "The State Pushkin Fine Arts Museum" CD-ROM and the Museum Site in INTERNET ([www.museum.ru/gmii](http://www.museum.ru/gmii)) have been published. In the period 1999 - 2001 five Museum buildings were united by the computer optical fibre network; a contemporary Museum Collection Computer Managing System (KAMIS-Oracle) has been installed, the top-level INTERNET put into operation. Two examples of contemporary IT in Museum: the 3-D Technology for Exhibition Models; the above-mentioned Flying Lens Scanning (FLS) Technology.

The Museum Direction realizes the necessity of "revolutionary reforms" in Museum activity, following the shift in management approaches from "scientific management" to "people-oriented management". The Project for Reconstruction and Evolution of the Museum up to 2012, the Museum Opening Centenary, includes actions for development in reconstructed and new buildings (to put into operation in new buildings the Museum of Modern Arts; the Center of Aesthetic Education of Children; the New Picture Gallery, the Exhibition Center and others).

IT will rank high among new and traditional methods and types of Museum activity, and newest technologies will be integrated into the Museum thoroughly. So, the "Plaster Casts Museum of XIX" will celebrate in May 31, 2012 the Opening Centenary as the "Newest Cultural Museum Centre of XXI".