



UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

MULTIMEDIA ENCYCLOPEDIA RUSSIA–USA: 20TH CENTURY

Feasibility study

UNESCO INSTITUTE FOR INFORMATION TECHNOLOGIES
IN EDUCATION



Publication is issued with the financial support of Abamedia, LP (USA)

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1. Project Description and Rationale

The objective of the proposed project is to create *Multimedia Encyclopedia Russia-USA: 20th Century* – a multimedia history teaching course based on the comparative analysis of the histories of Russia and the USA in the 20th century and illustrated with movie sequences and photographs shot during the described periods. Two versions of the proposed encyclopedia will be produced: the first one to be used on the Internet, the other to be distributed on CDs and/or DVDs.

The goal of UNESCO is to “strengthen peace and security by strengthening cooperation between nations in the area of education, science and culture.” In “the area of education,” the study of history is vital in shaping the national conscience of citizens as well as in developing their ability to conduct inter-cultural dialog. But even with a wide variety of educational systems, almost no system in the last decade has taught history in a way that supports the development of cultural pluralism. History teachers have often tended to emphasize political conflicts and distinctions among different national cultural traditions and lifestyles. Even though history education aims to preserve the uniqueness of national cultures, it must, at the same time, encourage the appreciation of what different national cultures share in common. If citizens of different countries realize that the process of mutually beneficial enrichment of national cultures has gone too far to be reversed, they might be motivated to strive for better understanding between themselves and individuals of other nations. Such atmosphere of tolerance and understanding can serve a prerequisite for further cultural and economic development of their countries.

2. Project Goals and Objectives

Multimedia Encyclopedia Russia-USA: 20th Century (MME):

- will visually present the historical development of Russia and the USA during the last century;
- will broaden the scope for the objective study of the 20th century history;
- will serve as a testing ground for the most modern software and related technologies as well as historical research and unique historical documents for teaching history;
- will create multinational understanding of history that is essential in strengthening cooperation between different countries.

3. Educational Concept of the Project

The comparative analysis of past events in different countries offers a powerful basis for creating teaching aids that can promote understanding between students of those countries. Such cross-cultural curriculum can help students compare life in different countries, not only in the same period of time (e.g., in the same decade of the last century), but also in the periods that exhibit similarities in events, and standards of living, etc.

Authors of historical teaching aids have to take into account that students usually have rather dim appreciation of realities of life in other countries at the current period and even more so of past times. Educators are well aware that the younger generations usually have a vague understanding of the realities of life in their own country happened 50 or 100 years ago. Visual aids can be very helpful in overcoming these gaps. While visual aids have long been used to illustrate history textbooks, only recently, with the development of information technologies and infrastructure, has it become possible to use multimedia aids – hypertexts illustrated with photographs, audio clips, and streaming video. The use of video clips in the context of history education looks especially important and promising.

Unlike interactive multimedia, an average history textbook usually presents the author’s views on the causes and consequences of historical events. Such textbook cannot always correspond to the level of education and mentality of each individual student. Certainly, for a good teacher, a textbook serves only a basis for instruction, and often the quality of education the student receives depends not upon the textbook, but on the teacher’s qualifications.

In most cases an author of a textbook compiles his/her book after having studied the original documents and resources preserved in the national libraries and archives, which average teachers and their students have no easy access to. *MME* will bring those original photographs, reproductions, documentary movies and audio records, which previously were available only to a limited number of professional researchers directly to the classroom. The opportunity to use such material will not only provide students with a qualitatively new kind of additional information (as the saying goes: it’s

better to see it once than to hear about it a hundred times), but will stimulate real interest in their study subject – the more questions they ask, the more active the study process will be. This could be compared with a small child, who, after scanning the family photos for the first time, becomes interested in his/her family history and questions his/her parents about his/her ancestors whose pictures are displayed in the album.

For the students the opportunity to see the real pictures of past events, and the faces of their participants, etc. with their own eyes, will mean that their study of history and cultures of other nations will not be a mere mechanical process of remembering names and dates but an independent creative research. Also, when starting a new history topic, a teacher can give his/her students photographs and movies of the corresponding period to view, and then ask for the comments. The students' comments, in turn, will help the teacher evaluate their understanding of the times and define what additional information they may require.

The interactive aspects of such encyclopedia, especially its means for remote editing of video movies, can broaden the scope of history education, introducing some entirely new techniques of increasing students' activities. For instance, students of different countries could be invited to participate in various history study competitions, or in a festival of video movies based on archival material, or in a multimedia presentation on a given topic.

On the other hand, history teachers will be able to create their own multimedia instruction courses using photographs, reproductions, and videos derived from the electronic encyclopedia. Moreover, current electronic and telecommunication software will allow teachers from different schools (and countries) to cooperate via the Internet, pooling together their creative efforts and sharing experiences. Such groups of history teachers will not only jointly create interactive study software programs, but will exchange their instruction techniques and ways of evaluating the level of students' knowledge, forming a common auditorium on the Internet. Each participating teacher will work on the details of his/her own topic thus contributing his/her own effort into the common work. Abundance of audio and visual material included in the encyclopedia will give teachers an opportunity to develop their own part of the collective work as well as provide a field for student research within the framework of their individual term papers, sessions or seminars. Using concrete movie sequences or a selection of photographs, students can study historical events and other things associated with them in detail.

MME will turn lessons of history and culture into a vivid and captivating process. It is also important to note that while learning to operate *MME*, the students will also develop practical skills in the use of modern information technologies.

4. Content of the Encyclopedia

MME will contain texts on history written by experts on 20th century history, as well as visual materials – documentaries and photographs. The blocks of texts and visual materials will form the information environment equipped with all necessary indexes and search mechanisms.

A group of Russian and American historians will supply *MME* with the articles that will make up the text part of the learning modules. The writers will work in close contact with other researchers who will select photo and video material in the archives of both countries. During the second stage, the selected visual materials will be digitized and incorporated in the texts they illustrate. Then the basic selection of the learning modules (the articles of the electronic encyclopedia) will be interlaced with corresponding hyperlinks within the modules and between them.

It seems important that an electronic educational encyclopedia created to be used via the Internet should be available in several languages. Clearly, the wide use of visual material, which is often vivid enough without any translation, makes the task easier for foreign language users, yet it seems necessary that the interface and the texts of *MME* articles should be provided at least in the English and the Russian languages. It's clear that the texts of the articles will bear the brunt of the translations.

Solving the translation problem with the help of a group of professional interpreters seems optimal as far as the translation quality is concerned, though rather expensive. From the point of view of cost reduction, it is possible to utilize the software for machine translation with subsequent editing of the texts. Positive experience has been accumulated in Russian-English machine translation of the 3,000 documentary movies summaries from the collection of the Russian State Archives of Documentaries and Photos to put them on the Internet. The translation done for the documentaries can in many ways be a useful reference for the translation work for *MME*, since the lexical components in both cases are similar.

5. User Interface

MME must be an open interactive software product. It should provide students with the tools to find the needed text or/and visual information as fast as possible either with the help of ramified hyperlinks or a detailed search system. It should enable teachers to prepare their own courses using *MME* as a means to montage videos and find necessary photographs to illustrate their texts. Students taking history as their main subject will be able to do the same when preparing their term papers.

Consideration is also given to the fact that a user (especially a novice to *MME*) may lose orientation in the mass of data connected by associated links because interpretation of the links varies depending on students' targets and tasks. The virtual subsystems, commonly used in such cases, are not very effective since they do not allow efficient movement to a new task using the results of the preceding one. The problem can be solved with the help of the so-called "topical information subspace" (learning modules), which will incorporate data blocks of similar topics fully satisfying the needs of a specific user. The topical information subspace represents a common software environment of *MME*; it contains all possible links between different learning modules. During their work with *MME*, students can switch from one learning module to another whenever they need to start a new topic.

Some learning modules of *MME* will serve an expandable basis for new modules. This means that a new topic can be added to *MME* using one or several existing modules. Such approach will allow *MME* authors to create complex multi-layer combinations of information blocks providing users with an easy-to-operate search system.

Each user's work with *MME* via the Internet will be based on a client/server architecture supported by a user-friendly interface. The server's software should be supporting a powerful search mechanism and effectively transport streaming videos to users. The client's software must also support operations associated with videos (to view separate stills, rewind, etc.) and other functions needed by professional users (especially teachers) to create their own versions of *MME*. Subsequently, the server will be able to run video clips and photographs inserted in such created versions.

6. Information Sources

The visual data and other information for *MME* can be obtained from different archival sources, including national and state archives. The latter usually contain a lot of photographs and documentaries reflecting the historical events in their own and other countries starting from the middle of the 19th century (photographs) and beginning of the 20th century (movies).

The archives mentioned above are considered to be a "common" property, but in practice, access to these treasures is not always easy without modern information technologies. *MME* will become not only an important instrument of history education but also a pilot project providing equal access to photographs and movies stored in national archives.

The educational value of *MME* will be high not only because of its professionally presented and expertly verified texts, but also of plentiful visual material in terms of photo and sequences of documentary movies. Within the framework of preparation of this document preliminary talks were held with the administration of the Russian State Archives of Documentaries and Photos and the Russian State Archives of Literature and Arts. Moreover, an agreement has been reached to utilize documents on space explorations stored in the Russian State Archives of Scientific and Technical Documentation.

Audiovisual information in the USA can be obtained from:

- USA Library of Congress;
- USA National Archives;
- Lyndon B. Johnson Library;
- other presidential libraries in the USA.

7. Development Stages

The project will be implemented through the 10 main elaboration stages, and certain stages will be performed simultaneously.

Stage 1. Analysis of the information-related needs of future *MME* users.

1. Determination of the representative range of potential *MME* users (both students and teachers), as well as the methods of collecting and analyzing their needs as to the contents and interface of *MME*.
2. Preparation and administration of questionnaires for different categories of users and analysis of the responses.

Stage 2. Ultimate determination of the team of authors of *MME* articles and the list of selected archives providing the visual materials to be included in *MME*.

Comment. In the course of preparing this document, researchers have explored the stocks of two Russian national archives and concluded that the visual materials stored in these archives could be utilized in *MME*.

Stage 3. Designing the architecture and functional options of *MME* software.

Comment. The modules delivering online streaming video and allowing interactive video editing are the most complicated components of the software. In the course of preparing this document, a basic software was selected, and the pilot implementation of the working program models was performed.

Analysis of the results of the experiments conducted proved the effectiveness of the proposed methodology of *MME* model.

Stage 4. Development of *MME* user interface (intended for all categories of users).

Stage 5. Research in the archives to select the film and photo materials.

Stage 6. Writing *MME* text articles.

Stage 7. The formation of *MME* information base.

1. Development of the software providing the textual and visual information input.
2. Installation and tuning of the data-input software and technical equipment.
3. Digitizing, scanning, coding and inputting the content of *MME*.
4. Structuring the content of *MME* (inserting hyperlinks, and indexing, etc.).

Stage 8. Creation of the basic components of *MME* software.

Stage 9. Creation of a pilot version of *MME*.

1. Creation of a pilot version.
2. Testing and demonstration of a pilot version.
3. Analysis of the achieved results.

Stage 10. Completion of *MME* and launching it into operation.

8. Software

The search mechanism (the system of database management) and a set of programs enabling the introduction as well as transmission of information, viewing and mounting of videos are the most important software components to make *MME* functioning and effective. No less important is making a choice of software for machine translation.

9. Gradual Expansion Strategy

The plan is that the project will be incrementally expanded in the process of its development. It is envisaged that at each stage the functional capabilities of the prototypes will be gradually increased. At the beginning the priority will be given to working out the software environment, which will integrate the modern information technologies, including video viewing.

The realization of the project will have several control milestones:

- a bi-monthly report on current development,
- a semi-annual report,
- an annual review of the results achieved,
- a final report.

10. Participants

Both Russian and American experts are expected to take part in the project. Their work will be coordinated by the UNESCO Institute for Information Technologies in Education (IITE). Historical research and selection of archival material will be conducted mainly by the staff of Moscow State University and the University of Texas in Austin. It is also expected that the group of experts who participated in the creation of the Open Society Institute financed *Krugosvet*¹ encyclopedia will be involved in editing and structuring *MME* content. A group of representatives from the University of Texas in Austin, and the Moscow-based Keldysh Institute of Applied Mathematics under the Russian Academy of Sciences (IPM RAS) will work on specifics of the information technology for the project. A group of IPM RAS employees will also construct the project's software.

11. Preceding Projects to be Incorporated

In 1996 the US Agency for International Development (USAID) allotted a grant to the Russian-American partnership *Archives Media Project* which included Abamedia, LP (USA), the Russian State Archives of Documentaries and Photos (RGAKFD), and a research group from the Keldysh Institute of Applied Mathematics under the Russian Academy of Sciences (IPM RAS). The goal of the project was to create and place on the Internet and CDs the catalog of the RGAKFD film collection.

The project was later supported by the Open Society Institute (George Soros), with funding provided by its Budapest Branch Open Society Archives (OSA). By now the catalog is completed with more than 40,000 film documents. (See <http://rusarchives.ru/federal/rgakfd/catalog/catalog.htm>).

The Open Society Institute financed the pilot project for machine translation from Russian into English, and the editing of the catalog. Currently, over 5,000 entries have been translated using this technique. (See <http://rusarchives.ru/federal/rgakfd/ecatalog/ecatalog.htm>).

In 2001 the tri-party Memorandum on Cooperation was signed between UNESCO, Abamedia, LP and the Federal Archives Service of the Russian Federation to support the development of the Russian Archives Online (RAO) as a part of the future project *World Archives Online for Education* (WAO).

Within the framework of the RAO project UNESCO has provided financing for the first stage of a photo catalogue depicting the collection of the Russian State Archives of Scientific and Technical Documentation (RGANTD). (See <http://rgantd.ru/elcatalog/photocat.htm>).

OSA also provided some financing to create RGANTD catalog within the framework of the RAO project; by now the project is almost completed. (See <http://rgantd.ru/ecfilm/catalog.htm>).

For film-makers, mass media, and researchers around the world, the above mentioned catalogs now serve a practical guide to film documents and photographs. *MME* will expand the archival audio and visual resources available online and the number of users.

Aiming at creating Information Technology means for universal and free access to archives of the world via the Internet, the WAO project will provide users from different countries with opportunities to work with existing learning modules, as well as to search, select and edit the information that will interest them. Thus, WAO will not only assist in preservation and distribution of educational and cultural resources, but will provide the best opportunities for their use.

¹ Around the World

The multimedia history teaching course *The Khrushchev Years* is now being created as a pilot project for the WAO education module. The financial support for the project comes from the Carnegie Corporation Fund, while the University of Texas in Austin, Abamedia, LP, and Moscow State University unite the forces for creative work.

MME can become the next vital step on the way to the global project *World Archives Online for Education*.

12. Supporting Organizations

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO is a United Nations agency with 188 member countries that contributes to peace and security by promoting collaboration on issues such as advancement, transfer, and sharing of knowledge. UNESCO as a coordination center for this project will help to disseminate the project results.

Open Society Institute and Central European University Archives-Budapest (OSI)

OSI and the Central European University are foundations of financier George Soros to promote the development and maintenance of open access to abundant information resources.

Internews Network

Internews is an international non-profit organization working to enhance tolerance and understanding by supporting independent media.

United States Agency for International Development (USAID)

USAID is a federal agency that works to achieve sustainable development and to advance U.S. foreign policy objectives.

Association of Moving Image Archivists

A non-profit professional association established to advance the collection, preservation, exhibition and use of moving image materials.

International Federation of Film Archives (FIAP)

FIAP brings together the institutions dedicated to rescuing films both as cultural heritage and as historical documents. This is a resource for contacts within the international archive field.

Possible funding sources:

- Carnegie Corporation
- Civilian Research and Development Foundation
- Ford Foundation
- Hewlett Foundation
- Knowledge Gateway
- Meadows Foundation
- Mellon Foundation
- National Endowment for the Humanities
- National Science Foundation
- RealNetworks Foundation
- Rockefeller Foundation
- World Bank

13. Some Problems to Solve

A stretched time frame to implement *MME* will present the members of the working group with the problem of selecting the necessary texts and visual material from the great amount of archival resources to include into *MME*.

Since RGAKFD movies are stored on the film they will have to be first converted to videos before they can be digitized. It is possible that the problem could be solved by initiating a separate project to digitize the RGAKFD movies – the archive administration needs such a project to diversify its measures both to preserve its collection and upgrade its client service.

The working group for the project will include American and Russian historians, computer specialists, educators, etc. All of them have different experiences and are accustomed to different styles of professional activities. Coordination of their work could present certain problems. Possible solution lies in the introduction of software environment used to ensure the functioning of large dimension projects, for instance, DSpace.

Certainly, some problems may arise if the financing of the project is inadequate or irregular.

14. Evaluation

In the process of creation *MME* elements and blocks can simultaneously undergo real-life testing. For instance, after some parts of *MME* are installed, they could be used by students of Moscow State University and the University of Texas in Austin during their seminars. The feedback from the students will help the members of the working group evaluate the project parameters and introduce corrections, if necessary.

15. Possibilities for Further Development

The project under consideration is envisioned as the first step in the stage-by-stage creation of *Multimedia Encyclopedia of World History: 20th Century*. The choice of the first chapter – a comparative analysis of history of Russia and the USA – has in many ways been motivated by the fact that both countries played very important parts in the global historical processes of the 20th century. This “first chapter” will also serve as a pilot project of *MME*.

After the educational effectiveness of *MME* is studied in the process of its practical use, it can become a basis for further development. The content can be enriched with new comparative historical data of other countries of the world, and the software can be upgraded by new means of information presentation that will be available in future.

The content of *MME* can be expanded by introducing material not only on history but also culture and art of many peoples. Existing audio and visual material from various museums (musical records, painting reproductions, sequences of feature movies, etc.) can be easily introduced at this stage.

MME interface will be developed to include interactive operations during user viewing of the material. This means that hyperlinks can be placed on separate video stills, viewing and editing of interactive videos will become commonly possible.

History teachers will also be able to rely upon upgraded technical and software tools for online creation of their teaching courses based on video and photo material transmitted from *MME* server. This direction is important for further development, as more and more people turn to online education programs. Nowadays, all over the world, several millions people use such programs. In response to the demand, increasing numbers of colleges and universities are offering distant education courses. *Multimedia Encyclopedia of World History: 20th Century* could become the main source of audio and visual information for the courses dedicated to history and culture of various countries.

It should be noted that the demand for new multi-lingual techniques will grow as the project covers more countries, and the amount of its users grow around the world. In turn, *Multimedia Encyclopedia of World History: 20th Century* will become a stage in the development of the project *World Archives Online for Education*.



