

MICHAEL
MULTILINGUAL INVENTORY OF CULTURAL HERITAGE IN EUROPE
&
MinervaEC
NETWORK FOR VALORISING ACTIVITIES IN DIGITISATION

Antonella. Fresa

Technical Coordinator of MICHAEL and MINERVA projects
Ghizzano di Peccioli (Pisa), Italy
fresa@promoter.it

Abstract

MICHAEL and MinervaEC are two projects coordinated by the Italian Ministry of Culture and co-financed by the European Commission in the frame of the eTEN and eConent Plus Programmes respectively.

MinervaEC is a Thematic Network in the area of cultural, scientific information and scholarly content. It brings together stakeholders and experts from all the EU Member State, capitalising the results achieved by the IST Minerva and Minerva Plus projects (www.minervaeurope.org). MinervaEC supports the European Commission initiative “i2010 - A European Information Society for growth and employment” and is aligned with the Commission Recommendation on the digitisation and online accessibility of cultural material and digital preservation (2006/585/EC) and the Council Conclusions adopted in November 2006 (2006/C 297/01).

MICHAEL is the multi-national deployment of a European cultural portal that is based on the integration and alignment of many national initiatives in the digital cultural heritage sector, including the most important initiatives in 18 European countries. The key objectives of MICHAEL are to add value to the European cultural heritage and to encourage interoperability and the use of common standards across major national digital cultural heritage initiatives. The project is delivering interoperability services of national cultural portal initiatives and a high-quality end-user services aiming to facilitate the exploitation of European cultural content resources.

INTRODUCTION

MINERVA initiative was launched by a group of European Ministries of culture in 2002 as a mean to coordinate their initiatives in the area of the digitization of the cultural heritage.

The original idea was to get together, to know each other, to understand from the experiences of the others and to gather information, lessons learned, best practices into a set of publications to be shared with the other European countries.

The MINERVA initiative is made of a set of projects that all together contribute to the general objectives represented by the following background framework:

- the eEuropean Action Plan and then the i2010 Initiative of the European Commission,
- the Lund Action Plan and the Dynamic Action Plan of the National Representatives Group of the European Ministries of Culture,

- the Commission Recommendation on the digitisation and online accessibility of cultural material and digital preservation (2006/585/EC) and the Council Conclusions adopted in November 2006 (2006/C 297/01).

The first MINERVA project run from 2002 until 2005 with the support of the IST-FP5 Programme¹.

Then a new edition of the project was approved by the European Commission as MINERVA Plus that run from 2004 until 2006 with the support of the IST-FP6 Programme².

Eventually, a third edition was launched in 2006 as MinervEC with the support of the eContent Plus Programme³; this project is currently running and will last until October 2008. The whole initiative has demonstrated to be so successful that the number of participating countries grew from 7 (the original partners of MINERVA in 2002) to 22 that are the current partners of MinervEC.

While putting into production a full editorial line, MINERVA has also engaged into international relationships:

- Israel and Russia participated to the MINERVA Plus project;
- Results and guidelines of MINERVA were disseminated in the Mediterranean region by the MED-CULT project of the UNESCO in the frame of the Information for All Programme (2005 - 2006);
- the coordination mechanisms of MINERVA are going to be deployed in the Balkan region by a UNESCO-ROSTE Programme in cooperation with the Italian Ministry of Culture. MinervEC operates through the coordination of national policies, programmes and institutions of the cultural sector. Its goal is to create a set of added value products and services at European level to improve awareness of the state-of-the-art in the sector, to contribute to the overcome of fragmentation and duplication of digitisation activities and to maximise synergies among Member States.

The project plan of MinervEC is made of the following tasks:

- Development of the European Cultural Content Interoperability Framework;
- Establishment of the Quality, Usability and Accessibility service;
- Analysis and dissemination of best practices in the area of enriched cultural content;
- Coordination, Assessment, Mobilisation, Awareness and Dissemination functions.

MinervEC is run by a network of European Ministries of Culture in cooperation with many cultural institutions from all over Europe.

In the frame of MINERVA several spin-off projects were launched, among which MICHAEL.

MICHAEL-Multilingual Inventory of Cultural Heritage in Europe is a deployment initiative supported by two projects co-financed by the eTEN Programme⁴, namely: MICHAEL (2004-2007) and MICHAEL Plus (2006-2008).

The scope of the initiative is to celebrate the richness, breadth and diversity of the European cultural heritage by promoting it to a world-wide audience through the Internet.

The MICHAEL portals provides simple and quick access to the digital collections of museums, libraries and archives from different European countries.

Work begun in June 2004, with the focus on implementing an innovative multi-lingual open source platform, equipped with a search engine.

¹ Information Society Technologies Programme of the Fifth Framework Programme for the Research and Technological Development of the European Commission (www.cordis.lu)

² Information Society Technologies Programme of the Sixth Framework Programme for the Research and Technological Development of the European Commission (www.cordis.lu)

³ eContent Plus: a multiannual Community programme to make digital content in Europe more accessible, usable and exploitable (europa.eu.int/econtentplus)

⁴ eTEN – Deploying trans-European eServices for all (europa.eu.int/eten)

The architecture of the service is based on national implementations, that are created, managed and maintained by the MICHAEL national partners and on a European portal that is able to harvest data from the national instances.

The national instances are already functioning in Italy, France and the UK.

The European portal has been announced in Rome in December 2007 and it is currently accessible online at www.michael-culture.org

There are many uses for MICHAEL, for example students and researchers are able to discover information about European collections that might previously have been difficult to find. The services will also support cultural tourism, the creative industries and other interests.

The MICHAEL consortium brings together public and private bodies: national and regional cultural ministries, state agencies, major cultural institutions and technical partners with specific expertise.

The consortium was born in 2004 with partners from three countries (Italy, France and the UK), extended in 2006 to eleven more countries (Czech Republic, Finland, Germany, Greece, Hungary, Malta, The Netherlands, Poland, Portugal, Spain, Sweden) and currently 4 new countries have joined MICHAEL (Bulgaria, Belgium-Flanders, Estonia and Slovakia).

The MICHAEL consortium comprises currently 18 countries and 38 public and private bodies.

The MICHAEL initiative is open to participation from new countries and to contributions by cultural institutions within the existing partner countries.

The MICHAEL technical platform is available under open source licences. This is enabling the platform and data model to be used by other projects that want to create, for example, regional cultural inventories and other added value services.

In each country, MICHAEL partners continue to work to develop support partnerships to enable cultural institutions to include information about their digital collections, being this work strictly connected with their own initiatives for cultural portals in their respective countries.

The benefits of MICHAEL grow as long as new countries join the initiative and new digital collections are described within the MICHAEL service.

The legal basis of MICHAEL is the ***MICHAEL-Culture*** AISBL (Association Internationale Sans But Lucratif) established under the Belgium law since June 2007.

The MICHAEL AISBL is aimed to run the MICHAEL European portal as well the communication and promotion at European and international level.

The national implementations of the MICHAEL service as well as the national communication and promotion are kept under the direct management of the national and regional partners, who joint the Association.

MinervaEC

MinervaEC is a Thematic Network funded by the European Commission under the eContent Plus Programme and coordinated by the Italian Ministry of Culture (Ministero per i Beni e le Attività Culturali).

The project, started in October 2006, will last for 24 months bringing together stakeholders and experts from all over Europe and capitalising the results achieved by the previous MINERVA projects.

MinervaEC supports the European Commission initiative “i2010 - A European Information Society for growth and employment” and contributes to the implementation of the “Dynamic Action Plan for the EU coordination of digitisation of cultural and scientific content”, launched by the EU Member States in Bristol in November 2005.

MinervaEC is aligned with the Commission Recommendation on the digitisation and online accessibility of cultural material and digital preservation (2006/585/EC) and the Council Conclusions adopted in November 2006 (2006/C 297/01).

Partners

The network includes the following full members:

- Ministero per i Beni e le Attività Culturali
- Salzburg Research Forschungsgesellschaft mbH
- Ministerie van de Vlaamse Gemeenschap, administratie Cultuur
- Ministère de la Communauté française de Belgique
- SPP Politique scientifique - Service d'information S&T /
POD Wetenschapsbeleid - Dienst voor W&T Informatie
- Ministerstvo kultury Ceske Republiky
- Stiftung Preussischer Kulturbesitz
- Biblioteca Nacional de España
- Helsingin yliopisto
- Ministère de la Culture et de la Communication
- Agence Juive pour Israël⁵
- Erevnitiko Panepistimiako Institouto Epikoinonion & Ypologiston - Etnhiko Metsovio Polytechnio
- Nemzeti Kulturális Örökség Minisztériuma
- An Chomhairle Leabharlanna (The Library Council)
- Ministère de la Culture, de l'Enseignement Supérieur et de la Recherche
- Heritage Malta
- Ministrstvo za Kulturo Republike Slovenije
- Secretaria-Geral do Ministério da Cultura
- Riksarkivet
- Museums, Libraries and Archives Council
- Bundesministerium fuer Bildung, Wissenschaft und Kultur
- Elliniko Ypourgeio Politismou
- Panepistimion Patron
- Kultuuriministerium
- Biblioteka Narodova
- Slovenská národná knižnica
- Amitié
- Stowarzyszenie - Międzynarodowe Centrum Zarządzania Informacją
- Association Dédale
- National Museum of Ireland
- Latvian Culture Information Systems - Kulturas Informācijas Sistēmas

Objectives

The general objectives of the network are:

- Improve accessibility to and visibility of European digital cultural resources;

⁵ Costs (Travel & Subsistence) incurred by this partner are not eligible for reimbursement under this contract as Israel is not participating in the eContentplus programme. The Agence Juive has the status of an observer in the MinervaEC network taking into account that it fully participated in the preceding MINERVA network contracts.

- Support the development of the European Digital Library for accessing cultural resources;
- Contribute to increasing interoperability between existing networks;
- Promote the use of digital cultural resources by business and citizens;
- Reinforce the European position in the global market competition;
- Facilitate exploitation of cultural digital resources, providing clear rules for their use and re-use, respecting and protecting the creators' rights.

Targets

The beneficiaries of the actions of the project are:

- public and private organisations and institutions that create, collect or own digital content;
- private citizens, interested in receiving quality contents, reliable and directly responding to their interests;
- universities and schools, which wants to use cultural contents for educational purposes in a legal and safe environment;
- small and large enterprises interested in re-using digital content for adding value in commercial activities and exploit digital content resources to create services.

MinervaEC aims to contribute in stimulating decision makers and implementers in carrying out their initiatives of content enrichment, in creating the conditions to improve the quality of content and services as well as enhancing accessibility of digital content.

A relevant example is the Michael service:

www.michael-culture.org (service)

www.michael-culture.eu (project)

Working groups

Five working groups are established in the frame of the MinervaEC project:

The working groups are organised on national and European levels:

- national experts are appointed to constitute the national working groups
- the grouping of all the national experts constitute the European groups.

The mechanism is the same as it was already successfully used for the Minerva and Minerva Plus working groups.

The MinervaEC working groups aim to contribute to the implementation of the priorities indicated for the Member States, in the Council Conclusion on the digitisation and online accessibility of cultural material, and digital preservation.

Quoted from the Council Conclusions [Member States are invited to]:

- reinforce national strategies and targets for digitisation and digital preservation;
- contribute to the European digital library, a multilingual common access point to Europe's distributed cultural heritage;
- improve framework conditions for digitisation and online accessibility of cultural material and digital preservation;
- reinforce co-ordination within and between Member States on related issues;
- contribute to an effective overview of progress at European level.

The activities of MinervaEC

In addition to the working groups, the following activities are planned within MinervaEC:

- Seminars on the Minerva tools for digitisation of cultural heritage
- Workshops on the Quality of cultural websites
- Plenary meetings, in coordination with the Presidency in turn of the European Union:

- Encounters and cooperation with other European networks that are contributing to the creation of the European digital library

MINERVA Editorial line

MinervaEC continues the successful experience of MINERVA and MINERVA Plus also for what regards the MINERVA Editorial line.

The following publications have been issued in the frame of the MINERVA and MINERVA Plus projects, most of them translated into different languages:

Dynamic Action Plan for the EU co-ordination of digitisation of cultural and scientific content

Guide to Intellectual Property Rights and Other Legal Issues

Quality Principles for cultural Web sites: a handbook

Charter of Parma

Technical Guidelines for Digital Cultural Content Creation Programmes.

Cultural Website Quality Principles

Handbook for quality in cultural Web sites: improving quality for citizens

Good practice handbook

Multilingual access to the European Cultural Heritage - Multilingual websites and thesauri

Cost reduction in digitisation

Coordinating digitisation in Europe – Annual progress report on coordination mechanisms for digitisation policies and programmes (2002, 2003, 2004, 2005)

The following publications are under preparation in the frame of MinervaEC:

IPR Guidelines

Technical Guidelines

Study on user needs

Report on content interoperability

European directory of websites legislations

Map of the cultural heritage in Europe

Coordinating digitisation in Europe: annual progress report (2006 and 2007)

The MINERVA Annual progress reports offer an up-to-date scenario of policies, programmes and projects in the field of digitisation of cultural heritage in Europe. Targeted to policy-makers, decision-makers and managers responsible or involved in the field of new technologies applied to cultural and scientific content, the reports also point out challenges and possibilities for the future, to contribute to the construction of the European digital library.

MinervaEC Rationale: description of the issue addressed

The evolution of the information society is affecting more and more the life of European citizens, facilitating access to different types of knowledge and stimulating the demand for new content and services. This has a direct influence on several factors:

- the opportunity of stimulating the economic development, due to the impact given to the content industry and then to new employment opportunities. The content industries are in

fact a growing segment of the European economy, and this sector has been clearly identified as a priority area: the Lisbon Strategy emphasises how investment in research and innovation are crucial to generate growth and jobs, and the future European actions will focus on technologies for knowledge, content and creativity - including cognition, stimulation and visualisation;

- the challenge for the R&D sector, requested to improve interoperability of the services for accessing a large number of distributed digital content. Europe lags behind its international competitors in ICT research investment. Today, it invests three times less than the USA both in the public and private sector and 30% less than Japan. This is undermining Europe's capacity to compete in all sectors of the economy, to innovate in all science fields and to meet the demands of its society;
- the need of quality digital content, made accessible to the different kind of citizens within a framework respecting the owner and the user rights. Different practices and legal environments among the Member States are still limiting the full access, use, reuse and exploitation of content;
- the need of accessing and managing digital content and services in multilingual and multicultural environments. The extensive cultural heritage and linguistic diversity of Europe creates the background to fully exploit the opportunities offered by digital technologies. For this reason, support for digitisation of European digital content is essential, to involve the hundreds of thousands of existing museums, libraries, archives, archaeological and historic sites.
- the challenge facing cultural institutions is the diversity of the media involved, including still images, audio, moving images and complex 3D models. This means that even the smallest cultural institution needs to be aware of best practice in dealing with a wide range of analogue materials, but also the creation, use and re-use of a wide range of digital media types.

MinervaEC will address these issues through 6 clearly-defined work-packages.

WP1 Project management and co-ordination

- Ensuring that the project objectives are achieved on time and within budget.

Responsible partner: MiBAC, Italy

WP2 Assessment and evaluation

- to assess the impact and effectiveness of the project
- to develop the study on the Map of Cultural Heritage in Europe

Responsible partners: Austrian Federal Ministry for Education, the Arts and Culture and Heritage Malta

WP3 Awareness, dissemination, mobilising stakeholders

- ensuring the development of a community of practice by engaging with Member States
- to develop the Guideline for IPR

Responsible partners: MiBAC and the Polish National Library

WP4 European Cultural Content Interoperability Framework

- providing clear guidance on the creation, use and management of cultural content, including interoperability and technical standards
- to develop the updated version of the Technical Guidelines

Responsible partners: MLA, UK, and NTUA-ICCS, Greece

WP5 Quality, Accessibility and Usability

- analysing and promoting tools for multilinguality
- increasing the accessibility to digital cultural heritage by sharing practises and techniques
- to develop the study on User Needs
- to develop an updated Directory of Web sites legislation

Responsible partner: SPK, Germany and MCFB, Belgium

WP6 Best practices for content enrichment

- building a European content charter and road-map for digitisation projects
- analysing the possibilities and conditions for the creation of added value products and services
- to develop a state of the art report based on the collection of best practices

Responsible partner: MCC, France

Analysis of demand and user needs: stimulating the European Cultural Information Space

Cultural institutions (archives, libraries and museums) have been developing in the last years several digital collections, most of them presented in the web site of the institutions, and linked to wider portals, which are growing numerous all over Europe, also thanks to the impulse provided by Member States and the European Commission since 2001, and the results achieved by the Minerva project.

However, this content is not fully visible yet to the European citizens, due to the progresses still to be achieved in providing real interoperable networks and solutions, to the different legacy systems in use in the Member States for the description of cultural resources, and to the linguistic complexity of Europe. Demand, needs and answers given under this project can be grouped under the below four pillars.

Pillar 1: Coordinating activities of Member States

The MinervaEC has the ultimate goal to design and experiment an infrastructure, which will perform different tasks: Observatory of new developments and trends, Resource Centre to facilitate the use of existing standards and promote the definition of best practices, Clearing House for identifying solutions to legal issues and IPR, Tutoring and expert support to provide guidance, assessment and ideas in the implementation of new content enrichment projects.

This function of monitoring the implementation of the single initiatives is essential to demonstrate the impact of the efforts and investment at European and Member State levels and to track progress towards the creation of the European Cultural Information Space. Changing needs and requirements can be better understood and valued by measuring from a common baseline, using agreed indicators and sharing methodologies. This will enable the identification of the contribution being made through coordination, funding, policy implementation and the deployment of research results at national and European levels.

Pillar 2: Mobilising stakeholders

A second major contribution which MinervaEC will provide is related to its capacity of capturing the attention and of mobilising the different stakeholders involved in the process of content enrichment:

- public and private organisations and institutions that create, collect or own digital content, which are already well represented in the network;
- private citizens, interested in receiving quality contents, reliable and directly responding to their interests;
- universities and schools, which wants to use cultural contents for educational purposes, in a legal and safe environment;
- SMEs and large enterprises interested in re-use digital content for adding value in commercial activities and exploit digital content resources to create services.

Several thousands users have been already directly involved in the previous Minerva project, physical and virtual communities of users have been already created at national and transnational level, and all this expertise will be directly transferred and enlarged to the new MinervaEC project.

Pillar 3: Stimulating the development of the European Cultural Information Space

Measuring digitisation at European level will depend on the availability, accuracy and quality of national data. The process of collecting data, building a strong set of indicators and framework for analysis, will not be simple. The European Commission launched a study at the end of 2006 to develop indicators, collect data in all Member States, and systematically analyse results. Dissemination of the outcomes of the study and translation into new digitisation strategies is an important task that MinervaEC is ready to perform as soon as the results of the study will be available to the public.

The third MinervaEC pillar will therefore support and stimulate the collection of data through the Commission study, as well as the strategic interpretation of its outcomes.

Reporting mechanisms as already set up by the previous actions, will profit from a more structured data collection and a sound and unified methodology to be applied for their analyses and the Commission study is expected to provide this.

Pillar 4: Standard solutions for legal issues

Finally, a fourth demand which MinervaEC will cover, is to provide the stakeholders with standard solutions relating to legal issues and DRM. This will be done in close cooperation with the organisations owning the cultural resources (museums, libraries, archives, but also including publishers for contents still covered by copyright). This legal situation is often uncertain, the problems have to be tackled in time, in order to rapidly proceed to the development of the European Digital Library, and MinervaEC will contribute to the identification of effective solutions in this field.

Correspondence between the pillars and the Work Packages of the project

The four main areas of intervention correspond with the Work Packages of the MinervaEC project. In particular

- the correlation with the Michael and MichaelPLUS projects, which play an important role in defining the catalogue of the future European Digital Library, is managed by WP4 and W6
- the start-up of the infrastructure for the European observatory of innovation, development and trends in the sector is tackled by WP4
- the different stakeholders involved in the process of content enrichment will be mobilised through the activities launched under WP3
- WP1 will enhance the European policy building on the *European Cultural Information Space* and it will use the Annual Reports as its main direct instruments to raise visibility on the work done

- the issues concerning Intellectual Property Rights and Digital Rights Management will be managed both by WP4 (analysing the technical aspects of possible tools) and WP2 (providing the stakeholders with a set of guidelines related to the legal issues).

Multilingual and/or multicultural aspects

In the European Union internet penetration is growing considerably, new services and tools should consider the requirements defined by the European Charter of Fundamental Rights, and the Council resolution of 14 February 2002, which recognise the importance of linguistic diversity and support new initiatives in this direction.

The cultural and scientific heritage of Europe has a significant impact on its social and economical development. Digitisation of these resources becomes then a major activity for increasing and improving access of citizens to information and European cultural heritage. Furthermore the cultural diversity of Europe received an important boost from the availability of digital assets, which play a crucial point in several fields: education, tourism and media industries. They can also be very effective in promoting cultural diversity and enhancing understanding of different cultural, ethnic or religious backgrounds of communities across Europe.

The partner European Ministries have already invested significantly in programmes for digitising cultural and scientific content. These activities have included several areas, such as museum objects, archaeological and environmentally important sites, music and audio-visual archives, bibliographic materials, documents and manuscripts: the importance of multilingual and multicultural cultural services based on digital contents is at the centre of their national strategies and a priority in the common discussion set up within the Committee of Cultural Affairs.

Community added value and contribution to related EC policies

MinervaEC involves governmental bodies and major cultural institutions of several EC Member States. It therefore perfectly responds to the general goal of the *eContentplus* programme to facilitate access to and use of European digital content.

MinervaEC targets several sectors of European citizens, not only cultural institutions and the content industry, but also the research community, students and the ordinary public to support their need to find and use digital information in their own language, independently from the location of the sources and the original language. For this reason, MinervaEC also provides a high importance to multilingual and multicultural issues.

MinervaEC members and associated institutions will make available their digital collections (created by digitising their physical collections) to the project, so developing a wide trans-European set of digital resources; they will also contribute with the expertise of their staff. MinervaEC members will build up wide consensus and mobilise new resources, touching also smaller bodies and any types of cultural organisation and collection. The contribution of MinervaEC becomes particularly important in the definition of agreed trans-European legacy systems and standards for describing cultural and scientific resources, due to the direct involvement of those governmental bodies which are requested to define the national frameworks. MinervaEC intends to be accepted as the trans-European infrastructure for supporting access and use of digital contents, and for stimulating content enrichment.

As already mentioned, due to its dimension and high visibility, MinervaEC proposed to be the test-bed for the other projects approved by the *eContentplus* and IST Programmes within this area, so becoming the way to immediately transfer the results achieved by the programme in the common practice of partner countries.

Finally, with reference to the specific activity of stimulating cultural and scientific/scholarly content enrichment, MinervaEC is directly supporting the programme objectives, thanks to its goal of improving the quality of digital cultural content, as well as increasing and spreading knowledge on the enhancement of digital content.

In particular, through its actions and the best practice identified, MinervaEC will make all the stakeholders involved in the sector of cultural, scientific and scholarly content, aware of the benefits derived from enrichment of digital content. MinervaEC will also coordinate other national and trans-national projects on content enrichment, and will facilitate the exchange of information between stakeholders of all the partner countries.

MinervaEC is about the interconnection and interoperation of national cultural networks. The technical work in the MinervaEC centres on interoperability across national boundaries, thus enabling trans-European cultural services. MinervaEC will add value to national networks of cultural bodies and projects by 'upping the ante' – increasing the magnitude of the scope of such networks to include other countries, other cultures.

Quality of Life

Access to culture is an important aspect of any citizen's quality of life, and is one of the pillars of the i2010 strategy. Exposure to the finest manifestations of art and history enriches and educates the individual, enabling him to find greater riches in his own environment as well as appreciate the culture of others.

For those who do not have the good luck to live in the immediate vicinity of the European cultural heartlands, access to culture via the Internet is an excellent service. It allows the individual to explore and learn at his own pace, pursuing detail as he sees fit, and learning and appreciating in a manner which cannot be supported by, for example, television or a limited number of books.

MinervaEC will facilitate that a very large body of the most important European cultural treasures, from a high number of countries, to be accessed in a simple and *similar* manner.

This lets the user explore across linguistic, cultural and national boundaries, without having to learn new technologies or interfaces. It broadens the scope of his cultural exploration across multiple countries. It well responds to the first and third priorities of the i2010 plan: supporting cultural diversity and digital libraries.

Employment Prospects

The MinervaEC project will contribute to expose new users to the breadth and depth of European culture. This will lead, in turn, to greater culture based tourism and so to improved employment and economic prospects for the countries involved. The global reach of the Internet, and so the MinervaEC service, means that European culture (and cultural tourism) will be broadcast to major external markets, making Europe a more attractive destination on the global travel market.

SMEs

Open, global Internet access levels the playing field for SMEs who wish to create a business based on the exploitation of cultural heritage material. SMEs in design, in textiles, in printing, in graphics and in publishing have a huge new resource to draw upon, providing inspiration, ideas and raw material for new products and services. In particular, creative individuals and SMEs, often geographically peripheral, will have new material to draw upon, from a content base which spans nations, cultures, languages and centuries.

Contribution to eServices within Culture and Tourism

MinervaEC enables access to a linked network of cultural portals and content bases, from some of the major cultural players in the world. Its government-level partners will ensure that the project has a major impact on their respective countries, so that the contribution made will be significant.

Cultural institutions in the Member States will benefit directly from MinervaEC. Their online profile will be enhanced, their ability to sell merchandise online will be enhanced by the large new audience of viewers, their visitor numbers can be expected to increase and their potential for cross-border cooperation will be enhanced.

As noted above, the impact on cultural tourism, particularly from beyond the EU, is expected to be important.

Contribution to economic development and social objectives

The cultural and scientific heritage of Europe has a significant impact on its social and economical development. Digitisation of these resources becomes then a major activity for increasing and improving access of citizens to information and for preserving European cultural heritage. Furthermore the cultural diversity of Europe can receive an important boost from the availability of digital assets, which can play a crucial point in several fields: education, tourism and media industries. They can also be very effective in promoting cultural diversity and enhancing understanding of different cultural, ethnic or religious backgrounds of communities across Europe.

The sector of digitisation of cultural heritage is in fact highly promising in terms of the market opportunities. This does not only refer to commercial enterprises, but to the overall social economy directly linked to the cultural sector, and usually managed by cultural institutions or by Third System organisations.

MinervaEC is expected to contribute in the definition of this scenario. To achieve these results, the evaluation results will be analysed, and policy and market conditions for further diffusion of the new services will be examined, outside the framework of this contract, in order to support interested SMEs in clearly identifying the target populations to be addressed. Promoting the use of digital content can play an active support to create and stimulate economic development, through job creation and promoting skills development. The importance of business models for distribution, archiving and use of electronic information has been already the objective of several strategic activities launched at European level. In fact the contribution given by the project to the definition of joint initiatives and of a European policy, is strictly correlated with the i2010 Action Plan, as well as the support given to identifying the main obstacles still present for SMEs which want to engage in digitisation business.

The ambitious objective of the MinervaEC project needs EU support in its inception phase, to promote the start-up of the action on a common basis, but has the internal strength to assure the sustainability of its achievements after the end of the EU contribution. The beneficiaries and target groups contacted through the project will touch government and public administrations, memory organisations, publishing companies, research centres, universities and higher education institutions, entertainment and software industries. If MinervaEC will succeed in tackling the existing difficulties and constraints, and contribute to animate a market still in the cradle, it is not difficult to anticipate that the financial resources for continuing its activities could be activated.

Standardisation

MinervaEC does not set out to establish or identify new standards. But the project will implement a common framework across Europe (see WP4), which embodies existing global standards, selected at a European level, and encourages their use.

The project will contribute to the evolution of trans-national standards, widely accepted to guarantee interoperability across the different applications set up at local level.

The strategy of the project will be based on creating a large consensus around the project, as a basic tool to promote definition and acceptance of international standards. This will consist in the promotion of permanent National Committees, including different ministries, regional and local administrations, national associations and SMEs active in the digitisation sector. In fact the beneficiaries and target groups of recommendations, services and tools provided by MinervaEC include several categories, namely governmental and public administrations, memory organisations, publishing companies, research centres, universities and higher education institutions, entertainment and software industries.

A key action for success (see WP3) will be a close synergism and integration with the actions promoted by trans-national organisations and the partner countries. For this reason the project will try to activate collaboration mechanisms with any organisation interested in digitisation of cultural and scientific content issues. Together with national and international bodies, special attention will be paid to national and international professional associations of cultural operators (e.g. libraries, museums, etc.), in order to merge the top-down approach due to the composition of the network, with a bottom-up fertilisation process. The definition of a common policy at European level will then be constantly monitored by a consensus building activity, where recommendations and guidelines will be acknowledged by operators asked to apply them. This iteration mechanism is considered to be the key issues to succeed in the definition of road maps, research agendas and in the implementation of any future strategy.

Inclusion

One of the objectives of i2010 is the promotion of an increasingly inclusive and secure information society, based on the exploitation of Information Technology to improve our quality of life: health care, education, life-long learning, quality of life and social inclusion. More and more Information technology plays a crucial role in improving the efficiency and accessibility of public services. The main challenge for e-Government in the next years is based on promoting inclusion. e-Government services enhance efficiency for citizens, businesses and public administrations.

The European Commission presented an Action Plan on e-Government in 2006, launched by the Ministerial conference held in Manchester during the UK Presidency.

MinervaEC intends to contribute to the achievements of these objectives, due to its focus on e-Accessibility, e-Learning (see WP4 and WP5) and the European Digital Library.

MICHAEL

Description of the Service

MICHAEL is establishing an international online service, which allows its users to search, browse and examine multiple national cultural portals from a single point of access. This online service is:

- actively supported and endorsed by the national governments and agencies responsible for cultural heritage (typically cultural ministries and dedicated national agencies);
- based on standard and open-source technologies, built upon an existing platform;
- flexible and extensible in terms of adding additional nations to the scope of the resource.

In addition, MICHAEL localizes and installs the same platform within the participating nations, so that similar services at a national level are available. This means that the end users of national inventories and cultural portals do not need to learn new paradigms and

approaches when utilizing the cultural services of other countries. It also means that a common approach and model of digital cultural heritage services is applied across the participating nations.

The MICHAEL project builds upon the following existing assets:

- the common meta-data standard for Inventories of digitisation projects developed in MINERVA and agreed by the European Ministries of Culture;
- the methodology and resources established by the Minerva;
- the technical platform used in the French inventory project at http://www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm, which includes application server, search engine, publishing framework and application generation functions. This technical platform is built upon open-source, de facto standard software components including Apache Cocoon publishing framework, Apache Tomcat servlet engine, Jakarta Lucene search engine and the XtoGen application generator.

User Experience

The end user can use the MICHAEL service to find and explore European cultural heritage material, which is accessed over the Internet. This material may include learning resources, catalogue information or the description of physical collections; however, the majority of this material will be digitised cultural heritage assets such as images, 3D models and meta-data descriptions of archaeological sites, buildings, paintings, sculpture etc. etc.

Searching is possible using both simple-text based search as well as search-by-category and search-with-meta-data, and potentially through the use of GIS to enable the creation of location-based services. The scope of the search can be restricted to a single country, to a number of countries or to all sites linked to the MICHAEL service. The common, agreed, meta-data model will increase the value of the results of cross-border searching. Its implementation is a key recommendation of the Lund Action Plan.

The MICHAEL service is available on a multilingual basis; the MICHAEL platform is localized for each country who adheres to the MICHAEL consortium.

Goals

The goals of the overall project can be listed as follows:

- To make available to the European citizen the richness of the European Cultural legacy.
- To allow access to all sectors of society, including the young, the elderly, the disabled, the disadvantaged, the educated, the serious researcher and the 'merely interested'.
- To achieve the goals set out in the Lund Action Plan.
- To address the terms of reference of the NRG and the objectives of the Minerva project, which themselves are a step towards the fulfilment of the Lund Action Plan

Critical to these goals are

- implementation of a common meta-data standard
- implementation of a multilingual thesaurus
- implementation of a common approach to inventories, in terms of meta-data, data model, service model
- pan European interoperability
- a real, usable service which can be used to demonstrate concrete results and as an example for other, subsequent services.

Objectives

The objectives of the MICHAEL project are as follows:

1. A European cultural heritage inventory, available to all and providing access to a trans-European range of cultural heritage resources
2. A growing number of national inventories using a common meta-data, data model, set of services and based on a common technical platform, localized as necessary.
3. Sustainable management format for the project going forward (based on an EEIG)
4. Endorsement and implementation at a national government level, in order to underpin further funding as required.
5. A methodology and procedure, coupled with a flexible technical platform, which makes it easy to add new national instances of MICHAEL, thus growing the content and user bases.

Outcomes

The outcomes of the MICHAEL project are closely aligned with strategic, operational and pan-Action-Line objectives of eTen, the European Commission programme that co-finances the MICHAEL project.

They include the following:

- Added value to Europe's cultural heritage resources
- Interconnected and interoperable national initiatives
- Improved access to public resources
- A reinforcement and extension of the national cultural initiatives, by adding a trans-European dimension.
- Facilitation of study, life-long learning, eLearning, distance education
- Encouragement of cultural tourism
- Major facility for education and recreation, available to all and so addressing social inclusion and geographical peripherality, economic and social cohesion and a level playing field for all.
- A goldmine of cultural material for exploitation and re-use by creative SMEs, by artists, designers, textile engineers and many other sectors. The creative focus particularly suits SMEs, often in remote parts of the EU.
- A growing number of national cultural portals, which can interoperate with one another and which comply with the identified best practice set of international standards for meta-data, data models, etc.

The MICHAEL portal itself is a major outcome – a significant online cultural service, growing in size and population in the future, with a clear management structure and plan for the future. This service can be used as a blueprint on which to base the implementation of further online services in the cultural area, as outlined in the Conclusions of the Council endorsing the EC Recommendation on the European Digital Library.

Technical Results

The technical results of the MICHAEL project can be listed as follows:

- National inventories on a common meta-data model, data model, multilingual thesaurus and service model
- National portals running on a common open source technical platform, localized as necessary
- Pan-national inventory portal
- Sustainable, flexible extensible model based on XML technologies
- Open source solution built on Apache Tomcat, Cocoon, XtoGen, etc.
- Methodology and model which is easy to deploy and replicate in additional countries.

The MICHAEL software platform consists of two modules that work together to provide data management and publishing services:

- the module targeted to the cataloguers that allows users to create, modify, import and manage records that describe the digital collections. These functions are available using a standard Web browser. Data is stored using an XML database.
- the module that offers the public interface to end-users to search for digital cultural heritage within their Web browsers. The module is based on an XML search. Institutions and countries can customise their own display engine to adapt the interface to meet their particular needs.

The two MICHAEL modules act as data repositories that are consistent with the Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH).

The MICHAEL platform is distributed as open source software and is built upon other open-source components, i.e.: Apache Cocoon, eXist, Xdepo, SDX.

The MICHAEL platform is based on the MICHAEL data model, which derives from the work done by MINERVA, closely related to the RSLP collection description schema and to the Dublin Core Metadata initiative on collection description.

Consortium

The MICHAEL consortium was originally made up of the cultural ministries of Italy, France (supported by the cultural agency Dédale) and the UK (as represented by Museums, Libraries and Archives Council, the national body for cultural integration), as well as Amitié and Dédale, two providers of project support services.

MICHAEL was extended as MICHAEL Plus to 11 more countries that are working together since May 2006.

Since late 2006, 4 new countries joined MICHAEL covering the full investment of their participation.

The following countries currently participate to the deployment of the MICHAEL services:

Belgium-Flanders
Bulgaria
Czech Republic
Estonia
Finland
France
Germany
Greece
Hungary
Italy
Malta
The Netherlands
Poland
Portugal
Slovakia
Spain
Sweden
United Kingdom

Sustainability of the MICHAEL service

The business model of the MICHAEL AISBL is based on membership fees that are aimed to guarantee the necessary resources to maintain the European portal.

Any new project of the Association will need to identify its additional financial resources, either internally, by a decision of the Board of the Association to ask the Members to finance a new venture, or by third parties investment, including private sponsorships, public funding and the EC programmes.

It is worth to remind to this regard that the actual maintenance of data will be guaranteed by the national bodies who run the national instances of MICHAEL, which are, on their behalf, generally linked to the national programmes for the national portals of culture in their respective countries. They are Ministries, Lander Governments and National/Regional Public Agencies. These liaisons of MICHAEL with the national portals will be the intrinsic guarantee for the sustainability of MICHAEL content.

Target Audience

The target audience of the MICHAEL service is global. The project addresses scholars at all levels, from school to post-doctoral research, providing them all with a valuable goldmine of content. In addition, it addresses the casual browser of cultural content, such as the potential tourist from the USA or Japan.

Why the Target Audience will be attracted

The target audience outlined above will be attracted to MICHAEL for a range of reasons.

- **Students and researchers** will find MICHAEL attractive because of its wide scope, its powerful search and retrieval functionality and the enormous body of rich cultural content that it makes available.
- **Browsers and potential tourists** will be attracted to it by the easy web-based user interface, by the availability to find cultural information based on the location of the original material (and thus, perhaps, included on the tour planned), and by the aesthetic beauty of the material presented.

Trans-European Dimension

MICHAEL is a project where multiple ministries cooperate to create a service which combines and integrates their national efforts. It enables the creation of trans-European cultural portals and the marketing of 'European Culture' as opposed to national "cultures". By combining national efforts, it creates an inventory which is truly trans-European in scope and reach.

The MICHAEL public partners (cultural ministries and national agencies in the 18 participating countries) are all active in their own countries, developing new cultural resources, working on national cultural portals, encouraging memory institutions, etc. For all public ministries, the digitisation and online access to cultural materials is one of the most important developments in some decades, with completely new models of culture, access to culture and exploitation of culture emerging. However, there is a very real danger that each agency or ministry will develop its efforts in a slightly different direction to the others. This would act as a major impediment to the creation of a major body of European culture, and to the availability of a very important eEurope eContent resource. It is the underlying objective of the efforts of MICHAEL to address this potential problem, by propagating common data models, meta-data and service models while there is still time to do so.

The influence of the public partners in MICHAEL and their role in the selection of services and promotion on a national level are very significant. Being endorsed and encouraged by the national agency means that the MICHAEL platform has a uniquely strong chance of becoming the national norm in these countries.

An important element of the MICHAEL effort will be localization of the MICHAEL platform. Another important element will be the mapping of existing cultural databases to the MICHAEL data model. The MICHAEL project will develop experience, guidelines and methodology for carrying out this work during its execution, and will pave the way for its further enlargement in the rest of Europe.

MICHAEL and the European Digital Library

The European Digital Library aims to involve all Cultural Heritage sectors and the largest number of institutions (national and local, large and small).

MICHAEL can be the catalogue of the European Digital Library.

In particular, MICHAEL will provide the following contributions:

- Catalogue of the digital collections, Europe-wide, covering all the cultural sector
- Successful cooperative approach and working methods
- Network of thousands of European cultural institutions
- MICHAEL AISBL: organisational and legal structure (the MICHAEL-Culture AISBL)

FIGURES AND TABLES

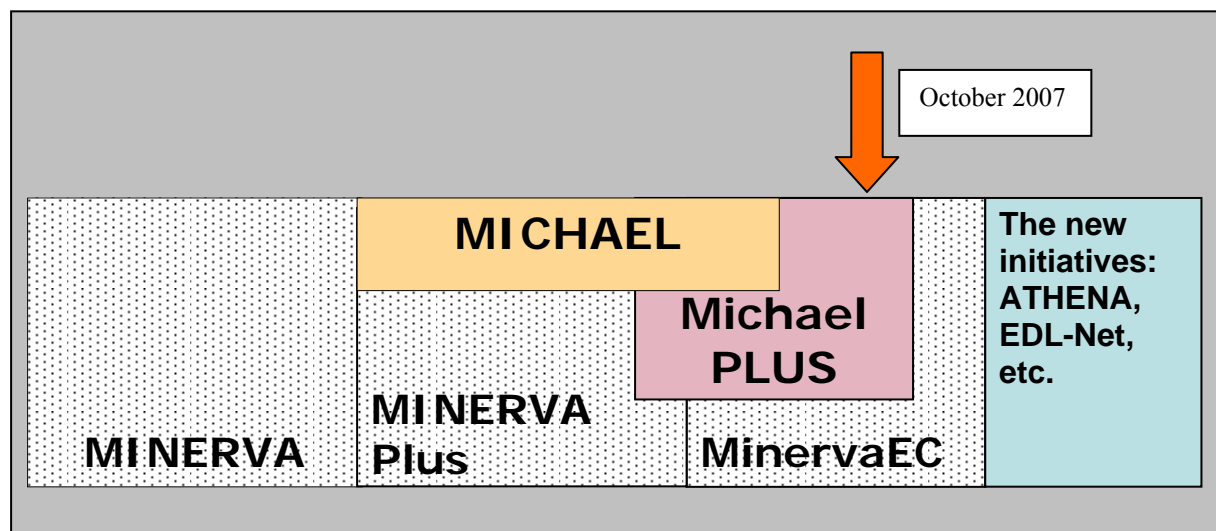


Figure 1 – MICHAEL and MINERVA projects' phases

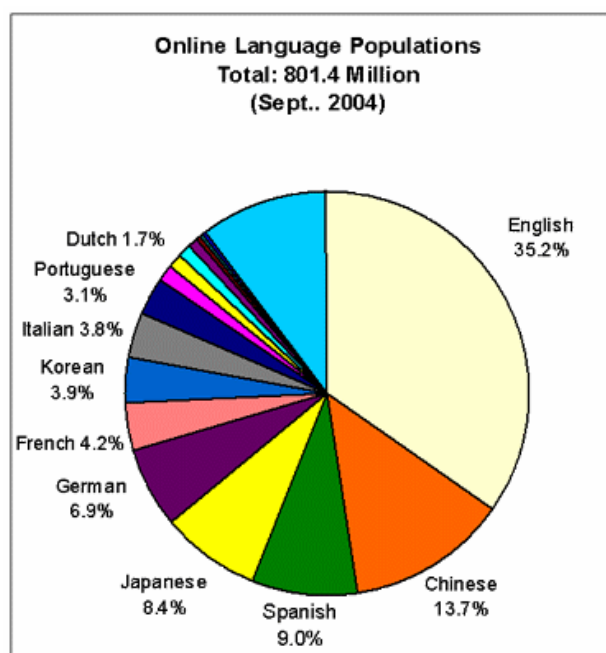
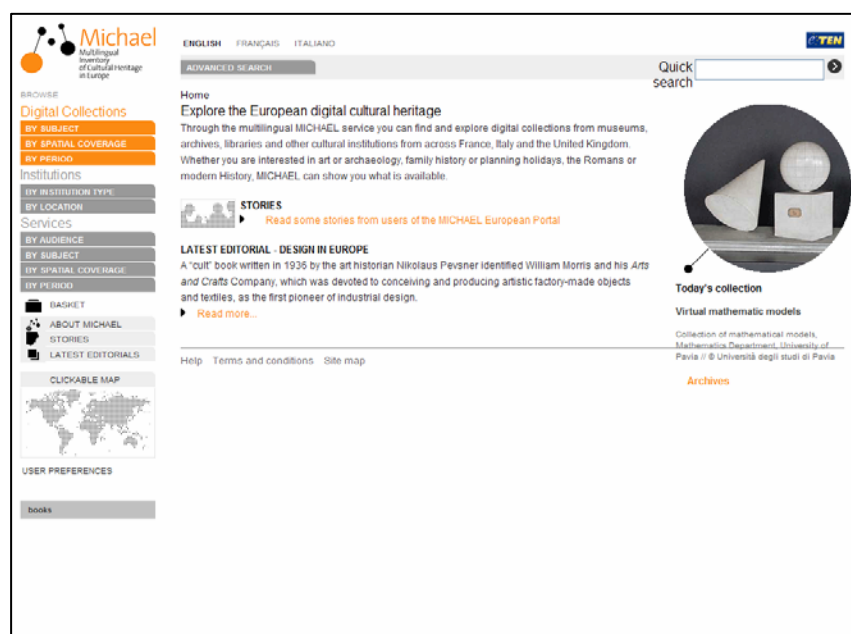
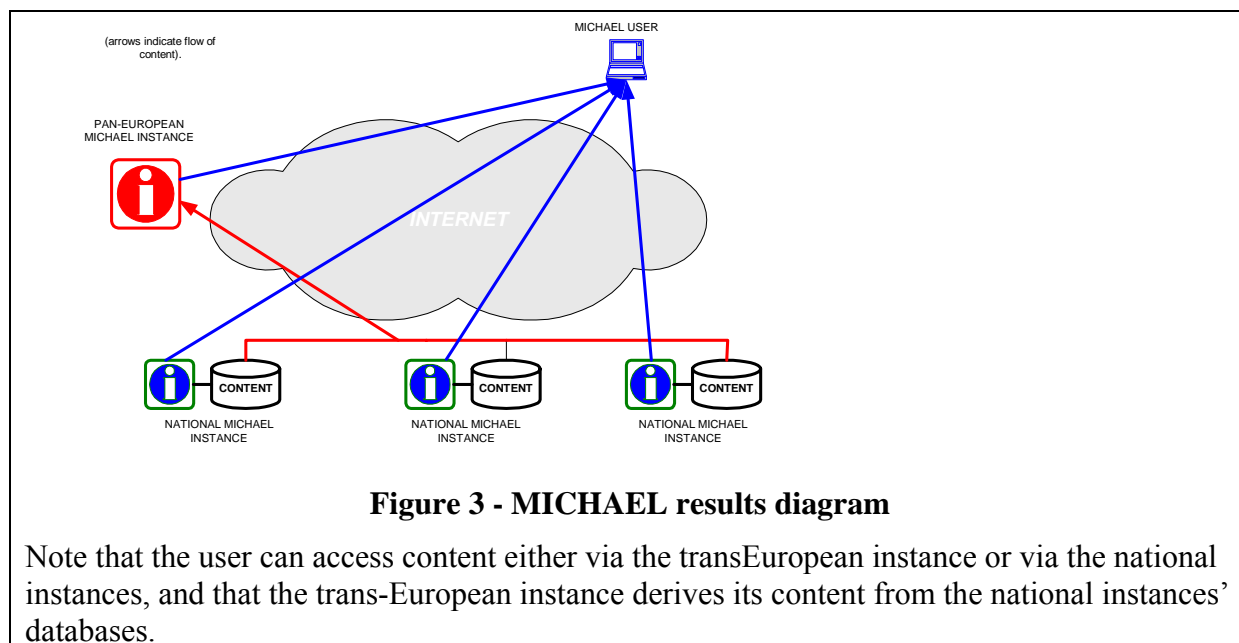


Figure 2 – Languages of the online services from the Minerva Report on Multilingualism



FR

**1450 digital collections
500 institutions
250 services-products**



UK

**766 digital collections
616 services
321 projects
306 institutions**



IT

**2588 digital collections
1396 institutions
1404 services/products
1520 physical collections
423 projects/programs**



Figure 5 – MICHAEL national portals in Italy, France and the UK

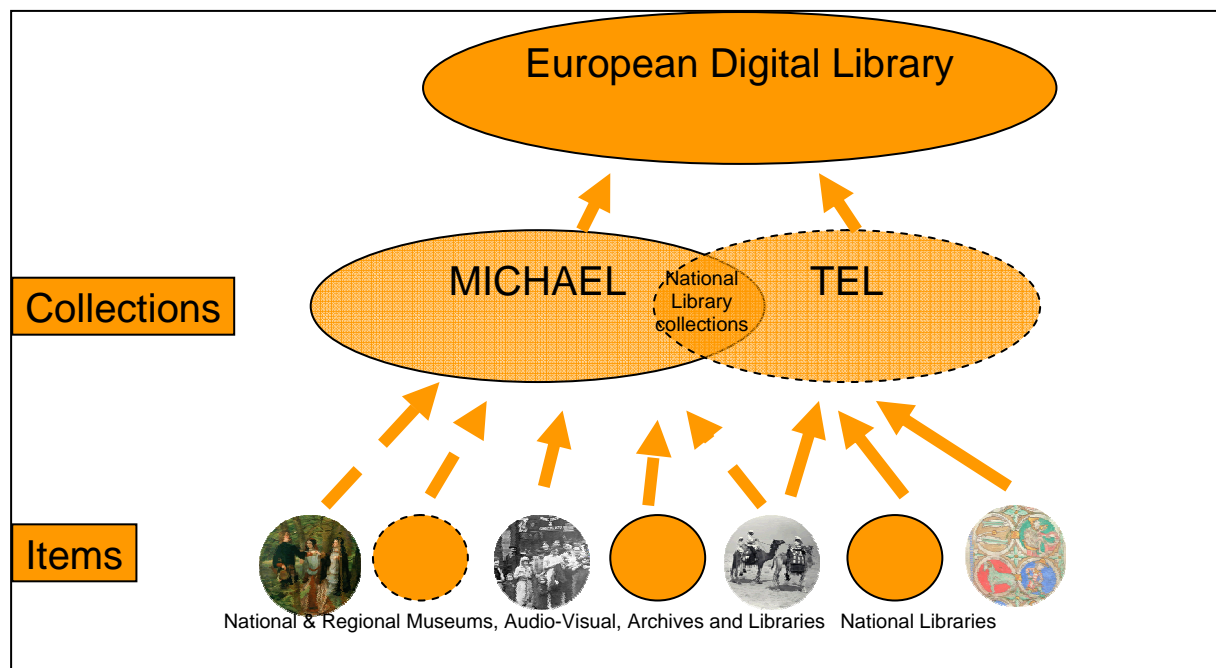


Figure 6 – the role of MICHAEL in the European Digital Library

ACKNOWLEDGMENTS

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