



MINERVA

Ministerial Network for Valorising activities in digitisation

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1. Introduction

1.1 Rationale

In December 1999 the eEurope initiative was launched by the European Commission to bring the benefits of the Information Society to all Europeans, followed in June 2000 by the eEurope 2002 Action Plan, agreed by Member States to achieve the previously defined targets. In its objective 3 (Stimulate the use of the Internet), the plan underlines the importance of content industries in creating added value by exploiting and networking European cultural diversity. To strengthen this aspect, both Member States and the Commission have the role to facilitate and ensure the availability of content for digital networks. In particular, within that objective, there is a specific action to "Create a coordination mechanism for digitisation programmes across Member States".

The content industries are indeed a fast growing segment of the European economy, and the European Commission, beginning with the Impact and Info2000 programmes and including the current eContent action, has clearly identified this sector as a priority area. The extensive cultural heritage and linguistic diversity of Europe creates the foundations for a vibrant digital content industry, able 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, historic sites, arts bodies and archives. The key objective is to make more accessible and more effectively exploited the wealth of information there contained. The key objectives are:

- to make the cultural and scientific heritage more accessible;
- to exploit the educational potential of digital content;
- to create the conditions for a flourishing digital content industry.

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.

European countries 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 main challenges are now promoting the uptake of new technologies for the digitisation of cultural and scientific content, ensuring lasting accessibility and preservation, the development of new services and job opportunities. Other important objectives include strengthening the European content industry and stronger support for its co-operation with educational communities, with consequent mobilisation of material and immaterial resources.

The achievement of these goals is threatened by some constraints, creating important risk factors:

- the European content market is fragmented, limiting the growth of the sector;
- technology is rapidly changing, and the absence of widely accepted standards can generate a quick obsolescence of digitised resources;
- access and exploitation of public sector information is not homogeneous;
- the various stakeholders in the digitised content (i.e. owners of intellectual property rights, e.g. original owners, intermediaries, and end-users) have different legitimate interests;
- inadequate provision of multi-lingual content; inadequate reflection of the cultural, social and religious diversity of communities across Europe;
- insufficient co-operation between educational and cultural institutions and the content industry.

As previously underlined, the European Commission is playing an active role in promoting initiatives to support the content industries in the new technological environment: the MEDIA plus programme promotes the audio-visual sector, the eContent action - following the previous INFO2000 and MLIS programmes - promotes the use of digital content linguistic diversity in the information society. The Culture2000 Programme is also an important element for involving and making cultural actors aware of the new opportunities, since it aims to promote cultural dialogue, creativity and the transnational distribution of culture, the promotion of cultural diversity and common cultural heritage, and improving public access to culture. This interest also touches co-operation with other Mediterranean governments: for instance EUROMED and EUMEDIS are initiatives aiming at interconnecting the Euro-Mediterranean research communities and at launching pilot projects in several sectors of intervention, including multimedia access to cultural heritage and tourism, and preservation of cultural heritage. In fact, a closer contact between EU and member states' policy in this field is essential to speed up the process: actions at national level should be interconnected, and complemented by a central co-ordination of digitisation programmes across Europe to ensure wider access to Europe's common heritage.

On 4 April 2001, representatives and experts from the Commission and Member States met at Lund in Sweden to discuss these issues and to make recommendations for actions that support coordination and add value to digitisation activities in ways that would be sustainable over time. The present proposal intends to start from the conclusions, the Lund Principles, available on-line in all EU languages, endorsed by Member States and underlining risks of losing the opportunities arising from applying new technologies at cultural and scientific content for the future Knowledge Society in line with eEurope Action Plan, and the following meetings held in Brussels on 17th July and Mons on 22nd September under the Belgian Presidency, and to facilitate the adoption of the Lund Action Plan. For this reason, the Member States partners of the MINERVA project commit themselves to identify solutions in order to:

- co-ordinate their strategies and policies for digitisation of cultural content;
- provide a European dimension to their policies and programmes;
- define, exchange and disseminate good practices across the European Union;
- support the development of national and international inventories of cultural and scientific content.

1.2 Outline of the Minerva Project

The **objective** of MINERVA is to create a network of Member States' Ministries to discuss, correlate and harmonise activities carried out in digitisation of cultural and scientific content, for creating an agreed European common platform, recommendations and guidelines about digitisation, metadata, long-term accessibility and preservation. Due to the high level of commitment assured by the involvement of EU governments, it aims to co-ordinate national programmes, and its approach is strongly based on the principle of embeddedness in national digitisation activities. It will also establish contacts with other European countries, international organisations, associations, networks, international and national projects involved in this sector, with a special focus on actions carried out in the DigiCult action of IST. The project will organise an advisory Group, relying on existing actions to identify and integrate best practices in a pan-European framework, to facilitate the adoption of the Lund action plan.

The **work plan** includes activities to:

- organise work groups to provide the political and technical framework for improving digitisation activities of cultural and scientific contents, and defining a common platform;
- facilitate the adoption of the Lund principles, both in EU Member States and other European countries, to amplify the impact of the eEurope initiative;
- set-up an international Forum, and electronic publication, supporting collaboration on scientific research;
- make visible, promote and exchange information about National Policy profiles concerning digitisation;
- identify users' needs, define training schemes and develop recommendations;
- make available test-beds, defining mechanisms for evaluating models, methodologies, techniques and approaches, aiming at the selection of guidelines for harmonising activities and trying to reach agreement among Member States, on a common basis;
- implement the benchmarking framework on digitisation, able to compare and improve quality of national approaches and promote best practice across Europe;
- organise a plenary meeting every six months, hosting also thematic workshops to present and discuss results achieved by the specific work groups;
- promote concertation events open to both EU and other national projects, to create clusters of projects;
- promote dissemination and training activities at national level, acquisition of new skills and access to existing resources;
- identify Road Maps suitable for activities to be launched in the near future, to support Member States in the definition of their policy, through exchange of experience, priorities agenda and work programmes.

The direct involvement of governmental organisations intends to contribute at bringing together a wide network of research centres, cultural organisations and companies interested in digitisation aspects, to co-ordinate their activities in order to advance towards common strategic goals.

1.3 What Is the Task?

Objectives

The objectives of work package 6 are:

1. to support the development of skills and increase of efficiency in digitisation by
 - a. encouraging take-up of good practice
 - b. encouraging promotion of “centres of competence”; the aim is that these “centres of competence” should be sustained by national governments.
2. to support MINERVA/WP 2 - 5 in the selection and identification of guidelines.

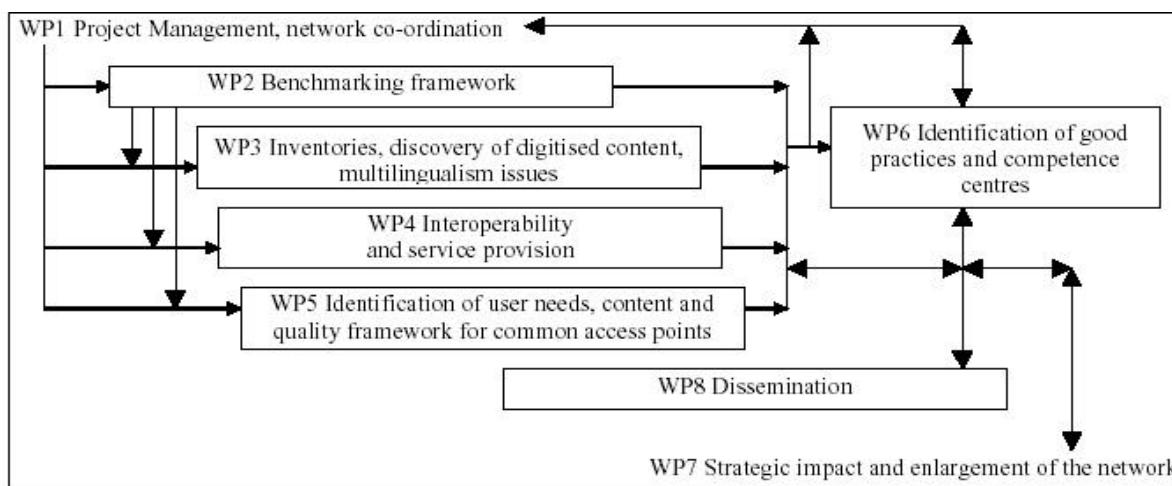


Figure 1: WP 6 in the context of Minerva

1.4 Work To Be Done According To the MINERVA Contract

Activities

Examples of good practice in digitisation will be selected and promoted from, in the first place, Member State programmes and projects in order to

- exchange experiences and skills
- collect consensus from different communities of users

Existing projects in cultural heritage under the IST programme like DigiCULT will also be analysed for potential contribution to good practice.

Organisations and centres with leading skills and competence in key technical domains will be identified and contacted. The purpose is to establish a “consortia” of such organisations with services to support and inform cultural organisations embarking on digitisation. Information about this “consortia” has to be made accessible on the web.

Sequence of work

As a start, existing good practices will be identified and promoted in the short term, with a view to producing a set of consensus guidelines on good practices at a later date in the project. Relevant standards will also be identified and recommendations about their application developed.

As a second activity organisations and centres with leading skills and competence in key technical domains will be identified and contacted.

Deliverables

- D6.1 First selection of good practices and competence centres (month 9)
- D6.2 First selection of good practices and competence centres (month 15)
- D6.3 First selection of good practices and competence centres (month 21)
- D6.4 First selection of good practices and competence centres (month 27)
- D6.5 First selection of goods practices and competence centres (month 33)

1.5 The Work Plan

At the kick-off meeting of MINERVA in Rome in April 2002 a work plan for WP6 was presented and accepted.

General conditions

- Benchmarking and good practice in digitisation are on-going activities; MINERVA is just a (first) step.
- Focus has to be on pull factors and not on push factors; otherwise no one will be interested in these activities, at least not in the long run.
- Benchmarking and good practice (guidelines, standards, recommendations, advice etc) form together a “wheel” that has to be rolling on by its own force.
- To underline the close relationship of benchmarking and good practices MINERVA/WP 2 (benchmarking) and WP 6 have a joint organisation. On top is a Ministerial Board with representing the Ministries of Culture in Finland and Sweden. The actual work is carried out by national project groups, one in Finland (benchmarking) and one in Sweden (good practice). All matters concerning the relations between the two work packages are handled by a Finnish-Swedish coordination group which meet regularly in regular meetings or in meetings over the phone.

Working phases of WP 6

For managing the task given to WP 6 four working phases has been identified:

- Construction of a generic model that define, describe, and delimit the activities identified in the MINERVA contract (“handling the reality”).
- Analyse of the situation today (“state of the art”).
- Describing a first version of a web application (prototype) that responds to the conditions given in the working model (“from words to deeds”).
- Describing the entering data elements in the web application (prototype) and revising the application (prototype) before its acceptance as the final version (“finalising”).

Suggested results - step by step

- 1. November 2002 A written report about the state of the art.
- 2. May 2003 A first description of a web application on good practice (prototype).
- 3. November 2003 A first version of a list of competence centres and a set of guidelines.

4. May 2004 A draft description of a web application (prototype) including data from MINERVA/WP 2- 5.
5. November 2004: A final description of a web application on good practice (prototype), including benchmarking and routines for on-going entering of data.

Work done up until now

Phase 1

In October 2002 the first phase (“handling the reality”) was accomplished. A working model was constructed, and a draft version presented at a work shop in Rome the 17th of October organised by MINERVA/WP 2. Input for revising the model was picked up at that particular work shop as well as in earlier discussions with other work packages.¹

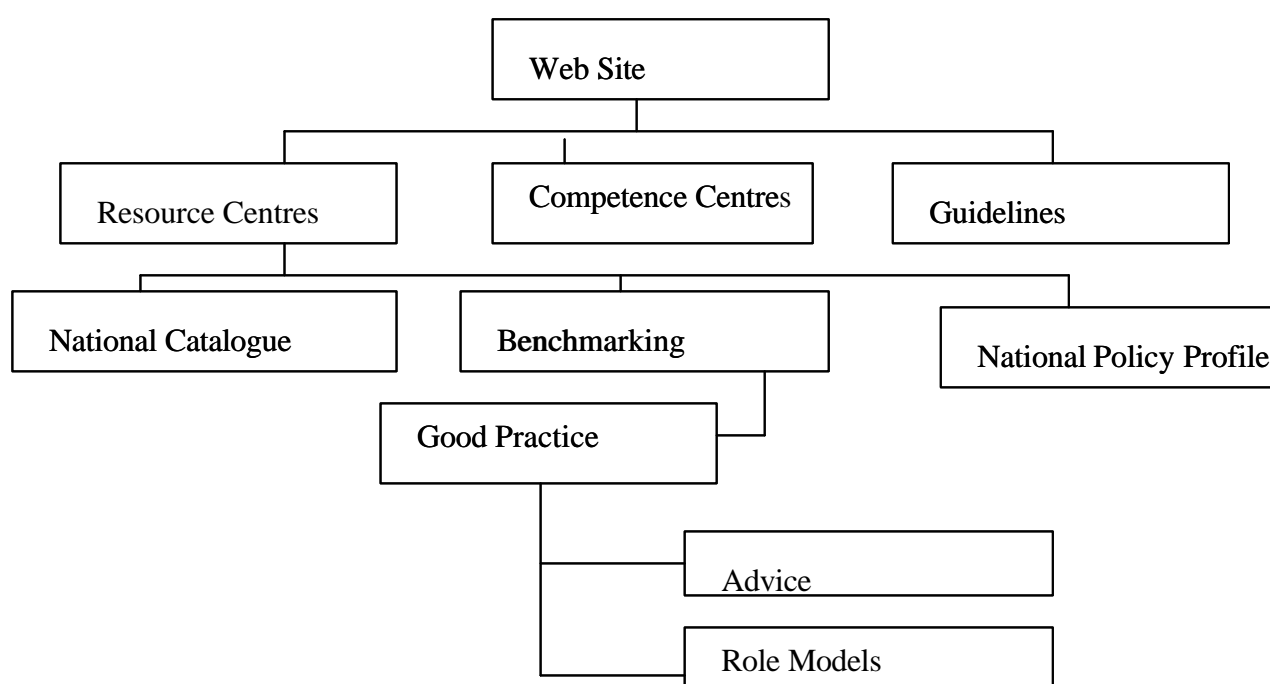


Figure 2: The Good Practice Model

The aims of this model are to identify the elements necessary to fulfil the objectives of WP 6 and to find a basic structure for the design of a web site, so flexible that it, firstly, can be implemented in different countries and, secondly, allow both data entry on national level and data collection on European level.

¹ Kick-off meeting in Rome 15th of April; WP2 – WP6 Coordination group meetings in Helsinki the 26th of March and by telephone the 5th of September, WP2 - WP6 Ministerial Board meeting in Helsinki the 5th of October; meetings with WP 3 in Stockholm the 4th of June and with WP3 and 4 in Paris the 5th of July.

All the elements in the model are organised in four layers:

- 1 (on top) Regardless of country it should always be possible to identify at least three “helping hands” in digitisation: Guidelines (telling what to do), competence centres (giving support) and other national resources.
- 2 Other national resources could be of at least three kinds: a national catalogue of digitising projects, a benchmarking tool, and a national policy profile for the country in mind
- 3 Benchmarking and good practice are two sides of the same coin. A benchmarking process always produces good practice which could be re-cycled in another benchmarking process. Therefore, good practice can be considered as an outcome of benchmarking.
4. Good practice as an outcome of benchmarking is in the model defined as advice and role models (in a broader sense it also includes guidelines and competence centres). Advice could be reports and recommendations produced by different digitisation projects giving indications about what to do and not to do (lessons learned). Digitising projects can also as such be looked upon as good (or bad) examples of digitising activities (so called role models) from which knowledge can be extracted by anyone who wants to study them.

Phase 2

The second phase (“state of the art”) in the work of WP 6 started in September 2002, and the main results are summed up in next chapter. The disposition of the text follows the identified elements in the working model (see above).

Before entering the third phase (“from words to deeds”), where the model should be converted into a description of a practical web application (prototype), there are some basic considerations that need to be agreed upon by the MINERVA project. Firstly, interoperability in its technical sense has to be handled (terminology, metadata, hard- and software etc). This is a matter in the first place for MINERVA/WP 4. Secondly, common criteria for guidelines, competence centres, and national catalogues on digitising projects, advice, and role models have to be set. This is done in this report (see next chapter). Thirdly, the multilingual issue has to be solved. All exchange of good practice must by necessity presume that the language or languages in use can be understood. Therefore, it is an urgent need for the MINERVA project to find a common multilingual platform for its work. This is an issue for its WP 3.

2. State of the Art

2.1 Guidelines

Guidelines and guides on good practice

The reasons for cultural institutions to implement digitisation can vary and may often overlap. Normally, a decision to digitise is based on an aim to

- increase access (because of a high level of user demands or because the content holder in mind wish to improve access to certain collections).
- improve services to expanding user group
- reduce wear and tear by creating back up copies for endangered material

Sometimes, digitisation projects have their roots in a desire to

- develop the technical infrastructure and/or the skill of staff
- increase world wide access
- take advantages of financial opportunities or of partnership with other institutions sharing the same approaches

The list of reasons for digitisation can be made very long. Despite – or maybe because - of that, digitisation in the cultural community is today pretty well covered by publicly available guidelines and good practice guides. Some general sources on the web are listed in appendix 1.

Standards

Also in the field of standards the situation is pretty good. Internationally adopted standards are today available in most areas connected to digitisation. Using them is a way to allow interoperability of products, systems and services, and promote common technical understanding. The ISO (International Organization for Standardization) has a special technical committee on document imaging applications (TC 171). Of interest for digitisation is TC 171 sub committee 2 and its working groups on electronic imaging applications (TC 171/SC2/WG 2) and on micrographics and electronic imaging engineering applications (TC 171/SC2/WG 4). There are also other ISO committees that can be of interest for digitisation, for example the technical committee on photography (TC 42) which has working groups on electronic still picture imaging (TC 42/WG 18) and extended colour encodings for digital images storage, manipulation and interchange (TC 42/WG 23, joint WG with TC 130). The current work on the wavelet-based JPEG2000 raster image exchange format (WG1 in ISO/IEC/JTC/SC29 – Coded representation of audio; picture and multimedia) should also be mentioned.

Information about ISO standards and the work of the technical committees can be found on <http://www.iso.ch/iso/en/stdsdevelopment/tc/tclist>. In Europe, the European Committee for Standardization (CEN; <http://www.cenorm.be>) has the mission to promote voluntary technical harmonization in Europe in conjunction with worldwide bodies and its partners in Europe. CEN works here in partnership with the European Committee for Electro technical Standardization (CENELEC ; www.cenelec.org) and the European Telecommunications Standards Institute (ETSI; www.etsi.org).

Digitisation covers a range of activities from selecting material for conversion to preserving the digital files. To get an overview of adequate standards regarding each activity a look at the

home page of the Diffuse project is a good idea (<http://www.diffuse.org>). The Diffuse Project is funded under the European Commission's Information Society Technologies programme. The objective of the project is to provide a single, value-added, entry point to up-to-date reference and guidance information on available and emerging standards and specifications that facilitate the electronic exchange of information.

Legal aspects

Legal aspects are of crucial importance for the possibilities to implement digitisation. Every digitisation project needs to be aware of its legal framework (IPR, data protection, legal deposit etc) and do some serious thinking about authenticity. In the MINERVA project this is a matter for in the first place it's WP 4 to handle.

Quality aspects

Quality is another corner stone for which guidelines are needed. Different aspects of quality controlling and verifications form the framework of digitisation projects. For example has the cultural heritage, also in its digital form, to be trustworthy now and for the future. Quality matters are a responsibility for MINERVA/WP 5.

RECOMMENDATIONS:

MINERVA guidelines on digitisation should in the first place be based on links to existing guidelines, guides on good practices and adopted standards that are publicly available on the web and/or as print-outs. These links should be complemented with outputs from MINERVA/WP2 – 5.

MINERVA guidelines should be arranged in such way that they match the practical work flow in a digitisation project. A proposed disposition could be

- * *Managing Digitisation Projects*
Project management, legal aspects etc.
- * *Creating Digital Images*
Selection of material to digitise, conversion, quality control etc.
- * *Managing Collections of Digital Images*
Presentation, meta data, preservation, maintaining long term access etc.

2.2 Competence Centres

WP 6 has not been able to find any formal criteria for appointing competence centres on digitisation in Member States. Obviously, there are no competence centres within the European Union who are in that sense sustained by national governments. On the other hand, there exist in many countries a number of informal, or more correctly non-formal, competence centres, sometimes publicly funded sometimes with private or mixed funding. Some of them do commissions for the state, at least in France based on contracts.

Several universities and university collages have departments or institutions that both act and are widely accepted as competence centres. Four examples of this kind are

- The Visual Arts Data Service (VADS), based at The Surrey Institute of Art & Design, University College. VADS mission is to support research, learning and teaching by providing visual arts digital resources for Internet access and long term preservation; and to encourage, support and facilitate engagement with visual arts digital resources, through collaborative and creative endeavour, primarily within UK Higher and Further Education.
- The Technical Advisory Service for Images (TASI), a service that has been set up to provide advice and guidance to the Further and Higher Education community on the issues of creating, delivering and using digital images together with managing digitisation projects. TASI is hosted at the Institute for Learning and Research Technology (ILRT) at the University of Bristol.
- UKOLN (<http://www.ukoln.ac.uk/>), a centre of expertise in digital information management, providing advice and services to the library, information, education and cultural heritage communities by:
 - Influencing policy and informing practice.
 - Promoting community-building and consensus-making by actively raising awareness.
 - Advancing knowledge through research and development.
 - Building innovative systems and services based on Web technologies.
 - Acting as an agent for knowledge transfer.

UKOLN is based at the University of Bath.

- Lund University Libraries Netlab (NetLab; <http://www.lub.lu.se/netlab/netlab.html>), which is the Research and Development Department at Lund University Libraries. The department primarily runs developmental projects focusing on digital library and netbased information discovery and retrieval, mainly in Internet/WWW environments. The objectives for NetLab are:
 - to run projects involving networked information with special applications to library tasks and to raise the common level of competence;
 - to promote an increased level of knowledge about networked information services and techniques;
 - to follow and contribute to the technical and methodological development within information science and information retrieval.

It is not unusual that university libraries serve as informal competence centres as a result of their own digitisation activities. This is most obvious in United States. Examples are:

- University of California (UCLA) Library (see <http://digital.library.ucla.edu>)
- Columbia University Libraries (see <http://www.columbia.edu/acis/dl/imagespec.html>)
- Cornell University, Department of Preservation & Conservation (see <http://www.library.cornell.edu/preservation/>)

Many times leading cultural institutions in Member States, like national libraries, museums and archives, have a role as competence centres by providing expertise in their respective fields. There is a tendency, although vague, that libraries expose themselves more explicit in digitisation, both in Europe and in other parts of the world. The British Library's official view is that it sees digitisation as a way to "...maximise use of the BL's collections by facilitating a greater volume of networked access, both in the reading room and remote, and by providing

the enhanced functionality intrinsic to the digitised items.”² The Library of Congress identifies as its mission “...to make its resources available and useful to the Congress and the American people and to sustain and preserve a universal collection of knowledge and creativity for future generations.”³ Digitisation is an important tool in fulfilling this mission but also to preserve cultural and intellectual output created in digital form. One of their web projects is (accidentally) called MINERVA (Mapping the INternet Electronic Resources Virtual Archives).

In almost all cultural areas of action (archives, libraries, museums, special collections of sound, moving images etc) professional associations have taken a responsibility for developing better skill and competence and foster training and expertise in digitisation. The International Council on Archives (ICA; <http://www.ica.org>), the International Federation of Library Associations and Institutions (IFLA; <http://ifla.org>), the International Council of Museums (ICOM; <http://icom.museum/>) and the International Association of Sound and Audiovisual Archives (IASA; <http://www.iasa-web.org/iasa0013.htm>), the International Federation of Film Archives (FIFA; <http://www.fiafnet.org/uk/whatis.cfm>), International Federation of Television Archives (FIAT; <http://fiatifta.org/index.shtml>) have all technical committees, commissions or working groups focusing on standards and technical issues connected to digitisation. In their respective fields these professional organisations are regarded as “competence centres”.

There are also special professional organisations and projects concerned with standards and good practice in preservation, digitisation etc. They can too be regarded as competence centres. Examples are:

- Networked European Deposit Library (NEDLIB; <http://www.kb.nl/coop/nedlib/>), a collaborative project of European national libraries with the aim to construct the basic infrastructure upon which a networked European deposit library can be built. The objectives of NEDLIB concur with the mission of national deposit libraries to ensure that electronic publications of the present can be used now and in the future
- National Initiative for a Networked Cultural heritage (NINCH; <http://www.ninch.org>), a diverse coalition of organisations created to assure leadership from the cultural community in the evolution of the digital environment.
- Council on Library & Information Resources (CLIR; <http://www.clir.org>), an independent, non-profit organisation which through projects, programs, and publications works to maintain and improve access to information for generations to come.
- Digital Library Federation (DLF; <http://www.diglib.org/>), a consortium of libraries and related agencies that are pioneering in the use of electronic-information technologies to extend their collections and services. Through its members, the DLF provides leadership for libraries broadly by
 - identifying standards and "best practices" for digital collections and network access
 - coordinating leading-edge research-and-development in libraries' use of electronic-information technology
 - helping start projects and services that libraries need but cannot develop individually.

² <http://www.bl.uk/about/policies/digital.html>

³ <http://www.loc.gov/minerva/aboutmin.html>

The DLF operates under the administration umbrella of the Council of Library and Information Resources (CLIR).

- European Council on Preservation and Access (ECPA; <http://www.library.knaw.nl/ecpa/>), established in 1994 to promote activities aimed at keeping collections in European archives and libraries accessible over time. The ECPA acts as a European platform for discussion and cooperation of cultural heritage organisations in areas of preservation and access. To promote the exchange of knowledge and experience, the ECPA organises conferences, meetings and workshops.
- International Color Consortium (ICC; <http://color.org>), established in 1993 by eight industry vendors for the purpose of creating, promoting and encouraging the standardisation and evolution of an open, vendor-neutral, cross-platform colour management system architecture and components. The outcome of this co-operation was the development of the ICC profile specification, a cross-platform device profile format. The acceptance of this non-proprietary format by operating system and applications vendors allows end users to transparently move profiles and images with embedded profiles between different operating systems and applications. Furthermore, it allows a printer manufacturer to create a single profile for multiple operating systems.
- Research Libraries Group (RLG; <http://www.rlg.org>), a not-for-profit membership corporation of over 160 universities, national libraries, archives, historical societies, and other institutions with collections for research and learning. RLG develops and operates information resources used by members and non-members around the world. The organisation is seen as a pioneer in developing cooperative solutions to the problems that research collections and their users face in the acquisition, delivery, and preservation of information.
- World Wide Web Consortium (W3C; <http://www.w3.org>), develops interoperable technologies (specifications, guidelines, software, and tools) for the Web. W3C's profile is to be a forum for information, commerce, communication, and collective understanding.

From MINERVA's point of view it is important to find a way to promote competence centres that can support an on-going growth of such centres in Member States and at the same time guarantee that key technical issues are acceptably covered without too many overlaps. WP 6 can see, in principle, three options: two formal with appointed centres, nationally or on European level, and one based on self-assessment and voluntariness:

1. MINERVA recommends Member States
 - to decide about certain criteria for competence centres
 - to certify official national competence centres based on those criteria
2. MINERVA identifies a set of criteria for competence centres and recommends Member States to adopt them.
3. MINERVA recommends Member States to foster the growth of competence centre by
 - putting up an official "list" of competence centres in digitisation where organisations and centres with an ambition to have leading skills and competence can announce themselves; the description of a web application (prototype) proposed by WP 6 will be adapted to this purpose
 - giving recommendations concerning key technical domains where competence centres are needed and expected levels of expertise.

All three options give possibilities to identify competence centres on national level and, when needed, to establish networks on European level. Option n:o 1 more or less presupposes elements of public funding. It can be doubted that all Member States are willing to accept such a commitment. Option n:o 2 runs the risk of declining due to the great number of organisations and centres already regarded (and acting) as competence centres. Defining criteria afterwards will either be non-committal (trying to cover all existing centres) or have no relevance in practice (not fitting the structure of existing competence centres).

RECOMMENDATIONS:

MINERVA shall recommend Member States to promote competence centres according to option n° 3.

MINERVA shall inform Member States about technical domains where competence centres are needed.

2.3 Resource Centres

National Catalogues on Digitising Projects

It is possible in many Member States to find some kind of web based national catalogues or directories on digitising projects. The status, objectives and scope of these catalogues or directories differs and also the ambition to keep them updated. The best example of a national catalogue that WP 6 has found so far is the French “Catalogue des fonds culturels numérisés” (http://www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm). It covers both on-going and closed digitisation projects in archives as well as libraries and museums.

The MINERVA web site (<http://www.amitie.it/minerva>) has links to those Member States who have published a National Policy Profile on digitisation in accordance with the Lund Principles. These profiles contain among other things information about on-going digitisation projects in respective state (in total about 25 projects).

Internationally (outside the European Union) there are several catalogues or directories on digitising project on the web. Examples are:

- Association of Research Libraries (ARL) Digital Initiatives Database (<http://www.arl.orf/did/>), created as collaboration between the University of Illinois at Chicago and ARL. The ARL Digital Initiatives Database is a Web-based registry for descriptions of digital initiatives in or involving libraries. The goal of the effort is to capture basic information for a wide range of digital initiatives. It is intended that the database include a wide variety of digital projects. "Digital Initiative" is not defined in order to encourage the broadest possible interpretation.
- UNESCO/IFLA Directory of Digitized Collections (<http://www.unesco.org/webworld/digicol/>) for the moment (November 2002) containing 164 collections all over the world.
- Australian Libraries Gateway (ALG; <http://www.nla.gov.au/libraries/>), a free Web-based directory service which has improved access to information about more than
- 5 400 Australian libraries, their collections and services since March 1998. It aims to be a directory of current information about every library in Australia - a "one-stop-shop"

for information about Australian libraries and at the same time a tool for world-wide users. One of its services is a list of Australian digitisation projects.

It is obvious that up-dated national catalogues or directories/inventories of digitising projects more and more are looked upon as crucial for the possibilities to get useful information about good practice. Some Member States like Spain have presented plans for the construction of such a catalogue or inventory.

RECOMMENDATIONS:

Member States shall have an official national catalogue on digitising projects. The aim of the catalogue is to provide information about digitisation projects within the cultural community in each State. To contribute with information to the catalogue, projects should be significant or substantial in terms of the importance or uniqueness of the material being digitised or because of the amount of material that the projects plan to digitise or produce. Projects should also commit themselves to secure a basic level of quality by taking part in benchmarking exercise and deliver results in written form (reports, recommendations etc).

The national catalogues should not include

- electronic publication (books, reports, etc) on the web
- projects only aiming at delivery of minutes, internal papers and institutional policy documents
- projects that will not produce digital resources
- projects outside the national cultural community⁴

MINERVA has to adopt a system for categorising projects (thesauruses) and recommend Member States to use that system. This is an issue that is not clearly addressed in the MINERVA project and consequentially need to be added to the work plan of a MINERVA work package.

Benchmarking

Internal discussions in the MINERVA project initiated by WP 2 indicate that benchmarking exercise must serve several purposes:

- data collection
 - on national level and
 - on European level
- a possibility for individual projects to improve their practices by measuring themselves
 - stand-alone
 - in interaction with other projects.

All these purposes are connected to various target groups which raises the question of multilingualism. It cannot be expected that national projects need to use a foreign language to take part in benchmarking, neither when supporting the process with data nor when measuring themselves. Consequently, to implement benchmarking for coordinating and improving practice, within as well as between Member States, requires an application in two “layers”:

⁴ An important source of inspiration has been the Australian Libraries Gateway (see <http://www.nla.gov.au/libraries/digitisation/scope.html>)

one (top down) for data collection on national and European level, using an agreed number of internationally spread languages, and one (bottom up) for self-measuring activities by national projects (using national languages or an internationally spread language).

The European Commission in 2001 launched a group of experts in benchmarking coming from different Member States. The group agreed upon a model for benchmarking. Data has been collected from Member States and put into a database built up by the Greek Ministry of Culture.

Within the MINERVA project its WP 2 has started to implement the model from another angle (bottom up). The aim is to secure a long term perspective.

National Policy Profile

When adopting the Lund Principles, Member States commit themselves to present and make publicly available on the web a national policy profile for the coordination of digitising activities within the culture sector in each country. The MINERVA project has on its web site links to these profiles. For the moment (November 2002) there are links to Italy, France, Netherlands, United Kingdom, Denmark, and Finland.

In Member States where the cultural community just has started systematic digitisation of the cultural heritage, a National Policy Profile is maybe not on the top of the agenda. However, the process to form one fairly well mirrors the situation in each country and the length of the road from diversity to coordination. National Policy Profiles are therefore justified in the coming description of a web application on good practice (prototype) developed by WP 6. What these profiles should contain, and the structure of their information, is in the first place a matter for the National Representative Group to decide upon.

2.4 From Benchmarking To Good Practice

As stated earlier in this report, WP 6 defines good practice as (a) guidelines, (b) competence centres and (c) an outcome of benchmarking. This outcome could be of two kinds: advice (reports, recommendations etc) or/and role models. But also projects not taking part in benchmarking activities can produce reports and recommendation usable as good practice or can serve as role models. In fact, there are hundreds and hundreds of projects connected to digitisation going on all over Europe, and a great number of them produce good practice. The problem is to navigate amongst them and find the right ones.

Advice

WP 6 has briefly gone through examples of reports, recommendations etc that can be found on the web. One example is the Electronic Libraries programme, eLib: <http://www.ukoln.ac.uk/services/elib/>, with the main aim to engage, through its projects, the Higher Education community in developing and shaping the implementation of the electronic library. The programme has been established through two separate calls for proposals that have so far yielded almost 60 projects funded in different programme areas. These areas are:

- Document Delivery
- Access To Network Resources
- Training and Awareness

- Electronic Journals
- Digitisation
- Images
- Electronic Short Loan Collections
- On Demand Publishing
- Pre-Prints and Grey Literature
- Supporting Studies
- Quality Assurance

A list of all projects in the eLib programme, divided into the original programme areas, can be found on the eLib web site. One of projects in the programme area “Digitisation” is the “Internet Library of Early Journals” (ILEJ; <http://www.bodley.ox.ac.uk/ilej/>), a joint project by the Universities of Birmingham, Leeds, Manchester and Oxford. It aimed to digitise substantial runs of 18th and 19th century journals, and make these images available on the Internet, together with their associated bibliographic data. The project finished in 1999, and no additional material will be added. Conclusions of the project are documented in the final report which can be found on the project’s web side together with several other papers of ILEJ presented on conferences and/or published in reports and magazines like RLG DigiNews.⁵

Another example is the DigiCULT study. In July 2000 the European Commission issued a call for tender for a study on “Technological Landscapes for Tomorrow's Cultural Economy” (short DigiCULT) to provide memory institutions with better information on how to face the challenge for Europe's archives, libraries and museums to keep abreast of the increasing speed of technological development in the digital age. Salzburg Research, together with a consortium of nine European cultural organisations, was awarded to carry out the study.

The DigiCULT study focused in particular on five topic areas, i.e. technology, new services and demands as well as national policies and initiatives, organisational and financial aspects, exploitation, and future trends. The final report was published in January 2002. Both the full report and an executive summary are available on the DigiCULT home page (<http://www.salzburgresearch.at/fbi/digicult/>). The DigiCULT Report provides recommendations for decision makers of European archives, libraries, museums and policy makers at European, national and regional level.

Appendix XI.3 to the DigiCULT report is a list of European cultural heritage projects that “... gives a non-comprehensive overview of exemplary ICT-related cultural heritage projects in European countries since 1996.” This list covers about one hundred project, and most of them are in some sense related to digital objects. It is not possible to see from this list if the projects are finished or if there are reports publicly available. To get that information one has to visit the actual web site of every project. An example of a relevant project is “Contemporary Culture Virtual Archive in XML” (COVAX; <http://www.covax.org>). The main purpose of COVAX is to test the use of XML to combine document descriptions and digital surrogates of cultural documents to build a global system for search and retrieval which will allow the widely distributed primary documents to be accessed regardless of their

⁵ Many thanks to Salzburg Research for information about this example.

location. Reports can be found on the project's home page together with information about 25 projects of special interest for COVAX.

RECOMMENDATIONS:

MINERVA advice shall contain reports, recommendations and other public documents from digitising projects in Member States that have taking part in benchmarking exercise, and from other digitising projects that are nationally or internationally identified as good practice.

All these documents shall be published, as full text or as summaries, in a language supported by the multilingual platform that the MINERVA project will recommend.

Role models

During the Spanish presidency a seminar on good practice in digitisation was held in Alicante on the 17th of May 2002 in connection to a meeting of the National Representative Group. The examples of good practices presented at the seminar by different countries are, together with other examples chosen by Member States in connection to the Alicante meeting, available as links on the MINERVA website (www.amitie.it/minerva). In total 35 examples from ten European countries can for the moment (November 2002) be found there (see appendix 2).

The target group differs widely between those examples. About half of them are in English or have explanatory text in English. The rest are only available in a native language. This is of course an important limitation.

The differences can be exemplified by, on one hand, the Greek server Odysseys at the Hellenic Ministry of Culture, where it specifically says (in English) that "The information of this server is also available in the Greek language.", and, on the other hand, the Danish example, "Soldaten i baghaven" (the Soldier in the back yard), which is an interactive web-tale for Danish children who are not supposed to read and write anything else than Danish.

Member States could before the Alicante meeting nominate good practice for on-going digitisation projects in six main areas proposed by the organiser. Each project could be nominated for more than one area. In appendix 3 are the projects that were nominated distributed amongst these main areas. Most popular was the main area called "Accessibility including copyright issues and web sites" closely followed by "Preservation of physical objects via digitisation and electronic surrogates" and "High quality of the digitisation process". Fewest nominations had the main area "Management of the process and workflow". About one third of the projects were nominated for one area, some for two areas, and about one fourth for three or four areas.

It is striking that only a few nominated examples of good practice are related to holdings in archives. Examples from the worlds of libraries and museums dominate.

Most of the 35 examples of good practice that emanates from the Alicante meeting are probably role models for those who are familiar with the languages in use. By visiting their homepages it is fairly easy to catch information about them that maybe can improve the visitors own work. It is up to him or her to decide. But - some of these 35 examples must be classified as something else than role models. One is the Dutch "National Initiative for a

Networked Cultural Heritage” (NINCH), which in an earlier chapter has been mentioned as an example of an informal competence centre. Another is the French directory of digitised collections that has been described above as a good example of a national catalogue.

Obviously, there is confusion when defining good practice, which underlines the need of categorising it. WP 6 has done that in its generic model where “good practice” can be found in guidelines, competence centres, advice (publicly available reports, recommendations etc.), and role models. However, it must – like in Alicante - be stated in each case in what way (or ways) a digitising project can be regarded as a role model or an example of good practice (in other words its uniqueness). WP 6 has based on the six main areas of good practice used for the Alicante meeting (see appendix 3) developed a first list of “mark ups” for categorising the uniqueness of role models. The intention is that this list, enclosed as appendix 4, can be used also for categorising other kinds of good practice (competence centres, guidelines, advice).⁶

RECOMMENDATIONS:

All projects accepted by MINERVA as role models shall on their web sites, for the whole text or for a summary, use a language supported by the multilingual platform that the MINERVA project will recommend.

All role models should also have a resume in such a language focusing on its uniqueness.

To be accepted as a role model, projects should be significant or substantial in terms of their uniqueness as digitising project or added value to the cultural community.

⁶ Many thanks to members of WP 2, WP 3, and WP 4 for helping us in developing this list.

Appendix 1: Examples of general sources for guidelines and good practices guides on digitisation that can be found on the web.

ARTS HUMANITIES DATA SERVICES, U.K. *Guides to good practice in the creation and use of digital resources*

<http://www.ahds.ac.uk/guides.html>

BRITISH LIBRARY. *Objectives of digitisation.*

<http://www.bl.uk/about/policies/digital.html>

CORNELL UNIVERSITY. DEPARTMENT OF PRESERVATION & CONSERVATION. *Moving theory into practice: Digital Imaging Tutorial*

<http://www.library.cornell.edu/preservation/publications.html>

COUNCIL ON LIBRARY & INFORMATION RESOURCES (CLIR) (2001). *Building and sustaining digital collections: models for libraries and museums*. Washington, DC (Publication 100)

<http://clir.org/pubs/abstract/pub100abst.html>

DIGITAL LIBRARY FEDERATION. *Digital library standards and practices.*

<http://www.diglib.org/standardspv.htm>

INSTITUTE OF MUSEUM & LIBRARY SERVICES (2001). A framework of guidance for building good digital collections, November 6 2001

<http://www.ims.gov/pubs/forumframework.htm>

NATIONAL PRESERVATION OFFICE/RESEARCH LIBRARIES GROUP (1998). *Guidelines for digital imaging: papers given at the joint NPO/RLG Preservation Conference, 1998*. London.

<http://www.rlg.org/preserv/joint>

NINCH (National Initiative for a Networked Cultural Heritage) (2002). *The NINCH guide to good practice in the digital representation and management of cultural heritage materials.*

<http://www.ninch.org/guide.html>

SITTS, M. K. (200). *Handbook for digital projects: a management tool for preservation and access*. Andover, MA, Northeast Document Conservation Center.

<http://www.nedcc.org/dighand.htm>

SMITH, Abby (2001). *Strategies for building digitized collections*. Washington, DC, Council on Library & Information Resources (Publication 101)

<http://www.clir.org/pubs/reports/pub101/contents.html>

SMITH, Abby (1999). *Why digitise?* Washington, DC, Council on Library & Information Resources (Publication 80).

<http://www.clir.org/pubs/reports/pub80-smith/pub80.html>

TASI (Technical Advisory Service for Images). *Advices documents on all digital imaging issues.*

<http://www.tasi.ac.uk/advice/advice.html>

VADS (Visual Arts Data Service). *Guides to good practice. Creating digital resources for the visual arts: standards and good practice*
http://www.vads.ahds.ac.uk/guides/creating_guide/contents.html

WEBER, H. “ DÖRR, M (1997), *Digitisation as a method of preservation?* Amsterdam, European Council on Preservation and Access.
<http://www.clir.org/pubs/reports/digpres/digpres.html>

Appendix 2: Good practice examples chosen by Member States in connection to the Alicante meeting.

Austria

METAe The Metadata engine project: <http://meta-e.uibk.ac.at>

Denmark

The Archive for Danish literature: <http://www.adl.dk>

The Soldier in the back yard, interactive web-tale for children:
<http://www.soldatenibaghaven.dk>

Royal Danish Art Chamber: <http://www.kunstkammer.dk>

France

Digitisation of cultural heritage: <http://www.culture.fr/culture/mrt/numerisation>

Directory of digitised collections:

http://www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm

Directory of Digital Libraries and Archives: <http://www.portail.culture.fr/sdx/pic/culture/int/>

Cultural Web portal: <http://www.portail.culture.fr>

Digitisation in Institut National de l'Audiovisuel: <http://www.ina.fr/index.en.html>

Bibliothèque Nationale de France: <http://gallica.bnf.fr>

Fine Arts: Joconde: <http://www.culture.fr/documentation/joconde/pres.htm>

Architecture and monuments:

<http://www.culture.gouv.fr/culture/inventai/presenta/bddinv.htm>

Greece

Odysseus, Hellenic Ministry of Culture: <http://www.culture.gr/>

Italy

Direzione Generale per i Beni Archeologici: <http://www.archeologia.beniculturali.it>

Istituto Centrale per il Catalogo e le Documentazione: <http://www.iccd.beniculturali.it>

Istituto Centrale per il Catalogo Unico delle Biblioteche Italiane e per le Informazioni

Bibliografiche: <http://www.iccu.sbn.it>

Progetto Piazze d'Italia: <http://cantieri.theranet.it/piazze>

SBN online: <http://sbnonline.sbn.it>

Museo Nazionale d'Abruzzo: <http://www.muvi.org/museonazionaleabruzzo>

Galleria Estense di Modena: <http://www.galleriaestense.it>

Pinacoteca di Bologna: <http://www.pinacotecabologna.it>

Progetto Edit 16: <http://edit16.iccu.sbn.it>

Archivio di Stato di Firenze: <http://www.archiviodistato.firenze.it/progetti/attivate.htm>

Progetto DADDI: <http://www.uffizi.firenze.it/Dta/daddi-eng.html>

Galleria degli Uffizi di Firenze: <http://www.uffizi.firenze.it/>

Netherlands

National initiative for a networked cultural heritage: <http://www.ninch.org>

Portugal

Collection of Portuguese Museums: <http://www.matriznet.ipmuseus.pt>

Spain

Virtual visit to the Spanish Royal Palaces: <http://www.patrimonionacional.es>

Virtual gallery for art and culture created by Fundacion Telefonica:
<http://www.arsvirtual.com>

Biblioteca Virtual Miguel de Cervantes: <http://cervantesvirtual.com>

Virtual Archive de la Edad de Plata: <http://www.archivovirtual.org/primer.htm>

Museo Thyssen Bornemissa: <http://www.museothyssen.org>

Sweden

The Oxenstierna project: <http://www.ra.se/ra/oxenstierna/oxenstierna2.html>

Image Databases and Digitisation - platform for ALM collaboration:
http://www.kb.se/ABM_plattform/Default_Start.htm

United Kingdom

The British Museum collections: <http://www.thebritishmuseum.ac.uk/compass>

Appendix 3: Areas for nomination of Good Practice at the Alicante meeting

PROJECT / PROGRAMME			AREAS FOR NOMINATION OF GOOD PRACTICE			
	1. Preservation of physical objects via digitisation and electronic surrogates	2. High quality of the digitisation process	3. Metadata and Thesaurus	4. Usability of project results	5. Management of the process and workflow	6. Accessibility including copyright issues and web sites
AER	X					
Archive for Danish Literature		X	X			
BAM portal			X			X
Biblioteca Virtual Miguel de Cervantes		X		X	X	X
COMPASS		X			X	X
DADDI	X	X				X
Digital Conversion Forms	X	X				
Digital historic newspaper Library	X	X			X	
Diplomatico	X					X
Edit16				X		X
Endovellicus			X			

Galleria Estense						X
Galleria Spada				X		
IconClass			X			
Information Network		X	X			
MAP	X					X
MatrizNet	X					X
Metadata engine						
Museo Nazionale d'Abruzzo						
National digitisation programme		X	X	X		
ODYSSEUS	X	X				X
Oxenstierna				X		
Piazze Storiche				X		
Pinacoteca di Bologna						X
Rinascimento Virtuale	X	X	X	X		
Royal Chamber of Art						X

SBN on-line				X		X
SITIA	X		X			
The soldier in the Backyard				X	X	
Tradex						X
Virtual Archaeological Tours around the Lost Cities	X	X				
Virual Sites RE-creation	X					X

Appendix 4: First list of good practice mark ups for role models

Management

- Training
- Project management
- Change management
- Risk management
- Budget
- Human resources
- Legal aspects
 - IPR
 - Freedom of information
 - Data protection
 - Legal deposit

Audience research/user needs/target group

Content creation

- Prioritisation
- Selection
- Conversion/digitisation
 - Scanning
 - 3d scanning
 - OCR
 - Time-based media
 - Character sets
 - Meta data
- Quality control

Content/collection management – making it available

- Metadata
- Databases/content management systems
- Terminology

‘Graphic’ Design

- Usability
- Accessibility (WAI)

Preservation

- Migration
- Emulation
- Metadata (technical, contextual and explanatory)

Service delivery

Evaluation

Promotion

Sustainability/’valorisation’