

FEASIBILITY STUDY FOR THE CREATION OF THE DIGITAL LIBRARY

Summary Report

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Reasons for this report

The idea of accompanying the study with a summary report arises from a series of reasons linked both to the vastness of the theme and to the way it is divided up.

Addressing all the topics regarding the Digital Library meant analysing both purely technical and librarianship aspects, to which are added the necessary organisational assessments. Many topics dealt with cut across the various sections and thus to refer to them in an organic and logical way seemed to us the best service that we could render to the clarity of the reading.

Aims

The Summary Report thus serves to highlight the various problems but also to give the proper emphasis to the possible solutions. Moreover we retain that a tool like this, orientated towards a synthetic reading, is sufficient to emphasise both aspects.

Structure

Inevitably this report is a different document from the study itself for reasons of easy readability. By synthetically pointing out the main principles case by case it allows us to constantly refer to the various sections of the study itself; hence it may, because of its very structure, be used as an intelligent index to the document in its complex whole.

Structure of the study

The study is made up of the following parts:

- 1) Part I: Current situation
- 2) Part II: Main lines of the project
- 3) Part III: Annexes
- 4) Summary report

The first two parts are dealt with in the present summary, while the third was conceived to make available the detailed information which is referred to throughout the study.

Objective and aim

The first part deals with the definition of the objective which may be summarised as: analysis of all the problems relative to the setting up, development and maintenance of a Digital Library in Italy.

The final aim of this study is to provide the Ministry with all possible indications for developing this project, indicating its benefits and restrictions, technical and organisational limitations, prospects regarding the profession, the possible services, the optimum use of the library heritage, its propagation and, in the last analysis, the indication of the larger cultural prospects which are implicit in such a project and to which the project should be directed.

Definition of the Digital Library

It is an important starting point to define the Digital Library in all its complexity.

The section dedicated to it (cf. *Pt. 1 Section 2.1*) examines the various possible definitions which librarian circles all over the world have been pondering for over five years, as well as the practical and operational consequences that a correct definition implies.

In the light of the examined debate the roles of the Digital Library are identified, and the way these are variously reported in the literature is examined. This process has produced what has been recognised, not by us but by the IFLA at an international level, as the most ample and circumstantiated possible definition of the Digital Library .

Two aspects of this definition should here be underlined:

- 1) the fact that the Digital Library is necessarily positioned within the context of other Digital Libraris
- 2) the fact that it is, no more and no less than other libraries, a centre providing services.

N.B. The IFLA quotation can be found at: Pt. 1, Section. 2. 1.

Models

Defining the Digital Library has also led to identification of models. Above all in the Anglo-American context, these models have been developed theoretically with the nonetheless very practical aim of deducing from them concrete indications for action and for the development of new solutions or modification of existing ones.

Of the various models examined two have been particularly mentioned:

- *Model of Bawden and Rowlands, Pt. 1 Section 2.1 para. Models*
which reveals the technical but also social complexity of the Digital Library and which recalls the need for a constant, detailed study, such as had never before occurred in the traditional library world.
- *Model of EFQM, Pt. 1 Section 2.1. para. Models*
which stresses the need for the Digital Library to develop the profession in a managerial and productive sense, linked to the fact that the reference area is expanding, the agents with whom contact is to be made are part of a productive and commercial world with which we must interact on a new basis and in new capacities. Being a body which certifies quality, EFQM places emphasis on the managerial part of the Digital Library, in terms of Leadership, Human Resource management and Entrepreneurial Capacity.

The practical consequence, which emerges in the continuation of the study and above all in the proposals part, is the need for a strong commitment in the direction of retraining the professional forces already working, above all in terms of management, of identification of the new professional skills necessary for handling the new complexities, and finally, the need for preparing the ground for a different degree of flexibility towards the world of digital information and its relations with the existing situation.

Actually the prevalent model is that of a library which is not purely digital (since this is unrealistic), but rather hybrid, in the sense that known and new ways of using, optimising and producing the information product are followed in conjunction with each other.

Aims of the Digital Library

The main aim, considering our hugely rich heritage, is and remains an eminently cultural one. The cultural aim is and remains in any case the main one also in all the other countries in the world, both where the Digital Library is used to create a support to academic studies and where the intention of documentation of historical memory prevails. Actually, as is clearly seen from the international account which is widely summarised below, the two aims are complementary and the problem shifts to the choice to be made at the start, so that the Digital Library can be developed in a coherent and uniform way in both directions.

In the case of Italy, the attention to local memory and the support for research might be the two ideal boundaries within which Digital Library initiatives should be directed and maintained.

It should also be pointed out that this cultural aim is seen as the cog-wheel for the creation of new work, professional growth and recognition of national culture at an international level.

The technical/librarianship framework

Both from the definition and from indications deriving from the models analysed, the Digital Library undoubtedly presents itself as an extraordinarily complex structure. This complexity is analysed from various points of view, both the purely technical and the specifically librarianship ones. Given the implications that the latter more than any other has in our view on the success of any project, we will focus on these themes in the summary and omit others for which we will simply refer to the main study.

Organisational aspects

On the basis of the proposed analysis, the Digital Library is seen to be a “complex Library” and as a new information system in terms of:

- Objects to be handled
- Format of data
- Means of description (metadata)
- Organisation of research (search engines)
- Interfaces (informatics and/or human)
- Production activities (Workflow, Budgeting)
- Integration of different types of applications and systems
- Complex and distributed system

The Digital Library which organises production activities needs to define the methodologies for the treatment of the various materials in the context of a project (Workflow) and consequently the investment policies (Budgeting) both for the moment of production and for the subsequent conservational maintenance.

A functional profile of the Digital Library is outlined in *Pt. 1, Section 2.1.2* with indication of the following functions:

NET INFRASTRUCTURES	OPAC/WEB OPAC
DATABASE bibliographic/metadata	DOCUMENT MANAGEMENT SYSTEM
DIGITAL REPOSITORY	IMAGING
STORAGE	GRAPHICS
INTERFACE	STATISTICS
	SAFETY

For each of these the functional requirements to be fulfilled in the Digital Library are specified.

In particular it is stressed that in a Digital Library the objects to be handled are very different in nature:

- They can integrate metadata for description and management
- They can be local and remote
- They can concern other information data (online courses, Web pages)
- They can be multi-format (text, audio, video, images,....)
- They can be original digital objects: electronic publications (CD ROM, WEB sites, etc.)

Cf. *Pt. 1, Section 2.1.1; 2.1.2; 2.1.3*

Evolution of services and the profession

The evolution of the potentialities of the services generated by the Digital Library and the parallel evolution of the profession are among the most significant and complex aspects of the Digital Library.

With the greater availability of information, the Digital Library still presents itself as a service structure.

Some of the many statements and definitions indicated and analysed strongly stress the function of service-provider in relation to other similar institutions.

For example:

- The appeal for cooperation (“the Digital Library is not a separate entity”)
- The appeal to the particular use of technologies (“the Digital Library needs technologies for connecting the resources of different libraries with information services”)
- The appeal relative to access (“the aim of the Digital Library is universal access to its collections and services”)

The characteristics of the service also change because of the changed attitude of the user and the different interaction between user and intermediary.

This leads to a careful consideration of the qualitative evolution of the reference services, in which this mediation will be a strategic element in the development of the Digital Library.

Undoubtedly the problem of professionalism is one of the most significant of those related to the Digital Library, both because of how this professionalism is defined and how it is changing with the new services and the new skills which are required.

It is agreed that we are in the face of a true revolution, mostly brought about by facts which are outside the librarianship field in the strictest sense, but have evident repercussions on the functions and the very nature of the library, hence of the librarian.

The librarian’s work is the fruit of different, complementary kinds of know-how which mean that he/she operates as a:

1. PROFESSIONAL HANDLER OF DIGITAL INFORMATION
2. PRODUCER OF DIGITAL INFORMATION
3. COMMUNICATOR OF DIGITAL KNOWLEDGE

To provide this type of service the librarian of the Digital Library needs:

- To know the users with whom he/she is in contact better in order to adapt adequate tools and products to specific demands
- To adapt the procedures for presenting data – interface – and not to propose them according to a single standard procedure
- To give access also to non-bibliographical information available on the Web

From the analysis it emerges that there will be an affirmation of professional figures who are able to unite the more classic principles of librarianship with the prospects offered to the profession by digital technologies and telematic connections.

The most substantial changes will be seen in the most classic areas of the librarian's profession, i.e.:

1. In the description of resources: with the advent of metadata and the implications dictated by the reflections deriving from the debate on Functional Requirements for Bibliographic Records;
2. In the services: with particular regard to the sector of Reference and Document Delivery;
3. In conservation: where simple conservation is united with production and extended access to resources which were once inaccessible.

These changes are inevitably translated into practice by the emergence of new qualifications and new professional figures.

At the basis we can identify a strong demand for entrepreneurship on the part of the managerial class, as has already been noted in the illustration of the model proposed by EFQM (see above).

In this regard it appears that the prevailing librarian will be a professional with the ability to combine different solutions, different public and private operators within and outside the structure: a sort of professional who moves between the classic principles of the profession and the new technological possibilities and suggestions, a professional who is able to unite opportunities and risks in a productive way.

The Italian scene does not favour great optimism in this sense.

In many libraries we perceive a widespread situation of unawareness of the change in progress and a growing gap between those who know and those who do not, with the growing risk of a sort of "returning illiteracy".

This phenomenon seems particularly present in the large Italian libraries which are mainly government-run, and which are seriously behind as regards basic training, continuous updating and the retraining of the managerial class.

Attending to basic and continuous training, also taking advantage of the possibilities offered nowadays by distance learning technologies, is becoming more and more a priority goal.

Thorough study of digital themes reveals that, though technology is important, it is more than ever an instrumental fact and hence secondary to that of giving staff the means for dominating the change.

cf. *Pt. 1 Section 2.1.4*

Technologies and standards

Undoubtedly the technological component is the factor through which a Digital Library is set up. The same can be said of the attention necessary for the application of descriptive standards (metadata) for access to the resources and their sharing, as well as for their fruition.

However, although the study reserves a significant part for these themes, it seems to us correct to emphasise here that technology presents itself above all as an instrumental and not a priority fact, due to its continual evolution.

In fact within a precise cultural and organisational reference framework, and with the availability of adequate skills, we should be careful to adopt market standards and move towards solutions which are technologically open to continual evolution.

The study deals with the following themes under a series of sections:

1. Digital supports (Text, Audio, Images, Video: *Pt. 1, Section 2.2.1 onwards*: a comprehensive survey of the “objects” of the Digital Library.
2. Telematic infrastructures and Internet *Pt. 1 Section 2.2.2 onwards*: an analysis of web demands and of the current range of offers in our country. The services offered by Infostrada, Albacom, I-net, Telecom, Garr and Rupa are examined.
3. Automated management systems *Pt. 1 Section 2.2.3*: a survey of to what extent and how the present library automation systems are being adapted to the advent of the digital. With a brief examination also of the Italian scene and of the features of SBN (SERVIZIO BIBLIOTECARIO NAZIONALE), which at the present time does not seem to be prepared for any kind of digital function.

Among the most innovative services is the ASP: “A further evolution, which may significantly influence the market in the years to come, is the starting-up of the so-called ASP (Application Service Provider). In practice, ASP is a service for library management which is completely entrusted to the outside. The only thing which the library has to manage locally is the connection to Internet. All the functions, from research to data input to the management of all the other functions are the concern of the system provider.”

It seems to us useful to recall this particular solution since it is proposed as one of the services that could be offered by the Digital Library., although with a different significance.

cf. Pt. 2 Section 2.3

4. Data Storage *Pt. 1 Section 2.2.4* on the function of storage.

It should be pointed out that in the face of a continually changing situation from both the technological viewpoint and that of competitiveness of the offer, a continual updating on each of these themes is crucial.

Digitisation

One of the most important technical aspects is that of acquiring a mastery of the materials and modes of treatment for digitisation.

“The project of setting up a digital library needs thoroughly to evaluate the different types of document which are involved in the scanning process, whether it be a question of books, archive documents or more specifically museum documents, since also the latter are involved in the process of technological transformation of conservation and of fruition through informatics and telematic instruments”.

Each type of support is analysed in detail *Pt. 1 Section 3.1.1 up to 3.1.1.4*

The theme of hybridism is dealt with.

“(…) a theme which is closely related to the conservation of the library document at the moment when we are planning the setting-up of digital library. The demands of a conservation system are, in fact, better fulfilled by a combination of technologies”.

“The practice of hybridism thus consists of combining the two technologies: converting into digital and producing microfilms from the digital or viceversa producing microfilms and converting them into digital”.

Cf. Pt. 1 section 3.1.15 onwards

For each type of material, technical and methodological indications are provided in the second part. Indications are given in particular for the following materials:

- Supports of vegetable origin (papyri)
- Cloth supports
- Wooden supports
- Paper supports (with particular regard to manuscripts [illuminated, illuminated with close binding, loose binding or loose-leaf, monochromatic], printed books, postcards and prints in general, tissue paper)
- Supports of animal origin (parchments)
- Supports of mineral origin
- Supports of chemical origin (microfilms, slides)

cf. Pt. 2 Section 1.5.1 and onwards

Indications are given regarding the general criteria to apply for photographic and digital resolution.

The organisation of a project

Granted that each project has a separate story, a general reference scheme for the typical operations of a digitisation project is however proposed on the basis of what is offered by the professional literature.

Pt. 2 Section 1.5.1.1.9

Description of the resources

In the Digital Library the problems of description take on more and more importance and a large part of the study is dedicated to these. What determines special attention to the problem is the need to understand all the different features of the digital object. The various categories of Metadata necessary for identifying the object for its conservation and transmissability in time are analysed.

A survey of the standards of description and their evolution, directly influenced by the nature of the objects to which they will be applied, is proposed.

cf. Pt 1 Section 3.1.3.1 onwards

Mention is made of ISBD (ER), of bibliographical formats such as MARC and Unimarc, of the problem of resource identifiers URN, DOI, URL, PURL, and finally a part is dedicated to the most significant standard so far developed for the purpose, i.e. Dublin Core.

The debate on description also regards environments other than the library, in particular archives and museums; the EAD and CRM developed standards take this debate into account.

Some international projects dedicated to this theme are of great importance. Some of these also include Italian participants. They are examined summarily at the end of the section.

cf. Pt 1 Section 3.1.3 onwards

The problems of the standards and Metadata return in the second part within a series of operational proposals and recommendations.

"The importance is underlined that some specific applications of projects for a digital library should start up the experimentation of the model IFLA FRBR because of its potential for analysing and documenting in a precise way the work, the expression, the manifestation, the copy (...), connections among them and respectively to the

intellectual responsibility and the concepts treated. This model is suitable for the treatment of electronic resources in their multiple versions, allowing documentation of critical editions, versions, new editions, translations, transpositions and revisions on similar or different supports. This could be adequately applied in the treatment of prestigious collections which boast a rich literary history, thus furnishing a precious, rich access to which the function of digital conservation can be associated”.

And “(...) metadata are necessary for the management of transactions which require the precise identification of the users of the objects treated, of the use that is to be made of them”.

“(…)

The initiatives of the digital library cannot ignore this function; they must define the parties involved and their role, the object of the transactions, the action to be carried out on the requested objects (e.g. read, listen, see, save, transfer), the parameters which limit it (in terms of place, time, amount, repeatability, hence the number of times in which the action may be repeated), and also the action of whoever uses the service in exchange for acquired rights”.

For conservation: “Regardless of the technique used to guarantee conservation and the future use of the digital resources, it is necessary to document clearly how to put these functions into practice and hence to define the features of the format of the software and of the instruments in order to use a certain resource over time”.

Pt 2 Section 1.5.1.2 onwards

“Besides the previously-expressed recommendations relative to the features of the metadata for the functions of identification and access, management of rights and conservation of the digital resources, some proposals are put forwards which cover on the one hand the activity of support to the description and management of the digital resources, on the other the actions of coordination which are necessary at an institutional and interinstitutional level, on both a national and an international scale”.

Pt 2 Section 1.5.1.2.5

Legal problems (copyright) in Italy

In this as in other cases, uncertainty prevails as to the behaviour to be adopted in the face of laws which are still mainly orientated towards traditional documentation.

“The reference norms for copyright in a digital environment derive (...) from the interpretation of the existing norms, from analogical application and from the appeal to the general principles of the law.

In general there is even a lack of a consolidated jurisprudential doctrine and practice.

In view of the particular nature of the new technologies and the many different possibilities that they offer in comparison with traditional supports (paper, videocassettes, photographs etc.), the recourse to analogy and to interpretation of the existing norms is sometimes difficult.

Thus for a more complete protection, contractual solutions are often used to clarify the conditions of use of digital material, either through contracts (or licenses) or through regulations of access (or general conditions).”

Regarding services:

“In offering services to the users of a databank we must necessarily follow the legislation established for that type of support or negotiate with copyright-holders.

If we wish to offer certain paid services on material which is still protected by copyright, we must necessarily negotiate the procedure to be adopted with the author, since he/she has all rights over the work”.

Concerning the protection of the rights of a database:

“In this case we can establish services, conditions of access to the database, limitations of liability, guarantees, applicable legislation and so on.

The contractual solution has undoubted advantages since the creator of the database defines his own liabilities and the conditions of access within a legislative picture which is not always clear and complete”.

Even in the case of copyright we are faced with a situation which is continuously changing.

“(…) the legislation on this matter is still evolving, and there is very little jurisprudential doctrine and practice; despite this some guidelines can be already identified in current legislation or in analogical application.

There are numerous problems regarding the possibility of offering paid services, in that obligations deriving from legislation on copyright, as well as some regulations about electronic trading, would emerge.

While the offering of “traditional” non-profit-making services on material not protected by copyright (public property) in any case seems to be easier, even if a clear legal framework is lacking” .

Pt 1 Section 3.1.2

In this as in other cases, the need for constant observation of the evolution of the law remains open.

There is a similarly strong need to acquire the necessary skills in the case of negotiation for the acquisition of original digital resources. This is possible both by means of an internal process (special training as required), and thanks to the activation of external references (outsourcing) which are specifically dedicated to negotiation.

Examination of the existing situation

One of the fundamental elements in the setting-up of Digital Library in the world (but also in Italy for few but significant examples) is cooperation in terms of sharing of experience, knowledge and programmes. This assumption can clearly be drawn from the observation of what has actually happened and is in progress, above all outside our country.

A significant part of the study is that dedicated to an inventory of what has been created in Italy and abroad from all the previously-mentioned points of view. It is from this survey that the most significant part of the proposals arise; they are outlined concretely in the second section of the study.

General summary

The Digital Library took off abroad much earlier than in Italy and this allows us to learn from a series of experiences, analyses, mistakes which have been identified and corrected, and thus to start from this point, exploiting the experiences metabolised by the library system thanks to forms of extended cooperation.

Features chosen for the study

The study has chosen from all the experiences analysed and has focused on the organisational aspects and the results which, thanks to these experiences, are being obtained in various, differentiated situations.

Situation abroad

The study examines more or less in detail both the American and the European experiences. To sum up, the elements that we feel it opportune to recall in this report are:

- the financial investment
- the political investment (understood as the politics of information)
- the training and professional investment
- the technological investment
- the constant investment of study and analysis

Let us examine the various points briefly:

1. The financial aspect is fundamental. Not only in the sense that to set up any Digital Library project large funds have been invested, but also in the sense that in all

countries the allocation of funds has been effected with extreme care and submitted to constant verification. Setting up a digital project not only costs a lot at the moment of its setting-up, but it costs as much again for its maintenance, digital resources not being static objects like traditional documents, but extremely dynamic ones. They are in fact subject to continual technological updating and, because of their possibilities of diffusion, produce expectations of service with consequences which must be continually foreseen, examined and dealt with opportunely.

As an example we refer to the figures indicated for Germany see *Pt. 1 Section 4.1.2.3* and those for the federation of the Scandinavian countries see *Pt. 1 Section 4.1.2.4. (synoptic table)*

2. The political investment. This investment is clearly meant at an international level as the need to determine beforehand the “rules of the game”, i.e. guidelines of development of the digital within which to direct and coordinate the various initiatives, to avoid dispersion of resources of all kinds. In almost all the countries examined a sort of “Charter of Constitution of the digital” has been made out: this is wide and flexible but able to provide an indispensable reference point for any future initiative. These declarations of intent, destined to constitute the “mission” of the various Digital Libraries, also have generic elements and in any case have the characteristic of being comprehensive of all the facets that local cultures inevitably carry with them. They are such as to fulfil all the requirements that the various countries regard as priority.

As an example we cite (there are in fact others) the principles emanated by the National Library of Australia “*Digitisation Policy*” for the years 2000-2004.

See *Pt. 1 Section 4.1.1.3*

3. The training and professional investment. The advent of the Digital Library has overturned or, let us say, has better clarified, the idea of what the lines of investment for retraining and basic training should be. In other countries where those working in libraries have a background of basic studies in librarianship, the greatest investment is being made in several directions: staff retraining in the sense of planning skill, management according to quality requirements, providing of new services and technological ability. Particular attention is placed on what is nowadays offered by the possibilities of continuous distance training. There are

numerous initiatives at various basic and higher levels, to guarantee a homogenous level of knowledge.

Numerous examples of online courses are listed in *Bookmark Pt. 3 Enclosures*

4. The technological investment. The Digital Library obviously has a strong technological component. Not only in the sense of the greater possibilities of application given by greater and more powerful means of production, storage and communication, but above all in the sense of using the technologies in the direction of all the categories of possible users. From this derive the diffusion of studies and applications in the field of interfaces, in the qualification of services so as to cover all possible user groups from the scientific to the purely entertainment ones. Another sector in which there is a large investment is that relative to the conservation of digital products, thanks to means of reconverting existing materials at the highest current technological level and according to the new market standards. Finally, the infrastructural aspect, which in many of the countries examined does not constitute a problem but which however is rightly pointed out as a precondition for the correct use of digital products.

Some examples (continuously growing in number) are indicated both in the Bibliography and in the Bookmarks.

Pt. 3 Enclosures

5. The constant investment in study and analysis. The Digital Library is not static and this involves the presence in many countries of *ad hoc* structures for continuous study and extended sharing of studies and researches. International cooperation is no longer seen only as the sharing of information resources (also that), but above all as a sharing of experiences of research and technological results. Many of the examples examined have within them structures suitable for scientific research in the digital field.

The most significant organisations in this sense are listed in *Bookmark Pt. 3. Enclosures Section 2.5*

Situation in Italy

A large section is dedicated to the Italian situation, whose main characteristics are the extremely fragmentary nature of the initiatives and poor coordination.

Features and limitations

In our country a considerable number of initiatives have been undertaken or are in progress in the digital field. Most of these are aimed at the exploitation of single parts of collections (music, geographical maps, Galileo estate, etc.), rather than subscribing to wider projects with precise goals directed towards study or the systematic re-evaluation of areas of national culture. In some universities and in the CNR (Consiglio Nazionale delle Ricerche), advanced projects are also created (three-dimensional digitisation, advanced workstations), but always in a way which is absolutely independent from other universities and, it sometimes seems, even in competition with them.

The same can be said of libraries, both government-run ones and those belonging to local government, in the absence of an overall plan.

Almost all the initiatives also seem to obey the rule of incompleteness, in the sense that maintenance costs and the relative services are not planned ahead; the importance of elements like the implementation of metadata and conservation are not considered beforehand.

That cooperation in the Italian libraries (apart from SBN (SERVIZIO BIBLIOTECARIO NAZIONALE)) is a sort of “optional”, is clear also to those bodies which observe them in relation to international initiatives ¹. This is, and it should be emphatically underlined, an element of great weakness in the case of the digital, where the complementary interaction of individual efforts acts to the advantage of better use of the financial resources, and not only of these.

A case apart, to which we will return in the proposals part, is SBN (SERVIZIO BIBLIOTECARIO NAZIONALE), whose main legacy is the very fact of having introduced a cooperative mentality into the Italian library environment. Organisations which differ in size and geographical location have learnt, thanks to the SBN (Servizio Bibliotecario Nazionale) principles, to discuss, take joint decisions and work for common objectives of resource sharing.

¹ The declaration of the OPIB, (Osservatorio Programmi Internazionali per le Biblioteche) which can be read on the CE Web, should give pause for thought: “*Synergy between the different kinds of libraries in Italy depends on the good will of administrations and of librarians*” in: Report on the situation of libraries, museums and archives: Italy (URL:<http://www.cordis.lu/libraries/en/nfp/italy.html>)

Despite the confusion which still prevails in the Italian digital situation, there are however initiatives which should be observed very carefully, these by no coincidence being those which show a joint effort on the part of different organisations towards a single goal (e.g.: the CeBIT – Biblioteca Italiana Telematica, cited and described in the section on the Italian situation).

Introduction to proposals

The proposal to which a large part of this summary as well as the study itself is dedicated, is fundamentally to

- fix precise criteria within which to carry out the activity of digitisation in our country
- opt for a strong series of initiatives of retraining and basic training
- set up a constant study
 - for the application of standards specific to the digital
 - for the definition of methodologies
 - for the definition of productive models directed at quality

All this is to be done starting from the group of 46 libraries belonging to the government which, besides having the advantage of being under a single administration also have that (by no means secondary) of being part of one of the largest and most prestigious cultural heritages in the world.

Proposals

The proposals which are developed in the second part of the study are the fruit of a reflection on all the needs which have emerged in the light of the problems of all kinds highlighted in the inventory.

The first part of the study ends with a mention of some aspects which are judged important and with a sort of summary of the problems.

Pt 1 Section 3.2 and Section 5

“Two necessary levels of coordination are identified: local and central.

*By **local coordination** is meant everything pertaining to the single library structure.*

(...)

It is thus a question of analysing the nature and extension of the new services and of the new professional figures required to handle these.

*The library also becomes a **production centre**, in that part of its collections will be destined to digital transposition; in this case we need*

- *a choice of the materials according to the ends which are proposed (conservation or service)*
- *identification of the most appropriate methodologies for their treatment*
- *creation of special operational task-forces or at least*
- *coordination of outside forces in total or partial support of the digitisation*

From the central point of view, this coordination activity must have the function of supporting the initiatives of the single institutes, and they must be conceived as follows:

- *according to general principles of coherence with the programmes of other institutions*
- *in compliance with consolidated standards which are updated each time*
- *contributing to the financial support of the initiatives on the basis of the analysis of actual needs*
- *providing where necessary the technical/logistic support for the setting-up and carrying out of digitisation initiatives*
- *setting up the necessary training programmes for the acquisition of specific skills in the digital sector*
- *creating the conditions for uncomplicated norms and regulations which fit the new tasks awaiting the single libraries”.*

The needs to be fulfilled should also be fixed, with particular regard to the features of the libraries belonging to the Ministry. The mixed features of these libraries requires a thorough knowledge of the users of the services provided.

“It does not appear that the government administration understands these needs at a qualitative level but, from what emerges from the use made of statistical data, only at a quantitative one, even though data are collected which could help to define the characteristics of the users and their demands, on the basis of services provided.

In the same way it does not seem that procedures of investigation specific to the users and their satisfaction (customer satisfaction) are ever undertaken.

This is an essential step in our opinion, one that should precede any project for the setting-up of Digital Librarys, as well as being coherent with the initiatives already underway relative to the quality of services. It is also coherent with debates at professional level on the so-called “Service Cards” in the library.

This would lead us to identify within the administration deficits related to regulations, organisation and the professional training of the staff, which may constitute a restriction to be overcome in order to achieve the effective working of a Digital Library project.

The analysis suggests the need for particular identification of

- *which professional figures are today contemplated by the administration*
- *which of these figures are coherent with the new professions which have become available with the advent of the digital*
- *how regulations and job descriptions fulfil the needs of the digital*

And from the point of view of regulations

- *what the obstacles are which prevent the setting-up of value-added services (pricing of services etc.)*
- *what restrictions dictated by the budget items prevent the acquisition and activating of electronic sources (databases, electronic magazines as an alternative to printed ones, etc.)”*

The proposal is moreover developed from a series of considerations which are the object of the “Analysis and Diagnosis” *Pt 1 Section 5*, which we report herewith.

“(…)

- 1) *In Italy, as in the rest of the world, digital projects are being developed but we have the sensation that “despite the technological and cultural validity of many of these projects (....) each of them has taken off on a separate impulse (...), without any thought of inserting the initiative into a wider picture of coordinated and shared planning”.*
- 2) *“The majority of projects has a single structure as its promotor and main participant, thus generating the legitimate doubt that no attention has been paid to similar initiatives in a national field (....) nor even to those at the international level.”*
- 3) *“It is very difficult (...) to know the measure [and] the duration of investments”.*
- 4) *The destined use of the projects underway does not seem clear and hence also their practical application seems to lack consideration, above all regarding certain librarianship aspects (e.g. use of metadata etc.)*
- 5) *The large majority of library structures does not seem to be ready from the point of view of professional skills either for the starting up and running of the projects or for the offering of new services or of traditional services through new methods.*
- 6) *More generally we note a lack of linkage among the structures belonging to the various administrations, but also among offices belonging to the same administration”.*

Operational proposals

These are a series of options which are compared regarding feasibility and times. We might call this series “transitory” and actually it is proposed as the necessary initial application of the more complex proposal, to be considered as the point of arrival of a wide process of reorganisation as a function of the setting-up of the Italian Digital Library.

Proposed model

From the analysis it emerges that the proposed model can be seen as a centre which must interact with the existing systems. These existing systems are understood as hybrid bodies, hence libraries which extend their activities and services to the digital environment.

The solution which emerges is thus not a purely technical one which quite simply stores in a single large “warehouse” the digital which is produced in Italy, but is instead orientated towards the coordination, support and management of the digital; in the Italian situation it will be above all new initiatives which will take on such service functions.

In this way the single initiatives which will have to be constructed according to standard and quality criteria, will be able to flow together into that single entity which we can call the **Italian Digital Library (IDL)**.

The strategic value of cooperation and the tradition of SBN (Servizio Bibliotecario Nazionale)

As already said several times during both the study and the present summary, cooperation, understood not in a formal but in a substantial way as sharing of intellectual, organisational and economic efforts orientated towards the digital, is the winning factor all over the world.

It is in any case the factor which blocks impractical initiatives or those without any great prospects, as well as those which simply waste public resources.

As already mentioned before, SBN (Servizio Bibliotecario Nazionale) is a positive “anomaly” on the Italian scene which has been nurturing the element of cooperation in the Italian library mentality and working habits for almost thirty years.

It seems to us important to emphasise the following results:

- SBN (Servizio Bibliotecario Nazionale) is a distributed system.
- It is already in itself a “federation” of libraries.
- It has a wide, consolidated national extension.
- It has developed programmes and initiatives in a context of inter-institutional negotiation.
- It has developed a way of working and a transverse decisional model at both geographical and institutional levels (Government/Regions; relations among different Ministries).

- It has contributed to establishing operational relations among different sectors within the Ministry of Culture and Heritage itself.
- It has worked extensively with the private world.

These are elements which must in our opinion all be included without exception in the future Italian Digital Library, since they have furnished important political, technical and librarianship experiences.

Setting up of the Italian Digital Library

Despite the fragmentary nature of Digital Library experiences in Italy, we cannot ignore the presence of episodes which are valid from every point of view. These experiences have generated within the structures where they have been carried out a series of specific skills which must constitute the starting-point for any future development in the field.

We have also said that the group of libraries pertaining to the Ministry, to which can be added those active in the web thanks to SBN (Servizio Bibliotecario Nazionale), make up a potential Italian *“Digital Library Federation”*. It goes without saying that in the case of our proposal for setting up the Italian Digital Library we must consider the role and experiences of at least three of these libraries: the Biblioteca Nazionale Centrale of Florence, the Biblioteca Nazionale Marciana of Venice, the Biblioteca Nazionale Braidense of Milan. Next to these must also be put the ICCU with all the weight of its skills in the field of applications of bibliographical standards, and the Discoteca di Stato (National Sound Archive), for its specific skills in the field of sound resources.

The areas of responsibility of these structures are thus:

ICCU – bibliographical standards and metadata

Government Record Library – sound resources

BNCF- Conservation of digital resources; methodologies of digitisation

BNMV- special materials (music, geographical maps)

BNBM – Periodicals

The definitions of the themes to be treated with continuity must be fixed from the start by representatives from these institutes, who will gradually be joined by other institutes and other skills.

Coordination structure (CS)

It is however felt that a series of duties must be entrusted to a coordination structure. These duties are extensively reported below *from Section 2.5.*

“The need to have an organised structure which deals with coordinating and monitoring the various initiatives in the digital field arises from the complexity inherent in the Digital Library from the technical, organisational and economic points of view.

The survey conducted both in Italy (few but significant examples) and above all abroad gives us a series of strong indications about the characteristics that the Digital Library must have in our country to give those guarantees of success and good return of investments.

The creation and running of a Digital Library is only partly comparable to the creation and running of a library automation system. In general, in our opinion, only in those parts regarding the technological choices (hw/sw solutions) and the activation of maintenance for the system. All the rest is instead part of a production process² which lies outside normal library functions.

The complexity of these initiatives is obviously proportionate to the dimensions of the “production object”. Hence the need at a national level of a CS which has the task of observing, directing and monitoring the various projects”.

“This CS would have strong powers of directing and monitoring compliance of the fixed standard requirements. The tasks and limitations of the CS will also be defined in relation to other ministerial bodies, particularly all those directly dealing with matters in the library, archive and museum environment. It must in fact be remembered that the Digital Library goes beyond the mere library sphere and indeed, as has been amply demonstrated by numerous examples, has its maximum significance in the interaction among different institutions such as libraries, archives and museums”.

The tasks which must be undertaken at a central level are such because they cannot be delegated to peripheral structures, whose roles must concentrate more on operations and applications.

We retain the following points to be indispensable:

1. The “mission” of the Italian Digital Library: its definition and creation

² see in this sense the relative parts of the present study

For the creation of the Italian Digital Library it is indispensable, as has already happened and is happening in other countries, to define the guidelines of the new Italian Digital Library. We are talking about a sort of “Charter of Principles” of the digital, in which the fundamental principles and the cultural and scientific reference frameworks within which the existing initiatives will be placed and new initiatives will be set up, must be fixed.

We must define “(...) a series of reference points which can be modified in time and adapted to the changing conditions and developments of the world of information.

The CS will have as its prime task that of monitoring compliance with the principles which have been fixed, in the sense of encouraging and sustaining all the initiatives which are coherent with these principles and discouraging those which diverge from them.

2. Study and research

The setting-up of the Digital Library involves a huge interaction of knowledge and experience from both the technological and the librarianship points of view.

The primary task of the CS of the Italian Digital Library will thus be to act as a real “clearing-house” for the various problems that are encountered in the projects, in their creation and in their running in time.

For the various subjects of interest it may divide up into permanent working groups with specialists in the sector and “temporary guests” who are able to contribute with their concrete experience to the acquisition of information.

We see four main paths along which to develop this type of organisation:

- 1. methodologies (planning, quality processes etc.)*
- 2. technologies (hw/sw solutions, compression systems, new digital formats, etc.)*
- 3. legal aspects (copyright, internal regulations, professional figures, deregulation directed to the service, etc.)*
- 4. the services (interfaces, pricing, joint ventures directed to resource sharing, etc.)*

3. A national Directory of the Italian Digital Library

The starting point for any planning or goal definition is awareness of the existing situation. Also in Italy there are already numerous initiatives on the digital and some (very few) also of a certain significance; many are interesting as regards goals and less so as regards results. In any case a Directory of the Digital must be set up, which is

coordinated with other similar initiatives (for example the new one of the ICCU, more directed towards the use of metadata.

It can contain data both on the projects carried out (providing the necessary access via URL) and on those still in the planning stage, identified through inventories, papers, conventions, mention in professional and non-professional periodicals. It will cover both technical, organisational and content aspects. There will be a parallel compilation of a kind of “Who’s Who?” of the digital in Italy (...) It will need a stable inventory and editing structure.

4. Planning support

The CS of the Italian Digital Library must become the reference point for providing consultancy services to the regions or to the large library structures for the correct formulation of the projects.

To this end it will from the start have to identify all the standards towards which the various projects must be directed, guaranteeing a tendency to homogeneity in the results.

It must succeed in imposing a workflow standard for production and provide support for the drawing-up of plans according to quality requirements (Pert, GANNT).

It will identify, also on the basis of indications by experts, programmes for optimising the national culture, themes (anniversaries, historical subjects) and types of material (periodicals, posters, statutes, etc.) which should all move towards the setting up of a complete Italian Digital Library (on the lines for example of the American Memory promoted by the Library of Congress), focusing on the integration of single projects which are developed on a local basis.

It will favour the growth of these local initiatives (always within the standard reference grid) incentivating them with ad hoc grants and funding, on the basis of tenders as happens in other countries.

It must in any case encourage projects which are the fruit of joint efforts (several bodies, complementary projects etc.).

It must favour projects integrating national and international projects which have already been started and particularly which regard themes of interest for Italian culture.

The task force responsible for this important task of project definition must necessarily include: librarians, pure technicians, project management experts, marketing experts.

5. Training

The identification of training needs for adapting basic and advanced skills is another vital task.

“The setting up of the Digital Library involves a revolution of skills, duties and roles which is not comparable to what was involved in the advent of automation of the library system.

The librarian, seen both as manager and as employee responsible for certain duties, must necessarily be submitted to updating and often to a new technological literacy process.

This is not so much in order to transform librarians into pure technicians but to offer him/her all the tools for the understanding of the various technological components introduced by the Digital Library.

The profession of librarian is transforming itself more and more into a sort of “aggregator” of solutions, aimed at obtaining a certain “object” (in our case: digital products) or at the activation of a certain service (in the case in question: new services of access to information).

The CS of the Italian Digital Library will play an important role in:

- *Identifying training needs*
- *Defining the level of training/updating*
- *Developing new training methods and contents or having them developed*
- *Activating monitoring tools for verification of results*

A task force for training will set up training paths and can also have the most suitable contents developed by outside companies which specialise in training.

Particular use must be made of distance learning.

It can also set up agreements with community and extra-community countries for periods of study and updating exclusively aimed at the acquisition of skills in the Digital Library sector.

A particularly important point will be that related to the relations with schools and universities.

Primary schools can be stimulated to become vehicles of Internet literacy and some of the first and most extensive users of Digital Library initiatives.

Secondary schools and universities can instead be the main users of services offered by the Digital Library in terms of creativity, planning, distance learning.

6. Communication, promotion and outside relations

One of the weak points of the present structures of the libraries is the low ability to communicate.

The Cs and Italian Digital Library must break this negative tradition, setting up a continuous communication with the potential users of the proposed services.

Not only through publicity campaigns but also above all thanks to detailed, constant strictly digital information on the current or finished initiatives, on projects and the various related initiatives.

The CS portal of the Italian Digital Library will be the natural vehicle of this information flow.

The promotion of initiatives in progress or those already available must pass through the portal.

The CS of the Italian Digital Library must have a stable active editorial board (even located remotely and not necessarily centralised) which is coordinated by experts in communication able to constantly update the Web with information pertaining to the Digital Library.

An electronic newsletter can be published in the currently fashionable method of brief review with links to the news or resource.

The aim of proposing Italian partnership in the great international initiatives will be particularly important for this PR Office.

Expanding public relations also means activating channels of constant relations with interlocutors such as the publishing world, firms interested in the digital, as well as of course all those traditional partners like the Regions, the Provinces and the Boroughs.

With the latter in particular permanent negotiations must be set up to launch and/or monitor initiatives directed towards the Digital Library.

The prototype developed shows how such a structure could communicate and provide specific services on the digital.

7. A national conference on a regular basis

An extremely important task due to its communication value is that of organising a “National conference on the Digital” on a regular basis (for example every two years).

This will be the national and international showcase of the results obtained, with sessions of presentation of the most significant projects in progress or completed, technical workshops in cooperation with similar international structures, exhibition of specific technological solutions for the digital.

Times, costs and quality requirements

Not all these objectives can be achieved at the same time and the last part of the study compares times, methods and costs of the proposals.

Emphasis is on the requirement of quality as an element to be focused on and in this sense a synoptic classification of the characteristics which a quality Digital Library should have is proposed.

These requirements are examined both in regard to the local Digital Library (which is transformed into a centre of production of digital products and of supply of value-added services) and in regard to the true object of the study and of our proposal, i.e. the Digital Library and its various services orientated towards the various local structures belonging to the system as a whole.

Pt2 Section 1.5.3 onwards

One section is dedicated to the “*planned interventions on non-informative components*” which are in particular training and organisation.

“The setting up of the Digital Library faces the traditional library with some questions finding the answer to which is a necessary prelude to the setting up of any initiative. In particular the answer to what the essential conditions are for the feasibility of a project from the point of view of the processes which will be activated and their organisational impact on the functioning of the library and its staff”.

This involves the redefinition of services, job definitions and training schemes.

Pt 2 Section 1.6

The final part of the study shows a list in table form of the main steps in this process of construction and an estimate of the costs to be faced at least during a first two-year period.

Breakdown of the project

The overall plan of the project for the setting-up of the Italian Digital Library is developed using the formalism of the Work Breakdown Structure, which provides a proposal for the segmentation of the project, defining the various activities (Work packages) of which it is composed.

“The main stages of the project which have been identified are:

-PRE-SET-UP STAGE: *one of the stages for the setting up of the Italian Digital Library where the founding principles of the Italian Digital Library are outlined*

-SET-UP STAGE: *where concreteness is lent to the action through a planning stage. It is in this stage that the tender specifications and/or outsourcing contracts for the creation of the technical/editorial infrastructures will be defined.*

-CREATION OF INFRASTRUCTURES: *stage of development and transfer online of the Italian Digital Library services*

-IMPLEMENTATION OF ADVANCED SERVICES: *this stage refers to the conception of the evolutionary nature of services offered by the Italian Digital Library.*

(...)"

Through GANTT and Pert the project is described in its time course and in terms of the milestones of verification and/or checking of the activities.

For this description please see *Pt 2 Section 2.2.*

Risks

"By risks we must above all understand non-exploitation of the resource potential in the processes and activities. But we can better judge this "non-exploitation" on the basis of the distinction of risks formulated as:

-wastage (of human resources, materials, potential of internal functioning; organisational processes and activities)

-losses of quality (dissatisfaction about the relations with the local Digital Library; with the final user; creation of a product not wholly complying with expectations and needs)

Pt 2 Section 3.2

Costs

The costs expressed in the table refer to two orders of greatness:

- *External costs refer to the adoption of resources outside the ministry such as: consultancies, telematic infrastructures, projects, outsourcing etc., to be found through contracts or tenders.*
- *Internal costs refer to the use of resources inside the organisational structure of the UCBL; in this case man-days were used as the unit of measurement to quantify the estimated expense.*

Pt 2 Section 4.1

A scheme is also provided for the calculation of the variable costs of a digitisation project, remembering that no universal scheme of budgeting so far exists for digitisation projects and that the orientation is rather that of working out a model on the basis of a prototype which is then extended to the whole project.

Benefits

In some final tables a methodology of evaluation is proposed without going into the attribution of the values expressed by the coefficients which will depend on the analysis of the various project situations. This illustration in table form is developed both for local Digital Librarys and for the Italian Digital Library.

In the first case (Digital Library) it involves

Information management	Quality control	Work organisation	Human factor	System area	Services
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while in the second (Italian Digital Library) it instead involves

Flows	Forms	Work organisation	Subjects	Communi- cation	System area
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See the tables and the attributes assigned to each one.

Pt2 Section 5

Conclusions

As explained in the introduction we have tried with this summary to provide a simpler and more direct key to the main concepts expressed in the study as a whole.

We recommend however that this summary be used as an “entry key” to the complete study. There are many subjects dealt with in it that are difficult to summarise without losing much of their value from the point of view of information or reflection on the complexity of the Digital Library.