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Digital Libraries for Cultural Heritage

*Development, Outcomes,
and Challenges from
European Perspectives*

Tatjana Aparac-Jelušić

***SYNTHESIS LECTURES ON INFORMATION
CONCEPTS, RETRIEVAL, AND SERVICES***

Gary Marchionini, *Series Editor*

Digital Libraries for Cultural Heritage

Development, Outcomes, and Challenges from European Perspectives

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Mathias Lux and Oge Marques

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Meredith Ringel Morris and Jaime Teevan

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Tatjana Aparac-Jelušić

University of Zadar

*SYNTHESIS LECTURES ON INFORMATION CONCEPTS, RETRIEVAL,
AND SERVICES #58*



MORGAN & CLAYPOOL PUBLISHERS

Dedication

To my former assistants and great colleagues Martina Dragija Ivanović and Sanjica Faletar Tanacković.

ABSTRACT

European digital libraries have existed in diverse forms and with quite different functions, priorities, and aims. However, there are some common features of European-based initiatives that are relevant to non-European communities. There are now many more challenges and changes than ever before, and the development rate of new digital libraries is ever accelerating. Delivering educational, cultural, and research resources—especially from major scientific and cultural organizations—has become a core mission of these organizations. Using these resources they will be able to investigate, educate, and elucidate, in order to promote and disseminate and to preserve civilization. Extremely important in conceptualizing the digital environment priorities in Europe was its cultural heritage and the feeling that these rich resources should be open to Europe and the global community.

In this book we focus on European digitized heritage and digital culture, and its potential in the digital age. We specifically look at the EU and its approaches to digitization and digital culture, problems detected, and achievements reached, all with an emphasis on digital cultural heritage. We seek to report on important documents that were prepared on digitization; copyright and related documents; research and education in the digital libraries field under the auspices of the EU; some other European and national initiatives; and funded projects.

The aim of this book is to discuss the development of digital libraries in the European context by presenting, primarily to non-European communities interested in digital libraries, the phenomena, initiatives, and developments that dominated in Europe. We describe the main projects and their outcomes, and shine a light on the number of challenges that have been inspiring new approaches, cooperative efforts, and the use of research methodology at different stages of the digital libraries development. The specific goals are reflected in the structure of the book, which can be conceived as a guide to several main topics and sub-topics. However, the author's scope is far from being comprehensive, since the field of digital libraries is very complex and digital libraries for cultural heritage is even more so.

KEYWORDS

digital libraries, cultural heritage, European cultural heritage, European digital libraries, research in digital libraries, European Union, European Commission, education in digital libraries

Contents

	Dedicationxi
	Figures	xv
	Preface	xvii
	Acknowledgments	xxi
	Abbreviations	xxiii
1	Introduction	1
2	The Digital Aura in Europe	13
	2.1 Introduction to Cultural Heritage Issues	13
	2.2 Cultural Heritage and Inside European Policies and Strategies	20
	2.3 Digital Libraries for Cultural Heritage: A Literature Perspective ..	29
	2.4 Concluding Remarks	35
3	Digitization and Coordination of Digitization in the European Cultural Heritage Sector	37
	3.1 Introduction	37
	3.2 Developing Infrastructure for Digitization	40
	3.3 A Short Overview of Digital Library Developments in European Countries	50
	3.4 The Development and Future of Europeana	62
	3.5 Concluding Remarks	70
4	Research into the Digital Library: Problems Researched, Outcomes of Research Projects, and New Challenges	73
	4.1 Introduction	73
	4.2 Principles, Models, and Frameworks for Digital Libraries	79

4.3	Access and Use of Digital Libraries	85
4.4	Preservation and Curation Issues	90
4.5	Developing and Testing the Evaluation Criteria	95
4.6	Concluding Remarks	98
5	Education for Digital Libraries: Roots, Approaches, and New Directions	101
5.1	Introduction	101
5.2	Education of Information Specialists in Europe: Tradition and Modernity	107
5.3	Overview of the Developments in Digital Libraries Education	111
5.4	Research Outcomes and Challenges in Education for Digital Libraries	116
5.5	Concluding Remarks	121
6	Conclusions and Predictable Future Trends	125
	Appendix: List of Projects Mentioned in the Book (with Useful Links)	131
	Bibliography	141
	Author Biography	175

Figures

Figure 1.1: Stonehenge and the Last Judgment from the Sistine Chapel	2
Figure 1.2: The map of East Europe before the fall of the Berlin Wall (left) and of Europe from 2012 (right)	6
Figure 1.3: Internet users in the world by regions, June 3, 2016. From www.internetworldstats.com/stats.htm	9
Figure 3.1: Europeana's paths to many collections (http://www.europeana.eu/portal/hr).	64
Figure 3.2: Europeana: strategy 2015–2020 http://strategy2020.europeana.eu	67
Figure 4.1: The DDC Curation Lifecycle Model based on http://www.dcc.ac.uk/resources/curation-lifecycle-model	83
Figure 4.2: The Balance Value Impact Model. Based on Simon Tanner (2012)	84

Preface

Previous analysis of the multitude of definitions, as well as mission statements and project proposals, indicates that digital libraries are seen from different perspectives and sometimes with different concepts as well. Many elements that characterized the early digital library positioned it as a separated set of resources and activities within but not necessarily associated with a traditional library. However, a growing interest in computational aspects has brought to the “stage” professionals from archives and museums, scientists and programmers from computer science, and researchers from the social sciences and humanities. The concept of the “hybrid library,” which originated in Europe, reflected the realities already being faced by many actors on the “digital scene” at the beginning of 1990s. Today, “digital library” is still looked at not only as a new term and concept that covers a great many diverse activities, but also as a new paradigm related to processing and managing information in the digital environment.

Although digital libraries in Europe have existed in diverse forms with quite different functions, priorities, and aims, as in other parts of the globe, there are some common features of European-based initiatives that are worthy of presentation to non-European communities. Being politically, economically, and culturally so diverse, many European countries have started digital libraries with an impetus derived either from innovative thinking about the future role of libraries, archives, and museums in preservation and usage of their rich cultural heritage, or about the future role of these institutions inside the fast growing networked environment. Other motivations, too, have led various digital libraries’ own personalities, and reflected the circumstances of their birth, their cultural environment, and their leaders. The approaches of the European Union, regionally, nationally, and even transnationally based sets of regulations, recommendations, and funding possibilities, made developmental efforts more feasible, and the results gave the research and professional arena more vitality and visible results.

Challenges and changes that are happening today, even more intensively than before, show an intention of digital libraries to appear as a process of constant acceleration. The need to deliver educational, cultural, and research resources, especially from major scientific and cultural organizations, has become an imperative closely associated with the core mission of these organizations to investigate, educate, and elucidate, to promote and disseminate and to preserve civilization.

Extremely important in conceptualizing the digital environment priorities in Europe was its cultural heritage and the feeling that this wealth of resources should be opened up to Europe’s and the world’s community. It is also important to shine a light upon cultural heritage infrastructural

elements in European society, which are so diverse and yet so bound by many historical, cultural, and political ties.

Undoubtelly, the interest in cultural diversity, domination by certain cultures, and cultural imperialism has grown with globalization trends. The issues that relate to the cultural diversity are not only the actual questions posed by scientists and politicians, but indeed among the most important ones in regard to perspectives of the human civilization. Europe made a significant effort to answer to the problem of cultural and national tensions by actualizing those values that could guarantee stability, homogeneity, and identity among its citizens and strengthening its position in today's world. Its rich heritage plays an important role in these attempts.

In this book we intend to concentrate on European digitized heritage and digital culture and its potentials in the digital age. A new digital culture has been transforming the whole cultural field, encouraging new forms of creative expression, offering new resources to be used for various purposes, intensifying educational, scientific, business, and leisure fields, and offering new perspectives to intercultural communication inside Europe and worldwide. We will specifically look at the EU and its approaches to digitalization and digital culture, problems detected, and achievements reached, with an emphasis on digital cultural heritage. We seek to report on important documents that were prepared on digitization, copyright and related topics, research and education in the digital libraries field under the auspices of EU, and some other European and national initiatives and funded projects.

The aim of this book is to discuss the development of digital libraries in the European context by presenting, primarily to non-European communities interested in digital libraries, the phenomena, initiatives, and developments that dominate in Europe. Following this aim, we intend to describe the main projects and their outcomes and to shine a light on the number of challenges that have been inspiring new approaches, cooperative efforts, and the use of research methodology at different stages of digital libraries' development. The specific goals are reflected in the structure of the book that can be seen as a guide to several main topics and sub-topics. However, the author's intention is far from being comprehensive. The reasons for this are threefold: first, digital libraries cover a wide range of fields, activities, scientific disciplines, educational paradigms, and business models to be covered in one single book; second, the number of initiatives and ongoing or finished projects is too high and results are often not so visible, not as influential as expected, or as interesting for wider user communities; and third, there are several literature reviews that cover either certain periods or special topics of the digital library developments in Europe, that could supplement our study.

The content of the book is divided into several chapters. After an introduction to the main characteristics of Europe and its visions and developmental plans, [Chapter 1](#) looks at European and national policies and initiatives that intend to coordinate activities related to culture and cultural heritage, primarily in European Union countries. In [Chapter 2](#) we discuss related terminological

issues, definitions, and basic notions of the digital library from the perspectives of the digitization of cultural heritage and its meaning to the new digital environment.

In [Chapter 3](#) we look at the development of information infrastructure, in particular that which aims to support digitization and digital libraries for cultural heritage. Following, there is a description of the main characteristics and features of some digital libraries' projects from the early stage of their development to recent attempts and results. This chapter will cover principles and criteria of digitization, especially in relation to the cultural heritage in Europe, and Europeana in particular.

[Chapter 4](#) is devoted to the research projects that investigated the challenges and possibilities of digital libraries from various perspectives (e.g., considering principles and models, users and use, preservation, and evaluation).

[Chapter 5](#) discusses education on digital libraries and the changes in the information profession on the European scene, as well as future trends in digital library education, research, and development.

In the Conclusion, [Chapter 6](#), we intend to summarize main findings and present our view about the challenges and possible future paths.

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Abbreviations

ALM – Archives, Libraries, and Museums (see also: LAM)

APIs – Application Programming Interfaces

CASPAR – Cultural, Artistic, and Scientific knowledge for Preservation

CDCPP – Steering Committee for Culture, Heritage, and Landscape

CEE – Central and East Europe

CENL – Conference of European National Librarians

CERL – Consortium of European Research Libraries

CH – Cultural Heritage

CILIP – Chartered Institute for Library and Information Professionals

DAE – Digital Agenda for Europe

DARIAH – Digital Research Infrastructure for the Arts and Humanities

DCH – Digital Cultural Heritage

DCC – Digital Curation Center

DILL – Digital Libraries Learning

DL – Digital Library

DPE – Digital Preservation Europe

DRM – Digital Rights Management

ERA-NET – Network for the European Research Area

ERPANET – Electronic Resource Preservation and Access Network

EC – European Commission

ECL – Extended Collective Licenses

ECo – European Council

ECTS – European Credit Transfer System

EDL – European Digital Library

EHEA – European Higher Education Area

EP – European Parliament

EPOCH – Excellence in Processing Open Cultural Heritage

ERA – European Research Area

ERASMUS – European Regional Action Scheme for the Mobility of University Students

ERIC – European Research Infrastructure Consortium

ERPANET – Electronic Resource Preservation and Access Network

ECTS – European Credit Transfer System

ERA – European Research Area

ERASMUS – European Regional Action Scheme for the Mobility of University Students

EU – European Union

FP – Framework Program (EU)

FRBR – Functional Requirements for Bibliographic Records

GDP – Gross Domestic Product

GII – Global Information Infrastructure

HAITII – Humanities Advanced Technology and Information Institute

HEI – Higher Education Institution

HEREIN – European Heritage Heads Forum

HOPE – Heritage of the People's Europe

ICT – Information and Communication Technologies

IFLA – International Federation of Library Associations and Institutions

II – Information Infrastructure

InterPARES – International Research on Permanent Authentic Records in Electronic Systems

IPR – Intellectual Property Rights

IS – Information Science

IST – Information Society Technologies

LAM – Libraries, Archives, and Museums (see also: ALM)

LIBER – Ligue des Bibliothèques Européennes de recherche (Association of European Research Libraries)

LIS – Library and Information Science

LOD – Linked Open Data

MALVINE – Manuscripts and Letters via Integrated Networks in Europe

METS – Metadata Encoding and Transmission Standard

MICHAEL – Multilingual Inventory of Cultural Heritage in Europe

MINERVA – Ministerial Network for Valorising Activities in Digitization

MLA – Museums, Libraries, and Archives Council

MOSAICA – Semantically Enhanced, Multifaceted, Collaborative Access to Cultural Heritage

MultiMATCH – Multilingual/Multimedia Access to Cultural Heritage

NEDLIB – Networked European Deposit Library

NGA – Next Generation Access

NPLD – European Network to Promote Linguistic Diversity

NSF – National Science Foundation (U.S.)

OpenAIRE – Open Access Infrastructure for Research in Europe

OAIS – Open Archival Information Systems

PATHTS – Personalized Access To Cultural Heritage Spaces

PLANETS – Preservation and Long-term Access through NETworked Services

PPS – Purchasing Power Standard

TEL – The European Library

R&D – Research and Development

RCUK – Research Councils UK

RDA – Research Data Alliance

RDM – Research Data Management

RDLP – Memory of Russia and Russian Digital Libraries

RIN – Research Information Network

ROADS – Resource Organization and Discovery in Subject-based services

ROW – (European) Registry of Orphan Works

RTD – Research and Technological Development

SCRAN – Scottish Cultural Resource Access Network

SHAMAN – Sustaining Heritage Access through Multivalent ArchiviNg

SPAM – Supporting Digital Preservation and Asset Management in Institutions

STREP – Specific Targeted Research Projects

TEL-ME-MOR – The European Library: Modular Extensions for Mediating Online Resources

TEMPUS – Trans-European Mobility Scheme for University Studies

TNT – The Neanderthal Tools

UKWAC – United Kingdom

UNESCO – United Nations Educational, Scientific, and Cultural Organization

VSA – Voluntary Stakeholders Agreements

CHAPTER 1

Introduction

In an attempt to present various approaches to digitization of the rich European cultural heritage (CH), and to build up and develop digital libraries (DLs) that would offer content and services to European citizens and worldwide, it seems necessary to offer even a surface look at the European CH scene.

European culture is considered one of the cornerstones of civilization. Yet, it is almost impossible to make even a brief sketch of the main elements of European culture. One might start with the evidence found in archeological sites and ancient art objects—from the cave paintings of Altamira and the Cave of Lascaux, Stonehenge, Homer and the Iliad, the Venus de Milo, the Acropolis of Athens, and Ancient Epidaurus, to the Roman Theatre of Merida, Les Ferreres Aqueduct, Diocletian's Palace—all of which reveal the high structures of state organization, life, and art; or the roots of democracy in Athens that led to great philosophical thought, literary works, and sculptures. Through many centuries, each period of growth resulted in a myriad of cultural objects that are now treated as European CH par excellence. Later phenomena, such as the Renaissance, Enlightenment, science, Romanticism, or postmodernism, came hand-in-hand with socio-political constructs such as nationalism, liberalism, imperialism, or totalitarianism, which influenced European culture in many ways.

Europe is rich in cultural institutions—museums like the Louvre, Prado, Hermitage, and British Museum; galleries like the Uffizi, Pinakothek München, Luisiana in Denmark, or Narodni Galerie in Praha; libraries and archives like astonishing medieval or Baroque libraries, national libraries, or Vatican Archives; film and creative industry, music, and literature, etc.—that form a base of modern civilization.

There are a number of perspectives from which one can look at modern Europe, and in particular, rich European CH, which is the focus of this book. Indeed, it is impossible to form a single, all-embracing concept of European culture, although a number of core elements could be generally agreed upon as a base for interpretations of the cultural foundation of modern Europe. In his well-known work, K. Bochmann (1990) pointed out a common cultural and spiritual heritage derived from Greco-Roman antiquity, Christianity, the Renaissance and its Humanism, the political thinking of the Enlightenment period, the French Revolution, and the developments of modernity. Moreover, European culture had influenced culture on other continents in many ways, especially during the period of the “Great Divergence.” European philosophers, sociologists, theoreticians of culture and their conceptions of the “individual,” “collective,” “human rights,” and the

“liberty of the individual,” to name just few of the topics, inspired leading thinkers throughout the world (cf. [Berting, 2007](#)).



Figure 1.1: Stonehenge and the Last Judgment from the Sistine Chapel.

European culture also reflects a specific way of living in states that have different religious backgrounds and political orders, a tradition that was often enriched by close relationships between states during centuries of international alliances, fights, wars, and foreign regimes. The concept of European culture is often linked to the classical definition of the Western world, e.g., the Western canon represented as a set of literary, scientific, political, artistic, and philosophical principles that differentiate it from other civilizations' canons.

With such a rich and diverse cultural background forming an important ground for overall development, Europe entered the 21st century full of positive energy and plans in many sectors to become more powerful and competitive. It has been building new infrastructure. Some European countries were already members of the European Union (EU), some approaching it, and some remaining neutral or with other focuses of their socio-political pursuits.

Education and culture have been regarded as two main pillars of Europe's future. Europe has been developing various educational systems since the 11th century. According to J. Rupnik ([1989](#)) the rebirth of Europe as a single educational entity toward the end of the 1990s has been emerging over the 1,500 years since the collapse and division of the Roman Empire, accompanied by ethnic and religious divisions and economic and political rivalries, particularly those that culminated in several major wars in the 19th and 20th centuries. These situations have continually shaped and altered the boundaries of the nation states that exist today. Today this system is submitted to coordination and harmonization by EU policy-making documents as it pertains to the member states, as well as stimulated by UNESCO's policies and documents as they pertain to the world. Visions and approaches to the future development presented in documents of non-EU countries should not be neglected, as they make an important contribution to the efforts related to the coordination of numerous activities, especially in relation to cultural, educational, and scientific ones. The cultural

sector has been in a transitional period due to the growing influence of information and communication technology (ICT) in every part of life, but also due to the need to overcome economic constraints by strengthening its resources with digital technology and empowering its social role by coordination and networking supported by the EU and national-like funding mechanisms.

According to the United Nations' statistical data from 2015,¹ Europe has 48 countries with 743,122,816 inhabitants, Russia being the largest and most populous (comprising 15% of its population), while the Vatican City is the smallest both in terms of area and population. As of 2013 the EU has 28 member states,² covering over 4 million km,² and has 508 million inhabitants—the world's third largest population after China and India.³ By surface area, France is the biggest EU country and Malta the smallest. Europe's population is increasing through a combination of natural growth (more people are born each year than die) and net migration, especially during the last several years when more people settled in the EU than left it, mostly due to the high migration from countries that are hit by wars and uncertain political or deprived economic situations. At the same time, the population of Europe is aging, as life expectancy increases and fewer children are born. Living standards are usually compared by measuring the price of a range of goods and services in each country relative to income, using a common national currency called the purchasing power standard (PPS). Comparing gross domestic product (GDP) per inhabitant in PPS provides an overview of living standards across the EU. Bulgaria is still the country with the lowest GDP per capita in PPS (47) and Luxemburg with the highest (266).

The major goal of the EU⁴ is to promote peace, European values, and the well-being of its peoples. In doing so, the EU strives to improve living standards by protecting the environment, encouraging job creation, reducing regional disparities, connecting formerly isolated areas by devel-

¹ Data was extracted from the website: <http://statisticstimes.com/population/european-countries-by-population.php> (2016-05-06).

² On May 1, 2004, ten new countries joined the EU—Poland, Lithuania, Czech Republic, Slovakia, Hungary, Malta, Slovenia, Cyprus, Estonia, and Latvia. Bulgaria and Romania joined the “family” in 2007 and Croatia did so in 2013.

³ Data was selectively extracted from the website: https://europa.eu/european-union/about-eu/figures/living_en#quality-of-life (2016-05-06).

⁴ The EU is comprised of the following institutions: the European Parliament (EP), European Council (EC) the European Commission (EC), often referred as “the Commission,” Court of Justice of the European Union, European Central Bank, and the Court of Auditors. The nomenclature of some of these institutions is at times confusing, especially in regard to the European Council and European Commission. The EC is an executive agency, ultimately subordinated to the European Parliament. The regular meetings of the ECo, whose members are heads of government of the member states, have a strategic role, being charged with defining “the general political directions and priorities.” None of these bodies should be confused with the Council of Europe, a separate forum for all the parliamentary democracies in Europe (cf. [Johnson, 2013](#): 64).

oping cross-border infrastructure, and encouraging the acquisition of language skills from an early age to support language and cultural diversity (EC, 2012).

As for languages spoken, there are 24 official languages with which the EU institutions work.⁵ In addition, some 80–90 regional, minority, or endangered languages are also spoken across Europe and enjoy different degrees of official recognition. These range from communities with full co-official status such as Basque, Catalan, Galician, or Welsh, to linguistic communities with little or no official recognition but with a strong will to keep their languages alive (NPLD, s.a.:16).

In accordance with the EU population, the most widely spoken mother tongue is German (16%), followed by Italian and English (13% each), French (12%), then Spanish and Polish (8% each). For the majority of Europeans their mother tongue is one of the official languages of the country in which they reside; 54% of European citizens are able to hold a conversation in at least one additional language; 25% are able to speak at least two additional languages; and 10% are conversant in at least three languages. The five most widely spoken foreign languages are English (38%), French (12%), German (11%), Spanish (7%), and Russian (5%) (EC, 2012: 5).

Because linguistic communities, like other human groups, are dynamic phenomena and do not have fixed frontiers, their contacts with other linguistic communities usually result in numerous multilingual and polyglossic situations on collective and individual levels, so that it is really impossible to draw a territorial borderline that would separate two or more communities (cf. Škiljan, 2001: 91). Europe's linguistic diversity is what best defines the continent and, at the same time, expresses and reinforces the cultural identity of Europe. Thus, it is not surprising that the motto "United in Diversity" was adopted by the EU (in 2000) and that the EC's first ever Communication on Multilingualism was adopted in 2005 (EC, 2005c).⁶ A set of appropriate measures was intended to extend the benefits of language learning to all citizens as a lifelong activity. The 2008 Council's document (EC, 2008) also stressed that languages and multilingualism played a major role in the European economy and that all mechanisms should be employed to encourage all citizens to learn and speak more languages, in order to improve mutual understanding and communication. These documents

⁵ Bulgarian, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovene, Spanish, and Swedish.

⁶ This document was superseded by the EC's Resolution on Strategy on a European strategy on multiculturalism (EC, 2008), which complemented EC's Action Plan Promoting Language Learning and Linguistic Diversity from 2003 (EC, 2003), which set out measures aimed at supporting initiatives carried out at local, regional, and national levels.

highlighted the idea of linguistic and cultural diversity as a part and parcel of the European identity and an asset for Europe.⁷

By strongly supporting and funding language and information and communication skills, the EU has been attempting to ensure that all EU citizens, whether they speak a major European language or a lesser-known one, have equal access to the policies and legislation of the EU as well as to the various online resources within the European Digital Library (EDL)⁸ or other access points to rich scientific, cultural, or educational resources.

On the other hand, language skills are becoming increasingly important, as globalization leads to more and more contact with people from other countries and an interweaving of different cultures. The most conservative estimate of the number of cultures would take the number of nation states or countries as its baseline, that is, 28 cultures are represented in the EU. But it is obvious that inside every country, from Spain or Germany to the UK or Croatia, people from different inner regions have a different culture. In major cities like Paris, London, Stockholm, Warsaw, Bucharest, or Madrid there exist different cultures in their different areas.

The complex European composition, with many languages and culture, dates from centuries ago, namely from the 16th century when Guttenberg's discovery and geographic and colonial expansion provided impetus in searching for new kinds of identity, when traditional national bonds such as territory, history, culture, and political traditions had the same role as the identification with the nation. It should be mentioned here that, in the 1970s, the idea of European identity became one of the important issues in discussions among politicians and bureaucrats within the EU. The declaration of European identity, accepted in 1973, stressed the importance of the legal frameworks, respect for human rights, and common marketplace as basic characteristics of Europe (cf. [Božić-Vrbančić, 2008:10](#)).

There is a great wealth of literature on European identity covering topics on European culture (issues on language, multiculturalism, heritage, belonging, boundaries, and identification). During the 1970s the domination of the traditional, neo-functional approach toward integration was ubiquitous. Such an approach departed from presumptions that European integrative processes could legalize a number of instruments as a vehicle for getting in tune with various national policies (cf., for example, [Shore, 2004](#)). However, not a single one of these processes was successful in shaping the unified European feeling about European identity. Thus, during the 1980s it became clear that the uncertainty about European identity could disrupt the development of a common EU market, and the issues related to the idea of European citizenship became topical at the beginning

⁷ Much of the funding has supported foreign language learning initiatives, under the Lifelong Learning programs. However, investment in non EU-official language projects has been and continues to be much lower and it has been showing a downward trend in recent years ([NPLD, s.a.: 20](#)).

⁸ The creation of the EDL began in 2001; from 2004 it has been supported, used, and developed by a growing number of members of the CENL and LIBER, and with generous funding from the EC.

of the 1990s, when it was realized that economic integration was not enough for the stability of the EU. As Castells pointed out, European integration is, at the same time, a reaction to the process of globalization and its most advanced expression (cf. [Castells, 2000: 348](#)).⁹

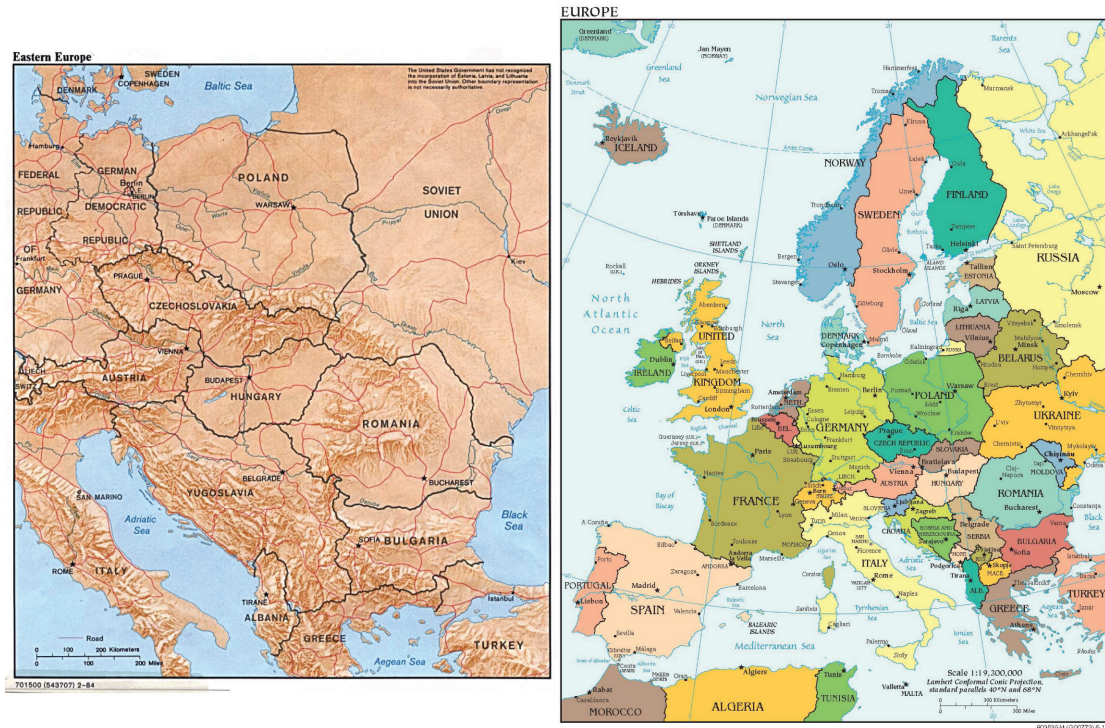


Figure 1.2: The map of East Europe before the fall of the Berlin Wall (left) and of Europe from 2012 (right).

These socio-political barriers also mark the European continent. Western Europe is a known term, but Central, South, Mid-Europe, Balkan, and West Balkan or Eastern Europe are used often for covering different countries. Among these concepts Central and East Europe (CEE) is probably the most problematic one.¹⁰ In her book, Borgman (2000: 245) uses the term CEE, which refers to the region of Europe that was under Soviet control until 1989, plus Yugoslavia, which was a nonaligned nation.

⁹ Indeed, recent events around Brexit proved that a common EU market could be disrupted within a short period of time and that the idea of a unified Europe is vulnerable.

¹⁰ In both literature and politics, CEE sometimes includes the entire former Soviet Bloc and the former Yugoslavia and sometimes refers to a subset, distinguishing former Soviet satellite states in the western part of the bloc from “the former Soviet Union,” the Commonwealth of Independent States, the present and former Yugoslav republics, or other subsets such as the Baltic States or the Caucasus.

Indeed, Europe is a mosaic of nations and minorities. For instance, before 1989 many of the CEE countries had various national minorities living within their borders.¹¹ The change of the geopolitical map of this part of Europe also meant a change in the relationships between the countries belonging to this region.¹² This also meant a new cultural neighborhood for each country. As the fall of the Berlin Wall and the breakup of the socialist/communist systems in Eastern Europe and Yugoslavia led toward the disappearance of multinational states, the reunion of Germany, and the birth of new countries, Europe was witnessing many new challenges, one of these being the growing interest in cultural issues related to identity, ethnicity, and nationalism. Although, of course, cultural relations with Western Europe existed before the 1990s, the exchanges and contacts were largely manifestational in character and lacking in content. Albeit an interest in different European cultures and civilizations was present (for instance since the 19th century for folk culture from the Balkan region, Russian music and literature, or ancient Greek culture), there were few opportunities for real exchanges of ideas, experience, and knowledge, the most visible ones being those stemming from the defection of a number of cultural figures and artists (film makers, writers, musicians) from eastern parts of Europe, who simultaneously promoted the cultural traditions from their native countries. In such a way, the changes that had taken place in Central/Eastern Europe also influenced the changes in other parts of Europe and brought in novelties in international cultural relations. In Huntington's words (1993: 31), "(T)he Velvet Curtain of culture has replaced the Iron Curtain of ideology as the most significant dividing line in Europe." These, and other circumstances relating to the notion of multiculturalism, weigh on the nation-states' attitudes toward the international environment and, by all means, on cultural circumstances (cf. Krzysztófek, 1997: 65), e.g., on creative achievements, mobility, and much closer interrelations.

In the context of Europe, this process of change of socio-political paradigms opened up space for a more flexible interpretation of national and ethnic values. In fact, the influence of a global cultural space seems to be supportive of the definition and redefinition of local cultural spaces (individual and regional) and of the readiness to promote local creativity and local cultural values through global cultural communication. The new paradigms led and are still leading toward finding one's own cultural space within the European cultural space. At the same time, such an approach calls for the acceptance of European basic standards as regulatory elements in designing cultural development (cf. Švob-Đokić, 2004).

¹¹ For instance, Slovakia, Lithuania, and Croatia had between 10 and 20% of national minorities, Estonia and Latvia had between 30–40%, and even in the countries that are considered homogeneous, like Poland, the Czech Republic, and Hungary, up to 10% of the population were members of national minorities. At the same time, for instance, large numbers of Hungarians used to live as national minorities in a number of countries in the region, in Romania, Czech Republic, Slovakia, Ukraine, Croatia, Serbia, and Austria (cf. Švob-Đokić, 1997, p. 26.).

¹² As noted by Krzysztófek (1997), at the beginning of the 1990s Poland had three neighbors: the German Democratic Republic, the Soviet Union, and Czechoslovakia; none of them exist anymore.

Moreover, these changes strongly influenced the discussions about the role of culture in the future of Europe, especially when connected with the challenges of the digital era. Thus, during the late 1990s the ideas of “European culture” and “perception of Europe” started to be implemented in the economic and political goals of EU policy. Many discussions about “Europeanization” as a process were marked by the attempt to assure a unique European identity that involved issues related to the diverse nature of the notion of identity, including language and culture (cf., for example, [Howarth, 2005](#); [Stavrakakis, 2005](#)). More and more politicians and theoreticians claim that Europe means “education and culture” (cf. [Sassoon, 2012](#); [Gielen, 2016](#)) and that its highest value is Europe’s cultural diversity. In Konrád’s words, Europe’s special quality is sensitive attraction to diversity, kept coherent by European humanism (cf. [Konrád, 2016](#)). Cultural diversity is one of the key objectives of the Council of Europe and is frequently being addressed in programs and measures of national or regional cultural policies.

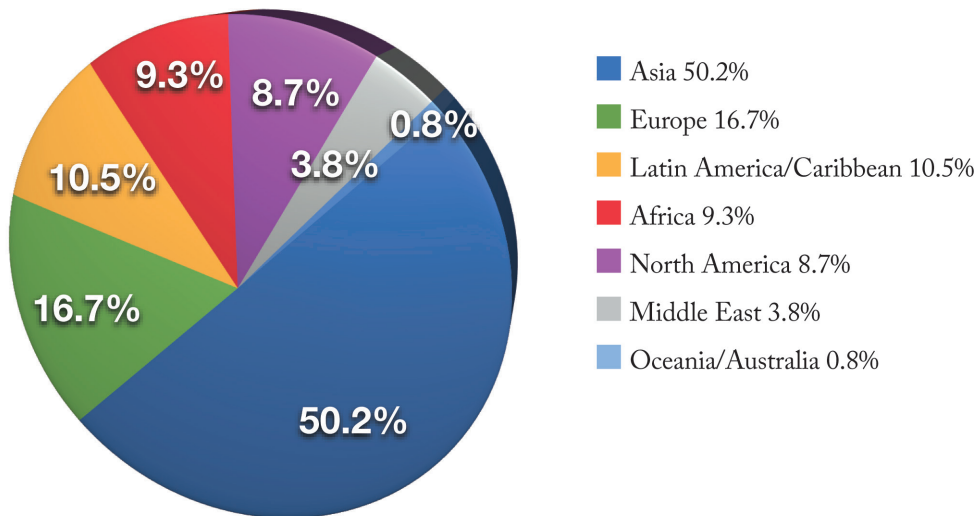
It is worth mentioning that modern European-based discourses, such as “envisaged unity of Europeans,” take over cultural differences as something that could co-exist peacefully, without contradictions. Diverse cultural (and national) styles characterize the diversity of Europe, while at the same time there exists another peculiarity—the assumption that all these differences could be assimilated in a body of the “supra-nation.” Along these lines, new symbols of Europeanism have been designed and created: European passport, European driving license, European anthem, European health-insurance card, and European statistics, as well as school and university courses on “European themes” (e.g., culture, history, legal issues, and collaboration), European Higher Education Area (EHEA), collaborative projects and initiatives such as Active European Remembrance, European City of Culture Project, European Film Awards, Europe’s Culture Award, Enlargement of Minds, Born in Europe, Mosaic, Captain Euro, European heritage label, and European Union prize for cultural heritage (Europa Nostra Awards), not to mention projects funded by the EU, such as the frameworks projects, Tempus,¹³ Erasmus,¹⁴ etc. (cf. [Božić-Vrbančić, 2008](#): 13).

As can be seen, Europe is a patchwork quilt, a diversity of national and regional cultures. But Europe has a common CH. The creation of the EU would not have been possible without this common heritage and the endeavor to have a common future. Paradoxically, as Berting (2007) points out, Europe’s specificity, its common heritage, is threatened by one of its major exports, the ideology of modernity and modernization. Thus, a very important task that Europe confronts is to be at the same time modernizing and preserving its specificity and diversity.

¹³ Tempus was a trans-European mobility scheme for university studies, adopted by the Council of Europe in 1990, with the goal to respond to the modernization needs of the higher education sector in CEE countries, following the fall of the Berlin Wall in 1989.

¹⁴ Erasmus was launched in 1987 with the aim to increase student mobility within the European Community. The program was extended later to include many other activities (e.g. teacher mobility, joint curriculum development, international intensive programs, thematic networks, language courses, and ECTS). Recently it adopted the term Erasmus + for the 2014–2020 period.

As Europe struggles with the tension between its past and its future, authors from different scientific and professional communities discuss broader social, cultural, and political issues (e.g., Stivenson, 2003; Berting, 2007; Cameron and Kenderdine, 2007; Segers and Albrecht, 2016). Certainly, the influence of the ICT and new communication paradigms significantly marked socio-political, cultural, educational, scientific, and business developments. Due to the growing importance of ICT in knowledge generation and distribution in the 1990s, the discussion shifted increasingly to the envisioned role of ICT, which stimulated new approaches, connections, and collaboration inside the framework of a “networked society” and an “information society.” New approaches and interpretations stressed “the power changes that are related to the control of the continuously (in speed and wideness) increasing flows of information, the knowledge management, the networking and communication infrastructures and the automation” (van Rij, 2015: 11).



Source: Internet World Stats - www.internetworldstats.com/stats.htm
 Basis: 3,675,824,813 Internet users on June 30, 2016
 Copyright © 2016, Miniwatts Marketing Group

Figure 1.3: Internet users in the world by regions, June 3, 2016. From www.internetworldstats.com/stats.htm.

The Bangemann Report (1994) was considered an important pillar for EU policies. In the report it was pointed out that the information society had the potential to improve the quality of life of Europe’s citizens and the efficiency of European social and economic organization, and to reinforce cohesion. However, the idea of developing an information society in which “everyone can share,” including marginalized and vulnerable groups, is linked more closely to social and economic

policies than cultural ones. Another impetus for the policy-making area was the approach of UNESCO (2005), which promoted the concept of a knowledge society inside which the cultural aspects of knowledge were embedded and (re)shaped in local communities. The rising issues of web archiving and harvesting strategies, discussions and decisions taken in relation to intellectual property rights (IPR) legislation, digital rights management (DRM), and the open-access movement—the new ways of making resources available online, free or via suitable business models—strongly influence the goal to promote Europe’s achievements to its citizens and to the rest of the world.

Research projects investigating issues that relate to the information/knowledge society and the rising concept and context of DLs became more and more dependent upon the participation of researchers and practitioners from a variety of disciplines and professional fields, including but not limited to library and information science (LIS) and information science (IS), cultural communication and learning theory, cognitive science, artificial intelligence, visual art history and theory, information management, history, anthropology, film, and music studies. In order to support digitization activities, researchers also began developing a variety of novel technologies and tools for the digitization of specific types of CH objects, which resulted in various national libraries, museums, archives, and government organizations and new services offering their digital content through organizational websites, specialized online exhibitions or portals and aggregators. At the same time, the influence of the growing research and development in DLs in the U.S. and Australia became one of the important incentives for European researchers, practitioners, and policy makers to intensify their capacities in order to keep up with new challenges.

All these novelties have been by all means enriching and, at the same time, transforming cultural organizations and “old” paradigms, as well as users and the ways they approach information and culture. When we have users in mind, it should not be forgotten that anyone can be a user of a DL. Users can access the DL from anywhere, they can be of any age, have various educational backgrounds, and speak any language. However, most DLs are constructed with certain groups of users and their needs in mind.

But, as S. Chowdhury (2015) wisely questioned, is there such a thing as a “European user” (or “world user”) for whom the digital products and services are built? It has already been stated that Europeans live in different countries and regions, speak different languages, have different ages, different educational backgrounds, different levels of digital and information skills, and, most of all, many different cultures. Designing a digital environment that can meet the information needs of this diverse population is a big challenge in itself.

While some authors state that many reflections about development seem to have “a fascination with technology as ‘the’ solution to development problems” (e.g., Mansell and Tremblay, 2013), others are stressing that ICT has been developing with lightning speed, deeply influencing society as a whole (e.g., Castells, 2000; Gleick, 1999; Bawden and Robinson, 2013). In Europe, given that the unpredictable ways in which technological innovations are interconnected with other changes

in all areas of society, the situation is even more complex, due to the different levels of economic growth, investments in information infrastructure or improvement of information and media skills, and different cultures and traditions, to name some of the most notable ones.

The need for collaboration and the advanced supporting infrastructure and mechanisms for digitization and preservation of digital heritage has been highlighted by many authors, policy makers, and (even) governments. Sula (2013: 16) observes that “the 21st century has seen a dramatic rise in social networks and crowdsourcing, access to digitized CH materials, and interfaces for archives and collections that exploit the capabilities of linked data and visualization.” The implications of digital technology for knowledge creation, the possibilities for “virtual CH,” and the preservation and interpretation of cultural and natural heritage through real time, require immense and interactive techniques that have been continuously investigated and tested.

The Digital Aura in Europe

2.1 INTRODUCTION TO CULTURAL HERITAGE ISSUES

In recent decades, the concept of heritage has evolved and expanded. Digitization and digital environments in general have been playing a notable role in how heritage is perceived today. The first decade of the 21st century recorded significant changes that had been occurring across the whole CH sector, including the noticable tendency toward an inflationary use of the notion of “heritage.”

The higher aspiration to understand the entire heritage sector, reaching beyond museums or libraries, often considered as the most valuable and most used heritage institutions, became obvious in theory and practice. The definition of the term “cultural heritage” has been evolving throughout the 20th century from an approach referring exclusively to archeological sites and monuments to a definition that includes both tangible and intangible heritage and the close interrelations between the two. CH covers a wide area of many human activities, involves many different types of individual and group actors and monument sites, as well as organizations such as memory institutions (archives, libraries museums—LAM, etc.), local, national, and transnational authorities, voluntary sector organizations (e.g., preservation trusts, local history societies, arts organizations), researchers and organizations providing services that involve CH venues (cultural industry, research institutions, tourism, education, etc.).

According to the definition by UNESCO (1972), objects and land/seascapes belonging to CH distinguish themselves for their “outstanding universal value from the point of view of history, art, or science.” The close interrelation between the CH and (national, regional, local) identity introduced in the last decades of the 20th century led to the consideration of intangible heritage as the mainspring of cultural diversity and a guarantee of sustainable development. UNESCO’s (2003b) Convention on the Safeguarding of the Intangible Cultural Heritage states that “intangible CH” means the practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artifacts, and cultural spaces associated therewith—that communities, groups, and, in some cases, individuals recognize as part of their CH. This intangible CH, together with tangible cultural objects, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature, and their history, and provides them with a sense of identity and continuity. Both the tangible and intangible heritage as well as digital heritage are covered by another UNESCO document—the Charter on the Preserva-