eCulture

Cultural Content in the Digital Age

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Introduction

Creativity is one of the highest forms of human energy. It is a defining human trait that enables us to design and to use tools, and it gives us the ability to solve problems. In the modern world, creativity and its outcome—innovation— are credited as the greatest predictors for economic advancement, equal to or surpassing investments. Creativity can be a vehicle for empowerment and fulfilment or, if denied or abused, it can lead to frustration, apathy, alienation, and even violence.

The role of creativity has been magnified by the explosive developments in Information and Communication Technologies.

ICTs are the most powerful means to produce, preserve and communicate the fruits of human creativity, including information, know-how, knowledge, and works of art.[1]

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[1] Passage from the "Vienna Conclusions" of the conference ICT and Creativity: Towards a Global Cooperation for Quality Content in the Information Society, held in Vienna, Austria, 23 June 2005, http://www.wsa-conference.org/data/viennaconclusions_051104.pdf

Acknowledgements

This book aims to synthesise some of the experiences that I have accumulated after working in the field of eCulture for two decades. It has been a great pleasure to be able to merge two of my main interests, technology and culture.

Computer graphics provided one of the first opportunities to merge these different interests, using drafting and solid modelling applications, in the 1980s. This application of computer graphics was propaedeutic to my first attempts to make use of virtual reality technology in the field of culture, and (at almost the same time) it also proved instructive when the potential advantages of applying the Internet in a cultural context were first considered, starting with "networks of virtual museums" early in the 1990s.

I should like to begin here by thanking Prof. Giovanni degli Antoni for his suggestions and encouragement, as well as all of the students and the researchers that actively cooperated with me in developing concepts, ideas and projects. There are a number of colleagues that I would like to thank for their valuable contributions: Francesco Antinucci, who introduced me to the "human side of ICT" and shared his deep knowledge of human perception; Fabrizio Funtò, Marcello Pappagallo and Antonella Guidazzoli, all of whom were perfect partners in many projects; Michele Gianni and Umberto Parrini, who provided close links to the humanistic side of my work; and Sergio Conti, one of the main supporters of the European Commision's MOSAIC project. Significant contributions were also provided by Derrick de Kerckhove and his vision of eSociety as well as by Ranjit Makkuni, multifaceted artist and scientist who introduced me to the possible relation between cutting edge technologies and craftmanship.

Special thanks are due to Kim H. Veltman, my partner in a number of projects and initiatives; Mario Verdese, my partner in the establishment of the EC MEDICI Framework of Cooperation as it was conceived in 1995; Sylviane Toporkoff, for promoting my studies in the Global Forum community; Senator Pierre Laffitte who introduced me to the experimental laboratory for the future of Sophia Antipolis; Eleanor Fink, Kimmo Aulake, Lynn Thiesmeyer, Michio Umegaki, my main contributors and partners in *On Culture in a World-Wide Information Society*; Elisa Liberatori Prati for her continuous and kind cooperation; Terje Nyphan for his studies of monument conservation and economics; Georges Mihaies and Shinji Matsumoto and their constant participation in MEDICI initiatives; Frederic Andres and ACM initiatives; Alvise de Michelis and his vision of the "reuse" of digital images and a number of other cultural

Foreword

The aim of the present book is to provide a comprehensive vision of a very relevant sector of the *digital landscape*: electronic content, or more precisely, cultural content. The relevance of *content and services* is now evident due to the contribution provided by the two phases of the World Summit on the Information Society, held in Geneva (2003) and Tunis (2005).

The creation and provision of high-quality content and services are key actions to bridging the digital divide. A special initiative that addresses these goals, the so-called *World Summit Award*, was started during the Summit.

Scope

This work is subdivided into three main parts: the first is devoted to the main issues and general guidelines; the second to technological fundamentals and the main solutions; and the third to applications and services.

Starting from the basics, the reader will be introduced to issues and achievements associated with virtual museums, cataloguing, digitising, publishing, the sustainable exploitation of cultural content, and a relevant case study. Drawing upon the many years of experience and achievements *in digital cultural content* of the author, this last part aims to provide a comprehensive overview of the issues and achievements associated with digital collections and cultural content.

Target Audience

Cultural content managers, publishers, memory institutions, digital collections developers.

Background Knowledge

A basic knowledge of information and communications technologies.

Background

The present section outlines basic issues and achievements in the field of the application of ICT and advanced technologies to cultural heritage, where *heritage* is considered to be the "path toward today's society and culture".

The extension of the concept of a *cultural heritage* to new classes of "objects", both tangible and intangible, and the relationship between conserving them and experiencing them provide new challenges, such as the combined utilisation of various online databases, and the creation of supranational and multilingual thesauri.

The rapid obsolescence of technologies focuses our attention on data storage and access from a long-term (i.e. after ten, twenty or more years) perspective. However, the aspects that attract the online user the most are both the interface and the provision of easy access to different subjects and contents.

We conclude by considering how to shape eSociety while also bridging the increasing gap between those who are online and those who are offline.

A significant number of charters, principles, and guidelines, including the *Nara Document on Authenticity* (1994), the *Burra Charter* (1999), the *International Charter on Cultural Tourism* (1999), and the *Principles for the Conservation of Heritage Sites in China* (2002) have emphasised the fundamental role of sensitive and effective interpretation in heritage conservation.

The general theme of *Universal Access to Information*, launched on the occasion of the *32nd UNESCO General Conference*, the *World Summit on the Information Society*, and the implementation of the documents adopted by the *Summit* lead us to consider (amongst others) the technological and cultural aspects of this.

Universal Access to Information, by UNESCO

Let us "historically" frame this subject with an overview of the main events that have characterised the evolution of the applications of information and communications technology (ICT) that are dedicated to cultural and social issues.

Going back over a decade, to the early 1990s, we may refer to both the US project entitled *Super Information Highways*[1] and to the *Bangemann Report*[2] that, in partial antithesis, presented the "European path" towards the Information Society.

Super information highways and the Bangemann Report

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[1] The term "information superhighway" was popularised by Al Gore (then the US Vice President) in 1994.

[2] See: http://www.medicif.org/Dig_library/ECdocs/reports/Bangemann.html or http://ec.europa.eu/archives/ISPO/infosoc/backg/bangeman.html.

In February 1995, the European Commission organised the first meeting on the Information Society, in Brussels[3]. During the meeting, a list of eleven pilot projects was approved:

The eleven pilot projects

- Global Inventory (of projects)
- Global Interoperability
- Cross-Cultural Education and Training
- Bibliotheca Universalis
- Multimedia Access to World Cultural Heritage
- Environment
- Global Emergency
- Government Online
- Global Healthcare
- Global Marketplace for SMEs
- Maritime Information Systems.

The aim of these projects was to trace the guidelines of the Information Society.

G7 Summit in Halifax and ISAD Conference

In June 1995, a worldwide *G7*[4] *Summit* was held in Halifax, Canada. The *G7 Group* approved and adopted the abovementioned list of projects. As a consequence, practical demonstrations followed during the ISAD Conference (Information Society and Developing Countries) held in Midrand, South Africa in May 1996. During this conference, four demo projects were selected[5], representing the four principal sections identified by the project *Multimedia Access to World Cultural Heritage*.

Multimedia Access to World Cultural Heritage

Focusing on European initiatives, the combined initiatives led to the birth of a new framework of understanding. The reference document was largely a *Declaration of Intent* that was initially signed by 240 museums and institutions. In this context, there was the development of a likely organic approach to the use of multimedia and more generally of ICT in the field of cultural heritage. The *Memorandum of Understanding for Multimedia Access to Europe's Cultural Heritage*, or more simply the *MoU*, is usually considered to be the Act of Incorporation for the "Information Company on European Cultural Heritage".

Memorandum of Understanding for Multimedia Access to Europe's Cultural Heritage—MoU

The MoU lasted, as stated in the document itself, for two years, and then the European Commission issued a "call for tender"—it asked for follow-up

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3   The European vision moves the focus away from mere technology toward both cultural and social dimensions.

4   The G7 comprise Canada, England, France, Germany, Italy, Japan and the USA.

5   The four sections principally referred to the specific contents of museums and art galleries: 3D Acquisition (originally called Laser Camera), a laser camera presented by the National Research Council, Ottawa; Filing, of the Museo di Storia della Scienza in Florence; Visualisation of the Nefertari Tomb, developed by Infobyte, Rome; "SUMS" Navigation, developed by SUMS Corporation, Toronto.

Background

projects. MoU was mainly a declaration of intent; the follow-up had to be much more pragmatic.

In 1997, a new "agency" called the *MEDICI Framework* was launched. A partnership has since been developed between the MEDICI initiative and the Council of Europe in the application of new information technologies to the field of culture.

The goal of MEDICI is to promote the use of advanced technologies to access, understand, preserve and to promote the economics of cultural heritage. The aim of this is to create conditions that permit the development of new economic activities that promote cultural heritage, mainly through the use of new media, and to create new employment opportunities in related sectors.

The official MoU progress report dated April 1996 reported that a third area that can be defined as application and testing "will be made up of projects that are market-oriented and based on the enjoyment of cultural heritage. This area will include projects aiming at producing advanced cultural applications by using the present technological resources in key sectors (education, entertainment, cultural tourism, disadvantaged users etc.)."

In this area, an assessment of museum initiatives highlights that the World Wide Web has assumed a leading position within the *Multimedia Access to World Cultural Heritage project*.

Following this trend, the MEDICI Framework, who had been involved in web technology from the very beginning[6], began to cooperate closely with the *World Wide Web Conference* initiative. Following interesting discussions at WWW7, held in Brisbane (April 1998)[7], a set of sessions called the *Culture Track* devoted to outlining a comprehensive scenario on emerging technologies and trends in "networked arts" was created, care of MEDICI, for WWW9, held in Amsterdam (May 2000)[8].

Specifically referencing virtual museums, this Culture Track[9] explored how multimedia technology could be employed to improve the way that visitors presently perceive a visit to a museum or art gallery.

In order to explore the whole scenario, additional topics included benefits associated with ICT applications, real issues related to museums and archives, e-society, e-commerce and e-services. In terms of e-commerce, one of the main ideas at that time was to apply a market model based on image copyright to

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6   Active contribution to WWW 3 and the development of online Ricci Oddi Modern Art Gallery (1994) and the De Architectura online portal (1993–94)

7   The 7th World Wide Web Conference, held in Brisbane, April 1998
    see: http://www7.scu.edu.au.

8   The 9th World Wide Web Conference, held in Amsterdam May 2000,
    see: http://www.www9.org.

9   Culture Track of the 9th World Wide Web Conference, held in Amsterdam,
    see: http://www.medicif.org. (see references to Chap. 5, Ronchi 2004)

online exhibits. An additional discussion topic was the "increasing digital gap" or the "digital divide".

From October 4th to 7th 1999, a relevant event took place in Florence: *Culture Counts—Financing, Resources and the Economics of Culture in Sustainable Development (World Bank 1999)*. As expressed in the title, the main focus of the conference was economics, but related concepts such as sustainability, access and the digital divide were also considered and discussed in depth too.

The important role of culture in sustainable development was examined, as was the need for new partnerships among multilateral development agencies, the private sector, foundations, nongovernmental organisations and academia to support this work. In addition, the importance of reducing cultural poverty in sustainable development programs was considered.

The event, which gathered key contributions from around the world, was organised and supported by the Government of Italy, the World Bank, and the United Nations Educational, Scientific and Cultural Organization. As stated in the official programme, "the premise of the conference was that culture is crucial to advancing sustainable development."

The objectives of the conference were to:
• Promote the expansion of the economic analysis of, and the resources available to, culture in sustainable development programs
• Expand the range of institutions and actors involved in culture from a developmental perspective
• Increase the number of instruments that can be used in these programs.

Culture Counts provided an important forum for experts and key decision-makers to discuss the full range of economic and financial issues associated with the cultural dimensions of poverty alleviation in developing countries.

Specific emphasis was placed on archives, because both current records and historical archives document the actions of individuals and states:

"On the one hand, records provide the evidence governments need to function and be accountable, to develop and implement policy, and to protect citizens' rights. On the other hand, being archives, they constitute a vital element of cultural heritage by preserving the collective memory of a nation and forming an essential link in the chain of human history. Records and archives management have key implications for development, often overlooked[10]."

The documentary evidence conserved in the archives of a particular country helps to ensure accountability, and thus good governance, in both the public and the private sectors of the economy. Therefore, the digitisation of existing archives and the preservation of *digital duplicates* are key issues (World Bank 1999), as is the broadening of digital access in order to establish a true Information Society.

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[10] *In Archives and Sustainable Development* (organised by the World Bank in Latin America).

Amongst other activities and official presentations, a set of workshops were held, which included: *Cathedrals for Environment: Financing Culture and Nature for Generation to Come* (organised by the IUCN and the Mountain Institute); *Cultural Economics, Identity and Poverty Reduction* (organised by the World Bank); the *Culture and National Millennium Commissions* (organised by The White House in the USA); *Cultural Conservation in East Asia* (organised by The World Bank in Asia); *Sharing the Wealth: Improved Sustainability Through Integrated Conservation Planning* (organised by the World Monuments Fund); *Valuing Heritage—Beyond Economics* (organised by ICCROM); *Museums: Conservation and Management of Cultural Heritage* (organised by CIVITA); *Cultural Policy and Sustainable Development, a New Partnership* (organised by the Council of Europe); *Culture and Private Sector Support* (organised by Arts and Business); *Sustainable Development in Communication and Education: Pilot Projects and Case Studies* (organised by Scuola Normale Superiore di Pisa, Soprintendenza Archeologica di Pompei, MEDICI Framework, European Commission, Istituto Centrale per il Restauro); *Financing Cultural Site Management* (organised by The World Bank); *Growth and Culture in Urban and Regional Proximity* (organised by INTERARTS Observatory and UNESCO); *Strategies and Guidelines for Architectural Heritage: Technical and Financial Aspects* (organised by ICOMOS, UNESCO, Council of Europe); *Supporting Cultural Enterprises for Local Development* (organised by Ford Foundation); *Cultural Tourism and Development* (organised by the Touring Club of Italy).

Culture Counts: workshops

On the occasion of the Special European Council held in Lisbon on March 23rd and 24th 2000, delegates launched a guideline document entitled e-Europe[11]. This document provides some guidelines for developing e-society, starting with ensuring cheaper Internet access, accelerating e-commerce, providing fast Internet connections for researchers and students, smart cards to secure electronic access, and risk capital for high-tech SMEs, enabling e-participation for the disabled and online health care, intelligent transport, and for allowing access to government services online.

Special European Council—Lisbon: eEurope

As expressed within the document:
e-Europe is a political initiative to ensure the European Union fully benefits for generations to come from changes the Information Society is bringing. Those changes, the most significant since the Industrial Revolution, are far-reaching and global. They are not just about technology. They will affect everyone, everywhere. Bringing communities, both rural and urban, closer together, creating wealth, sharing knowledge, they have huge potential to enrich everyone's lives.

Managing this transformation represents the central economic and social challenge for the Union. It will impact profoundly on European employment,

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11   See: http://ec.europa.eu/information_society/eeurope/2005/index_en.htm.

growth and productivity for the next five years (2000–2005) and for decades afterwards.

e-Europe is intended to accelerate positive change in the Union. It aims at ensuring this change towards the Information Society is cohesive, not divisive. Integrating, not fragmenting. Information Society is an opportunity not a threat. In essence, e-Europe aims at bringing the benefits of the Information Society to the reach of all Europeans.

An opportunity not a threat

The key objectives of e-Europe are:

The key objectives of e-Europe

- To bring every citizen (even at home or at school) and every business and administration into the digital age, and enabling them to get online;
- To create a digitally literate Europe supported by an entrepreneurial culture that is ready to finance and develop new ideas;
- To ensure that the whole process is socially inclusive, building consumer trust and strengthening social cohesion.

More recently, a number of different global initiatives aimed at predicting and possibly solving different problems related to the provision of universal access to information have been activated. These include, in relation to cultural preservation, UNESCO's Intangible Heritage Task Force (2002) and South Eastern Pacific Archives (supported by Keio University); in relation to the digital divide, the G8's Digital Opportunities Task Force (2000)[12], UNESCO OCCAM's Infopoverty Programme (2001), the two phases of the World Summit on the Information Society (WSIS), the first of which was held in Geneva in December 2003 and the second held in Tunis in November 2005 (organised by UNO and ITU), and the creation of the Global Alliance for ICT and Development (GAID, in 2006).

Intangible Heritage Task Force

WSIS: World Summit on the Information Society

On the occasion of the G8 Summit in Kyushu-Okinawa (2000), the *Charter on Global Information Society* was adopted.

In the Okinawa Charter, the G8 leaders agreed to establish a Digital Opportunity Task Force (DOT Force) aimed at integrating efforts to bridge the digital divide into a broader international approach.

Digital Opportunity Task Force (DOT force)

The Charter noted in paragraph 18 that the DOT Force, in close consultation with other partners and in a manner responsive to the needs of developing countries, would:

- Actively facilitate discussions with developing countries, international organizations and other stake holders to promote international co-operation with a view to fostering policy, regulatory and network readiness; improving connectivity, increasing access and lowering cost; building human capacity and encouraging participation in global e-commerce ;
- Encourage the G8's own efforts to cooperate on IT-related pilot programmes and projects;
- Promote closer policy dialogue among partners and work to raise global public awareness of the challenges and opportunities;

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12   Subsequently evolved into GAID (Global Alliance for ICT and Development).

Background

- Examine inputs from the private sector and other interested groups such as the Global Digital Divide Initiative's contributions;
- Report its findings and activities to G8 personal representatives before our next meeting in Genoa 2001.

The DOT Force was formed in the fourth quarter of 2000. Forty-three members participated in its work.

Following the G8 summit in Genoa (July 2001), the Global Forum 2001: Expanding the Global e-Society was held in Newcastle (UK) in October 2001, during which the WWW10 panel presented its report, *On Culture in a World Wide Web Information Society*. Other contributions to this Forum, such as *Time Rich Time Poor* (Lindskog 2001), also addressed cultural aspects.

Global Forum 2001: Expanding the Global e-Society

In November 2001, a joint event managed by the Council of Europe (see *New Information Technologies and the Young*; Council of Europe 2000) and UNESCO, Cultural Industries and New Technologies, was held in Strasbourg (France).

UNESCO: Cultural Industries and New Technologies
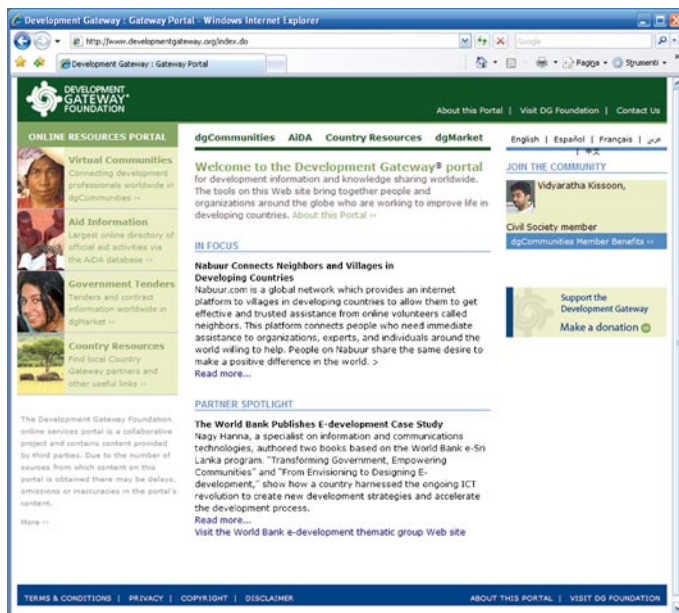
Fig. 0.1 Global Development Gateway portal (Development Gateway Foundation, Inc.)

A publication entitled *Vital Links for a Knowledge Culture* (Jeffrey 2001) was issued during this event. Vital Links deals with the complex relationships between NICTs (new information and communication technologies) and culture across Europe (Council of Europe 1999).

Vital Links

The publication is structured as follows:
- The context: vital links for a knowledge culture and the deep structure of knowledge societies;

- Dealing with public access to new information and communication technologies in Europe through statistics and indices;
- Some focused contributions on the many dimensions of access in Europe;
- Discussions of policy frameworks, including *Cultural Policy in the Knowledge Society, Towards a Strategic Evolutionary Cultural Policy*, and *A Policy Networks Model*.

Around this time, the World Bank created the Development Gateway, a global support portal for developing countries.

The World Summit on the Information Society

In order to fight the digital divide and promote the positive use of ICT, a two-phase process was launched, the *World Summit on the Information Society* (WSIS). It represented one of the first occasions on which different representatives from governments, institutions, and civil society met in order to try to shape the future of society.

Both phases were structured in a set of Preparatory Committees (PrepCom) held at both national/continental level and global level. The final event of the first phase was the summit held in Geneva, on December 2003, involving thousands of people from around the world. Three main *layers* were tackled in Geneva: political, NGO and civil society issues.

Two years later, as foreseen by the original project, a second set of Preparatory Committees led to the final summit held in Tunis on November 2005.

In the general framework of the WSIS, a relevant initiative promoting quality digital content creation and the potential reduction of the digital divide was created: the *World Summit Award* (WSA).

World Summit Award (WSA)   The WSA is a global initiative to select and promote the world's best e-content in eBusiness, eCulture, eEntertainment, eGovernment, eHealth, eInclusion, eLearning, and eScience.

Potential platforms and channels covered by the award are: broadband/online; mobile content; crossmedia; offline/DVD; CD-ROM or video materials; games platforms; interactive TV; interactive computer graphics; content tools; interface design.

The project was launched in cooperation with the WSIS 2003–2005, and it received support from numerous national and international nonprofit organisations, as well as substantial contributions from the private industry sector.

In 2003, 136 countries participated in the WSA and 40 finalists were selected out of 803 submissions by a worldwide expert network.

In 2005, 168 countries applied, and over 320 international expert representatives from Africa, Asia, Arab nations and the Middle East, South and Latin America, North America, Australia, New Zealand and Europe teamed up to ensure the independence, diversity and inclusiveness of the WSA global contest. More than 30 countries launched a national preselection process.

The same happened for the 2007 contest. In this case, evaluations were held in Brijuni (Croatia), while the awards ceremony was held on November in Venice (Italy).

Global Alliance for ICT and Development

In 2006, the *Global Alliance for ICT and Development*, a new initiative from the UNO, was launched. The *Millennium Declaration* of 2000 and the outcome of the 2003–05 World Summit established a clear set of internationally agreed development goals. The WSIS forged a global consensus on the importance of information and communication technologies (ICT) as tools for achieving these development goals.

Global Alliance for ICT and Development

As a follow-up to the DOT Force and to actively support the main role of ICT, on 28 March 2006 the United Nations Secretary-General approved the establishment of the Global Alliance for ICT and Development (GAID). The decision was based on the internationally recognized need for an open, multi-stakeholder forum that brings together governments, international organisations, civil society, the private sector, media and other stakeholder constituencies in order to enhance the utilisation of ICT—including community media and other traditional mass broadcast media such as radio and television, as well as communications media such as fixed and mobile phones—in order to encourage its development. The alliance is an embodiment of the *Millennium Development Goals* (MDG): to develop a global partnership for development and, "in cooperation with the private sector, make available the benefits of new technologies, especially information and communication technologies". In accordance with the *Outcome Document*[13] of the UN World Summit held in 2005, the Global Alliance will also "enhance the contributions of NGOs, civil society, the private sector and other stakeholders in national development efforts, as well as the promotion of the global partnership for development".

The mission of the Global Alliance for ICT and Development is to aid the transformation of the spirit and vision of the WSIS into action and to promote the application of ICT in order to achieve of internationally agreed development goals, including the Millennium Development Goals. It will do so by providing

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13 A/RES/60/1 (http://www.un.org/summit2005/documents.html).

an inclusive multi-stakeholder global forum and platform for cross-sectoral policy dialogue and advocacy, and by catalysing multi-stakeholder action-oriented partnerships that are encouraged under the GAID umbrella. GAID itself will not have any operational or implementational role. The Alliance will provide multi-stakeholder input to intergovernmental bodies, including the Economic and Social Council and the Commission for Science and Technology for Development.

The long-term objectives of the Alliance were outlined during the open global consultation in 2005. This event, which paved the way to the launch of the Global Alliance, identified six broad objectives that the Alliance will pursue over its lifetime:

- Mainstream the global ICT agenda into the broader United Nations development agenda;
- Bring together key organisations and other stakeholders involved in ICT for development in order to enhance collaboration and their effectiveness in achieving the internationally agreed development goals;
- Raise the awareness of policymakers on ICTD policy issues;
- Facilitate the identification of technological solutions for specific development needs and goals, and launch pertinent partnerships;
- Promote the creation of an enabling environment and innovative business models for pro-poor investment, innovation, entrepreneurship and growth, and for empowering people living in poverty and other marginalized communities;
- Provide the Secretary-General with advice on ICTD-related issues.

Within the framework of these objectives, specific attention will be given to mainstreaming ICTD into the United Nations development agenda, raising the awareness of policy-makers, and providing advice to the Secretary-General on ICTD policy issues.

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Central Institute for Cataloguing and Documentation (the body within the Ministry for Cultural Heritage and Activities (MiBAC) that defines the standards and tools for the cataloguing and documentation of national archaeological, architectural, art history and ethno-anthropological heritage in agreement with the regions. It also manages the General Information System for cataloguing and carries out high-level training and research in the cataloguing sector. The Institute conserves and evaluates collections of photography and aerial photography held in their own archives, which are open for public consultation): http://www.iccd.beniculturali.it

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International Centre for the Preservation and Restoration of the Cultural Property (ICCROM): http://www.iccrom.org

International Computing Centre (ICC), Geneva, Switzerland: http://www.unicc.org

International Council of Museums (ICOM): http://icom.museum/ or www.icom.org

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Contents

Part I
Cultural Content and the Information Society

Part II
The General Technological Framework

Part III
Exploitation, Applications and Services