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Educational, Scientific and
Cultural Organization



World Summit Geneva 2003
Tunis 2005
on the Information Society
Turning targets into action



Building Inclusive Knowledge Societies

A review of UNESCO's action in implementing the WSIS outcomes



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Knowledge Societies

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Table of Contents

Acknowledgements	3
Foreword	7
Introduction	9
PART 1 - THE CONTEXT FOR UNESCO'S WORK AND WSIS FOLLOW-UP	11
About the World Summit on the Information Society (WSIS)	13
Developments since WSIS	14
UNESCO's work to implement the WSIS outcomes	15
The WSIS+10 review	16
PART 2 - BUILDING INCLUSIVE KNOWLEDGE SOCIETIES	17
Towards inclusive Knowledge Societies - for Peace and Sustainable Development	19
PART 3 - IMPLEMENTATION OF WSIS OUTCOMES	21
Information for All Programme (IFAP)	22
Inclusive access to information	23
Gender equality	24
Persons with disabilities	24
Media and information literacy	25
Indigenous peoples	26
Freedom of expression and media development	26
Other UNESCO initiatives	29
ICTs in Education	30
ICTs and Sciences	32
ICTs and Cultural Diversity	33
The UNESCO Institute for Statistics	34

PART 4 - COORDINATION OF WSIS OUTCOMES **35**

UNGIS	37
The WSIS Forum and coordination of Action Lines	38
WSIS Knowledge Communities	39
The Internet Governance Forum	39
The Partnership on Measuring ICT for Development	40
The Broadband Commission for Digital Development	41

PART 5 - FACILITATING WSIS ACTION LINES **43**

Action Line C3 – Access to information and knowledge	45
Action Line C7 – ICT applications	47
Action Line C7c – ICT applications for e-learning	47
Action Line C7h – ICT applications for e-science	50
Action Line C8 – Cultural diversity and identity, linguistic diversity and local content	52
Action Line C9 – Media	54
Action Line C10 – Ethical dimensions of the Information Society	57
The future of the Action Lines	59

PART 6 - LOOKING TO THE FUTURE – WSIS POST-2015 **61**

Foreword



In 2003 and 2005, the *World Summit on the Information Society* took important decisions towards shaping an information society for all. Many positive changes have occurred since then, but challenges remain. Access to information and knowledge is still far from being universal and equitable. Many people remain excluded from the benefits of the information revolution, because of challenges in access to affordable ICTs, as well as from a lack of appropriate policies, content and skills. UNESCO has a clear message on the importance of overcoming these challenges in order for all humanity to reap full value from the opportunities created by the unprecedented technological progress.

Inclusive Knowledge Societies are the way forward, as they build on the sum of human ingenuity, technical innovation and the power of information and knowledge. They have the potential to achieve lasting, positive impacts on education, economic prosperity, social inclusion and environmental protection, taking us all forward to a new era of peace and sustainable development. Taking advantage of these opportunities should be at the heart of the post-2015 development agenda and the forthcoming Sustainable Development Goals.

The first World Summit on the Information Society Review (WSIS+10) Event *Towards Knowledge Societies for Peace and Sustainable Development*, hosted by UNESCO and co-organized with ITU, UNDP and UNCTAD in Paris in February 2013, marks a milestone in the WSIS+10 Review process. Its Final Statement *Information and Knowledge for All: An expanded vision and a renewed commitment* was developed through an inclusive multistakeholder process and adopted at the Event by consensus. The Statement was later endorsed by Member States at the UNESCO General Conference at its 37th session, elevating it in status and making it a unique contribution to the WSIS+10 overall review process.

I see this report on UNESCO's action in achieving the WSIS goals as another significant contribution to the WSIS+10 review process. It summarizes the main activities we have undertaken in coordinating, facilitating and implementing the WSIS outcomes. I hope that this will inform the urgent action that is required from all stakeholders to ensure that everyone has the skills and capabilities to contribute to, and participate in, building inclusive Knowledge Societies. For its part, UNESCO will redouble its efforts, together with all stakeholders, to take beyond 2015 the achievements made over the last ten years in our common endeavor to craft a better world.

Getachew Engida
Deputy Director-General
UNESCO

Introduction

Since its foundation, UNESCO has led the international community's work to promote peace and sustainable development through education, sciences, and cultural diversity and understanding. Information and communication, including freedom of expression, media development and universal access to information and knowledge, have been at the heart of that work. Since 1990, Communication and Information has become a fully distinct Sector and stream of programme activity for the Organisation. It has established the critical importance of knowledge for social and economic development, developing the influential concept of inclusive Knowledge Societies built around human skills and capabilities alongside rapidly changing technology. UNESCO is the leading United Nations agency concerned with the human dimensions of the Information Society.

A decade ago, the United Nations organized the World Summit on the Information Society (WSIS) in two phases, the first held in Geneva in December 2003, the second in Tunis in November 2005. The Summit focused global attention on the growing potential of information and communication technologies (ICTs) to transform social and economic development – enhancing the delivery of public services, creating new opportunities for business, and empowering citizens to express themselves, improve their knowledge and build better livelihoods. UNESCO played a pivotal role, alongside the International Telecommunication Union (ITU) and other United Nations agencies, in designing and implementing the Summit and has been at the centre of follow-up activities since 2005.

WSIS built on the foundations which had been laid by UNESCO's longstanding work to take advantage of innovation in information and communication media within its core mandate areas of education, sciences, culture and the free flow of information and ideas, and in social and economic development more generally. During the Summit, UNESCO emphasised the importance of building inclusive Knowledge Societies that put knowledge, its acquisition and deployment for social engagement and economic production at the heart of human development. UNESCO has worked in many ways since WSIS to promote access to information and knowledge, foster the effective use of ICTs in education, social and natural sciences and culture, and promote freedom of expression.

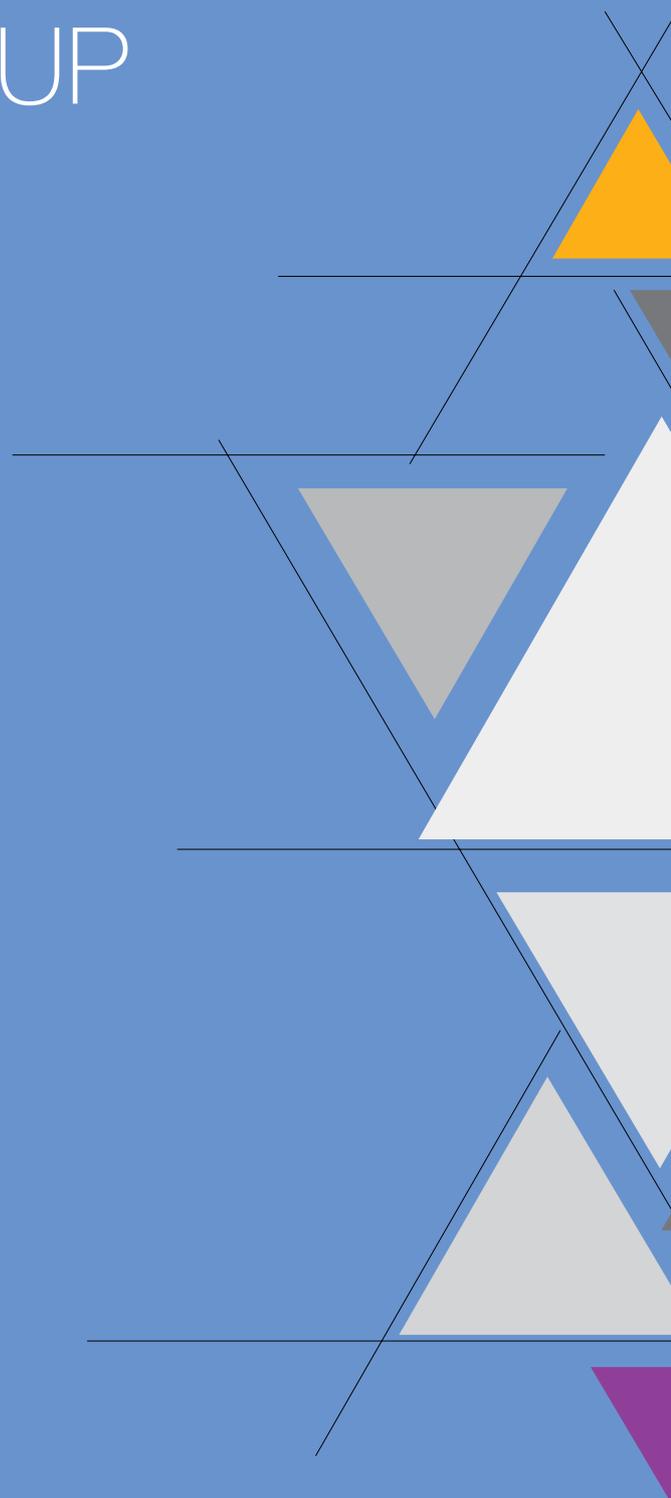
This report summarises UNESCO's work to implement the WSIS outcomes and build Knowledge Societies during the ten years that have followed WSIS. It describes work which UNESCO has implemented through its own programmes and in partnership with Member-States and other organizations, as well as its work to coordinate international responses with other United Nations agencies and to facilitate multistakeholder cooperation to achieve the goals which were established during the Summit. It identifies UNESCO's key achievements, draws conclusions from its experience, and makes recommendations for the future, including the role of ICTs in the new development agenda, which will follow the 2015 review of international development goals by the United Nations General Assembly.

The report is divided into six parts:

- ▶ Part 1 outlines the context for UNESCO's work and WSIS follow-up.
- ▶ Part 2 describes the concept of inclusive Knowledge Societies which underpins UNESCO's action in the area of communication and information.
- ▶ Part 3 illustrates the endeavour of UNESCO to implement the WSIS outcomes through its own programmes.
- ▶ Part 4 describes UNESCO's part in coordinating WSIS follow-up with other UN agencies.
- ▶ Part 5 describes the activities under the WSIS Action Lines facilitated by UNESCO.
- ▶ Part 6 summarises this report and looks forward to the WSIS+10 review and beyond.

PART 1

THE CONTEXT FOR UNESCO'S WORK AND WSIS FOLLOW-UP



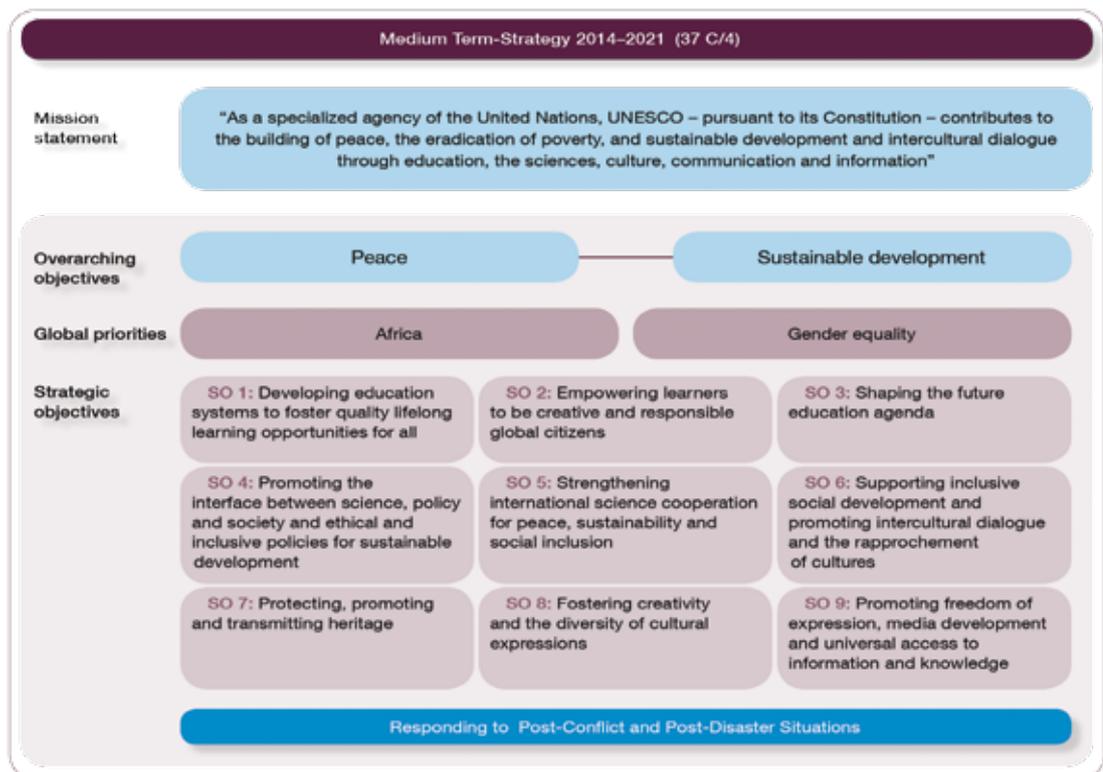
About UNESCO

UNESCO was established in 1945, with the mandate to contribute to peace, security and international cooperation as the United Nations' specialised agency for education, sciences and culture. Its work is rooted in its commitment to sustainable development and intercultural dialogue, within the framework of human rights established by the Universal Declaration of 1948 and its implementing Covenants, and in the belief that all people should have the opportunity to access information and knowledge, and to express their ideas and interests in free, open and inclusive social environments.

UNESCO pursues these objectives through five main programmes which are concerned with education; natural sciences; social and human sciences; culture; and information and communication. Activities in these programme areas are set out in periodic Medium Term Strategies which are agreed by the Organisation's 195 Member-States. All programmes contribute to addressing two global priorities – the development of Africa, and the establishment of gender equality as a fundamental human right, economic necessity and building block for social justice.

The overarching objectives of UNESCO's Medium Term Strategy for the period from 2014 to 2021 are illustrated in Figure 1.

Figure 1 – UNESCO's Medium Term Strategy, 2014-2021



The programmes which UNESCO undertakes to implement these strategic objectives perform five main functions.

- ▶ They develop and reinforce global commitment to education, sciences, culture, communication and information through *policy analysis, monitoring and benchmarking*.
- ▶ They serve as a *laboratory of ideas* to generate innovative proposals and policy advice.
- ▶ They set and help to implement *norms and standards* in these areas of competence.

- ▶ They provide *advice to Member-States and others* on policy development and implementation and on institutional and human capacities.
- ▶ They strengthen *international and regional cooperation* by fostering alliances, intellectual cooperation, knowledge-sharing and operational partnerships.

Since its inception, UNESCO has been at the heart of international thinking about the impact of the changing information and communication landscape. New technologies have created new opportunities for the creation, preservation, dissemination and use of information, but it is human activity that enables information to be transformed into knowledge that can add value to human experience and development. UNESCO's expertise lies in this human dimension of information and communication.

UNESCO focused the attention of the international community during the 1980s and 1990s on the potential of new technology to advance development and foster human rights. In 1990, it established a fully distinct Communication and Information Sector, and subsequently adopted the aim of 'building inclusive knowledge societies through information and communication' as one of its five overarching objectives. The concept of inclusive Knowledge Societies, which it developed further before, during and after WSIS, has influenced the work of the United Nations as a whole and the governments of Member-States, helping to ensure that human development remains at the centre of thinking about the Information Society. This work is described in Part 2 of this report.

UNESCO's Communication and Information Sector is responsible for its work on both freedom of expression and media development, and on inclusive Knowledge Societies. It provides the secretariat for two intergovernmental programmes, the Information for All Programme (IFAP) and the International Programme for the Development of Communication (IPDC). It has three principal strategic objectives:

- ▶ to promote the free flow of ideas and universal access to information and knowledge;
- ▶ to promote pluralism and cultural diversity in media and information networks; and
- ▶ to promote access for all to ICTs.

In addition to IFAP and IPDC, the Sector implements a number of extra-budgetary projects, mainly in developing regions, and collaborates with sister UN Agencies and other intergovernmental, governmental and non-governmental bodies.

About the World Summit on the Information Society (WSIS)

The World Summit on the Information Society was a major United Nations forum, organised by the ITU with the support of UNESCO and other UN agencies, which was held in two phases that culminated in plenary sessions in Geneva in November 2003 and Tunis in December 2005. It was the first comprehensive global summit to address the impact of ICTs on development, including the contribution which they can make to the internationally agreed development goals, such as the Millennium Development and Education for All Goals. Its four outcome documents – the *Geneva Declaration of Principles*, *Geneva Plan of Action*, *Tunis Commitment* and *Tunis Agenda for the Information Society* – committed the world community to build:

a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life

The outcome documents also established targets for ICT access and use, and Action Lines for the monitoring and evaluation of progress towards Information Society goals.

One important feature of WSIS and its outcome documents is the emphasis placed in them on multistakeholder participation in the development of both technology and policy. The *Geneva Declaration of Principles* recognised that:

... building an inclusive Information Society requires new forms of solidarity, partnership and cooperation among governments and other stakeholders, i.e. the private sector, civil society and international organizations.

All stakeholders have played their part in fulfilling WSIS goals during the past decade. Governments, intergovernmental and international organizations have established enabling policy and regulatory frameworks for information and communications. Innovation by the technical and professional community and investment by the private sector have driven the development, adoption and use of new services and applications, making information access and communications more widely available and affordable. Civil society has fostered participation and engagement by citizens and consumers in the evolving Information Society.

UNESCO has strongly supported this emphasis on multistakeholder participation, which reflects the important role which private sector, academic and civil society actors have played in its work, and in the development of the Internet, over many years. Multistakeholder principles are now firmly established in WSIS outcome activities, including the WSIS Forum and the Internet Governance Forum (IGF), where they have added greatly to the quality of debate and the range of partnerships emerging to facilitate the implementation of WSIS outcomes.

Developments since WSIS

WSIS did much to bring the potential of information technology, and the opportunities facilitated by it, to the forefront of international thinking about development. Its discussions were wide-ranging and, although it was not possible to reach agreement on everything that was discussed, its outcome documents represent a strong global consensus on the potential of ICTs as this was understood at the time the Summit met. Participants also recognised, however, that technologies, markets and societies were changing rapidly and would continue to do so, and that the goals and targets, opportunities and challenges arising from the Information Society would see rapid and unpredictable change as a result.

The pace of change in ICT technology and markets since WSIS has indeed been rapid:

- ▶ The number of mobile telephone subscriptions has grown from around 1.5 billion in 2005 to over 6.5 billion in 2013 (ITU statistics), almost one for every person on the globe. Mobile phone networks now provide coverage in almost all inhabited areas.
- ▶ The number of people connected to the Internet has grown enormously, from just over one billion in 2005 to over 2.7 billion in 2013 (ITU statistics). In many countries, mobile phones now provide the main mode of access to the Internet for most users.
- ▶ Rapid investment in broadband networks has greatly increased the capacity available to ICT users, especially for the Internet. Almost all countries are now connected to high-capacity undersea cables.
- ▶ Entirely new services have been introduced which have transformed users' experience of mobile telephony and the Internet, including smartphone apps, online social networks and microblogs. These have made ICTs and the Internet more interactive and fostered tremendous growth in user-generated content and free expression.
- ▶ Major changes continue to take place in ICT and Internet technology, such as the development of cloud computing, which locates applications as well as data in data centres rather than end-users own

hardware and software, and the Internet of Things which has the potential to extend connectedness from individuals and organizations to almost all devices and objects.

These changes in technology and markets have had and will continue to have profound impacts on social, economic, scientific and cultural developments. ICTs enable people and organizations to undertake activities more efficiently, and to coordinate more effectively with one another. They have also made it much easier for people and organizations to access information and to publish and share content. The number of indexed pages on the World Wide Web now exceeds two billion, while more than one billion people use the most popular online social network. Relationships between citizens and between citizens, governments and businesses have changed substantially as a result of these developments. New forms of economic production, distribution and consumption have emerged, including major changes in modes of access to literature, music and the arts. Governments and businesses now gather and analyse very large data sets, for various purposes including in order to maximise the efficiency of public services – a development which has important implications for privacy and identity. Patterns of work, leisure and even human settlement are changing in response to the impact of ICTs.

Many of these changes were not fully anticipated at the time of WSIS. They have led to revisions in WSIS targets for connectivity, and to fresh thinking, in UNESCO and elsewhere, about the best ways for governments and other stakeholders to respond to constant innovation and expansion in the potentialities of ICTs.

Major challenges also remain in building a people-centred, inclusive and development-oriented Information Society. While there has been tremendous growth in networks and services, it remains the case that access to ICTs and their potential for empowerment remain unavailable or unaffordable to many people, particularly in developing countries. The gap between developed and developing countries in deployment of broadband infrastructure, of increasing importance for leveraging ICTs for development, is still growing. New challenges to privacy and other rights have emerged alongside new opportunities for free expression. The growing importance of ICTs in almost every aspect of society, economy and culture has given greater weight to anxieties over cybersecurity. More still needs to be done to enable and stimulate multilingual and culturally diverse content, to build information literacy, and to ensure inclusive participation.

The need to address these opportunities and challenges, as summarised in this publication, is at the heart of UNESCO's efforts to fulfil the WSIS mandate which forms the backdrop to the WSIS+10 review.

UNESCO's work to implement the WSIS outcomes

UNESCO's work to implement the WSIS outcomes falls into three main areas, which are described in this report.

- ▶ *Implementation.* UNESCO has pursued WSIS objectives through its own programmes for education, natural and social sciences, culture, and communication and information through programmes undertaken collaboratively with other stakeholders. This work is described in Part 3 of the report.
- ▶ *Coordination.* UNESCO has worked with the ITU, UNDP, UNCTAD and other UN agencies to harmonize implementation of WSIS



Ms Irina Bokova, UNESCO's Director-General, opening session of the UNESCO hosted WSIS+10 Review Event (Feb. 2013)

outcomes within the UN system and encourage their wider implementation. This work is described in Part 4 of the report.

- *Facilitation.* UNESCO has taken lead responsibility for WSIS follow-up in six of the eleven Action Lines (eighteen Action Lines, if one counts all those covered by “C7 ICT applications”) that were established at the Summit, which fall within its core areas of responsibility and competence. This work is described in Part 5 of the report.

The WSIS+10 review

The WSIS outcome documents state that the United Nations General Assembly would undertake a comprehensive review of the outcomes of WSIS in 2015. This is known as the WSIS+10 review.

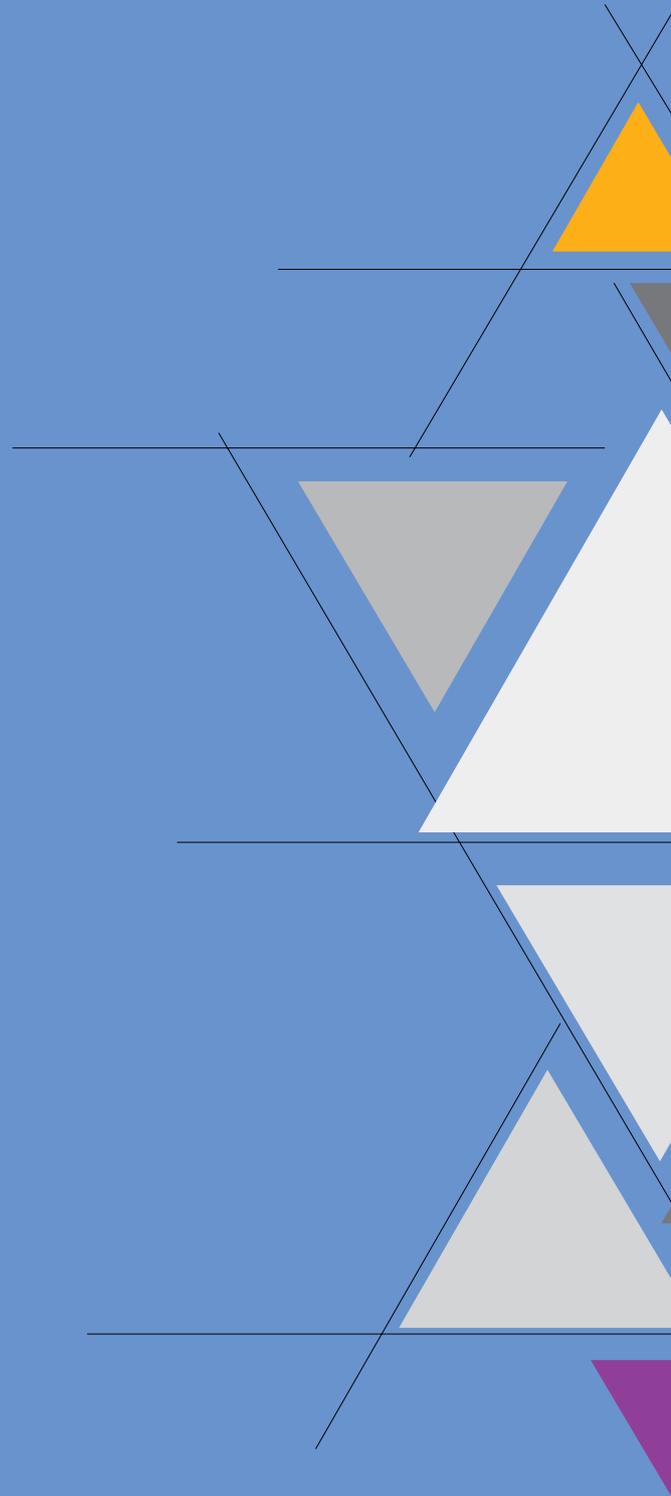
The leading agencies in WSIS implementation have been collecting evidence and facilitating discussion ahead of this review. UNESCO organised the first WSIS+10 Review Event, *Towards Knowledge Societies for Peace and Sustainable Development*, held in February 2013, which is described in Part 2 of this report. The Final Statement of this first WSIS+10 Event, which was developed through multistakeholder process and adopted by the participants, was elevated in status through the endorsement by the 195 Member States of UNESCO at its General Conference, in November 2013. UNESCO is also working with other agencies in the Partnership on Measuring ICT for Development to collect data for publication in 2014, when the ITU will also hold a high-level meeting to consider the achievements of the WSIS process and its continued follow-up.

UNESCO is committed to a collaborative approach to evaluating WSIS outcomes and establishing next steps for the period after 2015. The WSIS+10 review coincides with the review of Millennium Development Goals by the United Nations and with the introduction of Sustainable Development Goals to guide international development beyond 2015 in the light of MDG experience and the findings of the 2012 Rio+20 Summit on Sustainable Development. UNESCO believes strongly in the importance of integrating inclusive Knowledge Society objectives into the post-2015 development agenda in order to achieve the sustainable development goals of human-rights fulfilment, social equity, economic prosperity and environmental sustainability.



PART 2

BUILDING INCLUSIVE KNOWLEDGE SOCIETIES



UNESCO believes that the emergence of inclusive Knowledge Societies holds the key to sustainable human and economic development. By inclusive Knowledge Societies, UNESCO means societies in which people have the capabilities not just to acquire information but also to transform it into knowledge and understanding, which empowers them to enhance their livelihoods and contribute to the social and economic development of their communities. The concept of Knowledge Societies formed the centrepiece of UNESCO's contribution to WSIS, emphasising the importance of integrating technology and human development.

WSIS acknowledged the importance of locating technology within this wider developmental context, as follows:

... ICTs should be regarded as tools and not as an end in themselves. Under favourable conditions, these technologies can be a powerful instrument, increasing productivity, generating economic growth, job creation and employability and improving the quality of life of all. They can also promote dialogue among people, nations and civilisations.

The development of inclusive Knowledge Societies requires governments and other stakeholders to establish and build on those 'favourable conditions'. Societies whose citizens have high levels of skills and experience, and the capacity to absorb and use information to develop new products and services, are more likely to succeed in a world of increasing technological complexity. Knowledge Societies are better equipped to achieve the social equity, economic prosperity and environmental sustainability, which are the three core objectives of sustainable development and which also underpin the fulfilment of human rights. Knowledge is also of central importance for the sciences, and in social and cultural life, enriching human experience and contributing to intercultural dialogue and international harmony.

In 2005, UNESCO published an influential World Report, *Towards Knowledge Societies*, which described in detail the opportunities arising from the transformation of information and communications, and the challenges arising from these for social equity and inclusiveness. While access to information and knowledge was growing as a result of new technologies, this report emphasised, unlocking their value would depend as much on human aspects of development, such as education and free expression, as on technology:

Closing the digital divide will not suffice to close the knowledge divide, for access to useful, relevant knowledge is more than simply a matter of infrastructure – it depends on training, cognitive skills and regulatory frameworks geared towards access to contents.

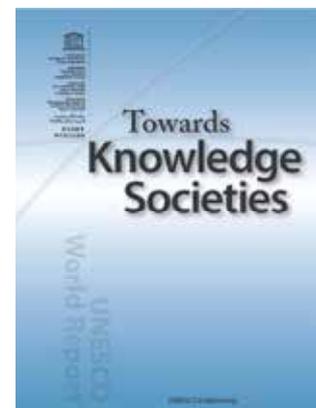
Throughout its subsequent work, UNESCO has stressed the importance of media and information literacy capacities as essential to empowerment, along with the need to ensure that information and knowledge should be equitably shared, inclusively distributed and reinforced by education and skills development.

The report *Towards Knowledge Societies* ended with a number of recommendations, focused on the need to improve the quality of access to:

- ▶ ICTs themselves, including both infrastructure and services,
- ▶ the information derived from them, through community facilities and linguistic diversity; and
- ▶ the services essential to maximise their value, particularly education.

It recognised that there could be no single model for achieving these goals, but that inclusive Knowledge Societies will develop differently in different countries, building on local cultures, experiences and capabilities.

The vision of Knowledge Societies articulated in this report was an important and original contribution to the discussions and outcomes of the WSIS. Since 2005, UNESCO has worked with governments and other stakeholders in its 195 Member-States and nine Associate Members to build upon that vision, reaching beyond the recommendations set out in



the WSIS documents, seeking lasting and sustainable progress towards social and economic development through inclusive Knowledge Societies.

Four themes run through all of UNESCO's work to develop Knowledge Societies and implement the WSIS outcomes. These are:

- ▶ freedom of expression;
- ▶ quality education for all;
- ▶ universal access to information and knowledge; and
- ▶ cultural and linguistic diversity.

These four themes can be considered the cornerstones of UNESCO's approach over the past decade. Much of its work to promote them has been undertaken, including through the Information For All Programme (IFAP) and International Programme for the Development of Communication (IPDC) which are described in Part 3 of this report.

Towards inclusive Knowledge Societies for Peace and Sustainable Development

As noted above, UNESCO hosted the first UN-wide WSIS+10 Review Event, a multistakeholder global conference *Towards Knowledge Societies for Peace and Sustainable Development*, which was held at its headquarters in Paris, in February 2013. Deliberations also contributed to the design of UNESCO's Medium Term Strategy for 2014-2021.

The Event brought together 1450 participants from government, business and civil society from 130 countries to share experience and develop ideas for the future. A total of 86 workshops provided participants with the chance to explore every aspect of the Information Society and of inclusive Knowledge Societies, from the promise of new technologies to the skills required to make effective use of ICTs, from the challenges faced by indigenous peoples to new opportunities for freedom of expression.

A flagship review of strategic priorities for Knowledge Societies was commissioned for the conference from Professors Robin Mansell and Gaetan Tremblay. Their review suggested a number of priority themes for UNESCO's ongoing work to develop inclusive Knowledge Societies:

- ▶ support for the development of networked learning;
- ▶ facilitating the rapid circulation of scientific knowledge;
- ▶ the development of new business models around intellectual property that leverage the potential of technological innovations;
- ▶ building partnerships between government, business and civil society; and
- ▶ encouragement of cultural diversity and the participation of local citizens and communities in decisions that affect them.

Other reports published by UNESCO at the conference addressed:

- ▶ the role of broadband networks in delivering Education for All;
- ▶ Knowledge Societies and persons with disabilities;
- ▶ literacy and other competencies required to participate in Knowledge Societies;
- ▶ the future of open systems;

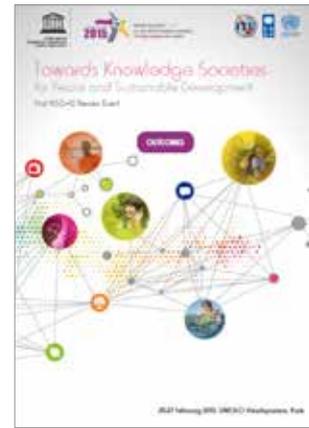


- ▶ the uses and potential of ICTs for indigenous peoples;
- ▶ the evolving media and freedom of expression environment;
- ▶ e-learning; and
- ▶ ethical and societal challenges of the Information Society.

UNESCO led sessions in the conference that explored these and other themes ranging across its mandate, including the future of mobile learning, open access to scientific and scholarly research, linguistic diversity, freedom of expression and privacy on the Internet, citizen journalism, and civil society objectives for the WSIS agenda.

The conference's Final Statement, *Information and Knowledge for All: an expanded vision and a renewed commitment*, agreed by all stakeholders participating at the event, was the first opportunity for the international community to set priorities for the WSIS+10 review. In that Statement, participants, among others:

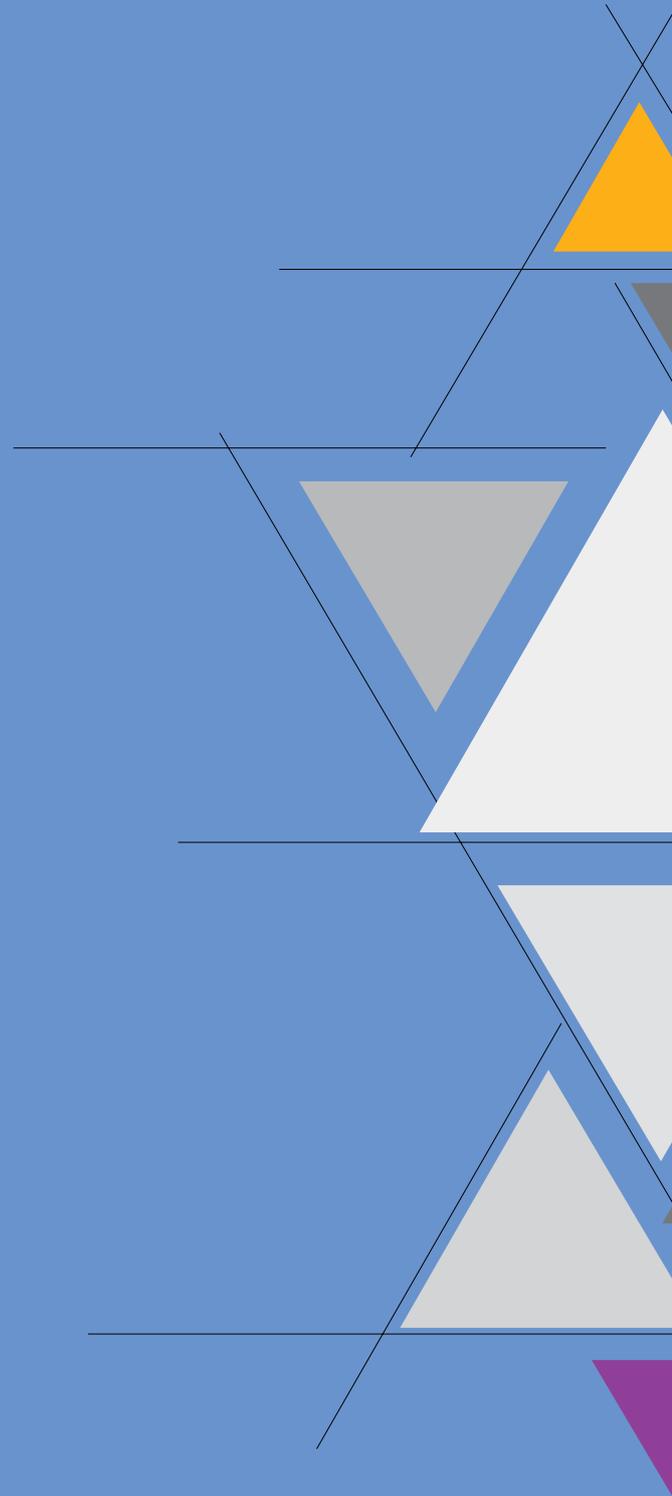
- ▶ reaffirmed the importance of addressing issues in UNESCO's core mandate – including the expansion of education, sharing of scientific knowledge, and cultural diversity – in building Knowledge Societies, and reaffirmed the value of multistakeholder participation;
- ▶ called on all stakeholders to redouble their pursuit of universal access to information and knowledge by promoting infrastructure and supporting content development;
- ▶ emphasised the importance of human rights, including freedom of expression and rights of privacy; and
- ▶ stressed the need to ensure the inclusiveness of Knowledge Societies, with particular reference to gender, age, disability and the participation of indigenous peoples.



At the 37th session of UNESCO's General Conference in November 2013, 195 Member States endorsed this Final Statement, elevating it significantly in status and making it a cornerstone of the WSIS+10 Review process.

PART 3

IMPLEMENTATION OF WSIS OUTCOMES



WSIS' call for the development of 'a people-centred, inclusive and development-oriented' Information Society chimed closely with UNESCO's core mandate and its established programmes of activity. Part 3 of this report describes how UNESCO has worked to implement WSIS outcomes in its own work, through its core programmes and through new initiatives which have been undertaken by the Organization, often in partnership with other WSIS stakeholders. It includes a focus on two longstanding UNESCO programmes – the Information for All Programme (IFAP) and the International Programme for the Development of Communication (IPDC) – and on other work concerned with freedom of expression and media development. Further examples of UNESCO's work on ICTs in education, science and cultural diversity are summarised towards the end of this part of the report and in Part 5, which discusses the facilitation of WSIS Action Lines for which UNESCO is lead agency.

Information for All Programme (IFAP)

Universal access to information and knowledge is fundamental to the development of inclusive Knowledge Societies. In the past, information and knowledge have too often been the preserve of powerful social or economic groups. Everyone should have access to the information and skills needed to turn information into knowledge of practical value to their lives.

UNESCO's Information for All Programme (IFAP) was established in 2001. It provides a platform for international policy discussion, cooperation and the development of guidelines concerned with access to information and knowledge. It also supports the work of Member-States to develop and implement national information policies and knowledge strategies, promoting access to knowledge in a world that is increasingly making use of ICTs.

IFAP's work is focused on five priority areas:

- ▶ information for development;
- ▶ information literacy;
- ▶ information preservation;
- ▶ information ethics; and
- ▶ information accessibility.



These priorities range across a number of the Action Lines agreed at WSIS, illustrating the cross-cutting nature of evolving Knowledge Societies. IFAP has pursued them through a wide variety of activities, including working groups of experts, assistance to national governments developing information policy frameworks, advocacy of open approaches to ICT development and applications, and cooperation with a multistakeholder network of partner organizations. The IFAP Information Society Observatory, which is supported by the Information Society and Trend Research Institute at the Budapest University of Technology and Economics, catalogues, reviews and makes available policy papers, strategies, analyses and other resources on information access issues to Member-States and other subscribers.

Inclusive access to information

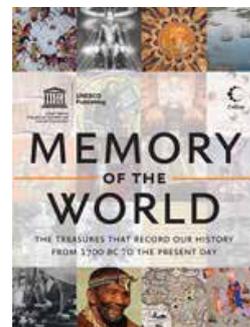
Access to information is at the core of this approach, and has multiple dimensions, including access to physical facilities and to the intellectual resources needed to make effective use of them. UNESCO's experience has clearly demonstrated how vital local content, including content in local languages, is to the capacity of all, particularly marginalised communities and individuals, to leverage social and economic value from ICTs and the Internet. Access to affordable ICT facilities, and the information available through them, remains limited for many people in many low-income countries and districts, as well as for disadvantaged social groups in all societies. UNESCO's International Initiative for Community Multimedia Centres (CMCs) has played a part in addressing the digital divide for some of the poorest communities in the developing world and in transition economies. CMCs, which combine community radio and telecentres with open learning and other social welfare opportunities, have been established in a number of countries, with a particular focus on Mali, Mozambique and Senegal. In more recent times, recognising the spread of wireless connectivity, UNESCO's work has moved beyond the CMC concept to one empowering community radio stations to use mobile phones to interact better with their audiences, and to particularly include content from remote areas and marginalised constituencies.

Open approaches to access, standards and technology enable greater innovation and wider participation in information and communications, and have been central to UNESCO's work. UNESCO has supported the development and use of open source software and applications alongside proprietary programmes, and the maintenance of open standards which underpin the experimentation and inventiveness that have made the Internet such a dynamic and valuable resource. It has also supported open access to scientific research and open educational resources (see below). In 2013, UNESCO became the first United Nations agency to adopt an open access licensing policy for its own publications, using the recently established Creative Commons licences for intergovernmental organizations.

UNESCO has emphasised the interrelationship between access and other dimensions of Knowledge Societies. In 2011, it published the findings of a collaborative study with the Internet Society (ISOC) and the Organisation for Economic Cooperation and Development (OECD), which explored *The Relationship between Local Content, Internet Development and Access Prices*.

This influential study reaffirmed the importance of holistic policies and programmes that integrate human and technological development in moving from the Information Society towards Knowledge Societies. It demonstrated, from experience in diverse countries, that investment in infrastructure and affordable pricing of Internet services stimulate the development of local content, including content in local languages, while local content in turn reinforces demand for Internet services within communities. It urged governments and other stakeholders to adopt broad policy approaches which could leverage this 'virtuous circle' of cross-cutting benefits to enable dynamic social and economic outcomes.

The Memory of the World programme adds another dimension of access to information. It was launched in 1992 with the aim of preserving the documentary heritage of cultures throughout the world. Its mandate is to afford opportunities not just to preserve cultural diversity, but to make the experience of diverse cultures more widely available through ICTs to their own communities and the wider world.



The inclusiveness of all social groups is central to UNESCO's vision of future Knowledge Societies. As well as gender equality, persons with disabilities and indigenous peoples, which are discussed below, UNESCO has emphasised the importance of accessibility of ICTs, and the opportunities they facilitate, to younger and older age groups, and to others experiencing marginalisation. UNESCO's commitment to inclusiveness is further demonstrated by its work on multilingualism, which is presented below.

Gender equality

Gender equality is one of UNESCO's two cross-cutting priority areas of action. At the time of WSIS, UNESCO published a report identifying *Gender Issues in the Information Society*. Throughout its work on ICTs and WSIS follow-up since then, it has emphasised the importance of ensuring gender equity in access to information and the ICT facilities through which information can be accessed. In many countries, women experience less access to ICTs than men, often because they have lower incomes, because of limited educational experience and attainment, or because facilities are located in areas or premises which are difficult for them to access.

UNESCO works with other UN agencies and partners to identify and address the particular challenges faced by women in accessing and using ICTs to improve their quality of lives and livelihoods, and in publishing and accessing content of particular value to women. Gender inclusiveness and sensitivity plays a crucial part in many of the UNESCO initiatives and activities described elsewhere in this report, including those concerned with open educational resources, capacity building and policy development.

The project *Mobile Phone Literacy – Empowering Women and Girls* project documents and disseminates effective practices of harnessing the potential of mobile technologies for breaking through the economic and cultural barriers to literacy education for women and girls. Nine in-depth case studies across four regions have been completed to analyse the enablers of successful mobile literacy education projects for women and girls. Lessons learned and policy recommendations for future up-scaled activities have been extracted and shared through Regional Consultative Workshops for Africa, Asia & the Pacific, and for Latin and North America and the Caribbean.

Its *Gender-Sensitive Indicators for Media*, published in 2012, is being implemented by partners such as regional broadcast associations and the International Federation of Journalists. This research instrument seeks to empower women within the media and improve the reporting of gender issues in media outlets. The launch in December 2013 of the Global Alliance on Media and Gender will further strengthen UNESCO's work in this field.

Advancing women's and girls' literacy education through mobile technologies: Through t

Persons with disabilities

Persons with disabilities often experience multiple disadvantages within societies. ICTs can have a positive impact on their ability to access services, social and economic opportunities, and to participate fully in public life. However, technology itself, and the content and services which it makes available, must itself be accessible to those with disabilities if these gains are to be achieved.

UNESCO has worked with the ITU and other organizations to support access by persons with disabilities to information technology, information and knowledge. Its Global Report, *Opening New Avenues for Empowerment*, published in 2013, builds on five regional studies to undertake a critical assessment of existing information policies and strategies, as well as the potential and challenges for persons with disabilities to use ICTs to access information and knowledge. These challenges encompass the whole range of ICTs, from hardware devices, through software programmes to the ways in which data are maintained, distributed, shared and accessed.



In 2013 UNESCO launched a global consultation on ICTs, Disabilities and Development, with partners including Microsoft and the Broadband Commission for Digital Development, to raise awareness and stimulate fresh thinking ahead of the United Nations High Level Meeting on Disabilities and Development. At the beginning of 2014, UNESCO and The Global Initiative for Inclusive ICTs (G3ict) launched a model policy to assist Member States and educational institutions to promote accessible ICTs and assistive technologies for persons with disabilities in education and related areas.

Media and information literacy

To gain most value from ICTs, people need more than access to affordable infrastructure and content. They also need the skills, knowledge and capacity to make effective use of networks, services and the information that becomes available through them. Since WSIS, UNESCO has devoted substantial resources to promoting media and information literacy.

Media and information literacy is defined as a set of competencies – knowledge, attitudes, skills and practices – that enables people to access, interpret and make informed judgements as users of information and media, as well as to become creators and distributors of content in their own right, thereby enhancing their participation in personal, professional, social and economic activities. UNESCO seeks to foster media and information literate societies by conducting assessments for the development of evidence-based national media and information literacy policies, addressing education, information technology and media challenges which inhibit developmental outcomes. A UNESCO curriculum for training teachers is one important focus of this work. Further relevant work by UNESCO is described later in the education section of this part of the report. UNESCO recognises in addition that libraries, which can offer free and open access to both ICTs and learning resources, are also of great importance.



IFAP's *Alexandria Proclamation on Information Literacy and Lifelong Learning* of 2005 defined information literacy as the capacity of people to recognise their information needs, locate and evaluate worthwhile information, store, retrieve and make ethical use of that information, and apply it to create and communicate knowledge. This commitment was reinforced and updated in the *Moscow Declaration on Media and Information Literacy* which was agreed in 2012.

In 2008, UNESCO published a conceptual framework, *Towards Information Literacy Indicators*, which took forward this definition, and included a set of indicators for information supply, access and supporting skills proposed by the UNESCO Institute for Statistics. In 2013, it added a *Global Media and Information Literacy Assessment Framework*, based on this conceptual framework, which provides a rationale and methodology for country assessments of MIL readiness with particular attention to teacher competency.

Indigenous peoples

Language is particularly important to indigenous peoples, many of whom are marginalised within their own countries and concentrated in areas with poor access to ICTs. The importance of addressing their needs was recognised by the United Nations in 2007 in its *Declaration on the Rights of Indigenous Peoples*.

The WSIS outcome documents emphasised the need to include marginalised groups and indigenous peoples in the Information Society, and UNESCO has given particular attention to this aspect of equitable access and cultural diversity. Without this attention, there is a risk that indigenous peoples will become further marginalised and disadvantaged. UNESCO's work in this area has focused on two aspects of particular importance to indigenous peoples and wider society.

- ▶ It has emphasised the importance of ensuring the survival of indigenous knowledge and practices in an increasingly globalised digital age, so that indigenous peoples and local communities retain their cultural identity and sustainable relationship with their environment.
- ▶ It has stressed the importance of ensuring that the infrastructure, networks and services needed to offer affordable access to ICTs to indigenous peoples become available to them, ensuring that they are not further marginalised but enabled to make use of ICTs in ways that are consistent both with preserving their cultural identity and fostering new opportunities to overcome barriers to development.

UNESCO works with indigenous peoples, through its Local and Indigenous Systems (LINKS) Programme, to ensure the transmission of their knowledge, language and cultures. In the remote communities in which some indigenous peoples live, innovative use of ICTs can be extremely valuable, for example in expanding educational knowledge that relates to local knowledge and environments, though it is highly dependent on the availability and affordability of connectivity.

The digital experience and rights of indigenous peoples have been a major focus for WSIS Action Line C8, which is facilitated by UNESCO.

Freedom of expression and media development

The second major area of activity within UNESCO to implement WSIS outcomes is that concerned with the promotion of free expression and media development.

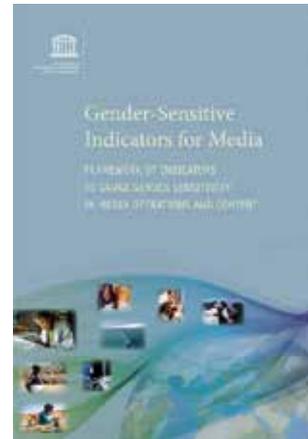
Free and independent media, reflecting cultural diversity and plurality of opinion, are critical to the development of inclusive Knowledge Societies. UNESCO works with governments, media organizations and other stakeholders to promote a culture in which free and independent media can thrive. International assistance through the International Programme for the Development of Communication (IPDC) is particularly valuable because it responds to needs expressed by independent media organizations themselves, and it spreads global standards of good practice in journalism throughout the world. More information on IPDC is provided below.

Freedom of expression, press freedom and media pluralism

UNESCO has played a leading role in monitoring and advocating for freedom of expression, media independence and plurality since WSIS. Each year since 1991, World Press Freedom Day has provided an opportunity for UNESCO and its partners to highlight different aspects of freedom of expression, media freedom, the right to information and the role of journalism in fostering the transparency and accountability of government. An annual conference, held in a different region each year, centres around a theme related

to press freedom – such as the safety of journalists and good governance, or the role of newly enabled media voices in social transformation. The associated UNESCO/Guillermo Cano World Press Freedom Prize is bestowed on an individual, organization or institution that has made an outstanding contribution to the defense or promotion of press freedom.

One of UNESCO's most important WSIS-relevant contributions to media development was the publication in 2008 of a framework of *Media Development Indicators*. This framework brings together indicators covering regulation of the media, its plurality and diversity, its capacity to act as a platform for democratic discourse, professional capacity-building, and infrastructural capacity. Together, these indicators establish a benchmark for assessing the openness and capabilities of different national media environments, making it possible to compare experience in different countries and to encourage the spread of good practice. They have been used or are being used by UNESCO, in partnership with local organizations, to assess the environment for media in at least 25 countries, from every continent. They are also used by other organizations that monitor media rights and freedom.



Complementing these indicators, UNESCO has also, as noted earlier, published a framework of *Gender-Sensitive Indicators for Media* in 2012. These encourage media organizations and other stakeholders to promote gender equality in the media workplace and to improve the quality, inclusiveness and depth of the portrayal of women in media content. They represent an important part of UNESCO's overall priority commitment to enhancing gender equality. Also building on the media development indicators are the *Journalists' Safety Indicators*, initiated in 2013.

UNESCO's work to promote media diversity has included strong support for community media. Community radio and television are characterised by their proximity and accountability to the communities they serve, and by the opportunity which they provide for people to express their views and engage in debate about the decisions that affect their lives. These media encourage open dialogue and local transparency, and give voice to the voiceless. Working with community media, UNESCO has supported enabling legislative and regulatory frameworks and spread good practice in community broadcasting, through publications and capacity-building initiatives such as the integration of ICTs for the purposes of including marginal voices in programming.

Another critical dimension of media freedom concerns the safety of journalists, who contribute public interest information to society, and are visible symbols of the right to exercise freedom of expression. They are increasingly threatened in both conflict and non-conflict zones. From 2006-13, UNESCO's Director-General has condemned the killings of 593 journalists, and has condemned the failure of criminal justice systems to protect journalists against violence and intimidation. The nature of journalism has diversified since WSIS as the media have made increasing use of comment from blogs, social media, microblogs such as Twitter, and audio and video material posted online. New actors have risen to play similar functions to the traditional media. UNESCO has insisted that media workers and social media producers who generate a significant amount of journalism should receive the same level of protection from governments and judicial systems as traditional journalists.

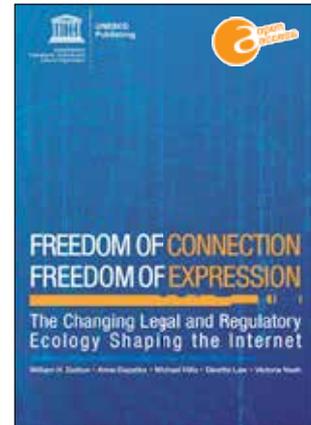
The United Nations adopted a Plan of Action on the Safety of Journalists in 2012, for which UNESCO is lead agency. The Plan aims to bring all stakeholders together to create a free and safe environment for journalists and media workers, in conflict and non-conflict situations. UNESCO has worked with the office of the UN High Commissioner for Human Rights to develop and publish an implementation strategy for the Plan of Action worldwide and has developed a guide to support implementation at national level.

Freedom of expression on the Internet

UNESCO recognises that the principle of free expression applies not just to traditional media but also to the Internet and other emerging media platforms. Since WSIS, UNESCO has commissioned and published a number of influential normative reports concerned with freedom of expression and the changing role of media. These publications have explored ideas and policies to promote human rights and media development in the new media age, which has made available much more information and enabled much wider expression than was previously the case. This work is particularly relevant to WSIS Action Lines C9 and C10.

Two publications have been especially significant.

- ▶ In 2011, UNESCO published a report entitled *Freedom of Connection, Freedom of Expression*. This developed a conceptual framework for the 'ecology' of freedom of expression, exploring the relationship between new opportunities for expression, including social media, and new restrictions on expression, such as the filtering and blocking of websites and other online resources. Its sophisticated analysis of the complex issues involved has deepened discussion of freedom of expression in public policy fora.



In 2012, UNESCO followed up this work with a *Global Survey on Internet Privacy and Freedom of Expression*, which mapped the intersection and regulation of these two areas of human rights. Its exploration of the threats to privacy which have developed in the Internet age and of international legal and regulatory standards has become a benchmark text in this complex and critical dimension of rights and governance. Its recommendations for good practice provide a basis for future work by UNESCO, rights organizations, media and governments.

Another benchmark report, on *World Trends in Freedom of Expression and Media Development*, will be published by UNESCO in early 2014. This provides a comprehensive overview of the current state of play on media freedom, pluralism, independence and safety in every world region, and pays particular attention to the impact of online media and their treatment by media organizations and governments. It provides an authoritative foundation for the development of UNESCO's and other organizations' work in this area after 2015. The study's insights could help ensure the inclusion of information and communications issues in the UN's Post-2015 Development Agenda.

The International Programme for the Development of Communication (IPDC)

The International Programme for the Development of Communication has been an important vehicle for part of UNESCO's work on media development and the safety of journalists since 1980. The IPDC has three priorities:

- ▶ freedom of expression and media pluralism;
- ▶ capacity development for journalists and other media professionals; and
- ▶ the convergence of traditional and new media in the digital age.

In the last 30 years, IPDC has committed more than US\$100 million to implement more than 1500 projects in over 140 countries. Almost 700 projects have been undertaken since the first WSIS summit in 2003.

Much of the work of the IPDC consists of training and capacity-building. Each year, the Programme supports between 60 and 90 projects concerned with media development. Projects are submitted by local



media organizations, and particular attention is given to work with Least Developed Countries, Small Island Developing States and countries in conflict or post-conflict situations.

The programme has three priority areas for capacity-building projects:

- ▶ It supports the development of community media initiatives and enterprises, building technical, institutional and journalistic capacity in countries as diverse as Sierra Leone and Jamaica, including projects concerned with gender awareness, participatory development and self-regulation.
- ▶ It supports a wider range of human resource development activities for journalists and other media professionals, including specialist training in areas such as the reporting of conflict, scientific journalism and environmental issues.
- ▶ It undertakes activities to promote freedom of expression and media pluralism, from supporting the safety of journalists to stimulating grassroots consultation and engagement in media activities and developing ethical and accountability strategies for media outlets.

The convergence of traditional and new media

The relationship between traditional and new media is increasingly complex. New ICT-enabled sources of information have become available to traditional media. The range of people generating news content has grown with the expansion of citizen journalism. Media users are increasingly making use of new platforms to access and redistribute content.

In recognition of these major developments in information and knowledge development, in 2013, the IPDC programme adopted the new concept of Knowledge-Driven Media Development (KDMD) as a Special Initiative for the programme.

The KDMD framework highlights the importance of generating and sharing knowledge and learning to advance media development, drawing together UNESCO's and WSIS's concerns for access to information and media freedom. Its *Media Development Data Sharing Principles*, for example, which have been developed by UNESCO in partnership with the World Bank Institute and the World Association of Newspapers and News Publishers, include a commitment for participating organizations to make information available to the wider community, supporting its use for research, education and advocacy. The purpose of "Knowledge-Driven Media Development" is to enable better-informed decision-making in the interests of strengthening the design, selection and evaluation of media projects at a time of media convergence.

Other UNESCO initiatives

The IFAP and IPDC programmes have played important roles in UNESCO's implementation of WSIS principles, including the Organisation's own work and work done in cooperation with other stakeholders. They are, however, only part of UNESCO's overall commitment to fulfilling WSIS goals. A review of UNESCO's programmes in 2011 identified more than 600 different activities concerned with information and communication technologies for inclusive Knowledge Societies, peace and sustainable development. The following paragraphs describe a selection of the more important of these initiatives concerned with education, science and cultural diversity. Some other UNESCO initiatives are described in Part 5 of this report, which is concerned with WSIS Action Lines.

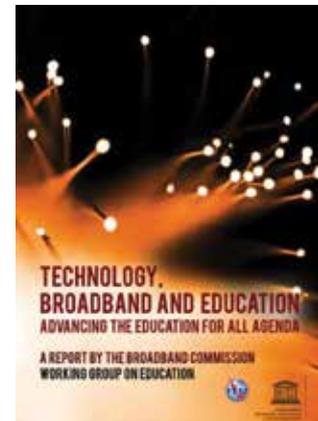
ICTs in Education

Education is one of the core mandate areas in UNESCO's work. UNESCO seeks to strengthen education systems worldwide, from early childhood to adulthood, including technical and vocational education and training, non-formal education and literacy.

Education for all has been a crucial goal of UNESCO's work. Millions of children are still deprived of the right to education and the opportunity to develop their potential. UNESCO works with national governments and development partners to achieve universal free primary education and gender equality.

At the World Education Forum which was sponsored by UNESCO and the World Bank in Dakar, Senegal in 2000, more than 160 governments pledged their determination to achieve six Education For All (EFA) goals by the year 2015, reinforcing the commitment to primary education and gender equality set out in the Millennium Development Goals. These goals aim to ensure that all children should have access to free quality primary education, to eliminate gender disparities in primary and secondary education, and to support the attainment of essential life skills including literacy and numeracy by both children and adults.

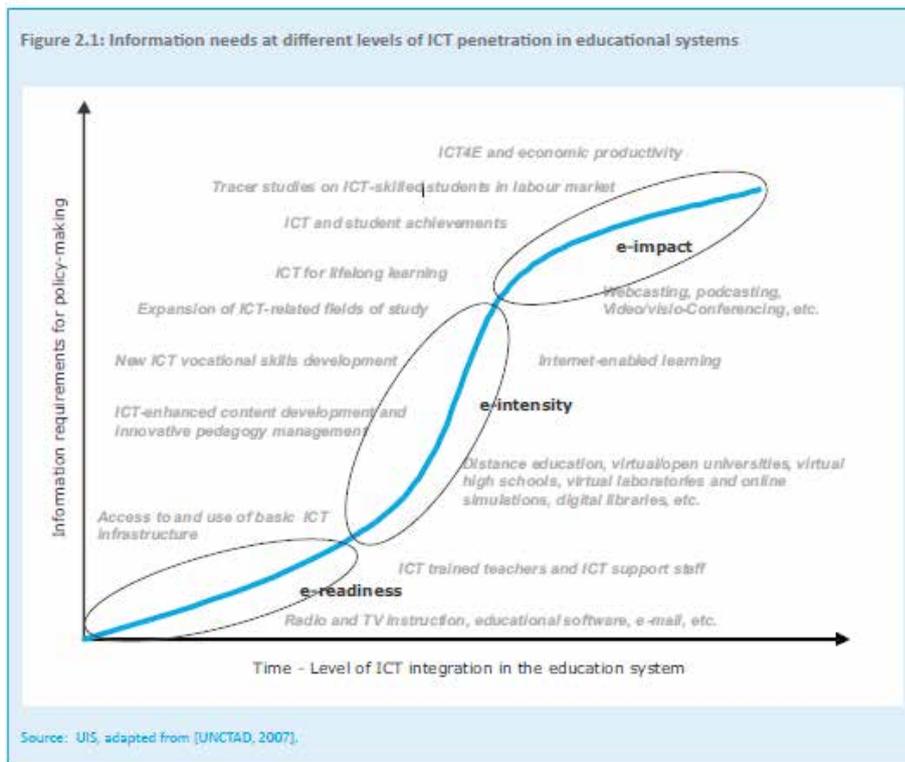
More recently, UNESCO's Director-General has chaired the Working Group on Education of the Broadband Commission for Digital Development, which published a landmark report on *Technology, Education and Broadband: Advancing the Education for All Agenda* in 2013. This report stressed the importance of addressing the relationship between educational needs and the policy challenges concerned with ICTs, including affordability and broadband connectivity. In particular, it emphasised the importance of increasing access to ICTs and broadband; teaching ICT skills to teachers and students; promoting mobile learning and open educational resources; supporting the development of local content and content in local languages; and incorporating ICTs into job training and continuing education. The report called for a gradual shift in priorities towards improvements in educational access and participation, improving the quality of education for all members of society.



UNESCO takes a holistic and comprehensive approach to promoting ICTs in education, addressing issues of universal equitable access, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration.

The UNESCO Institute for Statistics (UIS) has developed a set of core indicators for the use of ICTs in education, which forms part of the multi-agency Partnership on Measuring ICT for Development's work to build a quantitative evidence base for WSIS outcomes. In its work, UIS has recognised that the relationship between ICTs and education is highly complex, identifying three main stages in its evolution which it characterises as e-readiness, e-intensity and e-impact. These are illustrated in Figure 2.

Figure 2 – The development of ICTs in education



The first set of indicators developed by UIS and agreed by the Partnership focused on the availability of ICT devices in schools and on the proportion of schools with Internet connections. An expanded list of indicators was published by UIS in its 2009 *Guide to Measuring Information and Communication Technologies (ICT) in Education*, along with guidelines for the collection of relevant statistics. This second set of indicators focused more on the use of ICTs in learning processes and on ICT-related expenditure in education. Attention is now being paid to statistical measurement of the use and impact of ICTs in education. These three phases of work broadly correspond to the three stages of ICTs in education identified in Figure 2.

Another important initiative by UNESCO has been the development of an *ICT Competency Framework for Teachers*. Evidence from international experience shows that the quality of teaching is critical to unlocking the value of ICTs in educational environments. The Competency Framework, launched in 2008 and revised in 2011, sets out the skills which teachers need to make effective use of ICTs and help students to become collaborative, problem-solving, creative learners of the skills required for their future work and citizenship. It covers all aspects of a teacher's work, including curriculum development and assessment, organisation and administration, and addresses three successive stages in teachers' professional development:

- ▶ technology literacy, enabling students to use ICTs to learn more efficiently;
- ▶ knowledge deepening, enabling them to apply acquired knowledge to real-world problems; and
- ▶ knowledge creation, enabling them to build the knowledge base required by more harmonious and prosperous societies.

The *Competency Framework* has been translated into five languages. UNESCO is working with Member States and other stakeholders to examine its impact on the development of teachers' capabilities and professional practice.

Mobile learning has been another focus of UNESCO's work, much of it in partnership with international donors and the private sector. Mobile learning offers teachers and students the opportunity to supplement conventional teaching through access to additional educational content and applications, using devices which are more widely available than computers and other IT tools. UNESCO's work in this field focused on harnessing the potential of mobile learning to achieve EFA goals, including the development of policy

guidelines on mobile learning, using mobile technologies to support teachers' professional development, promoting mobile literacy for women and girls and commissioning research on mobiles for reading.

UNESCO has also been a powerful advocate for Open Educational Resources (OER). OER are educational materials, including curricula, student and teacher resources, texts and multimedia material, which are in the public domain or which can be legally and freely copied, used, adapted and shared. UNESCO has worked with the Commonwealth of Learning to develop guidelines for the integration of OER into educational practice. These guidelines, which are available in six languages, encourage governments and educational institutions to invest in systematic production, adaptation and use of OER, mainstreaming them in educational practice in order to improve the quality of teaching and curricula and to lower costs. UNESCO's OER Platform and Community provide access points to UNESCO materials and other resources, and to specialist discussions concerning the development of OER.

A Declaration on OER was adopted at World Open Educational Resources Congress, which was organised by UNESCO in 2012. As well as encouraging educational institutions to make material available through OER, this Declaration supported the inclusion of OER resources in national education strategies. UNESCO is working with partners including the Commonwealth of Learning to advocate wider availability and use of OER, and with the William and Flora Hewlett Foundation to build capacity and support implementation in five countries from different world regions.

ICTs and Sciences

UNESCO's work within its science mandate includes both natural sciences and social and human sciences. Together, these cover a very wide range of issues. In the natural sciences, for example, UNESCO is concerned with the range of relevant disciplines, from physics to life sciences, chemistry and natural resource management, as well as with science policy and the relationship between science and academia. In social and human sciences its priorities include social inclusion and youth development, the relationship between ethics, science and society, and the human development aspects of global environmental challenges, as elaborated in Part 5.

In both fields, a critical area of work has concerned the interface between science and society, including the role of science in public policy and the development of better public understanding of science and scientific research. This interface is increasingly important in many areas of public policy, such as climate science, genetics and biomedicine. UNESCO works to support policy development, build capacity and maximise the use of ICTs for science, technology and innovation in all countries, seeking to overcome gaps in ICT, technological and educational resourcing.

ICTs are critical to scientific development in many ways. They are themselves the products of highly sophisticated applied science, in areas such as radio transmission and fibre optics as well as in computing, which have advanced very rapidly over the past thirty years. ICTs are now essential for data gathering and analysis, for modelling and validation of findings, for real-time scientific applications and for the reporting and dissemination of scientific findings. They are used to enhance resource utilisation and the quality of learning processes and research activities. Communications networks also enable scientists to work much more collaboratively, across international borders, than they could do before. Recent developments in ICTs, including collaborative data analysis, cloud computing and linked open data have enabled much more sophisticated analysis of scientific data than was possible in the past, including analysis of much larger data sets, with consequential added value for policymakers and communities. This is particularly important in areas such as the environment and climate change, and agricultural production.

UNESCO has been keen to promote the effective use of ICTs for science as part of its commitment to building inclusive knowledge societies. Its Open Access programme, for example, promotes access to

UNESCO is also concerned about the need to develop systems to preserve digital heritage – recent cultural resources which are only or primarily available in digital formats. The rapid turnover of digital formats means that these can become inaccessible in relatively short periods of time. UNESCO's *Charter on the Preservation of the Digital Heritage*, and associated guidelines, call for international consensus on the collection, preservation and dissemination of digital materials and recommend appropriate legal frameworks and archival procedures to ensure that information and knowledge which is only available in digital form continues to be available to future generations.

The UNESCO Institute for Statistics

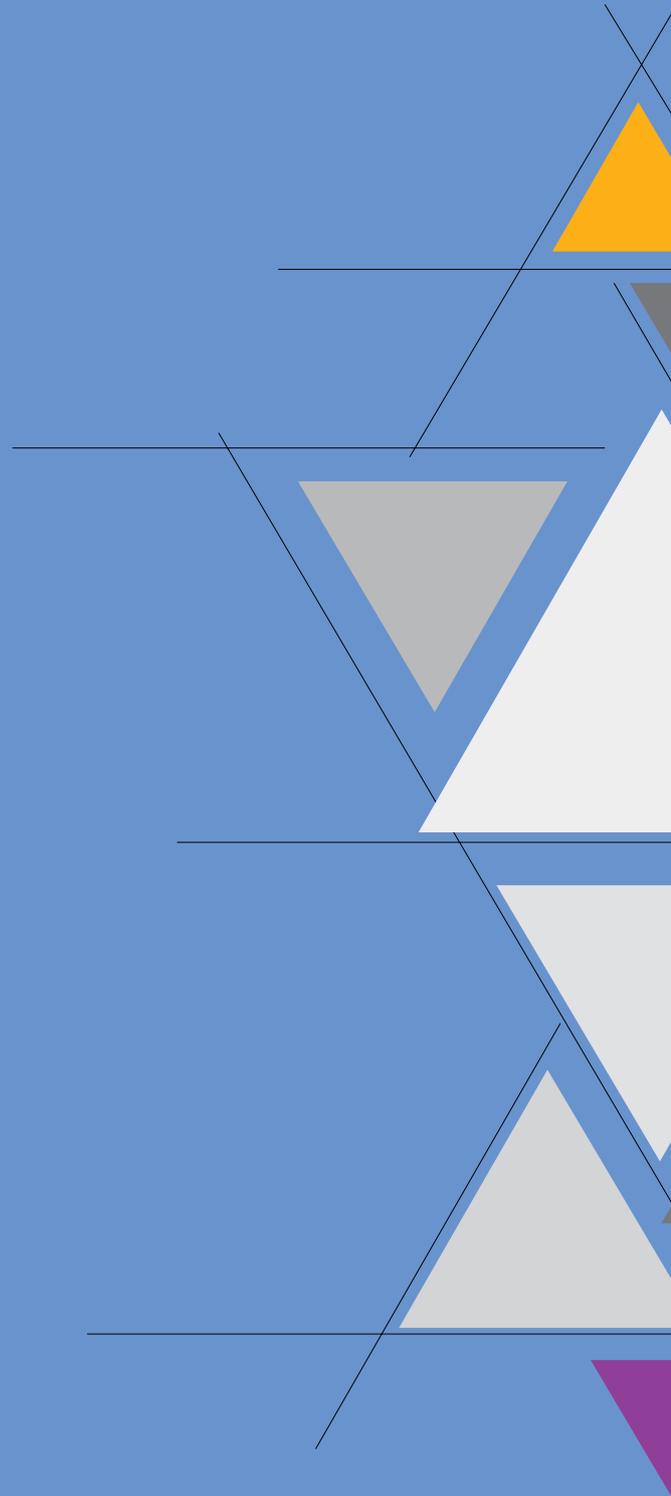
The UNESCO Institute for Statistics (UIS) was established in 1999 to reform and develop UNESCO's statistical capabilities and to enhance the quality of its and Member-States' work to quantify the evidence base concerning education, science, cultural diversity, communications and information within the UNESCO mandate. It has paid increasing attention to the role of ICTs within that mandate in recent years.

As a key member of the Partnership for Measuring ICT for Development, UIS has developed a set of core indicators to measure ICTs in education, which now form part of the UN-wide statistical approach to WSIS monitoring and evaluation. Data derived from these indicators formed an important part of the 2010 mid-term review *Monitoring the WSIS Targets*, which was published by the ITU in 2010, and of the comprehensive statistical review which will be reported to the United Nations in 2014. This work is described further in Part 4 of this report.

The UIS has also worked with the Communication and Information Sector in UNESCO to develop a framework of indicators to measure media and information literacy (see above), and has published a guidebook to help media stakeholders interpret data for media development based on UNESCO's influential *Media Development Indicators*.

PART 4

COORDINATION OF WSIS OUTCOMES



The WSIS implementation framework



At the UNESCO hosted WSIS+10 Review (Feb. 2013), from left to right: Dr Hamadoun Touré, Secretary-General, International Telecommunication Union (ITU); Ms Irina Bokova, Director-General, UNESCO; Mr Supachai Panitchpakdi, then Secretary-General United Nations Conference on Trade and Development (UNCTAD).

The *Tunis Agenda for the Information Society*, which was agreed at the second WSIS summit in 2005, established a framework for implementing the Summit's outcomes, led by the United Nations Secretary-General, involving a variety of UN agencies and including all stakeholder communities.

- ▶ The United Nations Economic and Social Council (ECOSOC) and its Commission on Science and Technology for Development (CSTD) were given overall responsibility for overseeing WSIS follow-up.
- ▶ The Secretary-General invited three UN agencies – UNESCO, the ITU and the UN Development Programme (UNDP) – to act as lead agencies in implementing WSIS outcomes at a more detailed level, a group that was joined in 2009 by the UN Conference on Trade and Development (UNCTAD).

Four new UN fora were established to help them with this work.

- ▶ A UN Group on the Information Society (UNGIS) was established to promote policy and programme coordination and coherence of UN agencies and other international organizations. This Group now has thirty participating agencies and is chaired in rotation by the four lead agencies and one rotating vice-chair.
- ▶ A series of multistakeholder Action Lines was set up to foster cooperation between stakeholders in eighteen different areas of follow-up activity. Various UN agencies were allocated lead responsibility for these Action Lines, with six being allocated to UNESCO. In 2009, these Action Lines were integrated into a new WSIS Forum, held each May in Geneva.



Mr Janis Karklins, then UNESCO's Assistant Director-General for Communication and Information, at the 2012 IGF.

- ▶ A separate multistakeholder Internet Governance Forum (IGF) was established to provide an annual space for discussion about the governance of the Internet and its relationship with other public policy domains.
- ▶ A Partnership on Measuring ICT for Development was formed to bring together international organizations concerned with the statistics needed to enable effective monitoring and evaluation. This Partnership now has twelve affiliates, including the UNESCO Institute for Statistics.

UNESCO has played an important role in each of these initiatives, which are briefly described in this part of the report.

UNGIS

The UN Group on the Information Society was formally established by the United Nations' Chief Executives' Board (CEB), which brings together the heads of all UN agencies, during 2006. The Group's purpose is to facilitate implementation of WSIS outcomes by developing synergies and fostering cooperation between UN agencies, and ensuring that all WSIS objectives are addressed within the UN system. It also aims to mainstream ICT issues in non-ICT development fields that are addressed by UN agencies. It is intended to complement and add value to the work of individual UN agencies but not to direct or oversee their work. Issues concerning science and technology transfer were added to UNGIS' mandate in 2009.

UNGIS recognises that it cannot act across the whole range of WSIS issues, and has focused on some of the more important cross-cutting themes that emerged at the Summit. In 2009, for example, it organised a large-scale open consultation on *Financial mechanisms: meeting the challenges of ICT for development*, which built on the work of a Task Force on Financial Mechanisms that met between the two WSIS summits.



UNGIS has coordinated input concerned with ICTs to other UN summits including the fourth United Nations Conference on the Least Developed Countries (2011) and the third United Nations Conference on Sustainable Development (Rio+20, 2012). It has advocated more attention to ICTs in country-level UN Development Assistance Frameworks (UNDAFs), within the context of the UN's initiative for inter-agency coordination, *Delivering As One*. It has also been the primary inter-agency forum for discussion of the WSIS+10 Review and the interface between this, the review of Millennium Development Goals and the inception of Sustainable Development Goals, all of which are scheduled to take place in 2015. UNGIS developed and adopted a *Joint Statement on the Post-2015 Development Agenda*, a unified effort of its 30 members to harness inter-agency ICT expertise to support deliberations on Post-2015 priorities.

UNGIS is chaired in rotation by several UN agencies, including UNESCO. Although the scope of its work is limited by resource constraints, it has proved a valuable forum for coordination between UNESCO and partner organizations within the UN system.

The WSIS Forum and coordination of Action Lines



WSIS Forum 2012

At the end of WSIS, the United Nations Secretary-General asked UNESCO, the ITU and UNDP to share responsibility for coordinating the work of the various Action Lines which were established as multistakeholder partnerships to support the implementation of WSIS outcomes. UNESCO took responsibility for leading six of these Action Lines, which are described in Part 5 of this report. The following paragraphs summarise UNESCO's work in partnership with other agencies to support the coordination of the Action Lines as a whole.

It was agreed in 2006 that meetings of the various Action Lines should be clustered together each year in Geneva around the time of the annual World Telecommunication / Information Society Day (17 June). It was hoped that clustering these meetings over a two-week period would allow for cross-fertilisation of ideas and encourage participation from a range of stakeholders.

The response to this initial framework was, however, disappointing. Although it was clear that many activities were taking place around the world to deliver WSIS outcomes, the number of participants attending Action Line meetings was low. In 2009, therefore, following an open consultation, the ITU, UNESCO and their partners decided to replace the existing cluster of meetings with a new format, the WSIS Forum.

The WSIS Forum is an annual week-long programme of events held in mid-May in Geneva. As well as meetings of the Action Lines themselves, it provides an annual opportunity for the facilitators of all Action Lines, including UNESCO, to share experiences and ideas. In addition to these



From left to right: Mr Janis Karklins, then UNESCO's Assistant Director-General for Communication and Information, Mr Kofi Annan, Former Secretary-General of the United Nations, Dr Hamadoun Touré, Secretary-General of the ITU.

meetings, the WSIS Forum includes high-level meetings on major themes of WSIS follow-up, discussions of emerging issues, book and report launches, and other activities. The Forum offers participants a more varied and interesting programme which enables much more cross-fertilisation of ideas between Action Lines than was possible in the previous format. It also is shorter and coincides with other meetings in Geneva which address WSIS-related issues, including other ITU meetings, meetings of the UN Commission on Science and Technology for Development, and open consultations for the Internet Governance Forum.

While the WSIS Forum has been a considerable improvement on the earlier cluster of Action Line meetings, more can still be done to increase participation, improve the interaction between Action Lines, extend Action Line cooperation outside the annual meeting, and ensure the Forum delivers value to all stakeholder groups. UNESCO will continue to work with the ITU, UNDP and UNCTAD to improve the quality of the Forum and Forum outcomes.

WSIS Knowledge Communities

One of UNESCO's specific contributions to the WSIS follow-up has been the establishment and maintenance of the WSIS Knowledge Communities (www.wsis-community.org). This online platform for discussion of WSIS-related issues was set up in 2009 to encourage participation in Action Lines outside the framework of the meetings held in Geneva each May. It has hosted debates about specific issues, such

as the impact of mobile phones on development, and provided a mechanism for consultation with more than 2500 stakeholders about future meetings of the WSIS Forum and the conduct of the WSIS+10 review.

The platform now has over 5100 registered users. A number of specialist discussion fora are hosted on its website, the more substantial of which include groups concerned with gender equality in the free and open source software sector, ICTs and youth, persons with disabilities, and open access regulation.

Interactive portals such as this are difficult to manage and maintain. The number of participants in some discussions has been disappointing. UNESCO will be reviewing the best way to ensure that as many people as possible contribute, and contribute meaningfully, to the discussions that are held online.



The Internet Governance Forum

The Internet Governance Forum (IGF) was established by the UN Secretary-General at the request of WSIS, to provide a discussion forum for multistakeholder policy dialogue on issues affecting Internet governance and public policy, though without decision-making powers. The first IGF was held in Athens in November 2006, with

subsequent meetings being held at annual intervals in countries around the world, attracting the last years 1500-2500 participants from all stakeholder communities and all world regions. It is now a well-established



part of the international ICT calendar. A substantial number of regional and national IGFs have also emerged to complement the global meeting.

UNESCO considers the IGF to be one of WSIS' most important outcomes and strongly supports its multistakeholder character which has enabled wide-ranging discussions to take place in a collaborative atmosphere, facilitating debates and agreement in other governance fora. The annual meeting of the IGF provides an invaluable opportunity for UNESCO to publicise its work and build partnerships around its core themes of freedom of expression, education for all, access to information and knowledge, and cultural and linguistic diversity. In 2011, for example, it held workshops in partnership with other stakeholders on local content creation and Internet infrastructure, the role of social networks in free flow of information, and security aspects of participation in the digital environment. In 2012, its workshops focused on information ethics and Internet governance, Internet privacy and freedom of expression, digital preservation and multilingualism, and the implementation of internationalised domain names.

The IGF has been an especially valuable forum to raise awareness and build discussion around the themes of research reports which have been commissioned or published by UNESCO. In recent years, these have included its collaborative study with ISOC and OECD of *The Relationship between Local Content, Internet Development and Access Prices*, its influential normative publication on *Freedom of Connection, Freedom of Expression*, and its *Global Survey on Freedom of Expression and Privacy*. The contents of these research studies are described elsewhere in this report.

UNESCO presented the experience and outcomes of the WSIS follow-up event *Towards Knowledge Societies for Peace and Sustainable Development* at the 2013 IGF. It also showcased its work, and sought multistakeholder input, in five areas of activity:

- ▶ media and information literacy;
- ▶ access to information and knowledge by persons with disabilities;
- ▶ digital preservation;
- ▶ freedom of expression, privacy and the role of intermediaries in information and expression; and
- ▶ the ethical dimensions of inclusive Knowledge Societies.

UNESCO will continue to support the work of the IGF, to promote multistakeholder participation in Internet governance, and to foster dialogue and understanding concerning human development and inclusive Knowledge Societies aspects of the Internet.

The Partnership on Measuring ICT for Development

The fourth new forum to be established in support of WSIS outcomes was the Partnership on Measuring ICT or Development.

Accurate data are critically important in the policy and practice of development. Governments and other stakeholders need as much information as possible to help them decide how they can most effectively make use of ICTs to achieve social and economic gains, and contribute towards fulfilment of internationally agreed development goals, such as the Education for All and Millennium Development Goals. Accurate data are also essential if the UN General Assembly and other stakeholders are to have the right information before them when they consider the impact of WSIS and the best directions for future international action.

The collection and analysis of data concerning ICTs is particularly difficult. Not only is there a shortage of expertise in the collection and analysis of relevant data in many countries. Data collection and analysis are made more challenging still by the very rapid pace of change in technology and markets, as a result of which circumstances can be radically different from one year to the next.

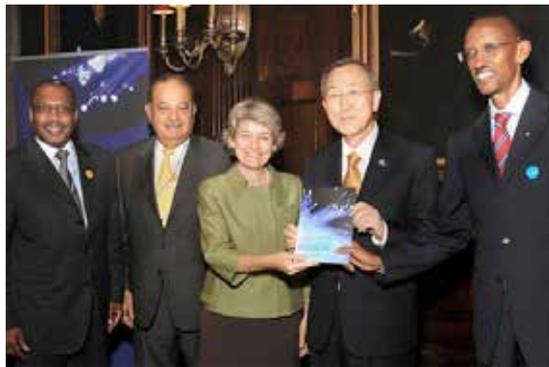
The Partnership on Measuring ICT for Development was established by a number of UN agencies in 2004, with the aim of improving the availability and quality of data concerning ICTs. It has developed a range of core indicators to measure achievement of the WSIS targets for connectivity and usage, which were agreed in 2003. Partnership agencies also provide technical assistance to national statistical offices in Member-States in order to improve their capabilities in ICT data collection. UNESCO's principal contribution to the work of the Partnership has been through the UNESCO Institute for Statistics (UIS), which has developed core indicators to measure ICTs in education.

The Partnership undertook a comprehensive review of available statistical evidence during the mid-term review of WSIS outcomes, which was published as *Measuring the Information Society*, the 2010 volume of the ITU's *World Telecommunication Development Report*. This included two chapters from UIS concerning evidence on ICTs in education. The Partnership has undertaken a further data collection process during 2013 and will publish a second comprehensive review of statistical evidence concerning WSIS outcomes during 2014.

The Broadband Commission for Digital Development

UNESCO has played a substantial role in an additional international initiative which is often considered a follow-up to WSIS. The Broadband Commission for Digital Development was set up by the ITU and UNESCO in 2010, in response to a suggestion from the UN Secretary-General, to increase understanding of broadband and expedite its deployment where it might contribute to social welfare and economic growth.

The Commission is made up of senior personnel from ITU, UNESCO and other multilateral agencies, chief executives and other top leaders of the global ICT industry, and a number of celebrities from different fields. It acts as an advocate for broadband deployment, which it sees as the foundation of future economic prosperity and social welfare: a technology that no developing country can afford to be without if it wishes to succeed.

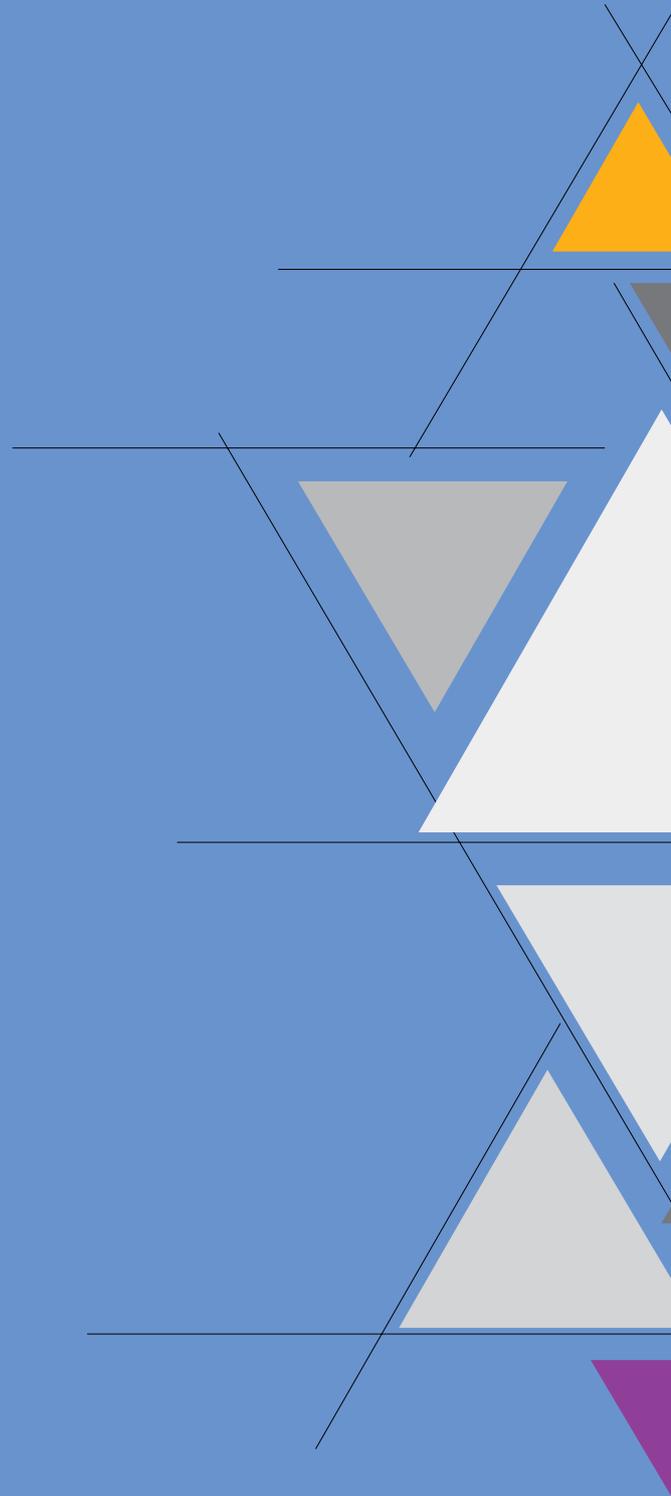


At the second meeting of the Broadband Commission for Digital Development, from left to right: International Telecommunications Union (ITU) Secretary-General Hamadoun Touré, vice-chair of the Commission; Carlos Slim Helú, Honorary Lifetime Chairman of Mexico's Grupo Carso, co-chair; UNESCO Director-General Irina Bokova, vice-chair; UN Secretary-General Ban Ki-moon, and President Paul Kagame of Rwanda, co-chair of the Commission.

UNESCO's Director-General chairs the Commission's Working Group on Education, whose report on *Technology, Broadband and Education: advancing the Education for All Agenda* was published at the event *Towards Knowledge Societies for Peace and Sustainable Development* which was hosted by UNESCO in Paris in February 2013. The Working Group's report explores how broadband infrastructure and services can help to achieve internationally agreed educational goals not just for students but also for the teaching profession, lifelong learning and society in general. It is described further in Part 3 of this report.

PART 5

FACILITATING WSIS ACTION LINES



The WSIS Forum, and a series of Action Lines concerned with specific aspects of the Information Society, have been at the heart of UNESCO's and other UN agencies' work to monitor the implementation of WSIS outcomes. They provide a valuable space for multistakeholder partnership and for showcasing participants' work across the range of WSIS follow-up activity.

Governments and other participants in the Geneva Summit in 2003 identified eleven Action Lines – thematic areas of follow-up activity – which encompassed the diverse range of issues discussed at WSIS. One of these, concerned with e-applications, is divided into eight subsidiary Action Lines. The *Geneva Declaration of Principles* which resulted from that summit articulated key principles in each of these areas of challenge and opportunity, while the *Geneva Plan of Action* established mandates for follow-up activity in each of them. In the *Tunis Agenda for the Information Society*, two years later, it was agreed that responsibility for facilitating these Action Lines should be shared among different United Nations agencies, with the responsibility for leading six of them, all concerned with aspects of its mandate, being allocated to UNESCO. The complete list of Action Lines, is set out in Figure 3.

Figure 3 – WSIS Action Lines

WSIS Action Lines

- C1. The role of public governance authorities and all stakeholders in the promotion of ICTs for development
- C2. Information and communication infrastructure
- C3. Access to information and knowledge
- C4. Capacity building
- C5. Building confidence and security in the use of ICTs
- C6. Enabling environment
- C7. ICT Applications:
 - E-government
 - E-business
 - E-learning
 - E-health
 - E-employment
 - E-agriculture
 - E-science
- C8. Cultural diversity and identity, linguistic diversity and local content
- C9. Media
- C10. Ethical dimensions of the Information Society
- C11. International and regional cooperation

UNESCO has led the facilitation of the six Action Lines concerned with access to information and knowledge (C3), e-learning (C7), e-science (C7), cultural identity and diversity, linguistic diversity and local content (C8), media (C9) and ethical dimension of the Information Society (C10) – with the support of other stakeholders, throughout the decade since WSIS. Groundwork to establish the Action Lines was undertaken in 2006. Action Line meetings were initially held either at UNESCO headquarters or at annual clusters of WSIS-related events held in Geneva in May 2007 and 2008. From 2009, meetings of Action Lines have formed part of the annual WSIS Forum, held in Geneva and described in Part 4 of this report. As well as providing a space for the exchange of ideas and information between stakeholders concerned with each particular theme, this has allowed for more exchanges and debates that cut across the boundaries between Action Lines, and for additional activities such as high-level panels, report launches and symposia.

Part 5 of this report describes in turn the work which UNESCO and its partners have undertaken within the six Action Lines for whose facilitation it is responsible. UNESCO's aim in each of these has been to draw together expertise from the diverse stakeholder communities engaged in WSIS follow-up within the Action Line's thematic area, so that they can share information and experience, develop partnerships and enhance their implementation capacity. The annual meetings have also provided an opportunity to explore aspects of an Action Line's theme in greater detail, including the implications of new technologies and market developments such as mobile Internet and social media.

The facilitation of Action Lines has not been without its problems. Some of the enthusiasm which was initially displayed by stakeholders was dissipated by the time it took to move beyond procedural to substantive work. The lack of resources available for Action Line facilitation limited the value which some stakeholders felt could be derived from annual meetings, while others – particularly civil society organizations – were unable to afford to travel to them. These problems led to a review by UNESCO and other UN agencies during 2008, and to the establishment of the WSIS Forum in 2009, which, stakeholders agree, has achieved a considerable improvement on earlier clusters of WSIS-related meetings.

Remote participation allows for stakeholders to join meetings at a distance, but participation in Action Line meetings, physically and remotely, and activities remain limited. UNESCO is, however, keen to maximise the value which can be derived from them for the future. The following paragraphs describe the themes and highlights some achievements of the six Action Lines for whose facilitation UNESCO is responsible, together with priorities for future discussion in their thematic areas.

Action Line C3 – Access to information and knowledge

Mandate of the Action Line

The mandate for Action Line C3, as for all Action Lines, is set out in the WSIS' *Geneva Declaration of Principles* and *Plan of Action*. It is rooted in WSIS' belief, which echoes UNESCO's mandate, that 'The ability for all to access and contribute information, ideas and knowledge is essential in an inclusive Information Society.' This commitment to content was seen at WSIS as an essential complement to access to infrastructure (Action Line C2) and capacity building (Action Line C4).

The Action Line's mandate in the *Geneva Plan of Action* identified ten aspects of access to information and knowledge which should be kept under review. These fall into five groups, each of which is consistent with UNESCO's mandate and with the objectives of its Information for All Programme (IFAP). They are concerned with:

- ▶ access to public information and resources;
- ▶ community access to the Internet and ICTs, for example through facilities like schools and libraries;
- ▶ access to both proprietary and open source software;
- ▶ access to scientific journals and other data sources which are valuable for research and community development; and
- ▶ access to ICTs for vulnerable social groups, including those with disabilities.

Developments since WSIS

Access to ICT networks and services has expanded greatly, throughout the world, since WSIS. The majority of adults worldwide, including most developing countries, now have mobile phones. Internet access, although it has not yet reached a majority of people, is also growing fast.

Meaningful access to ICTs, however, is not just a matter of access to networks and services. Users need to have the capabilities – including at present, for the Internet, literacy – to make effective use of them. Content needs to be available in more than global languages. It also needs to be affordable. And for some groups, such as those with disabilities, additional facilities need to be provided which enable them to take advantage of the same opportunities as other people.

The need for community access to ICTs has changed since WSIS. The rate of growth in mobile phone ownership has exceeded expectations, reducing the need for community facilities to provide access to basic telephone services. As mobile Internet takes off, it is beginning to have a similar effect where Internet access is concerned, though the growth of demand for Internet access among those who do not have Internet-capable mobile phones means that libraries, telecentres and cybercafés will continue to play an important part for some time to come.

Government services are increasingly being provided online as well as offline. E-government, which is the subject of a separate Action Line (C7 – e-government) initially focused on providing information, but is increasingly offering interactive services, including transactions.

Access to the Internet for vulnerable groups such as those with disabilities has been a particular priority for UNESCO (more details in Part 3, disabilities).

The nature of software markets, another subject of this Action Line, has also changed in the years since WSIS. Proprietary and open source software continue to coexist, with the latter increasingly strongly established in Internet markets. The emergence of mobile apps has led to a very large expansion in the applications development market. A number of developing countries have begun to take a prominent part in software development, for domestic and in some cases export markets.

Achievements of the Action Line

UNESCO has been one of the leading international agencies in implementing WSIS objectives concerned with access to information and knowledge. These are consistent with the goals of UNESCO's medium-term strategy (2008-13 and 2014-21), short-term programmes and budgets, and the Information For All Programme (IFAP) and other activities, described in Part 2 of this report. In particular, working with its partners in the Action Line, UNESCO has:

- ▶ developed understanding and awareness of the need to build strategies for inclusive Knowledge Societies around the conjunction of infrastructure, capabilities and content;
- ▶ published a benchmark study of *The Relationship between Local Content, Internet Development and Access Prices*;
- ▶ promoted open approaches to technology and software development, standard-setting, infrastructure access, and the publication and sharing of information and knowledge such as educational resources and scientific research;
- ▶ supported the establishment of Community Multimedia Centres and other community access facilities;
- ▶ developed programmes and guidelines to stimulate media and information literacy;
- ▶ promoted multilingualism online, enhancing access to the Internet itself through internationalised domain names as well as access to multilingual content work;
- ▶ encouraged governments and other stakeholders to improve access for disadvantaged groups, including women, persons with disabilities, and indigenous peoples.
- ▶ advanced work in Media and Information Literacy in various ways, including the formation in 2013 of the Global Alliance for Partnerships on Media and Information Literacy.

Action Line C3 has provided a valuable platform for multistakeholder discussion of initiatives by UNESCO and other stakeholders in all these areas, focusing in different years on different aspects of its mandate.



Since 2008, the Action Line has focused the attention of stakeholders on open access, open systems and open standards. Participating agencies agreed in 2008 that open standards are important to maximising opportunities for software innovation, in both proprietary and open source models of development. The Action Line has paid particular attention to promoting access to scientific data and knowledge, encouraging scientists and scientific publishers to maximise access to academic journals, especially for developing countries. This is also a concern for Action Line C7 e-science.

Access for persons with disabilities has been another priority for the Action Line. Participating agencies have focused the attention of governments and the private sector on the value, to those directly affected and to society in general, of ensuring that network facilities, hardware and software are accessible to those with disabilities, enabling them to access employment and fulfil their full potential.

Looking to the future

Access to information and knowledge is at the heart of UNESCO's work to promote inclusive Knowledge Societies. The ten years since WSIS have seen a shift in emphasis from access to infrastructure towards access to skills and content. This will continue. The next five years will see rapid continued growth in the number of people having Internet access, and so gaining much greater access to information than was previously available to them. The continued deployment of broadband networks will also improve the ease of access to information, particularly for businesses, educational institutions and those with access to networked computers and/or smartphones.

This growth in access to communications facilities must be accompanied by greater access to the resources that people, businesses and communities require in order to transform information into knowledge which can enhance their lives and livelihoods. UNESCO and other stakeholders in this Action Line will continue to emphasise the importance of developing and enabling open access to content, stimulating local content, and enabling access for all through multilingualism, facilities and outreach to currently under-represented groups. Open data will be a particular area of importance for all stakeholders. It will also be important to develop more effective indicators for inclusion, diversity and empowerment.

Action Line C7 – ICT applications

The contribution of ICTs to development depends critically on the extent to which the availability of infrastructure is complemented by the availability of services and applications which translate bandwidth into social and economic value. Action Line 7, which is concerned with ICT applications, was subdivided by the *Geneva Plan of Action* into eight subsidiary Action Lines dealing with different categories of application and their impact on development. Two of these deal with core aspects of UNESCO's mandate – Education (e-learning) and Science – and are facilitated by UNESCO.

Action Line C7c – ICT applications for e-learning

Mandate of the Action Line

The mandate for Action Line C7, where this is concerned with e-learning, is closely linked with that of Action Line C4 on capacity-building, and there has been some overlap between the work of these two Action Lines.

The *Geneva Declaration of Principles* states that everyone 'should have the opportunity to acquire the necessary skills and knowledge in order to understand, participate actively in, and benefit fully from the Information Society and the knowledge economy.' In summary, it therefore promotes:

- ▶ the use of ICTs in all stages of education, training and personnel development;
- ▶ continuous education, both in school and for adults, not least so as to equip them with the skills for ICT-enabled jobs; and
- ▶ sustainable development for the Information Society, enabling developing countries to integrate effectively with others.

The combined mandate for Action Lines C4 and C7 ranges widely over education, training and capacity-building. Among aspects which are particularly relevant to this Action Line are:

- ▶ the inclusion of ICTs in educational policy and practice, especially achievement of the Education For All targets established by UNESCO and partners;
- ▶ the use of ICTs to enhance educational inclusiveness, addressing dimensions such as gender, locality and indigenous peoples; and
- ▶ distance learning and education.

Developments since WSIS

Education is recognised as being critically important in every aspect of social and economic development. A literate population and a skilled workforce are better equipped to take advantage of every opportunity, not just those that rely on ICTs. Education is not just a priority for UNESCO, which was one of the agencies that established the EFA targets in 2000. All development agencies are keen to maximise the contribution that ICTs can make to educational performance and outcomes, particularly in countries which have suffered from shortages of teachers and educational resources. Particular attention is being paid to the education of girls, who have been disadvantaged in many countries.

One problem is that it has proved difficult to assess the impact of ICTs on education, particularly in the classroom, in spite of widespread investments in new technology. It has become increasingly clear that the impact of technology is much greater when it is deployed alongside skilled teaching staff, in environments which place students at the heart of the educational experience and respond effectively to their needs. Technology cannot substitute for other educational resources, but can complement them to great advantage. The UNESCO Institute for Statistics has developed indicators for measuring the e-readiness of national educational sectors, their use of ICTs and the impact of ICTs on educational outcomes, which should improve understanding of these issues in years to come.

The range of ICTs which can be used in schools and colleges, and in lifelong education, is constantly increasing. Particular attention has been paid in recent years to the use of low-cost access devices and to mobile phones which are widely available to teachers and students. ICTs are also increasingly important in the management of education, from curriculum planning to examinations and school administration.

Achievements of the Action Line

WSIS objectives for e-learning are consistent with UNESCO's core mandate on education and with UNESCO's work to maximise the value of ICTs in the delivery of education which is described in Part 3 of this report. In particular, working with its partners in the Action Line, UNESCO has:

- ▶ promoted the inclusion of ICTs in national and global approaches towards meeting the Education for All targets, and published research on the educational outcomes of ICTs;
- ▶ developed, through the UNESCO Institute for Statistics, core indicators for ICTs in education, and led the analysis of the results of these within the WSIS outcome assessment process;
- ▶ promoted debate and policy development on media and information literacy;

- ▶ developed and introduced the influential *ICT Competency Framework for Teachers*, setting benchmarks for ICT pedagogy;
- ▶ promoted Open Educational Resources through joint programmes with the private sector and academic institutions, the establishment of an online OER platform and the publication of guidelines;
- ▶ promoted awareness and understanding of mobile learning, developing also policy guidelines for this area;
- ▶ published case studies of the power of ICTs in education in developing countries under the title *Transforming Education*;
- ▶ led the work of the Broadband Commission for Digital Development's Working Group on Education and prepared the Commission's 2013 report on *Technology, Broadband and Education: Advancing the Education for All Agenda*.

UNESCO has worked hard to make the e-learning Action Line a focus for multistakeholder discussion and for the development of multistakeholder partnerships concerned with ICTs in education. Examples of partnership within the Action Line have included joint work by UNESCO with the William and Flora Hewlett Foundation and the Government of the United States on open educational resources, and joint projects involving UNESCO, Nokia and the Government of the United States on mobile learning.

Meetings of the Action Line have provided a valuable platform for discussion, development and launch of the *ICT Competency Framework for Teachers* and other publications by UNESCO and other agencies. They have provided an opportunity for stakeholders involved in the Action Line to focus attention on innovations in ICT technology and new services which have substantial potential value for schools and universities. In 2008, for instance, the Action Line focused on low-cost devices, including low-cost computers and online access terminals. In 2009, it concentrated on mobile learning. In 2010, it moved on to consider the impact of social networks and the potential of open educational resources. Meetings of the Action Line have also addressed other educational priorities including the development of educational management information systems (EMIS). There has been joint activity with Action Line C4, which focuses on capacity-building and for which UNDP was nominated as lead-facilitator.

Looking to the future

Education is of fundamental importance in enabling societies to transform information resources into knowledge which can accelerate social and economic development. Considerable experience has already been gained in the use of ICTs in both formal and non-formal education. This experience has demonstrated the importance of the relationship between professional education standards and new technology. More research is needed into the best ways of integrating ICTs in education, in order to maximise learning outcomes, building on work which UNESCO and the Action Line have already undertaken, e.g. with mobile learning and open educational resources. Particular attention should be paid to the creation of an enabling environment, which includes educational policies with clear priorities, capacity development of all actors, including teachers, content and curriculum development and the evaluation of all efforts. Of increasing interest today are distance and online education, including Massive Open Online Courses (MOOCs), learning anytime anywhere through mobile technologies and innovations such as learning analytics to name but a few. It will be a key objective to ensure that all learners, regardless of geographic, physical or social boundaries, can make use of ICTs to access and benefit from quality teaching and learning activities. The Broadband Commission's 2013 report on broadband and education also provides important background for the next stage of development in this context.



A critical challenge will be ensuring that ICTs in education reduce rather than increase relative disadvantage. Many governments have major problems funding education, and new ICT resources represent considerable investment costs, particularly in view of the fact that hardware presents in average only 1/3 of the total cost of well-designed initiatives, which include from the outset dimensions such as capacity and content development. UNESCO and other stakeholders within the Action Line will need to build on the work which has already been done, particularly in innovative areas such as mobile learning, OER and the *ICT Competency Framework for Teachers*, by offering capacity-building in policy development, curriculum design and teacher training. New opportunities will arise from further developments in technology and from the spread of experience that students have with ICTs. This is an exciting area for innovation that brings together two key areas of UNESCO expertise.

Action Line C7h – ICT applications for e-science

Mandate of the Action Line

The second C7 Action Line that falls within UNESCO's core mandate is concerned with e-science, which includes both the use of information technology in science and the emergence of large-scale collaborative research and analytical programmes. The latter often exploit very large data sets which require networked analysis.

The mandate for the C7 Action Line lists five priority areas for action. These can be summarised in three main areas:

- ▶ ensuring the availability of high-quality infrastructure for universities and research institutions;
- ▶ enabling open access to scientific information and the sharing of scientific knowledge, for example through electronic publishing; and
- ▶ the systematic collection and preservation of scientific data.

UNESCO has also sought to develop the interface between science, policy and society, ensuring that policy decisions are effectively informed by scientific evidence and that the wider public develops a better understanding of scientific knowledge and its implications, for example in areas such as biodiversity and climate change.

Developments since WSIS

Scientific knowledge is constantly evolving and expanding, in response to new research, analysis and publication. Major advances have taken place during the past decade, both in communications technology and in areas such as physics, genetics and biomedicine.

ICTs and the Internet have enabled much greater collaboration between scientists, including the ability to work on joint projects in research groups across national and regional boundaries. The ever-growing capacity of computing equipment has allowed scientists to address increasingly complex problems, using analytical methods and computations that were previously unfeasible. The spread of national and regional research and education networks (RENS), sharing high-capacity communications infrastructure, has facilitated this collaboration, as has the professional culture of the Internet, which originated among computer scientists and which has relied on collaborative innovation to develop standards.

New media have enabled more widespread publication of more research by more scientists, both in a wider range of peer-reviewed journals and in formats such as blogs which foster wider discussion within peer communities and are more accessible to the general public, though care is needed to maintain the quality of research and peer review.

UNESCO has been particularly concerned about the interface between science and society. One of the most exciting developments of recent years has been the emergence of ICT-enabled and crowd-sourced citizen science, which enables members of the public to join in scientific data collection and analysis. The emergence and publication, through open data initiatives, of very large data sets held by government agencies and other organizations has also created new opportunities for scientists and non-scientists to analyse and contribute to understanding of their national environments. Citizen science, facilitated by mobile and Web technologies, enables a more open and more responsive scientific process and provides relevant and timely information for scientists, local communities and policy-makers.

Achievements of the Action Line

UNESCO has a longstanding record of achievement in supporting scientific endeavour and disseminating knowledge of both human and natural sciences, particularly in stimulating the interface between science, policy and society. Its work to develop awareness and practice of e-science through its own programmes is briefly summarised in Part 2 of this report. In particular, working with its partners in the Action Line, UNESCO has:

- ▶ fostered the use of ICTs to enable computationally intensive e-science, within and among scientific institutions;
- ▶ enabled the sharing of scientific publications and data through a variety of mechanisms, including arrangements for free or low-cost access to scientific journals, electronic publishing of scientific findings, and peer-to-peer scientific exchanges;
- ▶ promoted access to the Internet for universities and research institutes, and supported the development of national and regional education and research networks (RENs);
- ▶ promoted the long-term systematic collection and preservation of scientific data;
- ▶ encouraged the development of citizen science, including public engagement in scientific research; and
- ▶ encouraged more positive understanding of the relationship between science and public policy, among governments and other stakeholders.

Action Line C7 (e-science) has provided a valuable framework for multistakeholder cooperation in these areas of activity, building support for UNESCO initiatives and helping to develop multistakeholder partnerships.

Access to scientific knowledge and information-sharing has been a major focus for the Action Line since its first meeting in China in 2006. The International Federation of Library Associations and Institutions (IFLA) and the organisation EIFL (Electronic Information for Libraries) have worked closely with UNESCO in the Action Line to develop approaches to open access which will be of benefit to all stakeholders involved, including policymakers, researchers, publishers and access providers such as universities and libraries. The 2012 meeting of the Action Line focused on the potential of broadband networks to extend and expedite scientific knowledge-sharing through e-publishing, peer-to-peer networking and the sharing of digital data.

A joint meeting of Action Lines C3 access to information and knowledge and C7 e-science in 2010 focused on the roles of government and other stakeholders in stimulating academic research and scientific exchange through National Research and Education Networks and other mechanisms. Other meetings of the Action Line have focused on the training of science teachers, the needs of small island states (including scientific approaches to climate change and disaster preparedness), and ways in which scientific agencies can support the preservation of cultural heritage.

Looking to the future

E-science is of increasing importance to the scientific community and to wider public policy. Recent United Nations meetings, including the Rio+20 summit, have emphasised the enormous challenges of sustainable development which face the world community, and the importance of science in understanding and finding solutions for those challenges in areas such as biodiversity and climate change, food security and natural resource management. Scientific evidence will be critical in discussions concerning design and implementation of the Sustainable Development Goals that will emerge from the United Nations General Assembly in 2015.

The United Nations High Level Panel of Eminent Persons on the Post-2015 Development Agenda emphasised the potential for exploiting what it called a 'data revolution' in addressing development challenges. E-science will have a critical part to play in determining the success of these endeavours. ICTs enable much more sophisticated analysis, particularly when conducted in partnership between research centres in different locations and with different specialisms. They also enable innovative ways of gathering data, such as crowdsourcing and citizen science, which can help to increase public understanding and support for science, to make science more responsive to public needs and concerns, and to enhance its quality, credibility and relevance to local communities.

UNESCO and other stakeholders in this Action Line are also keen to develop the interface between science, public policy and public understanding through practical measures. UNESCO is examining the potential for web-based portals which could respond dynamically to public interest in areas such as agriculture and water scarcity, climate change and disaster preparedness. The United Nations Secretary-General Ban Ki-moon entrusted UNESCO with hosting the UN Scientific Advisory Board composed of 26 eminent scientists, which started its work in 2014 and advises the Secretary-General and other leaders on matters of science, technology and innovation for sustainable development.

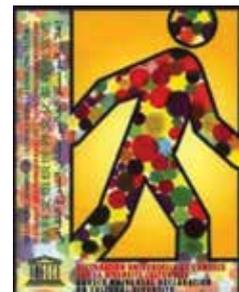
Action Line C8 – Cultural diversity and identity, linguistic diversity and local content

Mandate of the Action Line

Action Line C8 falls within core areas of UNESCO's mandate and expertise, including its longstanding commitment to supporting diversity of cultural expression, tangible and intangible heritage, multilingualism, the rights of indigenous peoples, and the development of content which meets the needs of local communities.

The mandate for Action Line C8 is one of the most detailed in the WSIS outcome documents. The *Geneva Declaration of Principles* emphasised the importance of ensuring that the Information Society respects and fosters dialogue between diverse communities, referring to UNESCO's *Universal Declaration on Cultural Diversity*. The mandate that stems from this commitment includes fifteen dimensions of diversity, which can be summarised in five groups:

- ▶ the maintenance of cultural diversity and preservation of cultural heritage;
- ▶ support for indigenous peoples, including indigenous knowledge and expression;
- ▶ the development of local and locally-relevant content, curriculum and software;
- ▶ multilingualism and the maintenance of linguistic diversity; and
- ▶ cultural exchange and interactivity.



Developments since WSIS

The digital divide between more and less connected countries was one of the most important concerns of participants at WSIS. This divide was and remains not just a matter of connectivity but is also manifested in the predominance of a small number of languages, particularly English, and of content from particular countries and regions on the Internet. WSIS participants committed themselves to foster greater cultural diversity on the Internet, focusing in particular on language and on the development of local content.

The spread of the Internet since 2005 has facilitated an enormous expansion in the amount and variety of content which is available. Resources which were previously restricted to small numbers of people or locations are now routinely available worldwide. The quantity of data which is recorded is estimated to double about every two years. At the same time there is concern about the preservation of digital data in formats which will be accessible to future generations. While languages change slowly, digital formats change very fast and it is already difficult for today's researchers to make use of some computer programmes that were common twenty years ago.

The spread of the Internet has reduced the predominance of content in English, though this was still estimated in April 2013 to be the main content language for 55% of the million most visited websites. Chinese is, however, rapidly catching English as the first language of the largest number of Internet users. The introduction of internationalised domain names (IDNs) has been one significant factor affecting these numbers on the supply side of the Internet, while the development of social networks, microblogs and other user-generated content have been influential on the demand side. Nevertheless, many of the world's languages are still very poorly represented online, or even not represented at all.

Intellectual property issues have continued to pose complex challenges in the digital age. The balance between content creators and content users is critically important in enabling innovation and creativity. Technology has affected that balance, challenging old models of copyright while allowing new models to emerge.

Achievements of the Action Line

Cultural diversity is part of UNESCO's core mandate, and the Organization is committed to ensuring that cultural diversity and multilingualism on the Internet play a central role in fostering pluralistic, equitable, open and inclusive Knowledge Societies.

UNESCO encourages its Member-States to develop comprehensive language-related policies, to allocate resources and to use appropriate tools in order to promote and facilitate cultural and linguistic diversity and multilingualism, on the Internet, in the media and in other contexts. Its efforts to do so cut across a number of the programmes which were summarised in Part 3 of this report, as well as other work. In particular, working with its partners in the Action Line, UNESCO has:

- ▶ promoted the inclusion of disadvantaged and minority communities, and indigenous peoples, in the benefits of the Information Society through government strategies and specific projects;
- ▶ promoted multilingualism online, particularly through the internationalisation of domain names (in partnership with ICANN) and support for local content;
- ▶ supported the development of community media which give opportunities to marginalised communities to participate in public debate and maintain their cultural identities;
- ▶ provided opportunities to disseminate information online about world cultural heritage; and
- ▶ addressed challenges concerning the preservation of digital heritage.

UNESCO has facilitated eight meetings of Action Line C8 since WSIS, focusing on a variety of issues within the mandate of cultural and linguistic diversity. Multilingualism, including the establishment of internationalised domain names and the monitoring of online linguistic diversity, was a priority area for the Action Line in the first five years after the Tunis summit, which followed adoption in 2003 of the *Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace*.

More recently, the Action Line has focused attention on the needs and interests of indigenous peoples. These are often marginalised by geographical, social and linguistic constraints. Agencies participating in the Action Line have emphasised the importance of consultation and of ensuring balance between the need to promote access and economic opportunity and the need to protect cultural values and identity. The Action Line meeting in 2011 focused on promoting indigenous education and intergenerational transmission of indigenous knowledge.

In 2012 UNESCO organized, in partnership with the International Federation of Library Associations and Institutions (IFLA), the International Council on Archives (ICA) and the University of British Columbia, a major international conference on *The Memory of the World in the Digital age: Digitization and Preservation* to explore the key issues affecting the preservation and long-term accessibility of digital documentary heritage, which resulted in the UNESCO/UBC Vancouver Declaration.

UNESCO has also worked to promote the development of local content through this Action Line, in partnership with the Internet Society and the Organisation for Economic Cooperation and Development. Their joint report on *The Relationship between Local Content, Internet Development and Access Prices* was the main focus of the Action Line's work in 2012.

Looking to the future

This Action Line brings together both broad general themes, which affect all societies, and the specific needs of particular, often marginalised, communities. The impact of rapidly changing technologies and markets on cultural diversity is, and will continue to be, complex. On the one hand, new technologies enable greater communication and knowledge sharing in developing countries, not least for marginalised communities, offering new ways to them of maintaining cultural traditions while benefiting from innovations in other societies. On the other hand, there is a risk that traditional cultures and languages will be overwhelmed by the global cultures and languages which predominate online. UNESCO and other stakeholders in this Action Line must continue to respond to these complex challenges by fostering access, including multilingual content and capabilities, for all cultures and language groups, and by reinforcing the standards and other mechanisms (such as multilingualism) which are required for genuine universality to be achieved. More disaggregated data sets are desirable in order to improve understanding of the impact of ICTs and the Internet on marginalised communities, and facilitate this approach.

UNESCO will continue to promote cultural and linguistic diversity, and to support development which takes local contexts into account, building on the knowledge generated by all communities while promoting innovation and creativity. It will focus attention on indigenous peoples within its work on cultural and linguistic diversity, placing their own knowledge and experience at the heart of initiatives to address their needs, concerns and opportunities, and will also pay attention to the needs of ethnic minorities, migrant and diaspora communities. UNESCO will support efforts to ensure the survival and continued relevance of tangible and intangible heritage, as well as helping to empower artists, cultural practitioners and the wider public to create, produce, disseminate and enjoy a wide range of cultural goods, services and activities.

For the post-2015 development agenda process, culture is increasingly recognized by Member States as a powerful driver and an enabler for sustainable development. The link between cultural heritage, cultural and creative industries, of sustainable, cultural tourism, cultural infrastructure and poverty alleviation has been established, but also non-monetized cultural benefits, such as social inclusiveness, resilience, creativity are increasingly linked to innovative uses of technologies, as shown in post-2015 think pieces and debates.

Action Line C9 – Media

Mandate of the Action Line

Although WSIS is primarily concerned with ICTs, the governments and other stakeholders at the Summit were conscious of the strength and continued importance of traditional as well as new media when developing the *WSIS Action Plan*. These media represent freedom of expression in action, and contribute significant volumes of information to society. WSIS was aware that traditional and new media interact extensively, and it has become clear since that the newcomers both challenge and contribute to the role, norms and business models of the former.

Freedom of expression with the correlative of the right to information are deeply rooted in the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights, and have been central to UNESCO's work to promote a rights-based approach to information and communication. The *Geneva Declaration of Principles* reaffirmed the international community's commitment to the principles of freedom of the press and freedom of expression, which are set out in the Declaration and Covenant, and also to the independence, pluralism and diversity of media, which it declared essential to the Information Society.

The mandate for Action Line C9, which is concerned with media, therefore focuses on:

- ▶ the maintenance of media independence and plurality;
- ▶ support for freedom of expression – while also combatting illegal and harmful content;
- ▶ encouraging traditional media to engage with ICTs and new media;
- ▶ reducing international imbalances in infrastructure, resources and capabilities; and
- ▶ support for media training and capabilities.

Developments since WSIS

Traditional media, such as newspapers, radio and television, continue to be bastions of journalism and have not been eclipsed by new media. At the same time, they have been substantially affected by them.

Changing business models and citizen behaviour have adversely affected some media. Newspapers have lost readers in many countries. Radio and television compete for audiences with online content, including new types of audio and video. Traditional book publishers are threatened by e-books in much the same way as traditional booksellers were threatened and lost markets to online retailers. All traditional media have lost advertising revenue to digital competitors.

However, ICTs have also allowed traditional media to develop in new ways. Newspapers and broadcasters now publish content online, often including material that is not available on their traditional platforms, and have extended their readerships beyond national borders. Many publications are now only available online. Traditional newsgathering has been supplemented by user-generated content, including images and video material, and by citizen journalism. Content has become more interactive, as traditional titles offer digital comment space as well as letters pages.

These changes have had an impact on UNESCO's longstanding concern for press freedom, independence and plurality. The rise of citizen journalists, for example, has raised questions about their professional status, journalistic standards and the validation of news stories, as well as about their safety, freedom of expression and other ethical aspects of the Information Society. The Internet has allowed journalists and others to gain much greater access to information and has stimulated freedom of information legislation. The boundaries between freedom of expression, rights such as privacy, and concerns over national security and criminality have become less clear and more frequently tested by both traditional and online media.

Achievements of the Action Line

UNESCO has played a leading part, within the international community, in promoting media freedom and freedom of expression, in building the capacity of journalists and media organizations, and in developing understanding of the interaction between traditional and new media. Its work in this area is described in Part 3 of this report. In particular, working with its partners in the Action Line, UNESCO has:

- ▶ vigorously advocated for the value to society of upholding the right to freedom of expression, and the associated media freedom, independence and plurality in print, broadcast and the internet;
- ▶ established benchmark *Media Development Indicators* for assessing media freedom and independence and comparing media environments country by country;
- ▶ published landmark studies of the impact of the Internet and social media on traditional media, on freedom of expression and on privacy;
- ▶ strongly supported the safety of journalists, as lead agency for a United Nations *Plan of Action*, and developed indicators on safety;
- ▶ developed indicators for gender equality in media employment and content;
- ▶ built the capacity of journalists, media organizations and governments to promote free media and freedom of expression; and
- ▶ developed a new concept of Knowledge-Driven Media Development to take the media sector forward into inclusive Knowledge Societies

UNESCO continues to stimulate debate around the relationship between media and information technology, including the new concept of ‘internet universality’ (see below). As noted earlier, it will publish a major review of media freedom, safety, pluralism and diversity in the digital age, the *World Trends in Freedom of Expression and Media Development Report* in early 2014.

Action Line C9 has provided an opportunity for UNESCO to spread awareness of its work and engage in dialogue with other stakeholders, including Member-States and media organizations. In particular, it has helped UNESCO to share and explore views on the themes of benchmark publications on subjects including freedom of information and the use of user-generated content in broadcast media. Discussion in Action Lines has helped to develop work in progress, including media development and information literacy indicators. The Action Line has provided a valuable platform for encouraging use of the Organisation’s *Media Development Indicators* as a standard enabling comparison between different countries’ media environments.

The Action Line and its sub-groups have also provided an opportunity for other organizations to spread awareness of their work and benefit from multistakeholder discussion. The World Association of Community Radio Broadcasters, AMARC, has led a fruitful series of discussions on the role of community broadcasting in ensuring media plurality, and the legal and regulatory challenges faced by community media. Other debates within the Action Line have explored the continuing importance of public sector broadcasting, the future of radio in the Internet age, and the impact of social media on freedom of expression.

Looking to the future

UNESCO’s work on media freedom and freedom of expression puts it at the forefront of public debate on these issues. The nature of media will continue to change rapidly, with the development of more online alternatives to traditional media and continued expansion in opportunities for expression, including citizen journalism. The changes that are taking place in the ways that media content is produced and shared will continue to challenge the business models of traditional media.

New opportunities for media freedom are likely to be met by new types of violation of that freedom, including blocking and filtering of online content and the inappropriate use of surveillance and data mining techniques. Some governments have seized the opportunity of new technology to increase access to information, through open data initiatives. The role of information intermediaries, including Internet and Online Service

Providers, has also been changing, with some governments seeking to devolve content management authority to them. UNESCO will remain at the forefront in assessing these developments and in supporting media pluralism, independence and freedom as they evolve.

Action Line C10 – Ethical dimensions of the Information Society

Mandate of the Action Line

The *Geneva Declaration of Principles* envisaged a future in which the Information Society respects human rights and fundamental freedoms, including freedom of thought and privacy, but in which action is also taken to inhibit or prevent racial discrimination, xenophobia, child abuse and other generally accepted harms to society.

The mandate for this Action Line reflects both enthusiasm for the opportunities which ICTs present for extending human rights, and concern that ICTs can also be used for purposes which harm society and individuals. The international debate on information ethics (or info-ethics) concerns ethical, legal and societal aspects of the Information Society. Ethical principles involved derive from the Universal Declaration of Human Rights and include freedom of expression, universal access to information, the right to education and the right to participate in cultural life. They therefore affect a wide range of WSIS outcomes and have cross-cutting implications for other Action Lines.

UNESCO's core mandate commits the Organisation to promote peace and security within the framework established by the international rights regime. This is consistent with the Action Line mandate to 'promote respect for peace and ... uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature.' All stakeholders, according to both WSIS and UNESCO, should promote the common good and work together to avert harm.

Developments since WSIS

One of the most important developments in the Information Society since 2005 has been the emergence of new services and applications which facilitate freedom of expression and association.

At the time of WSIS, the Internet was for most users primarily a source of information rather than an opportunity for communication. Innovative 'Web 2.0' services such as social networks, microblogs and audio/video file-sharing applications have led to enormous growth in user-generated content, including much more open and accessible debate on public policy issues. The increasing capability of mobile phones, which have become the primary mode of access to the Internet for many users in developing countries, has intensified this trend, which has contributed to the development of citizen journalism and crowdsourcing, discussed earlier in this report, and is widely believed to have contributed to political transformations in several countries.

As well as enabling greater expression and association, however, ICTs and the Internet have also made it much more difficult for individuals and organizations to protect their privacy. Everything that people do online leaves a trail of information about them which is much more extensive than that left in their offline lives. These data have commercial value to businesses that provide services on the Internet. Recent revelations concerning government surveillance of online activity have also led to widespread debate about privacy, data protection, the detection of crime (including fraud and child sex abuse) and national security. Challenges of cybersecurity, data protection, data security and data sovereignty are intensifying as a result of technological developments, including big data analysis, cloud computing and the Internet of Things.

There has been much discussion of ethical issues arising from these developments, including the extent to which technological changes are related to their social context, and the extent to which adoption and experience of technologies alters human interactions. An important underlying factor in these discussions concerns whether ICTs are seen as essentially neutral or as expressions of the assumptions, expectations and values of those responsible for their design. The diversity of perspectives and assumptions on these themes highlights the need for awareness of the ethical dimensions of ICTs across all Action Lines.

Particular attention has been paid to the relationship between ICTs and human rights. In 2012, the United Nations Human Rights Council agreed that 'the same rights that people have offline must also be protected online,' especially freedom of expression. This clarified the applicability of the International Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights to the Internet, including the constraints on rights which are included in those instruments.

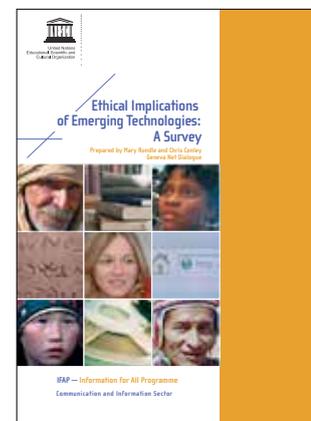
Ethical issues such as these have become increasingly important in discussions about the future of the Internet and in particular cybersecurity – a term that includes both the protection of Internet resources against malicious attack and the protection of society against malicious use of Internet resources. While technical dimensions of cybersecurity are the responsibility of Action Line C5, their ethical dimensions fall under the mandate of Action Line C10. Coordination between these two dimensions will be important in ensuring the integration of human rights with public policy goals.

Achievements of the Action Line

Ethical issues associated with peace and sustainable development are at the heart of UNESCO's mandate. Ethical questions about the role of governments, the rights of citizens and the responsibilities of different stakeholder communities also arise in almost every aspect of Information and inclusive Knowledge Societies.

Some of UNESCO's work around the theme of Info-Ethics is described in Part 2 of this report. This includes much of UNESCO's work on media freedom, freedom of expression and other rights, including the pioneering and influential *Global Survey on Freedom of Expression and Privacy* which UNESCO published during 2012.

In addition to this work, UNESCO held a series of regional Info-Ethics conferences in the years following the second WSIS summit. There has been ongoing discussion among Member-States about the possible development of a code of ethics for ICTs and/or the Internet. Although this work has not reached any firm conclusions, it has stimulated important research and analysis including preparation of a survey of the *Ethical Implications of Emerging Technologies*. UNESCO has also helped to shape the thinking and practice of public, private and civil society actors through discussions such as those leading to adoption of the *Riga Guidelines on Ethics in the Information Society* at a Global Meeting of Experts in October 2013, which also discussed the development of a handbook on information ethics for policymakers.



Multistakeholder debate within Action Line C10 has ranged widely across the whole range of WSIS outcomes, including issues that are covered by Action Lines C3 (access to information and knowledge), C5 (confidence and security in the use of ICTs) and C9 (media). Action Line participants have explored the relationship between the Information Society, rights instruments and other international agreements; the relationships between rights in the digital age; and approaches to negative aspects of the Information Society including the abuse of ICTs and the Internet to harm individuals and communities. The 2011 session of the Action Line focused on the relationship between cybersecurity and information ethics.

Looking to the future

The ethical challenges of the Information Society will continue to grow and become more complex as ICTs continue to become more pervasive and have increased impact on human society, and as technological innovation presents people with opportunities to do things which were previously not possible or which threaten others' security or privacy, many of which were not envisaged at the time that international rights instruments were developed. Concepts of security and privacy are evolving rapidly alongside the evolution of ICTs themselves, particularly as data gathering becomes more pervasive and extensive and as data management and analysis become more crucial to policy development, public service and business activity. Technological innovation and market evolution are changing the relationships between governments, businesses and citizens. The blurring of boundaries between issues, and the emergence of new opportunities and threats to rights, point to the need for more public discourse around these challenges and better understanding of their implications. UNESCO will contribute to this debate with a comprehensive study of the Internet-related issues within the mandate of the Organization, including access to information and knowledge, freedom of expression, privacy and ethical dimension of the information society, which will inform debates of the 38th General Conference in 2015.

A forum for debate, such as Action Line C10, provides a valuable space for exploring ideas and attitudes without the need to agree a common view. There are also important overlaps between the issues covered by Action Lines C5, which is concerned with cybersecurity, and C10.

The future of the Action Lines

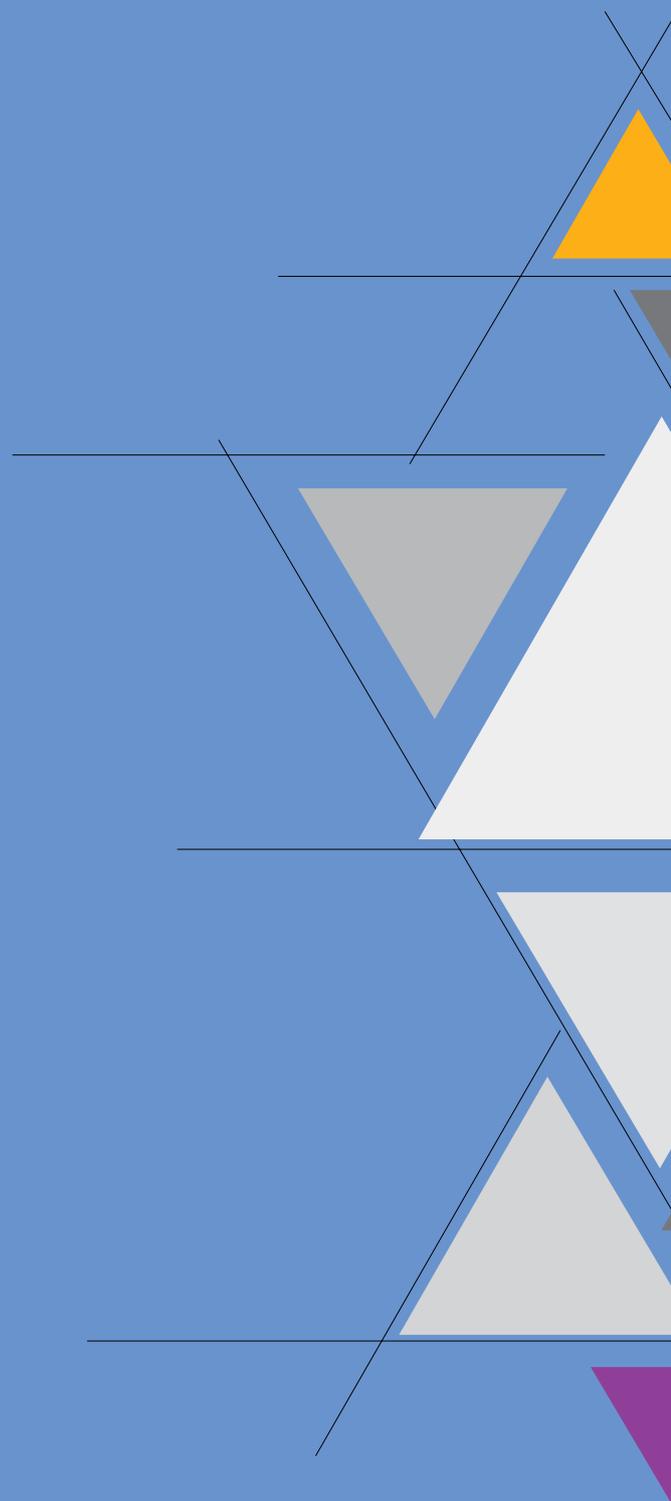
UNESCO has worked extensively to make the WSIS Action Lines an effective forum for the interchange of ideas and experiences between different stakeholders concerned about different aspects of the Information Society. This has not been an easy task. Participation in some Action Lines and Action Line events has been disappointing, with only a limited range of organizations involved in the relevant area of activity participating. In spite of their efforts, UNESCO and other UN agencies have found it hard to achieve continuity between annual meetings or to develop dynamic partnerships among the stakeholder communities involved. Although participation and the quality of debate have improved significantly since the initiation of the WSIS Forum in 2009, it remains the case that none of the Action Lines exercises a leading role in the practical implementation of WSIS outcomes in its area.

The United Nations General Assembly will review the future management of Action Lines when it considers ten years' experience since WSIS in 2015. This will provide an opportunity for all stakeholders to contribute to discussion concerning whether the Action Lines should continue as they are or be restructured, for example by integrating WSIS follow-up more closely with the Sustainable Development Goals which the General Assembly will also agree in 2015.

UNESCO considers that it is important to build on the above experiences and further maximise its value added in all processes concerned with following up WSIS outcomes that lead towards building inclusive Knowledge Societies. The Organization remains committed to continuing its work with all stakeholders in order to achieve this central goal.

PART 6

LOOKING TO THE FUTURE – WSIS POST- 2015



The theme of inclusive Knowledge Societies will continue to be at the heart of UNESCO's work to fulfil WSIS objectives. If anything, the years since WSIS have made clearer the importance of reaching beyond technology to ensure that ICTs meet human development needs. Inclusive Knowledge Societies will be societies in which people have ready access to information and to communications resources, in languages and formats that suit them whatever their individual circumstances, the skills to interpret and make use of them, and employment opportunities to turn information and skills into sustainable livelihoods. Such societies will be better equipped to address the challenges of poverty eradication, sustainable development and peaceful coexistence that still face our world. UNESCO will continue to pursue them vigorously through its own programmes and in partnership with others.

The emergence of the Internet as the world's leading medium for information and communication in the early years of this century has required governments and other stakeholders to rethink many of the assumptions that had previously underpinned their policies and priorities. The Internet is in a state of continual expansion and innovation. The decade since WSIS has seen major, sometimes unanticipated developments in its technology, services and markets, as broadband networks and the mobile Internet have reached out to more people, Web 2.0 applications have greatly extended interactivity, and innovations such as cloud computing have begun to offer radically new ways in which organizations and individuals can store data and manage their business and personal lives.

The Internet has been built on foundations of open innovation and free expression. UNESCO believes that four principles are essential to the continued development of inclusive Knowledge Societies based on the Internet and other ICTs. These four principles have been summarised in the draft concept of 'Internet universality' which UNESCO has developed as a synthesis of its positions and statements, and about which it has extensively consulted other stakeholders during 2013. These principles are that the Internet should be:

- ▶ rights-based, rooted in freedom of expression, the Universal Declaration of Human Rights and its associated Covenants;
- ▶ open, in the way that Internet protocols are developed, applications are designed, and services are made available to their users;
- ▶ accessible to all, in both infrastructure and content; and
- ▶ multistakeholder in its governance, building on the successful partnerships that have evolved since WSIS between governments, the private sector, the technical and professional community, and civil society to foster the Internet's growth and use for peace, prosperity, social equity and sustainable development.

These principles are critical to the future of a dynamic Internet, which contributes to the achievement of UNESCO's core commitments to freedom of expression, education for all, access to information and knowledge, and cultural and linguistic diversity. They offer a framework for the Organisation's future Internet-related work to promote inclusive Knowledge Societies beyond 2015.

The year 2015 will be a landmark year in international engagement with social and economic development. As well as the WSIS+10 review, the United Nations General Assembly will undertake a comprehensive review of the Millennium Development Goals, and will agree a new post-2015 development agenda, including the adoption of Sustainable Development Goals. This provides an opportunity to integrate ICTs and WSIS outcomes more effectively within the broader development agenda, and associate the emergence of inclusive Knowledge Societies with the Sustainable Development objectives of social equity, economic prosperity and environmental sustainability. UNESCO can be expected to enthusiastically contribute further to the growth of inclusive Knowledge Societies in the framework of the new mandate for development that will emerge from the General Assembly in 2015.

