CONNECT ALL
PUBLIC LIBRARIES,
MUSEUMS, POST OFFICES AND
NATIONAL ARCHIVES
WITH ICTs

Target 4: Connect all public libraries, museums, post offices and national archives with ICTs[1]

Executive summary

WSIS Target 4 measures the extent to which public libraries, museums, post offices and national archives are connected with ICT. Those institutions are highly relevant to the information society as repositories of, and public access points to, knowledge and information. They are also centres of learning and education, communication and commerce. Connecting public libraries, museums, post offices and national archives with ICT serves multiple purposes:

- Bringing those institutions online increases the reach and accessibility of their holdings.
- Public libraries and post offices are in a unique position to provide access to ICTs.
- Beyond providing access to ICTs, libraries can serve as a venue for ICT education and capacity building.
- ICTs can improve the operations of these institutions.

The tracking of each of the subtargets of Target 4 is hampered by a lack of comprehensive and internationally comparable data. Available data suggest that many libraries, museums, post offices and archives had a broadband Internet connection and some sort of web presence by 2013 (or latest year for which data are available). Even less information is available on the extent of digitization, but available data suggest that a lot remains to be done in terms of digitizing cultural heritage and making it available online. With regards to public libraries and post offices as providers of public Internet access, available data show that while some progress has been made, libraries and post offices remain largely untapped as public access venues.

Moving forward, post-2015 discussions should distinguish between public access to ICTs and online content related to culture, in particular:

1. Despite the continuous growth in Internet access, there will continue to be a need for public access to the Internet for the foreseeable future – in particular for poor and underserved rural communities in developing countries. Public libraries and post offices are in a unique position to provide public access to ICTs: they are open to the public, their branches are widely spread and they constitute an established source of information.
2. Libraries, museums and archives are repositories of knowledge and information. They present an authoritative source of content and can put information into context. By digitizing books, documents and objects and making them available online, libraries, museums and archives are major providers of online cultural content.

Future tracking of the ICT-connectedness of libraries, museums, post offices and archives could thus be divided into two parts and merged with possible post-2015 targets focusing on online content creation and connecting people with ICTs.

Introduction

WSIS Target 4 measures the extent to which public libraries, museums, post offices and national archives are connected with ICTs. Those institutions are highly relevant to the information society as repositories of, and public access points to, knowledge and information. They are also centres of learning and education, communication and commerce. Connecting public libraries, museums, post offices and national archives with ICTs serves multiple purposes:

- Bringing those institutions online increases the reach and accessibility of their treasury of information.
- Public libraries and post offices in particular are in a unique position to provide access to ICTs given that they are open to the general public, established as resources of information and their branches can generally be found throughout a country.
- Beyond providing access to ICTs, libraries in particular, can serve as a venue for ICT education and capacity building.
- ICTs can improve the operations of these institutions; this ranges from post offices offering track-and-trace services to archives and museums digitizing content to preserve their collections.

Given the numerous purposes that connecting public libraries, museums, post offices and national archives with ICTs can serve, Target 4 is relevant to a number of WSIS action lines as shown in Figure 4.1.

Figure 4.1: Relevance of Target 4 to WSIS action lines
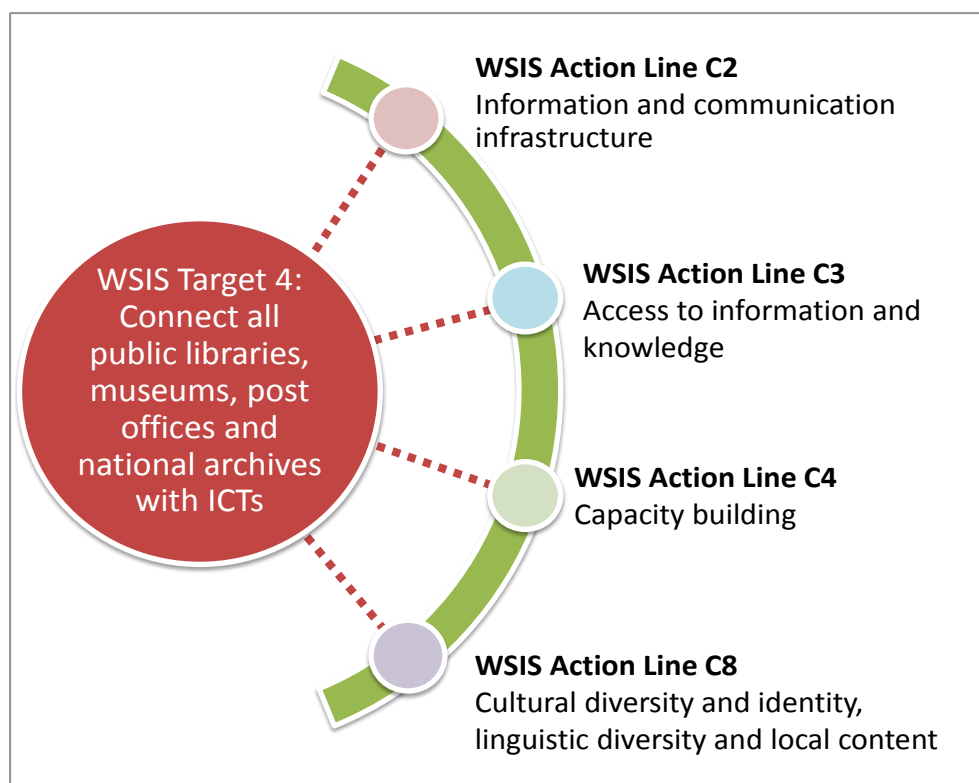
Action Line C2 (Information and communication infrastructure) is concerned with ICT infrastructure and calls on governments to "… provide and improve ICT connectivity for all schools, universities,

health institutions, libraries, post offices, community centres, museums and other institutions accessible to the public … in the context of national e-strategies." (ITU, 2005)

Action Line C3 (Access to information and knowledge) includes several calls for action with regards to public libraries and archives. In particular, it calls for the "… creation and development of a digital public library and archive services … including reviewing national library strategies and legislation, developing a global understanding of the need for "hybrid libraries",[2] and fostering worldwide cooperation between libraries." Furthermore, Action Line C3 supports open access to information by stating that "Encourage initiatives to facilitate access, including free and affordable access to open access journals and books, and open archives for scientific information." Action Line C3 calls on governments to "… establish sustainable multipurpose community public access points. These access points should, to the extent possible, have sufficient capacity to provide assistance to users, in libraries, educational institutions, public administrations, post offices or other public places, with special emphasis on rural and underserved areas ...".

Action line C4 (capacity building) relates, among other things, to the capacity building potential of public libraries and post offices and calls on governments to "Promote e-literacy skills for all, for example by designing and offering courses for public administration, taking advantage of existing facilities such as libraries, multipurpose community centres, public access points and by establishing local ICT training centres with the cooperation of all stakeholders." Action Line C4 furthermore underlines the importance of designing "… specific training programmes in the use of ICTs in order to meet the educational needs of information professionals, such as postal workers and other relevant professional groups."

Finally, Action Line C8 (Cultural diversity and identity, linguistic diversity and local content) is concerned with public libraries, archives and museums as generators of content and stewards of a country's cultural heritage. In particular, it calls on countries to "Develop national policies and laws to ensure that libraries, archives, museums and other cultural institutions can play their full role of content, including traditional knowledge providers in the Information Society, more particularly by providing continued access to recorded information." Furthermore, it calls on countries to "Support efforts to develop and use ICTs for the preservation of natural and cultural heritage, keeping it accessible as a living part of today's culture. This includes developing systems for ensuring continued access to archived digital information and multimedia content in digital repositories, and support archives, cultural collections and libraries as the memory of humankind." Action Line C8 also includes a call to "Support local content development, translation and adaptation, digital archives, and diverse forms of digital and traditional media by local authorities."

Target 4 is furthermore linked to Target 1. Post offices and libraries can serve rural communities as public Internet access venues and thus contribute to the achievement of Target 1 (Connect all villages with ICTs and establish community access points). Post offices and libraries are also important providers of online content, and in particular local content, and are thus highly relevant to Target 9 (Encourage the development of content and put in place technical conditions in order to facilitate the presence and use of all world languages on the Internet).

While Target 4 is highly relevant to different WSIS action lines, there are serious limitations regarding the availability of data for this target. General statistics on public libraries, museums and national archives at the international level are lacking, let alone, statistics on ICTs. Ad hoc data collection exercises have found that definitions, functions and organizational structures of these institutions

vary across countries, thus adding to the challenge of producing internationally comparable data. Post office statistics are an exception, as data are regularly collected by the Universal Postal Union (UPU) following well-established definitions.

This chapter will provide an analysis of data availability based on the indicators as defined in the 2011 WSIS statistical framework (*Partnership*, 2011) and a discussion on the achievement of the target for each of the institutions covered by WSIS Target 4, namely public libraries, museums, post offices and national archives. The conclusion will summarize the progress made in connecting these institutions with ICTs and provide recommendations for the way forward.

Achievements against Target 4

Public libraries

While access to the Internet continues to expand, it is still not available to the majority of the world's population. In 2013, 39 per cent of the world's population was using the Internet. In developing countries, the percentage was lower at 31 per cent and in least developed countries only 8 percent of individuals were Internet users. Millions of people around the world rely on public access venues, such as public libraries, to go online.[3] The library is often the only place in many communities where people can use ICTs to access information that will help them to improve their education, develop new skills, find jobs, build businesses, make informed agricultural and health decisions, or gain insights into environmental issues (Sey *et al.*, 2013). Data from the International Federation of Library Associations and Institutions (IFLA) show that globally there are more than 330 000 public libraries, of which 73 per cent are located in developing and transitioning countries.[4] Public libraries reach populations underserved by other institutions, and they come with the support of library staff who are on hand to offer advice and training. As part of many countries' existing infrastructure, and often a key component of a country's cultural heritage, public libraries are known and respected institutions, in many cases established and maintained by governments.

A five-year research project (2007–2012) – the Global Impact Study of Public Access to Information & Communication Technologies – carried out by the Technology & Social Change (TASCHA) group at the University of Washington Information School, showed that public libraries play a critical role in extending the benefits of ICTs to a diverse range of people worldwide. The results show that a central impact of public libraries is promoting digital inclusion, information access and development of ICT skills through technology provision, particularly for marginalized populations and those who face challenges using and benefiting from computers and the Internet (Sey *et al.*, 2013).

In the United States, public libraries have successfully made the transition from a traditional depot of books to also opening access to the web's almost endless wealth of information. A 2010 study, *How the American Public Benefits from Internet Access at U.S. Libraries* (Becker *et al.*, 2010), shows that in US libraries "Internet access is now one of the most sought after public library services, and it is used by nearly half of all visitors." Research from the Pew Research Center confirms these findings: in a national survey conducted in 2012, it was found that 77 per cent of Americans say that free access to computers and the Internet is a "very important" service of libraries. This compares to 80 per cent of Americans saying that borrowing books – a traditional service offered by libraries – is a "very important" service (Zickuhr *et al.*, 2013).

Apart from providing public access to the Internet, libraries are repositories of knowledge and information. They provide a venue in which to read and study as well as a collection of books, journals and other resources to the general public. The continuing growth of the information society has a direct and important impact on libraries, with more and more books, documents, journals and other resources available and accessed online. As the media that libraries are offering are evolving, the role of libraries is changing as well.

> **Box 4.1: The Economic Commission for Africa's digital institutional repository**
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> In its over 50 years of existence, the United Nations Economic Commission for Africa (UNECA) has created and holds a vast quantity of information and knowledge in a variety of formats, including printed and electronic. These represent the corporate memory, providing historical evidence of its actions and decisions. Begun in 1959 as a traditional document repository accessed by a card catalogue, the UNECA library has adapted over time to provide its material in a digital format so that knowledge organizations and individuals can access it around the world. The information resources include published materials such as flagship publications, journal articles, conference proceedings, technical and annual reports, working papers, policy briefs, speeches, UN resolutions and various multimedia products, all which include information and research on economic and social developments in Africa.
>
> In 2008, a proposal was brought forward to develop an institutional repository (IR) that would provide an online mechanism for collecting, preserving and disseminating all UNECA publications and other information resources in a digital format. Other overarching objectives were to establish and endorse an institutional framework, including policies and guidelines that promote proper development, the management and preservation of UNECA intellectual output, and the digitization and online dissemination of all print collections.
>
> The IR hosts over 19 000 documents grouped into 13 categories, including amongst others, economic development, gender issues, political and legal questions, as well as transport and communications. The usage statistics indicate that the repository is widely accessed, with on average 200 000 hits and 100 000 documents downloaded per month by users from all over the globe (see table below).
>
> **UNECA institutional repository, number of views, top ten countries, 2013**
>
> | Country | Views |
> |---|---|
> | United States | 91,870 |
> | Korea, Rep. | 5,077 |
> | Italy | 4,583 |
> | China | 2,072 |
> | Nigeria | 1,726 |
> | France | 849 |
> | Ireland | 848 |
> | Ethiopia | 573 |
> | United Kingdom | 539 |
> | Ukraine | 534 |
>
> Today, the wealth of knowledge generated by UNECA since 1958 is well organized, preserved and widely accessible worldwide over the Internet. Furthermore, the IR activities have been streamlined with the regular knowledge and library services activities. Its activities are linked to the Access to Scientific and Socio-economic Knowledge in Africa (ASKIA) online portal, which was developed as a federated search engine to be a one-stop-shop able to meet the demand for knowledge from Africa and beyond. The first phase of the UNECA IR project was completed in 2011 and the second phase of sustaining the growth of the repository has continued since then. In 2014, the inclusion of multimedia resources such as videos, photos, speeches and press releases started, hence ensuring that all types of the Commission's information resources are captured in the UNECA IR.
>
> Source: UNECA.

By digitizing their rich repository and making it available online, libraries can significantly extend their reach, facilitate access to information and better serve their users (see Box 4.1). The digitized library refers to everything from the offering of e-books, e-journals and other electronic resources, to the digitization of key national heritage documents or the availability of a digital card catalogue. By creating digital public libraries and providing free or affordable access to open access journals and books, libraries make an important contribution in promoting the information society.

Indicators for measuring the subtarget

Indicators 4.1 and 4.3 of Target 4 address the ICT connectivity of public libraries worldwide, and are designed to support the measurement of progress in the WSIS action lines whose goals indicate a requirement for high-speed Internet connectivity. Indicator 4.2 tracks public libraries as providers of public Internet access.

> Indicator 4.1: Proportion of public libraries with broadband Internet access
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> Indicator 4.2: Proportion of public libraries providing public Internet access
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> Indicator 4.3: Proportion of public libraries with a web presence.

The choice of indicators acknowledges the diverse functions of libraries. Indicator 4.1 measures how far libraries themselves are connected to the Internet, which is of course the foundation for integrating ICTs in their work. Indicator 4.2 is concerned with how libraries are providers of Internet access to the general public. The third indicator (4.3), measures how far libraries are represented on the web – with a website/homepage or presence on another entity's website. The information made available on a library's webpage will vary considerably, thus a limitation of the indicator is that a web presence *per se* does not reveal anything about the quality of information.

Unfortunately, the availability of data for each of the indicators is variable at best. A 2007 library pilot survey, conducted by the UNESCO Institute for Statistics (UIS) in Latin America and the Caribbean, collected information on the number of public libraries with websites but it currently has no plans to resume its library survey in the short-term.[5]

The largest data collection exercise in relation to the indicators was undertaken by IFLA during the period 2005–2009 when it surveyed its member countries regarding the extent to which libraries are providing public Internet access across different library types, including public libraries.[6] These surveys provide some data for Indicator 4.2. The IFLA *World Report 2010* (IFLA, 2010) includes data from 122 countries.

A number of countries collect data on the ICT characteristics of their national public library networks. For example, in Australia, National and State Libraries Australasia (NSLA) published a statistical report on public libraries, including data on the 'number of service points with public access Internet terminals' and 'public use computer terminals' for the year 2011–12 (State Library of Queensland, 2013). In Europe, the Conference of National Librarians (CENL) has a Working Group on Performance Evaluation, which has defined indicators for measuring digital services by national libraries. Results are published in the national reports to CENL.[7] The Institute of Museum and Library Services carries out an annual data collection on public libraries in the United States. The survey measures 'usage sessions on public access Internet computers at public libraries' and the number of 'public access Internet computers available at public libraries'.[8]

Apart from a lack of globally available and comparable data on libraries and ICTs at the global level, monitoring the subtarget is further complicated by issues concerning the definition of public libraries. In some countries, public libraries are centrally administered while in others, the system is decentralized. Therefore, it might not always be clear whether surveys capture all relevant public library units. Furthermore, how a public library is defined might differ as well.[9] For example, a study conducted by the University of Washington's TASCHA group revealed that "despite the information in many administrative sources, the majority of public libraries in the core research countries did not in fact meet the [study's] definition of public access" (Sey *et al.*, 2013).

Status of the subtarget

The 2013 *Partnership on Measuring ICT for Development WSIS Targets Questionnaire, 2013* (*Partnership*, 2013) collected information on the extent of ICT connectivity of public libraries. However, given the very low response rate, the results do not allow for conclusions at the global or regional level. Chart 4.1 shows that in 13 out of 30 countries that provided data on the proportion of public libraries with broadband Internet access, all (or nearly all) public libraries were connected in 2013. This includes mostly developed countries such as Denmark, Estonia, Japan and Latvia, but also some developing countries such as Bhutan, El Salvador and the Maldives.

The proportion of public libraries with a web presence is generally much lower, with only 7 out of 26 countries reporting that all (or nearly all) of their public libraries had a web presence. In half of those countries (13 out of 26), less than 50 per cent of the countries' public libraries had a web presence. In two countries, Niger and Sudan, no public library had a web presence and in Azerbaijan and Georgia very few (under 3 per cent) public libraries had a web presence. A comparison over time regarding the ICT connectivity of public libraries is very difficult to make, as the countries responding to the 2013 and 2009 WSIS targets questionnaires are almost completely different. Of the few countries that responded in both years, Denmark, Latvia and Singapore already had connected all public libraries by 2009. In the Czech Republic, the proportion of public libraries with a web presence almost doubled from 30 per cent in 2009 to 54 per cent in 2012. Turkey also made good progress and in 2013, 12 per cent of public libraries had a web presence, compared to only 3 per cent in 2009.

Chart 4.1: Public libraries with broadband Internet access/a web presence, 2013 or LYA[10]
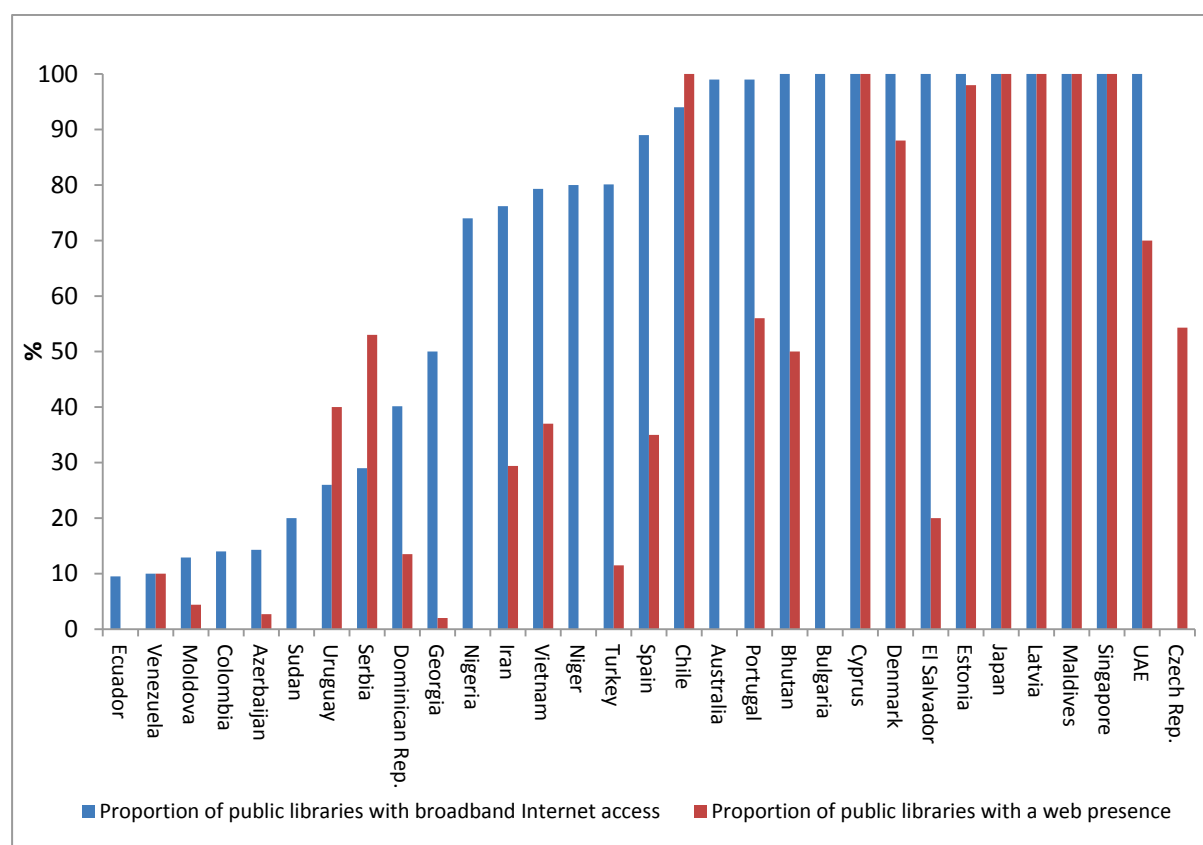
Source: Partnership on Measuring ICT for Development WSIS Targets Questionnaire, 2013 (*Partnership*, 2013).

Note: Niger and Sudan have data on web presence, with a zero value.

The IFLA/FAIFE *World Report* series reveals information about the extent and growth of public access to the Internet in public libraries for the years 2007 and 2009 (IFLA/FAIFE, 2007; IFLA, 2010). It is difficult to compare all reports due to different numbers of countries responding each year[11] but by 2009 it was possible to see an overall increase in levels of public access to the Internet in public libraries among responding countries. Table 4.1 shows the number and percentage of public libraries offering Internet access by region. Respondents were asked to estimate the levels of public Internet access in bands of access ranging from less than 20 per cent to 81–100 per cent of public libraries in a country offering public Internet access.

Across Africa, public access to the Internet in public libraries is very low, with 14 of the 22 countries responding to the 2009 questionnaire indicating that they do not offer access to the Internet in more than 20 per cent of their public libraries.[12] In Asia the situation is somewhat better, with 6 out of 27 responding countries able to offer access in 81–100 per cent of public libraries. In Latin America and the Caribbean, public access has expanded over the duration of IFLA's data collection, and by 2009, ten of the 21 countries reported that 81-100 per cent of their public libraries were able to provide Internet access. This compares with 6 out of 22 countries in 2007. However, despite progress across both Asia and the Latin America and the Caribbean regions, there still remain a number of countries (31) reporting low rates of public access.

Europe's public libraries have been able to expand Internet access during the period of the IFLA surveys, with 59 per cent of responding countries in 2009 able to offer Internet access in 81–100 per cent of public libraries.

Overall, the 2009 IFLA results show an improvement over 2007, which in turn was an improvement on 2005. However, improvements in providing public Internet access in public libraries have not been evident everywhere, and four of the six countries that have reported less than 20 per cent access in 2007 or earlier (Moldova, Romania, Russia and Ukraine) were still at this level in 2009. In every contribution to the IFLA/FAIFE *World Report* series the United States, Canada, New Zealand and Australia all reported that 81–100 per cent of their public libraries offer Internet access.

The *World Report* series shows that there are significant differences between developed and developing countries in terms of providing public Internet access in public libraries. The necessary infrastructure to access the Internet, costs related to Internet access and the implied financial burdens are all factors that play an important role in the limited access to the Internet in public libraries of the developing world. From the overall statistics, it is evident that (Western) Europe, North America, Australia and New Zealand have the best Internet access in all categories, whereas Africa has the lowest.

Table 4.1: Public libraries offering public Internet access, by region, 2007 and 2009

In your estimate, what percentage of all public libraries in your country offers Internet access to users?															
		Africa		Asia		Europe		Latin America & Caribbean		North America		Oceania		Total	
Percentage	Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
81–100%	2009	1	5	6	22	20	59	10	48	2	67	2	67	41	37
	2007	2	7	4	20	16	47	6	27	2	67	4	50	34	30
61–80%	2009	1	5	1	4	5	15	3	14	0	0	0	0	10	9
	2007	1	4	1	5	3	9	4	18	0	0	0	0	9	8
41–60%	2009	2	9	10	37	4	12	4	19	0	0	0	0	20	18
	2007	2	7	4	20	8	24	1	5	0	0	1	13	16	14
21–40%	2009	4	18	1	4	1	3	1	5	1	33	0	0	8	7
	2007	3	11	3	15	1	3	3	14	1	33	0	0	11	10
≤20%	2009	14	64	9	33	4	12	3	14	0	0	1	33	31	28
	2007	20	71	8	40	6	18	8	36	0	0	3	38	45	39
Total (N=)	2009	22		27		34		21		3		3		110	
	2007	28		20		34		22		3		8		115	
No data/ unknown	2009	4		5		0		1		0		2		12	
	2007	0		1		0		0		0		0		1	

Source: IFLA.

In a number of countries, the Bill and Melinda Gates Foundation's Global Libraries program has worked towards connecting more libraries with ICTs and has installed public access work stations and trained library workers (see Box 4.2). In Medellín (Colombia), the Red de Bibliotecas project has been successful in bringing Internet to the city's libraries (see Box 4.3).

Box 4.2: Global Libraries program

Since 2001, when it awarded its first country grant to the Government of Chile, the Global Libraries program of the Bill and Melinda Gates Foundation has leveraged over USD 260 million to connect 15 025 public libraries to the Internet in communities that serve almost 100 million people across 16 countries: Botswana, Bulgaria, Chile, Colombia, Indonesia, Jamaica, Latvia, Lithuania, Mexico, Moldova, Poland, Romania, South Africa, Turkey, Ukraine and Viet Nam. With more than 50 000 workstations installed and 20 000 library workers trained, this is the single largest multi-country philanthropic investment in public libraries.

FIGURE 1: COUNTRIES SUPPORTED BY THE GATES FOUNDATION
(Year Indicates Program Launch Year)
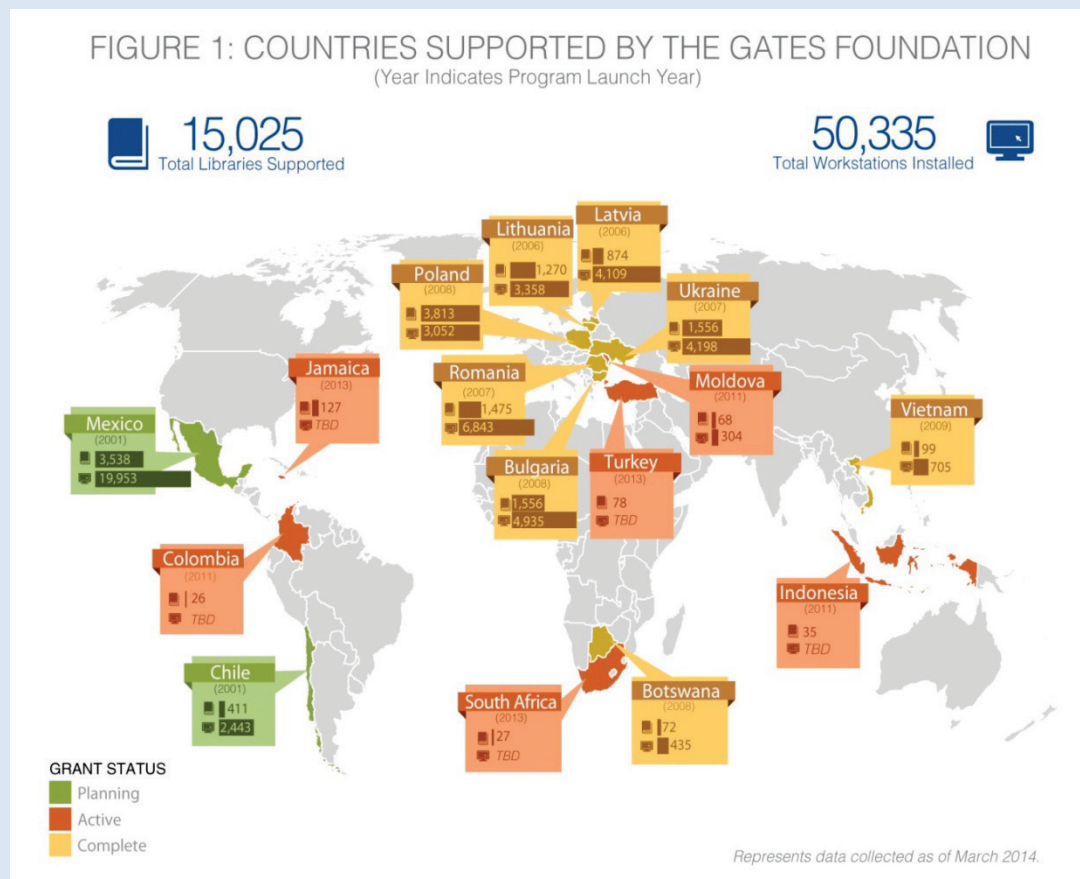
The BiblioRedes program in Chile presents a successful country example. Established in 2002 in poor and isolated communities throughout Chile, the program provides access to computers and the Internet through libraries. Up until 2013, through a network of 412 public libraries and 18 regional training labs with computers and Internet access, a quarter of a million Chileans had been trained in digital literacy. The program was initiated with the support of the Bill and Melinda Gates Foundation but is now supported through government and municipal funding.

Source: Bill and Melinda Gates Foundation.

> **Box 4.3: Red de Bibliotecas project in Medellín, Colombia**
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> In Medellín, Colombia, public and private sector organizations decided to bring Internet-connected computers to the metropolitan region´s libraries in 2006 through the Red de Bibliotecas project. By 2014, the Medellín metropolitan area hosted 63 libraries that all provide free ICT access to citizens. The project is being expanded to the rest of the state of Antioquia to reach 44 additional libraries. The project has encouraged public policies favouring the development of libraries equipped with ICTs and has trained librarians. Libraries have become integrated centres relied on by citizens for community participation, as well as training on a variety of topics and youth engagement.
>
> Source: Red de Bibliotecas.

Museums

Museums play a crucially important role in society: they not only conserve the heritage of humanity, they are also charged with communicating this heritage to the wider public. Furthermore, museums function as fora on culture and history – and are also places of learning and education. ICTs can support museums in fulfilling these functions. An online exhibition, while it cannot replace a physical museum visit, can reach wider and new audiences. It also provides the possibility of connecting different collections across museums, countries and continents (see Box 4.4). Furthermore, the largest part of a museum's collection is not on regular display at exhibitions, thus ICTs can play an important role in opening up collections by making them available online. Apart from bringing collections and exhibitions online, ICTs can also enrich museum visits. Integrating ICTs into exhibitions can help make them more interactive and provide a complementary source of information to visitors. ICTs can thus add value to museum collections and increase their visibility and usability. Museums can furthermore profit from use of ICTs in their work of cataloguing and preserving objects.

Indicators for measuring the subtarget

Two indicators have been identified to track this subtarget of Target 4.

> Indicator 4.4: Proportion of museums with broadband Internet access
>
> Indicator 4.5: Proportion of museums with a web presence.

Indicator 4.4 measures the proportion of museums that have access to broadband Internet. Broadband Internet access facilitates the work of museums and constitutes the foundation for museums to make further use of ICTs.

Indicator 4.5 tracks the proportion of museums with a web presence. This can include a website, home page or presence on another entity's website.[13] With the help of a web presence, museums can provide practical information (such as directions and opening hours) as well as information on exhibitions to potential visitors. Museum websites can also go much further and host virtual exhibitions, provide additional information and material on ongoing exhibitions, or offer access to collection databases and digital materials. The information made available on a webpage will vary considerably, thus a limitation of the indicator is that a museum's web presence *per se* does not reveal anything about the quality of information.

The International Council of Museums (ICOM) defines a museum as "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity

and its environment for the purposes of education, study and enjoyment".[14] The 2009 UNESCO Framework for Cultural Statistics (FCS) provides further details on the institutions to be included (UNESCO Institute for Statistics, 2009).[15]

At the international level, no organization is compiling statistics on museums. In Europe, the European Group on Museums Statistics (EGMUS) is working on the collection and harmonization of Europe-wide museum statistics. EGMUS provides statistics going back to 1998 on a variety of indicators on museums, including some with high relevance to the subtarget.[16] They are:

- number of museums possessing a website
- number of museums connected to a museum portal
- number of museums making use of computers:

    o for administrative purpose
    o for visitor's information purposes (for example, interactive gallery system)
    o for having a database for electronic inventory
    o for having Internet access.

In addition, the European Commission funded project, ENUMERATE, carried out a series of surveys on digitization in European cultural heritage institutions, including museums, libraries, archives and institutes of archaeology and monument conservation, during the years 2012 to 2014. The topics covered are: collection size and growth; use of/access to digital collections; the cost of digital collections; and digital preservation.[17]

Status of the subtarget

Chart 4.2 presents the results of the 2013 WSIS targets questionnaire on the indicators relevant to this subtarget. The results show that in the majority of the 25 countries that provided data, at least 90 per cent of museums had broadband Internet access. Very few countries had only a small proportion of museums connected to broadband Internet. They were: Yemen (5 per cent), Azerbaijan (9 per cent) and Ecuador (17 per cent). Furthermore, Chart 4.3 illustrates that, for most countries, the levels of broadband Internet access and web presence are related. Exceptions include El Salvador and Turkey, where a very high proportion (94–100 per cent) of museums had broadband Internet access but a small proportion (9 and 25 per cent respectively) had a web presence.

There are substantial differences between countries regarding the number of museums. This can both be explained by the simple fact that some countries have more museums than others as well as to different definitions of museums being applied. This limits the comparability of data: countries with just a few museums located in cities will be more likely to be connected to ICT than countries with museums spread throughout their territory.[18] In addition, where there are a small number of museums, it is possible that they are relatively large and therefore more likely to be connected.

Chart 4.2: Museums with broadband Internet access/a web presence, 2013 or LYA[10]
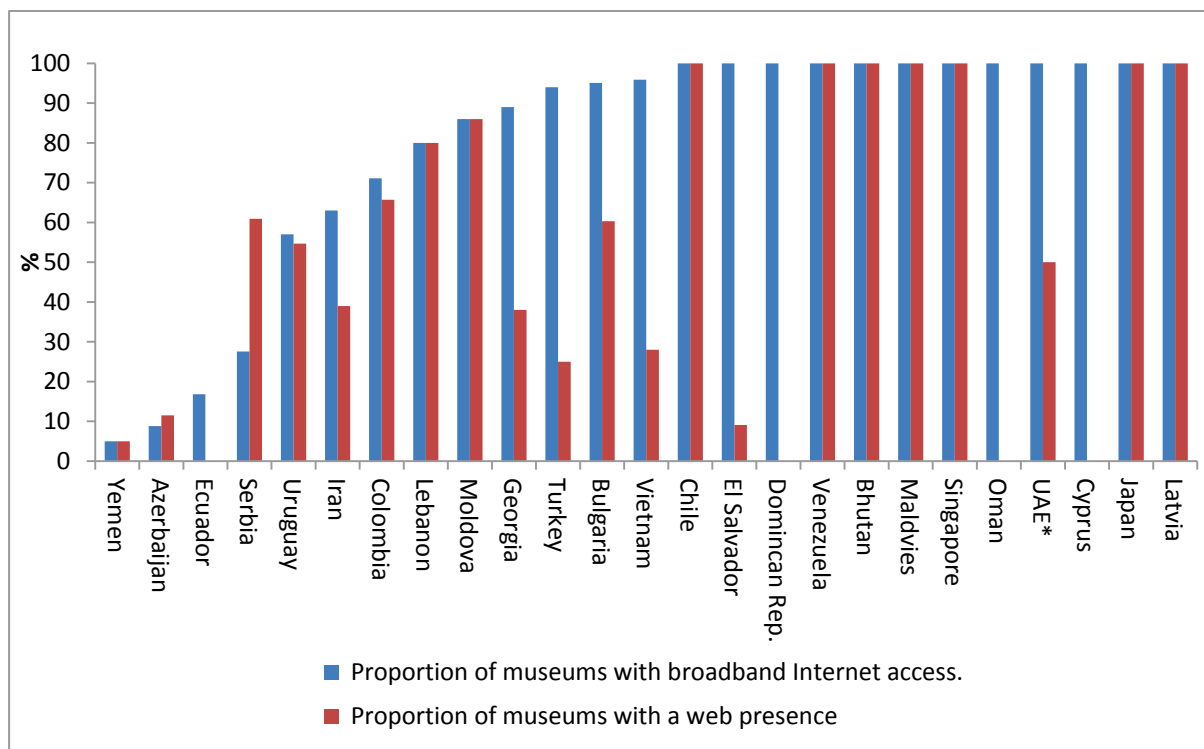
Source: Partnership on Measuring ICT for Development WSIS Targets Questionnaire, 2013.

Notes:

1. * estimate.
2. Colombia: Refers to museums under the Programa Fortalecimiento de Museos.

The ENUMERATE survey measures the extent to which European museums are connected with ICTs. The proportion of museums with a web presence was measured indirectly: institutions were asked to provide the address of their main website that is accessible for the general public.[19] As shown in Table 4.2, almost all European museums covered by the ENUMERATE survey had a web presence in 2012.

Table 4.2: Museums with a web presence, Europe, 2012

Country	Number of museums	Percentage with a web presence	Country	Number of museums	Percentage with a web presence
Austria	59	100	Lithuania	20	90
Belgium	27	100	Luxembourg	14	100
Cyprus	5	100	Malta	1	100
Czech Republic	73	97	Netherlands	93	100
Denmark	37	100	Poland	7	100
Estonia	6	100	Portugal	27	93
Finland	61	98	Romania	22	95
Germany	94	99	Slovakia	37	89
Greece	20	100	Slovenia	25	100
Hungary	14	86	Spain	87	89
Ireland	6	83	Sweden	17	100
Italy	18	100	Switzerland	58	91
Latvia	6	100	United Kingdom	28	96
Liechtenstein	2	50			

Source: ENUMERATE Core Survey 1, 2012.[20]

Apart from websites that are essentially initiated and maintained by individual museums, a growing number of institutions are involved in projects that aggregate digital collections on a national or international scale. In Europe, the Europeana portal is a major example of this initiative (see Box 4.4).

The ENUMERATE survey also included a question on the proportion of museum collections that are, and will be, available through a number of popular access channels. Offline access (48 per cent) and the institutional website (24 per cent) are widely used as a means to offer access to collections. An increase in the future is expected for access through the institutional website, national aggregator and Europeana (see Chart 4.3).

Chart 4.3: Accessibility of digital objects in museums, selected access channels, Europe, 2013
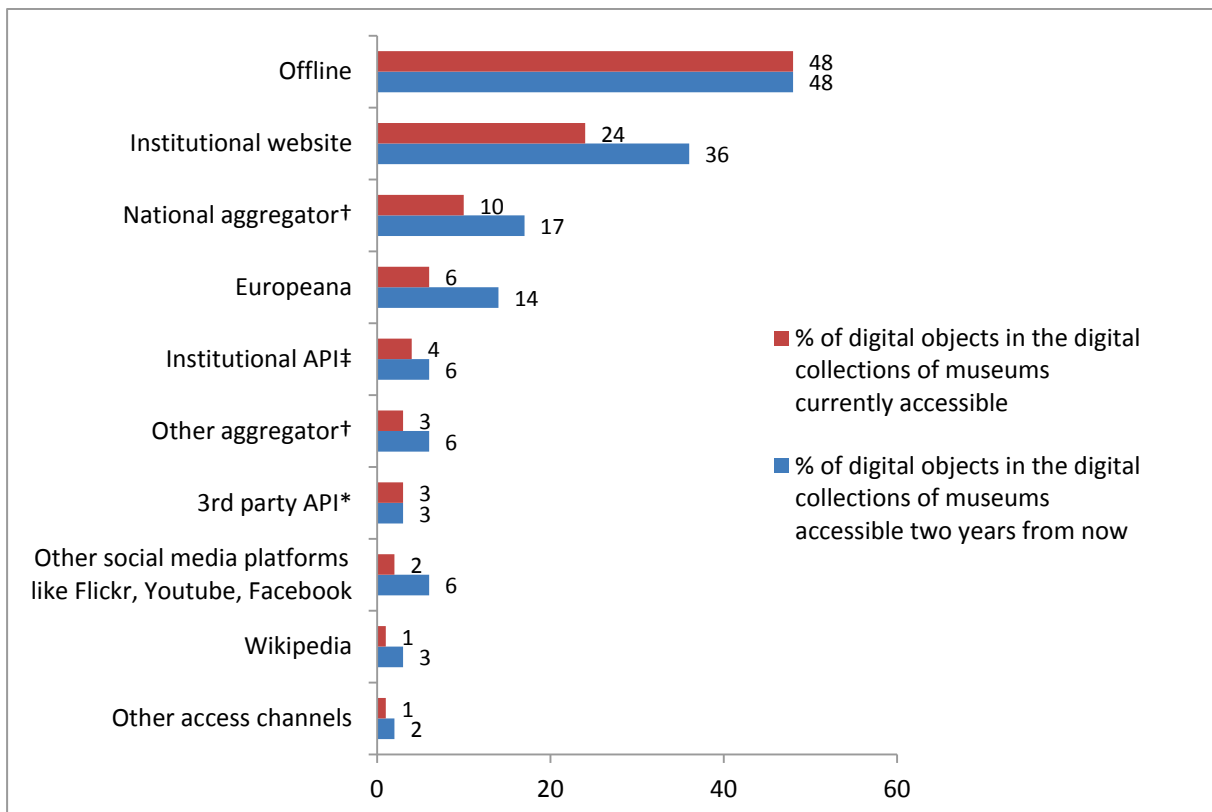
Source: ENUMERATE Core Survey 2, 2013.[21]

Notes:
1.   Sample size is 317 museums.
2.   †Organizations that compile and collect data from a group of data providers. National aggregators are organizations that collect data from cultural heritage institutions in a given country.[22]
3.   ‡Software solution managed by the heritage institution to enable open access to the collection data.
4.   *Software solution managed by third parties (for example, a commercial service provider) to enable open access to the collection data of the cultural heritage institution.

Museums are increasingly making use of social media to promote their collections and exhibitions as well as to engage in exchanges with visitors and online audiences. Through social media, museums can increase their visibility and encourage the virtual sharing of content. Table 4.3 shows the number of visits, both online and onsite, as well as the number of Facebook page 'likes' and Twitter followers for selected museums. The data illustrate that museum websites can greatly increase the reach of the institution. For example, New York's Metropolitan Museum of Art attracted 5.2 million onsite visitors in 2011, while almost ten times as many – 47 million visits – were made to the museum's website. The Metropolitan Museum of Art has over one million Facebook fans and close to 700 000 followers on twitter.

Table 4.3: Museum visits onsite, online (2011), Facebook 'likes' and Twitter followers (2014)

Institution	Location	Onsite (2011)	Online (2011)	Facebook likes (2014)	Twitter followers (2014)
		Number	Number	Number	Number
Musée du Louvre	Paris, France	8,500,000	..	1,219,483	82,381
British Museum	London, United Kingdom	5,842,138	8,700,000	505,055	271,798
Metropolitan Museum of Art	New York, United States	5,216,988	47,000,000	1,064,773	686,020
Tate	London, United Kingdom	5,061,172	17,887,851	646,145	1,045,360
National Gallery	London, United Kingdom	4,954,914	4,500,000	312,997	200,662
National Gallery of Art	Washington DC, US	4,775,114	..	145,906	43,996
Natural History Museum, London	London, United Kingdom	4,647,613	..	244,436	493,947
Museum of Modern Art	New York, United States	3,131,238	19,300,000	1,547,153	1,649,731
Centre Pompidou	Paris, France	3,130,000	..	380,234	100,426
National Museum of Korea	Seoul, Korea, Rep.	3,067,909	7,799,124	8,844	..
State Hermitage Museum	St. Petersburg, Russian Federation	2,490,387	..	19,864	131,792
Centro Cultural Banco do Brasil	Rio de Janeiro, Brazil	2,317,772	5,883,055	193,538	99,736
Museo UPR	San Juan, Puerto Rico	13,900	..	2,868	1,551
Centro Cultural Palacio La Moneda	Santiago, Chile	..	..	26,003	30,587
Museo Nacional de Colombia	Bogotá, Colombia	..	..	32,590	85,001
National Museums of Kenya	Nairobi, Kenya	..	..	3,023	245
MALI – Museo de Arte de Lima	Lima, Peru	..	..	144,173	15,028
The Mind Museum	Taguig, Philippines	..	..	115,948	3,213
Museum of Islamic Art	Ad Doha, Qatar	..	..	792,379	29,982

Source: Museum Analytics.[23]

Note: .. not available.

> **Box 4.4: Connecting cultural heritage across countries and continents**
>
> **Europeana:**
>
> The Europeana portal brings together millions of digitized items – including images, text, sound and video – from more than 2 300 European galleries, libraries, archives and museums. Europeana was launched in 2008 and is co-funded by the European Union. The content available on Europeana also gets showcased in the form of virtual exhibitions themed around pan-European history from the *Napoleonic wars* to *The Euro*. Europeana exhibitions feature items found in collections across the continent and provide visitors with extensive curatorial information. A special online collection – Europeana 1914–1918 – is dedicated to the "untold stories and official histories of WW1" and combines items from libraries and archives across the globe with memories and memorabilia contributed by families throughout Europe. The collection includes a multitude of digitized items, such as 400 000 rare documents, 660 hours of unique film material and 90 000 personal papers and memorabilia. Europeana aims to give access to Europe's entire digitized cultural heritage by 2025.
>
> **Virtual Collection of Asian Masterpieces (VCM):**
>
> The Asia Europe Museum Network (ASEMUS) initiated the virtual collection of Asian Masterpieces in 2007. More than 120 museums contributed objects from their collections, which are exhibited on the VCM website. Those include major museums such as the British Museum, the Tokyo National Museum and the National Museum of Korea, but also smaller local museums like the Traditional Arts and Ethnology Centre in Luang Prabang, Laos and the Didrichsen Art Museum in Helsinki, Finland. The participating museums share 2 200 masterpieces of Asian culture online. This virtual collection brings together objects that are physically separated across museums and collections in Europe and Asia.
>
> Source: Europeana[24] and Virtual Collection of Asian Masterpieces.[25]

Post offices

With over 640 000 post offices worldwide and almost half a million in developing countries, the postal network offers a unique physical network to provide better Internet connectivity to unconnected communities.

In outlying areas, post offices are often the only public service available and in many cases, they constitute a vital channel to communicate, and to exchange goods and services, between communities. Billions of people visit post offices every year for one reason or another. They send and receive mail, packages or money orders. They can also get access to government and related community services, as well as more sophisticated services such as account-based financial services or IT-based services.

Post offices themselves are important users of ICT in order to provide public Internet access points, new ICT-based postal services, improving their operations and for providing visibility of mail and packages for their customers (track-and-trace services) for which they rely on Internet access.

Indicators for measuring the subtarget

This section analyses the connectivity of post offices and the contribution of post offices in providing public access to the Internet. Two indicators were defined for this purpose:

> Indicator 4.6: Proportion of post offices with broadband Internet access
>
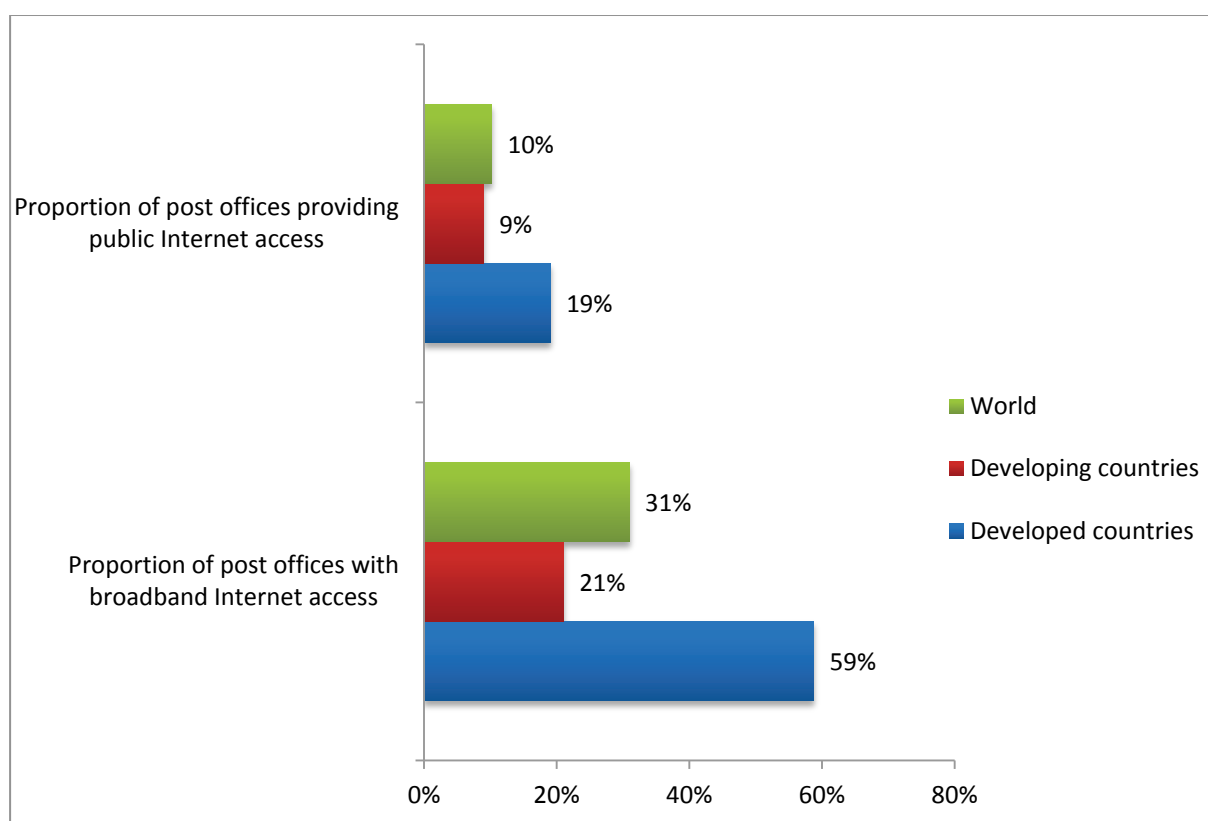> Indicator 4.7: Proportion of post offices providing public Internet access.

Whilst data on post offices providing public Internet access has been regularly collected by the UPU since 2005, data on post offices with broadband Internet access were only collected for the first time in 2013. In 2013, 81 countries (62 developing countries) provided data related to post offices

providing public Internet access and 74 (54 developing countries) provided data on post offices with broadband Internet access.

Status of the subtarget

The actual achievements in expanding broadband access to post offices do not always match the potential of the postal network for providing Internet access to the public. As shown by Chart 4.4, at 2012 there was a significant difference between the availability of broadband Internet access in post offices and the provision of public Internet access. While 59 per cent of post offices in developed countries and 21 per cent in developing countries were equipped with broadband access technologies, only 19 per cent of post offices in developed countries, and 9 per cent in developing countries, offered public Internet access to their customers

Chart 4.4: Post offices providing Internet/with broadband Internet, by level of development, 2012

Source: UPU.

Note: Data are calculated as a simple average.

Charts 4.5 and 4.6 illustrate the untapped potential of post offices to provide public access to the Internet. While the proportion of post offices with broadband Internet access reached high levels in a significant number of countries in 2012 (Chart 4.5), only 12 countries offered public access to the Internet in 20 per cent or more of their post offices (Chart 4.6). In 16 countries out of 74 countries that provided data on the number of post offices with broadband Internet access, 90 per cent or more of all post offices were connected. This includes Brunei, Darussalam, Estonia, Italy, Lebanon, Netherlands and Spain, where all post offices had broadband Internet access.
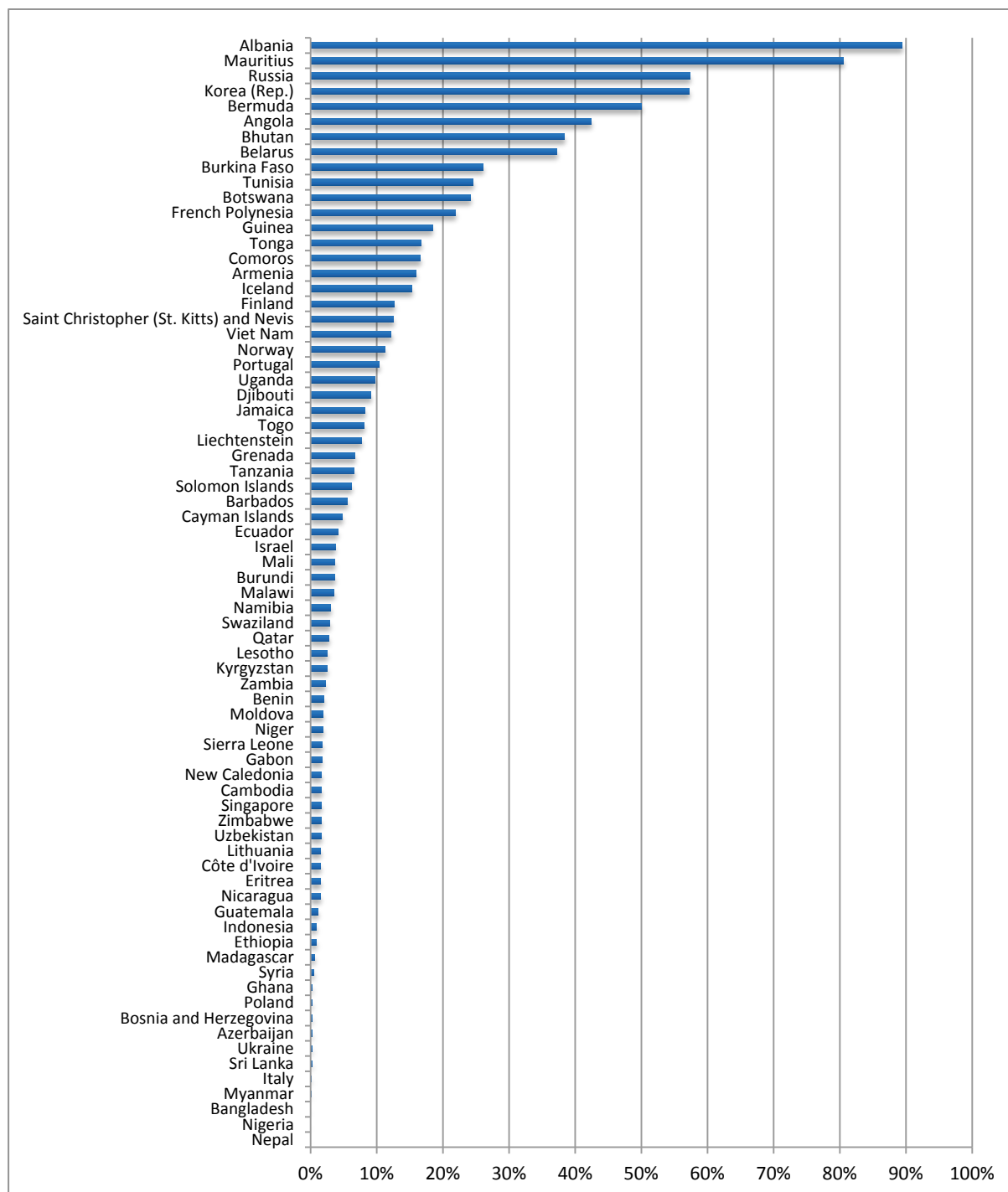
Chart 4.5: Post offices with broadband Internet access, by country, 2012
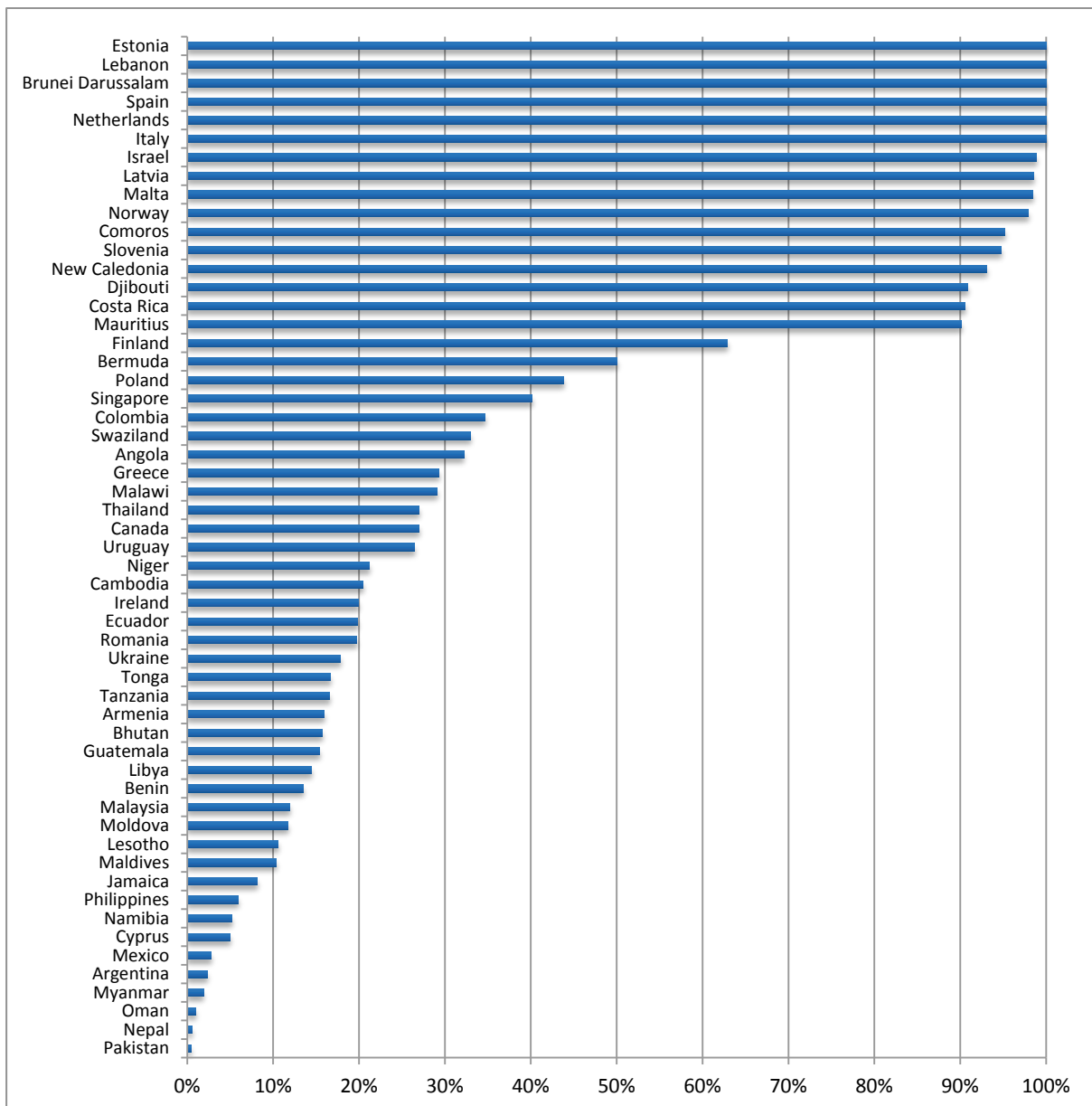
Source: UPU.

Note: The following countries had zero values (that is, no post offices in that country had broadband Internet access in 2012): Afghanistan, Albania, Belarus, Dominica, Georgia, Guinea, Jordan, Kenya, Kiribati, Mauritania, Nicaragua, Panama, Papua New Guinea, Senegal, Seychelles, South Africa, Suriname, Uzbekistan and Zimbabwe.

Chart 4.6: Post offices providing public Internet access, by country, 2012

Source: UPU.

Note: The following countries had zero values (that is, no post offices in that country provided public Internet access in 2012): Guyana, Iraq, Ireland, Lebanon, Malaysia, Oman, South Africa and Thailand.

Overall, 42 per cent of responding countries were equipped with broadband Internet in at least 20 per cent of their post offices (Chart 4.5).

Beyond providing public access to basic Internet services, expanding access to broadband Internet in post offices is critical in order to support financial and digital inclusion for underserved communities. The development of access to financial services through the postal network, either provided directly

by the latter or in partnership with other financial institutions, is a vital element of economic development and inclusion of low-income people.

Broadband Internet access via the postal network in rural and underserved communities provides opportunities for small and medium business enterprises (SMEs) to participate in e-commerce opportunities, for example, selling their goods to more affluent urban or overseas markets, while using the post office as a facilitator for the exchange of goods, payments and related services. A connected post office network is also an important asset for governments to increase democracy and social inclusion via the provision of e-government services such as identity, registrations, licenses and social services (UPU, 2012).

A recent UPU study indicated that 20 per cent of post offices of surveyed communities in 25 sub-Saharan African countries were located in the three main urban areas of each country. This pattern was also found in a research project analysing the location of post offices in the postal network in Brazil. The rest of the post office network was evenly distributed across small- and medium-size towns and rural areas.[26] Anecdotal evidence suggests that post offices in other developing (as well as developed) countries have approximately the same urban/rural distribution. Assuming that to be the case, if public Internet access is initially offered in a country's three main urban centres, that would equate to around 20 per cent of all post offices in the country offering public Internet access. Where the proportion of post offices offering public Internet access is above 20 per cent, that would imply that some rural areas and small towns have public Internet access via post offices. A proportion above 45 per cent would imply that up to a third of all rural areas and small towns have public access to the Internet, while a proportion of 60 per cent would correspond to half of rural areas and small towns being connected. By 2012, the majority of countries had not reached the critical 20 per cent threshold for the provision of public Internet access through their post offices (Chart 4.6).

Post offices also contribute in other ways to improved Internet connectivity for underserved communities by providing enhanced Internet-based services such as secure Internet domain access e-commerce webshops for SMEs and e-payment facilities under post top level domain. Although this is not directly reflected by the two indicators defined above, these enhanced services are often mentioned as key factors in the sustainable success of connectivity investments (for example, see *ICTs, new services and transformation of the Post*, UPU and ITU, 2010).

Chart 4.7 compares the evolution of public access to the Internet through post offices in different regions of the world since 2005. While provision of Internet access through the postal network increased in Africa, the Americas and Europe between 2005 and 2012, it decreased for Asia and Oceania.[27] For instance, India only started connecting 10 per cent of its 155 000 post offices to the Internet recently. No region reaches the critical average threshold of 20 per cent of post offices providing public Internet access, at which point rural and small towns are likely to benefit from an increased public access to the Internet through the postal network. The most significant increases were found in a small number of developing countries, shown in Chart 4.8, and in an even smaller number of developed countries. The top performers, with an improvement of over 20 percentage points, were Albania, Mauritius, Angola, Belarus and Botswana (see Box 4.5). These countries have contributed to a substantial improvement of public access to the Internet by leveraging the reach of their postal networks.
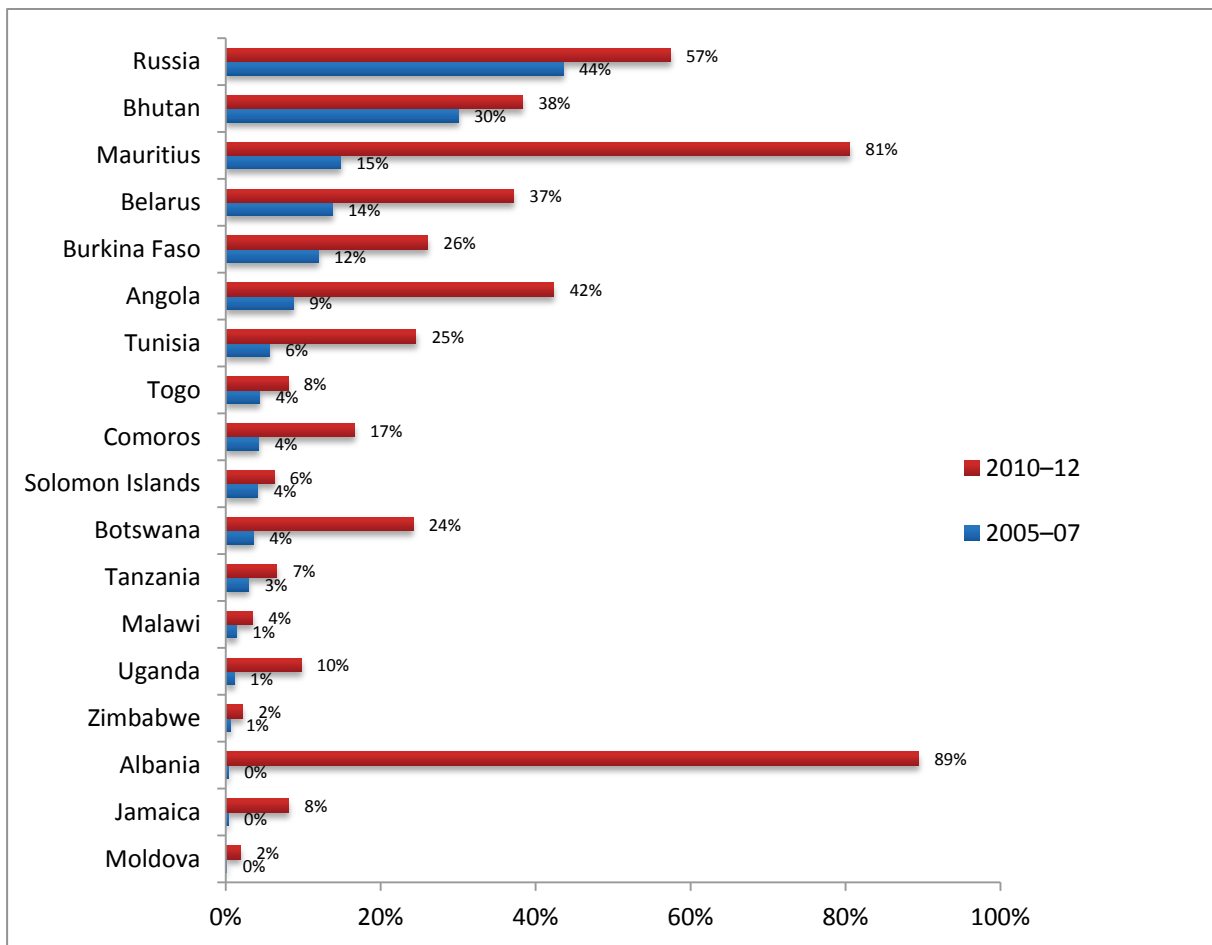
Chart 4.7: Post offices providing public Internet access, by region, 2005–07 and 2010–12
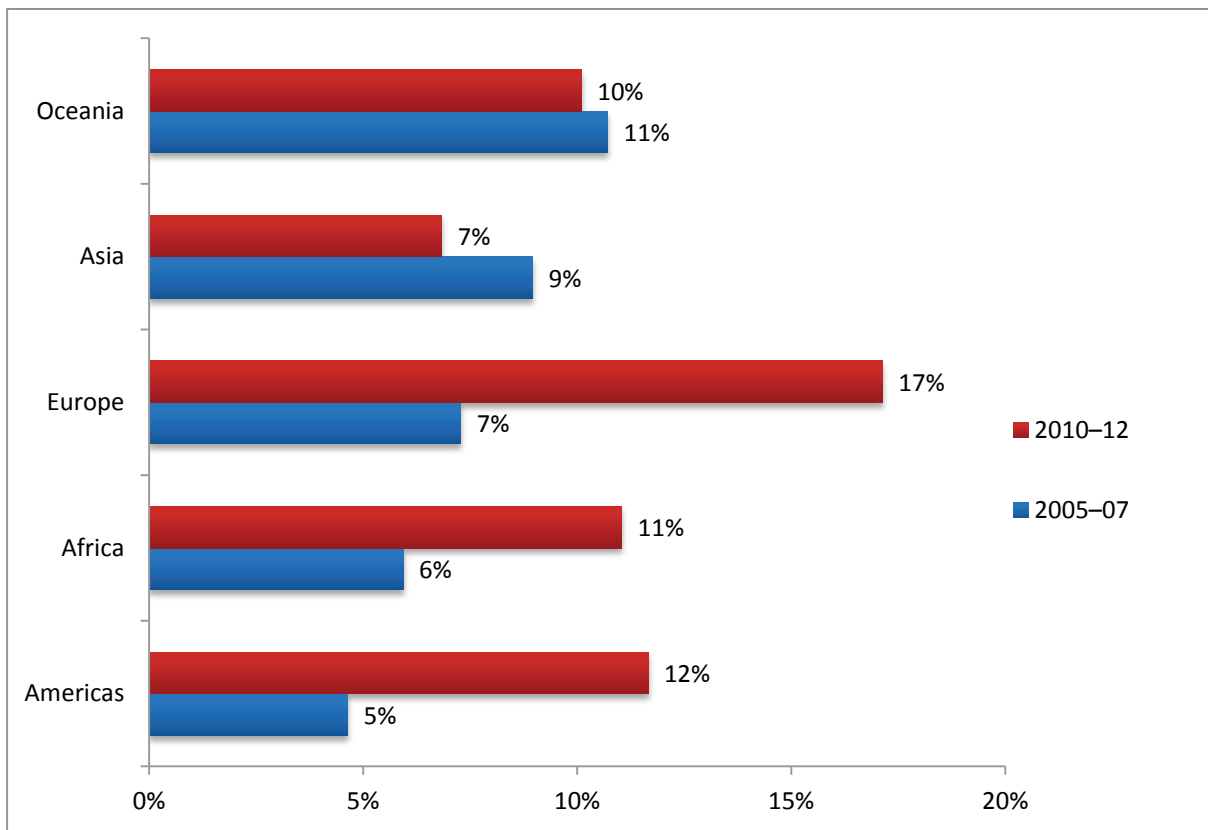
Source: UPU.

Note: Data are calculated as a simple average.

Chart 4.8: Post offices providing Internet access, top performing countries, 2005–07 and 2010–12

Source: UPU.

The results for indicators 4.6 and 4.7 indicate only a partial achievement of the objectives outlined in the WSIS outcome documents. In the development of the post-2015 agenda for the information society, stakeholders should increase their efforts to realize the potential of an ICT-enabled post office network as a facilitator of social and economic development.

Box 4.5: Kitsong centres offering access to ICTs in Botswana

In the urban areas of Botswana, access to ICT for people without computers or Internet connections at home is provided mainly by privately operated Internet cafés. Rural and remote areas have generally lacked such access, because of private operators' concerns about financial viability.

Botswana has one of the lowest population densities in the world. Delivering any type of universal service to such a sparse and widespread population presents enormous challenges to the government. Delivering ICT services where electricity and Internet connectivity are intermittent is even more challenging.

In 2016, Botswana will celebrate its 50th anniversary of independence. The Botswana Vision 2016 is the government's strategy to transform the country into a competitive and prosperous nation. Kitsong (knowledge) centres, offering access to information and communication facilities, are the means by which the Government of Botswana is narrowing the digital divide between urban and rural communities. Botswana Post, with its countrywide network of 192 postal facilities, was the natural choice to provide such centres. The government and Botswana Post had installed 49 Kitsong centres by 2009, with five more due to open in 2010.

Besides Internet access, Kitsong centres offer fax, photocopying, desktop publishing, printing and digital photography services. They also provide local content, such as agricultural information.

The number of people using Kitsong centres is growing, and the income of post offices with Kitsong facilities increased by an average of 25 per cent, compared to the situation in post offices without Kitsong centres (2006), reflecting the use of the new services. Clearly, if the number of customers is growing, there must be a perceived benefit to each individual using the centre. This may be for business reasons in obtaining information about markets; it may be for educational reasons with e-learning programmes; or it may simply be for social reasons, such as chatting or gaming.

The project has also led to greater computer literacy because these centres provide training in the use of computers. The government is pleased with the results achieved so far, seeing these centres as helping to meet its national objectives and its commitment to the United Nations Millennium Development Goals.

Botswana Post has also benefited from hosting the Kitsong centres. Besides contributing to increased revenue, Kitsong facilities have "revitalized Botswana Post by providing an injection of new technology based services".

Source: UPU/ITU.

Archives

The International Council on Archives defines archives as "the documentary by-product of human activity and … an irreplaceable witness to past events, underpinning democracy, the identity of individuals and communities, and human rights."[28] Connecting archives with ICTs is important, because it increases their reach and provides more people with access to the wealth of information preserved in their collections. Furthermore, ICTs can facilitate the archiving and improve the preservation of documents through digitization.

Indicators for measuring the subtarget

The indicators designated to track this subtarget reflect the different ways in which ICTs can serve archives and the different levels of connectedness.

> Indicator 4.8: National archives organizations with broadband Internet access
>
> Indicator 4.9: National archives organizations with a web presence
>
> Indicator 4.10: Proportion of items in the national archives that have been digitized
>
> Indicator 4.11: Proportion of digitized items in the national archives that are publicly available online.

Indicator 4.8 tracks whether national archives organizations have broadband Internet access. Broadband Internet access can facilitate the work of archivists and is likely to be a prerequisite for a web presence and the digitization of items.

Indicator 4.9 ascertains whether the national archives organization has a web presence. A web presence includes a website, home page or presence on another entity's website. Archives with a web presence can provide practical information to the public (such as opening hours or access to the archives) as well as information about their collection. The information made available on a webpage will vary considerably, thus a limitation of the indicator is that a web presence *per se* does not reveal anything about the quality of information.

Indicator 4.10 measures the proportion of items held in the national archives that have been digitized and can therefore be preserved and shared in digital format. The indicator refers to the proportion of the total number of catalogued items held in the national archives. By digitizing an item, the original object is protected from use, which should increase its lifespan. The unit 'digitized item' may be interpreted differently, for example, archives might define catalogued items in different ways. It is usually not known how many individual items there are in archival collections: archives typically measure their analogue collections in terms of shelf length needed to store the materials or in terms of the number of textual records created to enable access to the archival materials. Furthermore, the way in which an item has been digitized will vary, for example, the quality of digitization and the information associated with a digitized item will have an impact on its usability.

Indicator 4.11 measures the proportion of digitized items in the national archives that are publicly available online. Thus, this indicator goes one step further than Indicator 4.10 and tracks the proportion of items that are actually accessible. The same limitations with regards to the definition of 'digitized item' as well as the quality of digitization apply to Indicator 4.11. Furthermore, there might be considerable differences regarding the way in which the digitized item is presented online and thus accessible to the public.

Any type of organization that is engaged in archiving could be considered to be an archive. However, the scope of this subtarget is limited to national government archives, which allows for more comparability of data. Furthermore, the focus on national archives narrows data collection to one (or in some cases few) organization(s) per country. Some countries do not have national archives organizations. For those countries, no data on the connectivity of national archives with ICTs can be collected. Other countries have a decentralized archives systems with (several) sub-branches. For those countries, results for all sub-branches should be shown.

Despite the fact that national government archives are relatively well defined and limited in scope, no internationally coordinated data collection for this subtarget of WSIS Target 4 exists. In Europe, the European Commission funded project ENUMERATE, carried out two surveys (in 2012 and 2013) in order to monitor the progress on digitization of cultural heritage across the region, including in national archives. The ENUMERATE data covers 46 national archives in 17 European countries.[29]

Status of the subtarget

Responses to the 2013 WSIS targets questionnaire on indicators 4.8 and 4.9 revealed that in almost all countries, national archives organizations had broadband Internet access. Furthermore, of those national archives organizations with broadband Internet access, all had a web presence (see Table 4.4). This is an improvement on the situation in 2009, when archives in some developed countries did

not have a web presence (ITU, 2010).[30] In Europe, where ENUMERATE collects data on Indicator 4.9, close to 100 per cent of national archives had a web presence in 2013.[31,32.]

Table 4.4: National archives organizations with broadband Internet/a web presence, 2013 or LYA[10]

Country	National archives organizations with broadband Internet access	National archives organizations with a web presence	Country	National archives organizations with broadband Internet access	National archives organizations with a web presence
	%	%		%	%
Bhutan	100	100	Moldova	73	9
Bulgaria	100	100	Niger	80	0
Cyprus	100	100	Nigeria	100	100
Dominican Rep.	100	100	Norway	100	100
El Salvador	100	100	Oman	95	100
Estonia	100	100	Poland	100	100
Georgia	100	100	Portugal	100	100
Iran, Islamic Rep.	100	100	Senegal	100	100
Latvia	100	100	United Arab Emirates	100	100
Lithuania	100	..	Uruguay	100	100
Maldives	100	100	Venezuela	100	100

Source: Partnership on Measuring ICT for Development WSIS Targets Questionnaire, 2013.

Notes:
1. .. not available.
2. Countries responded to the question in different ways. Some indicated the proportion of archives organizations with broadband Internet access/a website, while others provided the total number of archives organizations with broadband Internet access/a website.

It is difficult to obtain exact figures on individual items in the collections of national archives (indicators 4.10 and 4.11). This was confirmed by the results obtained through the 2013 WSIS targets questionnaire. Only a few countries provided data for indicators 4.10 and 4.11. For those that did, comparability is an issue as respondents used estimation and the definition of what constitutes a digitized item differs across countries.

Table 4.5 shows the status of digitization in the countries that responded to the questionnaire. A relatively low proportion of items in the national archives have been digitized – less than 5 per cent in the majority of countries. Japan, Latvia and the United Arab Emirates are exceptions; even so, less than or equal to 10 per cent of items have been digitized in those countries. Looking at the proportion of items that are publicly available online, Chile, El Salvador and Japan, provide all of their digitized items online.

Table 4.5: Digitization and online availability of items in the national archives, 2013 or LYA[10]

Country	Proportion of items in the national archives that have been digitized	Proportion of digitized items in the national archives that are publicly available online
	%	%
Azerbaijan	5.0	..
Bulgaria	4.5	4.4
Chile	..	100
Cyprus	0.2	0.0
Dominican Rep.	..	70
El Salvador	..	100
Estonia	approx. 2–3	..
Georgia	0.1	0.001
Japan	8.5	100
Latvia	10.0	10
Lithuania	..	1.1
Niger	0.01	0.0
Portugal	1.6	1.5
Sudan	0.1	0.0
UAE	8.0	0.0
Uruguay	1.0	..
Venezuela	1.8	39

Source: Partnership on Measuring ICT for Development WSIS Targets Questionnaire, 2013.

Notes:
1. Chile (2 727 535 documents) and El Salvador (225 documents) provided absolute values for the number of documents in the archives that had been digitized. All digitized documents were available online.
2. .. not available.

In the ENUMERATE surveys, respondents were asked to estimate the percentage of their analogue heritage collections that has already been digitally reproduced. Across Europe, the average percentage of the analogue heritage collections that have been digitally reproduced stands at 9 per cent in 2013. Taking into consideration the size of these institutions, the overall proportion in Europe is about 6 per cent.[33] The proportion of digitized items in the national archives that are publicly available online (Indicator 4.11) stands at 42 per cent (unweighted). If organization size is taken into account, this percentage is higher (53 per cent).

Conclusions and recommendations

The tracking of each of the subtargets of Target 4 over the period 2005 to 2015 is hampered by a lack of comprehensive and internationally comparable data. The available data do not allow for conclusions to be drawn on the ICT connectivity of public libraries, museums and national archives at the global or regional level. For post offices, there are more data available, enabling aggregation for developed and developing countries.

In almost half of countries – 13 out of 30 (43 per cent) that provided data, all (or nearly all) public libraries had broadband Internet access in 2013. The number of public libraries with a web presence

is generally much lower, with only 7 out of 26 countries (27 per cent) reporting that all (or nearly all) of their public libraries had a web presence.

A higher proportion of countries that provided data (15 out of 25 countries, or 60 per cent) reported that all (or nearly all) museums were connected to broadband Internet. In the majority of those countries, at least 90 per cent of museums had broadband Internet access. Only seven (out of 22 countries) reported that all (or nearly all) museums had a web presence. Additional data from ENUMERATE show that almost all European museums had a web presence.

Data on post offices with broadband Internet access show that in 16 out of 74 countries that provided data on the number of post offices with broadband Internet access, 90 per cent or more of all post offices had broadband Internet access.[34]

Almost all countries (20 of 22 countries for Indicator 4.8 and 19 out of 21 for Indicator 4.9) that provided data on the connectivity of national archives organizations reported that all (or nearly all) archives had access to broadband Internet and a web presence.[35]

Even less information is available on the extent of digitization, but data suggest that a lot remains to be done in terms of digitizing cultural heritage and making it available online. Only 17 countries provided data on digitization by national archives organizations. These data show that a relatively low proportion of items has been digitized – less than 5 per cent in the majority of countries. Regarding the proportion of digitized items that are publicly available online, only three countries – Chile, El Salvador and Japan – provide all of their digitized items online. Additional data from Europe show that the average percentage of items in national archives that have been digitized is about 6 per cent of which 53 per cent are publicly available online.

Looking at public libraries and post offices as providers of public Internet access, available data show that while some progress has been made, libraries and post offices remain largely untapped as public access venues. The IFLA/FAIFE *World Report* provides data on public libraries as providers of public Internet access for the years 2007 and 2009 and found that by 2009 there was an overall increase in levels of public access to the Internet. However, there are significant differences between developed and developing countries in terms of providing public Internet access in public libraries. Data show that (Western) Europe, North America, Australia and New Zealand have the best Internet access in all categories, whereas Africa has the lowest. While provision of public access to the Internet through the postal network increased moderately in Africa, the Americas and Europe between 2005 and 2012, it decreased for Asia and Oceania. The most significant increases were found in a very limited number of developing countries. The proportion of post offices providing public Internet access was highest in Europe (17 per cent) in 2012.

The tracking of indicators 4.1 (proportion of public libraries with broadband Internet access), 4.4 (proportion of museums with broadband Internet access), 4.6 (proportion of post offices with broadband Internet access) and 4.8 (proportion of archives organizations with broadband Internet access) should be discontinued. These indicators, with the exception of Indicator 4.6, are not part of a regular data collection and, with growing connectivity, measuring access to broadband Internet by public institutions will become less relevant.

Moving forward, the attention should shift from access to ICTs to libraries, museums, post offices and archives as online content providers and public Internet access venues. Post-2015 discussions should distinguish between public access to ICTs and online content related to culture.

Despite growth in Internet access, there will continue to be a need for public access to the Internet for the foreseeable future – particularly for poor and underserved rural communities in developing countries. Research carried out by the TASCHA group reported in 2013 that while public ICT access can function as a (sometimes temporary) substitute for private access, it also acts as a (potentially permanent) complement to private access (Sey *et al.*, 2013). The study concluded that it may take decades for some countries to reach high levels of quality home connectivity; therefore public ICT access will remain a critically important service that is likely to be relevant even when higher connectivity has been achieved. Public libraries and post offices are in a very good position to provide public access to ICTs: they are open to the public, their branches are widely distributed and they constitute an established source of information. Therefore, Target 4 indicators on public access to the Internet (indicators 4.2 and 4.7) could be measures for a possible future target that focuses on connecting people with ICTs. While Indicator 4.7 is collected by UPU through its regular data collection, Indicator 4.2 can only be retained if a robust data collection can be assured.

Libraries, museums and archives are important providers of online content related to culture. They present an authoritative source of content and can put information into context. By digitizing books, documents and (images of) objects and making them available online, these institutions are major providers of online cultural content. Apart from digitizing analogue material, libraries, museums and archives are also putting born-digital material, such as videos, e-books and electronic records online. Material may be made available through an institutional website, regional or international aggregator or social media. Unfortunately no data are being regularly collected on the extent of digitization in cultural heritage institutions, with the exception of data collected on European museums and national archives organizations by ENUMERATE.

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Endnotes

[1] The original WSIS indicator was worded "Connect public libraries, cultural centres, museums, post offices and archives with ICTs".

[2] The hybrid library is on the continuum between the conventional and digital library, where electronic and paper-based information sources are used alongside each other. See http://www.dlib.org/dlib/october98/10pinfield.html.

[3] Compare Becker *et al*. (2010) and Sey *et al*. (2013).

[4] See http://beyondaccess.net/wp-content/uploads/2013/07/Beyond-Access_Library_Map_EN_201304.png.

[5] See http://www.ifla.org/files/assets/statistics-and-evaluation/publications/Report_UNESCO_IFLA_GlobalLibStat_pretest.pdf.

[6] The IFLA statistical unit (public library service point) used in these surveys, which formed part of the IFLA World Report in 2005, 2007 and 2010, is consistent with the unit recommendation for Indicator 4.2.

[7] See www.cenl.org/members.php.

[8] See http://www.imls.gov/research/public_libraries_in_the_us_fy_2011_report.aspx and http://www.imls.gov/assets/1/AssetManager/Fast_Facts_PLS_FY2011.pdf.

[9] The UNESCO's Framework for Cultural Statistics, includes a definition of libraries, but not public libraries (http://www.uis.unesco.org/culture/Documents/framework-cultural-statistics-culture-2009-en.pdf). The 2011 WSIS statistical framework adopted the definition of public library used by a UIS pilot survey of libraries.

[10] Latest year available.

[11] Number of responding countries: 88 (2003); 84 (2005); 116 (2007); 122 (2009).

[12] Bands of access were allocated as 81–100 per cent of libraries; 61–80 per cent; 41–60 per cent; 21–40 per cent; less than 20 per cent.

[13] Including a related entity's website. It excludes inclusion in an online directory and any other webpages where the library does not have control over the content of the page.

[14] See http://icom.museum/the-vision/museum-definition/.

[15] Another classification that can be applied is ISIC Rev 4 Class 9102 "Museum activities and operations of historical sites and buildings" and Class 9103 "Botanical and zoological gardens and nature reserves activities", which is similar in scope to the FCS definition.

[16] See http://www.egmus.eu/en/statistics/choose_by_topic/.

[17] See http://www.enumerate.eu/en/surveys/.

[18] For example, the Maldives and Bhutan reported having only one and two museums, respectively.

[19] See http://www.enumerate.eu/en/surveys/core_survey_1/.

[20] See http://www.enumerate.eu/en/surveys/core_survey_1/.

[21] See http://www.enumerate.eu/en/surveys/core_survey_2/.

[22] See http://www.pro.europeana.eu/web/guest/aggregators-and-providers.

[23] Museum Analytics is an online platform featuring an online tool that collects information about more than 3 000 museums and galleries. The information is automatically collected or contributed by organizations. See http://www.museum-analytics.org/.

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[24] See http://www.europeana.eu/.

[25] See http://masterpieces.asemus.museum/index.nhn.

[26] As illustrated in chapters 4 and 6 of Universal Postal Union (2014).

[27] The same countries in each region were used for the four-year comparison.

[28] See http://www.ica.org/125/about-records-archives-and-the-profession/discover-archives-and-our-profession.html.

[29] The following countries (number of national archives organizations shown in brackets) were included in the survey: Austria (1), Czech Republic (1), Denmark (1), Estonia (1), Finland (1), Germany (1), Greece (3), Hungary (9), Italy (5), Latvia (1), Liechtenstein (1), Luxembourg (1), Malta (1), Portugal (1), Slovenia (2), Spain (12), Sweden (4).

[30] See page 90 in: http://www.uis.unesco.org/Communication/Documents/WTDR2010_e.pdf.

[31] See http://www.enumerate.eu/en/surveys/core_survey_1/.

[32] In the ENUMERATE Core Surveys (2012 and 2013), the proportion of national archives with a web presence was measured in an indirect way: institutions were asked to provide "the address of your institution's main website that is accessible for the general public".

[33] The weighing by size of the National archives was performed according to their total annual budget. See: http://www.enumerate.eu/en/surveys/core_survey_2/.

[34] Data are not comparable across different institutions, as different number and set of countries provided data on specific indicator.

[35] It should be noted that in many countries there is only one national archive organization. Thus, Indicator 4.4 cannot be compared with the other indicators on access to broadband Internet as they measure the connectivity of a significantly higher number of institutions.