

 **WORLD  
INFORMATION SOCIETY  
REPORT**

**2006**

*Executive Summary*





# WORLD INFORMATION SOCIETY REPORT



## *Executive Summary*

*May 2006*

This Executive Summary provides a brief resumé of the new ITU publication, "**The World Information Society Report**", which has been prepared as direct follow-up to the World Summit on the Information Society (WSIS), held in two phases in Geneva in 2003 and Tunis in 2005. This Executive Summary includes a selection of tables, illustrations and analysis from the full report. For further information, please visit the website at: [www.itu.int/spu/](http://www.itu.int/spu/). This report is the first in the "The World Information Society Reports" series, which ITU intends to publish annually.

ITU publications are available from the ITU website at [www.itu.int/spu/publications](http://www.itu.int/spu/publications). Copies of the text of the summary and report can be downloaded free-of-charge or purchased in hard copy (complete with additional statistical tables) for CHF 100. Printed copies are also available from the ITU Sales Service ([www.itu.int/publications](http://www.itu.int/publications), Fax: +41 22 730 5194, Email: [sales@itu.int](mailto:sales@itu.int)), with reductions for ITU Member States and Sector Members and for purchasers from Least Developed Countries (LDC).

The report charts progress towards building the Information Society in the light of the WSIS targets and Millennium Development Goals, as called for in the *WSIS Geneva Plan of Action*. It evaluates access to telecommunications and digital opportunity in 180 economies worldwide and considers the policy implications for the further evolution of the Information Society, through the **Digital Opportunity Index**, which is one of the two indices endorsed in the *WSIS Tunis Agenda*. A further chapter focuses on WSIS implementation and follow-up in different countries, and considers efforts to promote ICT development. A 65-page Statistical annex presents the latest available data on 180 economies worldwide.

The report was prepared by a team led by the ITU's Strategy and Policy Unit (SPU). Much of the original research was carried out under the Digital Opportunity Platform, which is a multi-stakeholder partnership including ITU, UNCTAD, the Ministry of Information and Communications of the Republic of Korea and the Korea Agency for Digital Opportunity (KADO). The Platform welcomes new partners.

The views expressed in the report are those of the authors and do not necessarily reflect the opinions of the ITU or its membership.

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## About the Report

"*The World Information Society Report*" is the first edition in a series of reports that will monitor the development of the Information Society worldwide. In particular, this new series will chart progress towards the implementation of the outcomes of the World Summit on the Information Society (WSIS) and WSIS targets. This report has been prepared in response to the World Summit on the Information Society, held in Geneva in 2003 and Tunis in 2005.

The report charts progress towards building the Information Society in the light of the WSIS targets and the Millennium Development Goals, as called for in the *WSIS Geneva Plan of Action*. It evaluates access to telecommunications and digital opportunity in 180 economies worldwide and considers the policy implications for the further evolution of the Information Society, through the **Digital Opportunity Index**, which is one of the two indices endorsed in the *WSIS Tunis Agenda*.

- ***A Summit for Building the Information Society*** describes the origins of this report in the World Summit on the Information Society and explains how the WSIS endorsed an agreed methodology for international benchmarking and evaluation of progress in building the information society, notably through the use of composite indices.
- Chapter two, ***Measuring the Information Society***, introduces the Digital Opportunity Index (DOI) as a statistical tool for policy-makers and describes how it measures digital opportunity around the world in terms of access to telecommunications, price of services and affordability, network penetration and the take-up of new technologies such as broadband and mobile Internet.
- Chapter three, ***Key Trends in the Information Society***, shows how the DOI can be used to analyse the latest trends in the evolving digital divide and track the transition of the telecom industry through wireless and mobile forms of access.
- Chapter four, ***From measurement to policy-making***, reviews recent developments in policy and regulatory reform and shows how the DOI can be used to support the policy-making process by identifying trends and gaps in ICT policy, especially in universal service policies and policies to address urban/rural and gender divides.
- Chapter five, ***Beyond WSIS: Making a difference globally***, focuses on WSIS implementation and follow-up in different countries, and considers the valuable work underway to promote ICT development in the wake of WSIS.

A 65-page *Statistical annex* presents the latest available data on 180 economies worldwide. This Executive Summary, published separately, provides a synopsis of the full report, which is available from the ITU website at: [www.itu.int/wisr/](http://www.itu.int/wisr/). ITU looks forward to continuing its fruitful collaboration with the United Nations Conference on Trade and Development (UNCTAD), the Korea Agency for Digital Opportunity and Promotion (KADO) and other partners on future editions of this series.

## 1 A Summit for Building the Information Society

At the World Summit on the Information Society (WSIS), held in Geneva in 2003 and Tunis in 2005, governments and world leaders made a strong commitment towards building a people-centred, inclusive and development-oriented Information Society for all, where everyone can access, utilise and share information and knowledge.

**“We are fully committed to turning this digital divide into a digital opportunity for all, particularly for those who risk being left behind and being marginalised.”**

**Geneva Declaration of Principles, paragraph 10**

During the first phase of the WSIS, government leaders also committed themselves to a set of bold targets to broaden access to ICTs and bridge the digital divide. According to the WSIS outcome documents, one of the most important priorities is to design national e-strategies in accordance with local and national development needs. This requires an understanding of the situation in each country with regard to ICTs and the setting of future targets. It is important to track progress against the benchmarks set out in the WSIS final outcome documents. To meet these needs, the partners involved in the *Digital Opportunity Platform* have created the **Digital Opportunity Index (DOI)** to measure digital opportunity for 180 economies for 2003/2004.

The **DOI** is a composite index that measures “digital opportunity” or the possibility for the citizens of a particular country to benefit from access to information that is “universal, ubiquitous, equitable and affordable” (*WSIS Tunis Commitment*, para 10). It uses a range of indicators, including data on service prices and the take-up of latest ICTs, to assess countries’ performance and prospects to measure progress in building the Information Society in 180 economies worldwide. The DOI can be used to enrich policy and inform policy-makers of the latest trends and impact analysis of ICT policies to identify successful policies and replicate them elsewhere. This report uses the DOI to provide insights and guidelines for policy-makers, especially in developing countries, in mobilizing resources and setting their national strategy for building the Information Society.

**“A realistic international performance evaluation and benchmarking (both qualitative and quantitative), through comparable statistical indicators and research results, should be developed to follow up the implementation of the objectives, goals and targets in the Plan of Action, taking into account different national circumstances.”**

**Geneva Plan of Action, paragraph 28b**

## 2 Measuring the Information Society



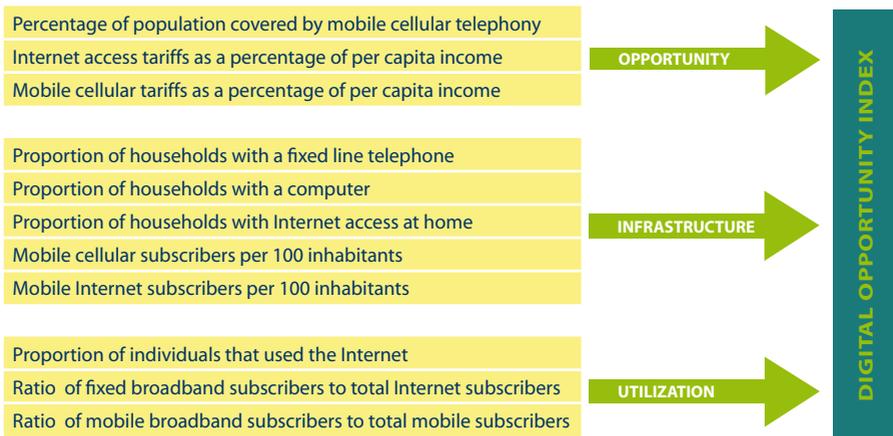
The Digital Opportunity Index is a composite index has been created from a set of eleven internationally-agreed core ICT indicators (established by the *Partnership on Measurement of the Information Society*).

The DOI has a flexible and versatile structure, based on three categories (Figure 1):

- **Opportunity** measures the basic **access** and **affordability** needed to participate in the Information Society, in mobile population coverage, Internet access prices and mobile prices.
- **Infrastructure** includes measures of different **networks** (fixed lines, mobile cellular subscribers and household Internet access) and **devices** (households with a computer and mobile Internet access devices).
- **Utilization** evaluates **ICT usage** in Internet users and broadband subscribers (fixed and mobile).

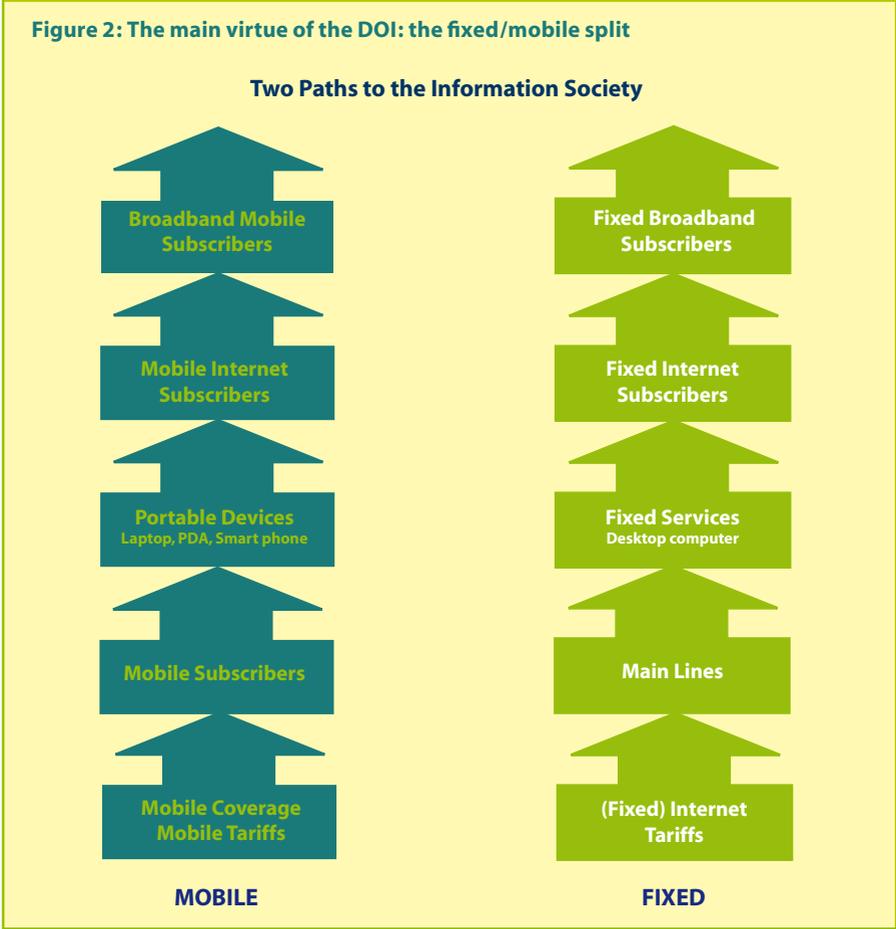
This classification is intended to help policy-makers in determining where countries are strong and weak in order to focus attention on priority areas.

**Figure 1: The structure of the DOI**



The DOI has a modular structure, which means that it can be split into different components, for instance between mobile and fixed networks and services (Figure 2). This is important, as developing countries can be assessed on their strengths (for instance, explosive growth in mobile communications), rather than their weaknesses (such as limited fixed line infrastructure). This distinction also allows the Digital Opportunity Index to track the mobile transition and transformation of the telecom industry through wireless means of access.

Further, this index includes innovative and promising new technologies, such as broadband and mobile internet. This means that the DOI can be used to assess the growth and take-up of new ICTs. It will thus remain relevant for some time to come, unlike more traditional connectivity indicators (e.g. fixed lines), which may become less and less relevant for developing countries through the expansion of mobile telephony networks, advanced wireless connectivity and own leapfrogging. The DOI is forward-looking in terms of each country’s distinctive ICT development trajectory.

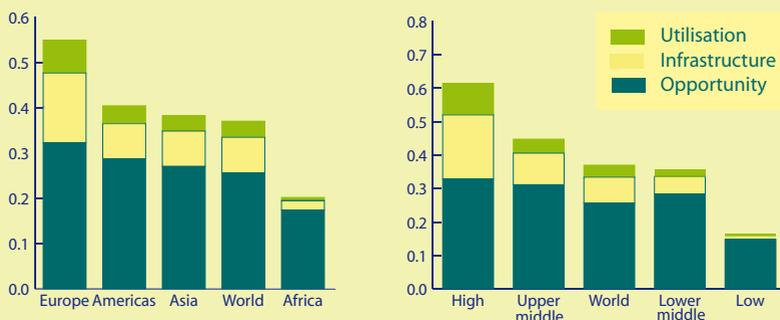


### 3 Key Trends in the Information Society

The Digital Opportunity Index shows that the potential to provide universal access to ICTs at affordable levels (measured as a proportion of monthly income) is within reach of most countries around the world (Figure 3). In low-income countries, digital opportunity derives from access to cellular service and affordable telecoms, whilst high-income countries are realising their digital opportunities in good infrastructure and the use of advanced technologies.

**Figure 3: The Digital opportunity index worldwide**

*The different make-up of the DOI worldwide, world average and by income group*



Source: ITU

The map (see insert) illustrates the strong lead taken by Europe and North America in realizing digital opportunity. Latin America and Central Asia are catching up fast with large infrastructural investments and strong gains in mobile and Internet subscribers, including 3G mobile technologies (CDMA 2000 1x and W-CDMA). Two Asian countries top the rankings – the Republic of Korea and Japan – followed by Denmark and Iceland. Chile leads in Latin America, whilst Morocco leads in Africa.

Most importantly, digital opportunity is growing rapidly with the expansion of the telecom sector in many countries and the prioritization of the Information Society by many governments. The major gainers in the DOI since 2001 are shown in Table 1. They come from virtually every region and include the developing giants of the so-called “BRICs” (Brazil, Russian Federation, India and China). Strong gains in infrastructure and broadband usage are being achieved in these countries, with commercial packages becoming available and rapid growth in subscriber numbers.

Although mobile telephony networks have been the main focus of investment in developing countries, broadband services are now also available in some 166 economies worldwide, as of early 2006. For instance, broadband is being introduced in low-income African countries such as Ghana (March 2006), Botswana (mid-2005 onwards) and Libya (where ADSL is currently being introduced over Libya Telecom and Technology’s ATM network), as well as in Lebanon (where an agreement for the introduction of ADSL was signed in early 2006).

Nevertheless, while developing countries are making strong gains in mobile telephony and internet access, industrialised countries are already forging ahead with 3G mobile and

**Table 1: Major gainers in the DOI**

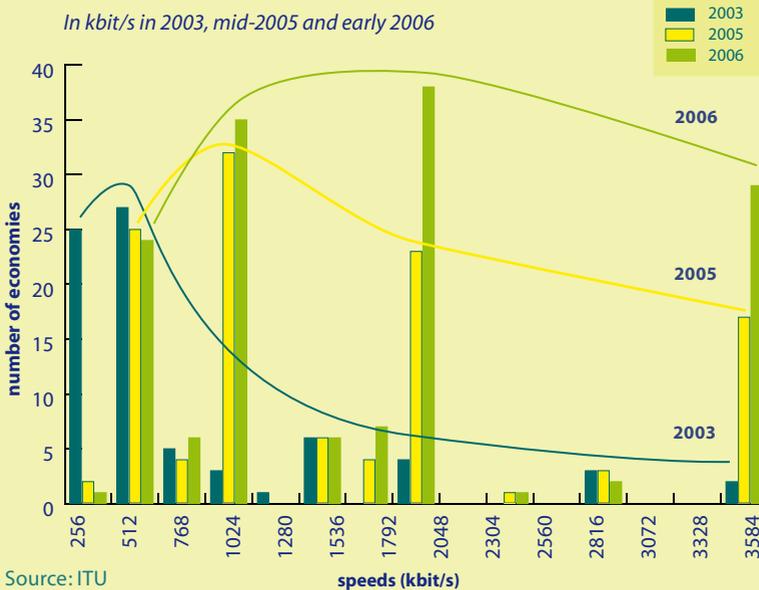
Economy	DOI 2005	DOI 2001	Change 2001-2005	Drivers (+.0.2)*
1 India	0.29	0.17	73%	O
2 China	0.42	0.29	46%	I
3 Russia	0.44	0.32	41%	I
4 Hungary	0.55	0.40	37%	I,U
5 Peru	0.38	0.28	37%	O,I,U
6 Indonesia	0.33	0.24	36%	O
7 Brazil	0.43	0.32	35%	O,I,U
8 Poland	0.52	0.39	34%	I,U
9 Japan	0.71	0.54	33%	U
10 Venezuela	0.43	0.32	33%	U
11 Chile	0.52	0.40	32%	U
12 Egypt	0.38	0.29	32%	I
13 Rep. of Korea	0.78	0.60	31%	U,I
14 Israel	0.66	0.50	31%	U
15 Spain	0.61	0.47	28%	U
Average	0.50	0.37	37%	
<b>40 economies</b>	<b>0.54</b>	<b>0.43</b>	<b>27%</b>	

\* O = Opportunity I = Infrastructure U = Utilisation

broadband technologies. Developed countries enjoy greater and more varied data services, at faster speeds and lower cost. Economies of scale and modern infrastructure mean that telecommunications are, for the large part, cheaper in the industrialised world - relative to income and in absolute terms (in the case of flat-rate broadband offers in parts of Asia and Europe). The nature of the digital divide is changing, and strategies to promote digital inclusion must take these changes into account, if the developing world is not to be left behind.

**Figure 4: Typical broadband speeds available worldwide**

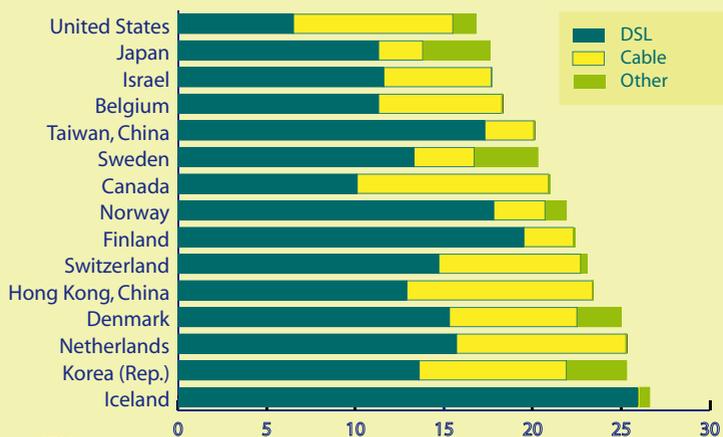
*In kbit/s in 2003, mid-2005 and early 2006*



Source: ITU

**Figure 5: The cheaper it is, the faster it grows**

Top 15 Broadband economies 2005  
Total penetration (per 100 inhabitants), by type of access



Source: ITU

**Table 2: Lowest broadband prices, per month, and change, mid 2005 - early 2006**

	Economy	Company	Speed kbit/s	Price per month US\$	US\$ per 100 kbit/s	Change 2005-2006
1	Japan	Yahoo BB	51'200	31.19	0.07	-12.5%
2	Rep. of Korea	Hanaro	51'200	40.59	0.08	...
3	Netherlands	Internet Access	20'480	27.97	0.14	-81.3%
4	Taiwan, China	Chunghwa	12'288	22.67	0.18	...
5	Sweden	Bredbandsbolaget	24'576	56.08	0.23	-6.5%
6	Singapore	Starhub	30'720	73.17	0.24	-85%
7	Italy	Libero	12'288	37.23	0.30	-73.8%
8	Finland	Elisa	24'576	85.64	0.36	-51.4%
9	France	Free	10'240	37.29	0.36	-90.1%
10	United States	Comcast	4'096	20.00	0.49	...
11	Germany	Freenet.de	6'016	30.95	0.52	...
12	United Kingdom	Pipex	8'128	50.89	0.63	-53.6%
13	Hong Kong, China	Netvigator	6'144	51.17	0.83	...
14	Portugal	Sapo	8'128	75.82	0.93	...
15	Canada	Bell	4'096	41.26	1.01	-3.93%
	Average		18'287	44.33	0.42	-50.8%
	<b>Best Practice (Top 20%)</b>		<b>40'960</b>	<b>27.59</b>	<b>0.08</b>	<b>-73.3%</b>

Source: ITU

## 4 From measurement to policy-making

**“We recognize 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. Realizing that the ambitious goal of this Declaration—bridging the digital divide and ensuring harmonious, fair and equitable development for all—will require strong commitment by all stakeholders, we call for digital solidarity, both at national and international levels.”**

**Geneva Declaration of Principles,  
paragraph 13**

Achieving the challenges set by the Millennium Development Goals and WSIS requires governments to design and implement sustainable policies, including policies to promote digital opportunity. The Digital Opportunity Index (DOI) is a practical tool that can help in the design and assessment of ICT strategy, because it shows a country’s strengths and weaknesses in different areas relative to its peers. For instance, as Table 1 (last column) shows, those countries that show the fastest gains in improving their DOI scores have followed different strategies. For India and Indonesia, it is improvements in “Opportunity” which have helped boost ICT growth (for instance, by increasing mobile coverage or reducing prices). By contrast, in China, Russian Federation and Egypt, the main gains have come from Infrastructure investment while some of the more developed economies, like Japan, Israel and Spain have benefited from increases in utilization, especially through the transition from narrowband to broadband networks.

This chapter introduces a discussion of different policy instruments available to a country in improving digital opportunity, infrastructure and utilization.



At the international level, WSIS brought a fresh approach to the implementation of ICT policies by adopting multi-stakeholder partnerships as the framework for the private sector, civil society and international organizations to work with governments on promoting ICT development. The *Tunis Commitment* and *Agenda* represent international agreement on the importance of ICTs and the need to build a just, fair and equitable Information Society. The DOI can monitor the changing nature of the international digital divide to improve and strengthen policy.

At the national level, many governments are initiating reforms in liberalization, competition and deregulation of their telecom sector. Especially important for ICTs, policies for universal service, affordability and new technologies (such as broadband, mobile Internet and, more recently, Next Generation Networks) are being prioritised. The DOI has important applications in monitoring the effects and follow-up of policy and can be used to evaluate many aspects of telecom policy, including the impact of Calling Party Pays (CPP) and prepaid on mobile density, the size and extent of the gender divide shifts in the urban/rural divide (according to urbanization and large-scale migration). This chapter of the report illustrates some of these applications of the DOI and reviews recent initiatives in reform of the telecommunication sector.

**“To maximize the social, economic and environmental benefits of the Information Society, governments need to create a trustworthy, transparent and non-discriminatory legal, regulatory and policy environment.”**

**Geneva Plan of Action,  
paragraph 13**

### **Box 1: National ICT Strategies**

Many countries have announced national ICT strategies or are working to introduce them (these also include Telecommunication Plans, Information Society Programmes, e-Strategies, Digital and Broadband Strategies). ICT strategies are usually led by a government Ministry or appointed oversight body (e.g., ICT Council or Commission) or sometimes by the regulatory agency. In line with the principle of multi-stakeholder partnerships endorsed by WSIS, such strategies may be designed in cooperation with the private sector, academia and other bodies, to ensure the full participation of all stakeholders. Such strategies typically include policies on infrastructure, policy and regulation (including, for example, liberalization, universal service and digital inclusion) and human resources. They may also focus on involvement of stakeholders and ICT applications in important areas such as education, e-health, commerce, science and culture.

Examples of countries with ICT strategies are highlighted in the Report on the WSIS Stocktaking, published at WSIS in Tunis in November 2005. Countries that have launched ICT and similar strategies include Argentina, Austria, Azerbaijan, Bangladesh, Colombia, Cost Rica, Croatia, the Dominican Rep., El Salvador, Finland, Honduras, Hungary, Indonesia, Jamaica, Kenya, Lebanon, Lesotho, Luxembourg, Malawi, Mauritania, New Zealand, Poland, Qatar, Samoa, Serbia and Montenegro, Singapore, Slovakia, Sri Lanka, Switzerland, Syria, Turkey, Uganda and Vietnam, among others.

## 5 Beyond WSIS: Making a difference globally



The WSIS called for governments to move from principles into action. There are many efforts underway, both large and small, to implement the WSIS goals, involving a range of stakeholders at the community level, regionally, nationally and internationally. This chapter of the report highlights some of these initiatives to implement the *WSIS Plan of Action*, from national strategies to grassroots projects. A variety of initiatives have been launched to promote digital opportunity, infrastructure and advanced ICT applications and these highlight fresh approaches and innovative new solutions to ICT development.

Since 2003, over 3'000 WSIS-related projects have been launched and recorded in the WSIS Stocktaking database and report, which will continue to be published by ITU on a regular basis. A Report on the WSIS Stocktaking was published at Tunis in November 2005 and endorsed by the Summit as part of the approved evaluation methodology for WSIS implementation. The Golden Book was published in February 2006 and records new initiatives announced by stakeholders during the Tunis Phase of the WSIS wrth almost US\$ 4 billion.

During this implementation and follow-up phase, ITU, UNESCO and UNDP are working with other partners—including governments, civil society, business entities and international organisations—to co-organise Action Line Facilitation Meetings to coordinate and streamline work in the different action lines and themes of the *WSIS Plan of Action*. Within the WSIS framework, efforts are underway to promote cybersecurity, multilingualism, ICT applications, the use of different software models (see Box 2), and international cooperation, through multi-stakeholder partnerships, to ensure coordinated work in all Action Lines.

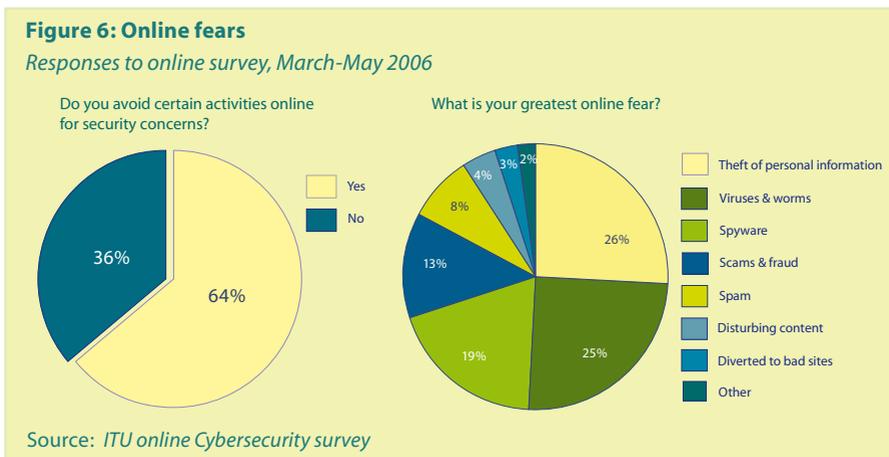
### Box 2: Open Source Software

**Open Source or Open Access software is digital, online, free of charge and free from most copyright and licensing restrictions. It can help users with limited resources to take full advantage of the opportunities offered by the Information Society. Several promising initiatives were launched to promote open access to software and technical resources.**

CERN has adopted a specific Publication Policy to promote Open Access at <http://open-access.web.cern.ch/Open-Access/pp.html>, recommending that scientific information, software tools, networking infrastructure and the training to use these should be made freely available. The FLOSSWorld project ([www.flossworld.org/](http://www.flossworld.org/)), initiated by UNU-MERIT ([www.merit.unu.edu](http://www.merit.unu.edu)) aims to build a global constituency for Free/Libre/Open Source Software (FLOSS) and open standards research with partners from Argentina, Brazil, Bulgaria, China, Croatia, India, Malaysia, South Africa and Europe through regional and international workshops.

**Source:** *WSIS Golden Book*, quoted in the *World Information Society Report*.

One of the biggest barriers to the further development of the Information Society is the growing unease over the security of the internet and the growth of threats such as spam, phishing and spyware. In a recent survey, conducted by ITU ahead of World Information Society Day, almost two-thirds of respondents reported that they avoided certain activities online due to security concerns. Among the major fears reported were the theft of personal information (26% of respondents) and virus attacks (25%) (See Figure 6).



The implementation of the *WSIS Plan of Action* is now well underway. In May 2006, a series of action line facilitation meetings for the different WSIS action lines and themes was held, clustered around the inaugural World Information Society Day on May 17. ITU is working closely with UNESCO and UNDP as the leading facilitation agencies in providing coordination for the multi-stakeholder implementation process and, through the newly-created UN Group on the Information Society (UNGIS), on coordinating the work of UN agencies.

Implementing the *WSIS Plan of Action* and achieving the bold targets it establishes cannot be achieved overnight. The WSIS set a target of building an information society by 2015 at the latest. The *World Information Society Reports* will provide an annual benchmarking of progress towards those goals, as part of the permanent legacy of the WSIS process. It is hoped that this report will help inform and enrich policy-making, to ensure that everyone has access to the benefits of the Information Society.

**“Develop and launch a composite ICT Development (Digital Opportunity) Index. It could be published annually, or every two years, in an ICT Development Report.”**

**Geneva Plan of Action, paragraph 28a**



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