



2013

WEBINDEXREPORT



Communication is a fundamental social process, a basic human need and the foundation of all social organisation... Everyone, everywhere should have the opportunity to participate and no one should be excluded from the benefits that the Information Society offers.

World Summit on the Information Society Declaration, 2003.

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Knowledge has always been one of the most valuable and unequally distributed resources in the world. The first great democratisation of knowledge and communication came with the printing press, which enabled the mass production of books and drove down the costs of owning them 500-fold.¹ The World Wide Web, which was invented by Sir Tim Berners-Lee 25 years ago, has the potential to bring about a similar revolution.

Recognising this, 175 governments gathered in Geneva for the World Summit on the Information Society (WSIS) in 2003. They committed to harnessing the internet and other information and communication technologies to build a world “where everyone can create, access, utilize and share information and knowledge”, enabling people “to achieve their full potential... and improve their quality of life.”

On the ten-year anniversary of the World Summit, this report assesses progress towards the WSIS goals (see Box 1). Our 81-country research evaluates how far ordinary people around the world can use the Web to obtain the basic knowledge necessary to achieve the UN’s Millennium Development Goals and improve quality of life – for example, early warning information on floods and droughts; advice on sexual and reproductive health; facts on government budgets and spending; or basic data on the performance of local schools.

We also assess how far the Web is empowering people not just to receive information, but to voice their own views, participate in public affairs, and take action to improve their lives – a second important pillar of the WSIS vision.

The decade since the Geneva Summit has thrown up new challenges. Many countries are grappling with rising inequality in the wake of the 2008-10 global economic crisis, exacerbated by persistently high unemployment.² Climate change poses an imminent threat to the livelihoods, health and food security of billions; spreading awareness of the environmental crisis facing us, and the knowledge and skills needed to cope with it, is an urgent priority. Civil liberties that are fundamental to democratic participation and accountability are under threat from several quarters.³

Against the background of these threats, the WSIS goal of an inclusive information society is more necessary and compelling than ever before. But beyond the digital divide, the world faces a participation divide, as unequal access to knowledge and speech online denies millions the necessary tools for free and informed participation in public life. Democratisation of information and communication flows is further constrained by a global trend towards greater online censorship and surveillance.

Access and skills

The number of internet users worldwide has more than doubled since WSIS, from 16 percent of the global population in 2005 to 39 percent in 2013. In Sweden and Norway, the two top-performing countries overall in this year’s Web Index, almost 95 percent of people are online. Seven Web Index countries, including most of the top-scoring middle income countries, have taken legal steps to ensure rights of access to the internet. However, except for Morocco (ranked 54th overall in the Index), none of the developing countries in the Web Index have achieved the WSIS target of connecting at least 50 percent of their populations,⁴ and in Africa, fewer than one in five people are using the internet.

Between 50 and 70 percent of Africans cite high costs as the main reason they are not online, suggesting that today’s digital divide is primarily a matter of lack of affordability rather than lack of infrastructure.⁵ On average, across the developing countries in the Web Index, a basic, entry-level broadband package costs 65 percent of monthly per capita income.⁶ Socioeconomic divides in internet use, driven in part by high costs, also exist in many middle and high income countries, including the US, our Web Index number four.

Too few countries have launched large-scale digital and media literacy programmes inside or outside of schools, even though “full integration” of Information and Communications Technology (ICTs) in education and training at all levels was one of the key WSIS commitments.⁷ Only 56 percent of Web Index countries were assessed as allocating “significant” resources to ICT training programmes targeting women and men equally.

1. Executive Summary

¹Silver, N., 2012. *The Signal and the Noise*. Penguin.

²OECD, 2012. *An Overview of Growing Income Inequalities in OECD Countries: Main Findings*. <http://www.oecd.org/els/soc/49499779.pdf>

³See for example Quentin Skinner’s interview with Richard Marshall, 26 July 2013, published at <http://www.opendemocracy.net/ourkingdom/quentin-skinner-richard-marshall/liberty-liberalism-and-surveillance-historic-overview>

⁴This is true whether developing countries are considered to be those classified as “low and lower-middle income” by the World Bank; or those achieving medium or low scores on UNDP’s Human Development Index.

⁵Gillwald, A., 2012. “Understanding Broadband Demand in Africa: Internet Going Mobile.”

ResearchICT Africa research paper. <http://www.researchictafrica.net/docs/Gillwald%20CITI%20Zambia%20Broadband%202012.pdf>

⁶Average of fixed and mobile broadband costs, using latest ITU price basket data. For mobile broadband only, the average cost is slightly lower, but still over 50% of average monthly income.

⁷Exceptions include South Korea, China, Jordan, Estonia, the Philippines, and the US.

Expanding knowledge and participation

Over 100 countries now have laws guaranteeing access to information; just over half of the Web Index countries have right of information laws that are judged to be robust and well enforced.⁸ Moreover, 55 percent of the countries in the Web Index have committed to national Open Government Data initiatives.

Nevertheless, ten years after WSIS, basic information that people need to improve their lives and livelihoods and participate in decision-making remains inaccessible to many. ICTs provide a powerful tool to overcome this gap, and countries placed near the top of our Web Index rankings – developing as well as developed – are making creative use of the Web as a cheap, effective and interactive way to broaden access to information, increase accountability in governance and deliver basic services more efficiently. However, over 60 percent of Web Index countries are failing to adequately disseminate even the most basic information online in areas such as health, education and agriculture.⁹

The rights and priorities of women are especially poorly served by the Web in the majority of countries researched, with locally relevant information on topics such as sexual and reproductive health, domestic violence, inheritance and the rights of low-paid workers remaining largely absent from the Web.

Governments lag even further behind on the release of raw official data, with less than 10 percent of key government datasets in the countries we studied available online in fully open formats (see Box 2).

Civil society organisations (CSOs) and entrepreneurs tend to be ahead of government in using online tools to expand access to information. Across most areas we surveyed, CSOs were more active and innovative in their outreach than governments, particularly when it comes to harnessing the interactivity of the Web to provide channels for people to report problems and ask for help.

Surprisingly, however, we found that few civil society websites and even fewer government ones are designed to allow people to access or contribute Web content via channels more accessible to poor and disadvantaged groups, such as mobile phones or local radio. Government use of mobile channels is lowest in Africa, where it could potentially make the biggest difference.¹⁰

Use of online information by micro, small and medium enterprises (SMEs) is strong in North America and Europe, but still in its infancy elsewhere. We looked specifically at the extent to which farmers and SMEs in the agriculture sector – the backbone of most developing country economies – are using online market price information and weather information to expand markets and increase earnings. In only 13 of 81 countries did we find evidence that such information was driving significant innovation, but in developing countries where this occurred, there was a noticeable impact on the livelihoods of firms and farmers.

The Web as a tool for civic engagement and participation

Traditional civil society organisations, trade unions and political parties in most countries are frequently failing to keep up with the growth of social media, and in only half of the countries surveyed do they use Web-based tools extensively to engage citizens around influencing government decision-making or holding governments accountable.

However, the Web and social media are giving rise to new, more spontaneous forms of collective action. The growth of user-driven networking has been especially rapid in Africa and the Middle East, albeit from a low base.¹¹ Over the past year, the Web and social media played a role in raising awareness and mobilising people on political issues in 80 percent of the countries studied, and on environmental issues in 66 percent of countries.¹² In about half of these countries, our researchers found evidence that the Web had played a leading role in galvanising both political and environmental action.

Nevertheless, the potential impact of social networking is currently constrained by the size of the connectivity and skills gaps described above, which limits social media use outside of relatively affluent groups; and most significantly, by government moves to co-opt, monitor and control online conversations.

Freedom and openness

As Sir Tim Berners-Lee put it in his recent address to the Open Government Partnership, democracy requires a technical infrastructure, which is increasingly provided by the Web. He proposed that a free and open Web means “don’t block me, don’t spy on me.”¹³ The United Nations passed a landmark resolution last year upholding rights to freedom of expression and opinion online.¹⁴ The Philippines – the top-ranking developing country in the Web Index – has crowdsourced a “Magna Carta” bill for the internet, and Brazil – one of the top emerging market countries in the Index – has also tabled a groundbreaking framework of internet rights. Despite concerns over a recent data localisation amendment, the draft *Marco Civil da Internet* is notable for the ambition of its vision to enshrine users’ rights to a free and open Web, and for broad popular participation in drafting it.

Globally, however, spying and blocking are on the rise. In nearly one in three countries, politically sensitive Web content is blocked to a moderate or severe extent, and only five countries in Web index (six percent) meet best practice standards for checks and balances on government interception of electronic communications (requiring a warrant from an independent court, substantive justification and transparency in the oversight process).

Provisions against cybercrime, terrorism, or blasphemy are frequently being employed to silence legitimate dissent or justifying blanket digital surveillance.

Recommendations

A second Gutenberg revolution has yet to arrive for the majority of the world’s people. As the Web increasingly becomes essential to full participation in public life, concerted action is urgently needed to deliver on the WSIS commitments to increase internet access, affordability and digital capacities; to provide adequate access to critical information; to find creative ways to bring currently unheard voices into the Web’s global conversation; and to protect privacy and freedom of opinion online.

Without these steps, the amazing power of the Web and social media may largely amplify the voices and harden the interests of those who already have control over knowledge and access to influence – cancelling out the ambitious but necessary WSIS vision of creating an information society that furthers inclusion, participation and human rights.

We call on governments, civil society organisations and companies to commit to the following actions to re-energise the information society:

1. Reverse the rising tide of online censorship and surveillance. The rights of all citizens to freedom of expression, opinion, and association and privacy both online and offline must be enshrined in law and respected and upheld by all stakeholders. Governments and civil society groups should initiate robust and participatory national debates on the role of the Web in achieving human rights and advancing national development – bringing together all social groups and stakeholders to build a vision for the role of the Web in achieving human rights and national development, and to participate in defining the legal safeguards, policies and programmes needed to achieve that vision. Technology companies should accelerate their deployment of privacy-enhancing technologies; oppose the development of specifications that enable excessive and invasive violations of internet users’ rights; and cooperate in developing regulations on the export of censorship and surveillance technologies to repressive regimes.

2. Make broadband affordable and accessible to all. Accelerate actions to achieve or surpass the UN target of reducing the cost of broadband below five percent of average per capita income by 2015. Encourage community wi-fi and other innovative uses of spectrum for public benefit, and re-invest some of the revenue raised from the ICT sector (such as license fees and Universal Service Fund contributions) in achieving universal access to mobile and fixed line internet.

3. Guarantee that all women, men, girls and boys can access essential information. Essential information is that which is necessary to understand and secure individuals’ rights to health, education, shelter, livelihood, healthy environment and public participation. Steps needed include ensuring information is widely disseminated via the Web, in formats and languages accessible to excluded groups; allocating specific funds and creating incentives to support non-government actors and independent media to develop innovative public outreach strategies; proactively releasing government data for anyone to download and re-use; and strengthening the legal right of citizens to obtain information on request.

4. Educate everyone on digital rights and skills. Ensure that all teachers receive basic ICT training as part of their professional education, and that all schools and public libraries offer digital literacy and skills training by 2015, with a focus on empowering consumers and young people to take a creative and critical approach to online communication, to make full use of technology to enhance their lives and livelihoods, and to ensure their own privacy and safety on the Web.

⁸ World Bank Institute and Open Contracting Partnership, 2013. “Open Contracting: A New Frontier for Transparency and Accountability,” Research paper, October.

⁹ As measured by the number of countries who averaged 3 or better on a 5 point scale for effective dissemination of information on health, education, climate adaptation, women’s rights, workers’ rights and other key topics.

¹⁰ United Nations Department of Economic and Social Affairs, 2012. UN E-Government Survey 2012, <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>

¹¹ Ibid.

¹² As measured by the number of countries who averaged 3 or better on a 5 point scale for the extent of social media and Web use for political mobilisation.

¹³ Sir Tim Berners-Lee, 2013. Remarks at the closing plenary of the Open Government Partnership Summit, 1 November, London.

A video of the speech is available at <http://www.youtube.com/watch?v=-179P2j8gw>

¹⁴ <http://www.regeringen.se/content/1/c6/19/64/51/6999c512.pdf>

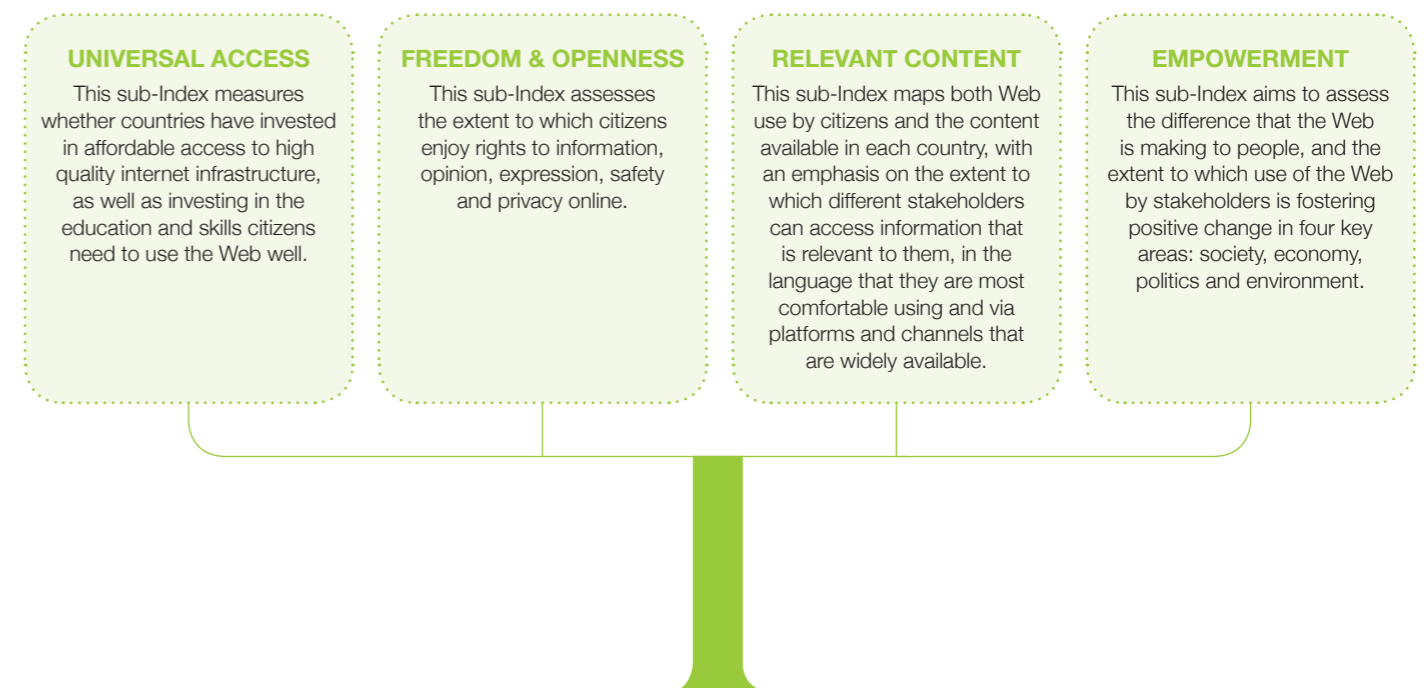
Table 1: Top performing Web Index countries

Developed Countries		Emerging Market Countries		Developing Countries	
Country	Overall Rank	Country	Overall Rank	Country	Overall Rank
Sweden	1	Mexico	30	Philippines	38
Norway	2	Colombia	32	Indonesia	48
United Kingdom	3	Brazil	33	Kenya	53
United States	4	Costa Rica	34	Morocco	54
New Zealand	5	South Africa	35	Ghana	55

The Web Index is a measure of the World Wide Web's contribution to development and the fulfillment of basic human rights in 81 countries. It provides an objective and robust evidence base to inform public dialogue on the steps needed for societies to leverage greater value from the Web. The Index combines existing secondary data with new primary data derived from an evidence-based expert assessment survey.¹⁵

The Web Index 2013, which advances, expands and updates the initial findings made by the Web Index 2012, tracks the main dimensions of human rights through and on the Web, as the World Wide Web Foundation understands them.¹⁶ The graphic below shows its basic structure.

The 2013 Index structure



The data and methodology used to produce the Web Index are published under an open license and can be used by others to undertake their own research.

¹⁵ See the Appendix for a full description of the Index methodology.

¹⁶ Our framework is loosely based on the 2011 report to the UN General Assembly by the UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue. See http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf

2. The Web Index: A Global Picture

Country	INDEX	SUB-INDEX	SUB-INDEX	SUB-INDEX	SUB-INDEX
	Composite	Universal Access	Freedom and Openness	Relevant Content	Empowerment
Sweden	1	3	6	5	2
Norway	2	6	1	4	4
United Kingdom	3	8	24	1	3
United States	4	12	27	10	1
New Zealand	5	11	8	3	5
Denmark	6	2	7	7	12
Finland	7	9	2	13	10
Iceland	8	1	3	9	17
France	9	16	5	8	6
Korea (Rep. of)	10	4	33	6	8
Australia	11	15	30	2	7
Netherlands	12	18	4	12	13
Japan	13	14	15	15	9
Austria	14	10	16	16	15
Canada	15	17	26	11	11
Germany	16	7	19	17	14
Switzerland	17	13	10	25	18
Estonia	18	22	11	30	16
Ireland	19	25	14	18	25
Belgium	20	20	23	23	22
Poland	21	27	18	28	19
Italy	22	21	21	26	23
Portugal	23	19	9	27	33
Czech Republic	24	23	17	33	20
Israel	25	26	31	19	24
Greece	26	29	12	22	32
Chile	27	30	22	21	29
Spain	28	24	28	40	28
Uruguay	29	32	13	34	42
Mexico	30	38	32	29	31
Singapore	31	5	70	14	35
Colombia	32	33	40	31	26
Brazil	33	37	36	41	27
Costa Rica	34	52	25	39	34
South Africa	35	34	20	48	37
Argentina	36	42	43	24	40
Malaysia	37	36	62	32	21
Philippines	38	48	44	42	38
Peru	39	56	29	43	50
Mauritius	40	46	34	45	52

Country	INDEX	SUB-INDEX	SUB-INDEX	SUB-INDEX	SUB-INDEX
	Composite	Universal Access	Freedom and Openness	Relevant Content	Empowerment
Russia	41	43	67	35	30
Hungary	42	53	37	51	45
Ecuador	43	47	51	44	46
Tunisia	44	51	45	53	41
United Arab Emirates	45	31	74	20	55
Thailand	46	40	63	52	39
Jamaica	47	55	41	49	58
Indonesia	48	57	48	46	53
Kazakhstan	49	44	75	36	44
Bahrain	50	35	71	37	51
Qatar	51	28	77	38	60
Venezuela	52	39	64	50	54
Kenya	53	63	57	55	36
Morocco	54	67	55	56	43
Ghana	55	66	35	60	62
India	56	62	47	63	48
China	57	45	79	47	49
Turkey	58	54	58	59	57
Tanzania	59	61	42	65	56
Namibia	60	49	39	66	76
Senegal	61	70	50	64	47
Jordan	62	41	73	54	63
Egypt	63	58	66	57	66
Bangladesh	64	65	56	61	65
Uganda	65	73	49	76	59
Zambia	66	72	53	70	61
Nigeria	67	60	59	68	69
Botswana	68	64	46	77	80
Saudi Arabia	69	50	81	58	74
Benin	70	80	38	72	78
Nepal	71	75	61	67	71
Viet Nam	72	59	80	62	72
Burkina Faso	73	77	54	73	75
Malawi	74	79	52	81	68
Rwanda	75	71	69	71	64
Cameroon	76	76	65	75	70
Pakistan	77	68	76	69	67
Zimbabwe	78	69	68	78	73
Mali	79	74	60	80	81
Ethiopia	80	81	72	79	77
Yemen	81	78	78	74	79

The Top 10

Sweden tops the rankings for a second year running, driven by strong achievement across all dimensions of the Index – including one of the highest mobile broadband penetration rates in the OECD. Its pathbreaking 2000 “Information Society for All” law established that broadband service should be considered a utility and every citizen should have access to it. The government obliged state-owned companies to build high-speed backbone infrastructure and provided tax incentives to boost broadband demand. In 2009, a plan was put in place to enable all households and businesses to access public services by broadband. The result? Sweden is rated the second most innovative country in the world by INSEAD, and the Web has become a ubiquitous tool to discover, create and disseminate information, resulting in greater efficiency, transparency and empowerment. These achievements, however, could be compromised by growing concerns over inadequate safeguards against excessive state surveillance.

Norway is placed second in the 2013 Index driven by its decade old digital action plan, effective regulation to encourage innovation and affordability in ICT markets, and its top-scoring performance on measures of freedom and openness. The United Kingdom, despite falling down on privacy rights, is placed third overall in the Index, propelled by its high scores on availability of relevant content and political impact. The USA, the best performer in 2013 on use of the Web for social, political,

environmental and economic empowerment through the Web, falls to fourth in the Index given mediocre scores on internet access, communications infrastructure, and the lack of adequate safeguards to protect users’ privacy from extensive electronic surveillance. New Zealand, although only the 23rd richest country in the Index in per capita income terms, rises into the top five performers thanks to improvements in its communications infrastructure, availability of relevant content and Web use.

New entrants into the top 10 – Denmark, Iceland, France – rose due to strong performance on online freedom, as well as growth in the number of mobile broadband subscribers. Korea also joins the top 10 countries, having achieved the highest household penetration of broadband in the world and world leadership on e-government services. Where countries dropped from the top 10, this was often due to stagnant internet penetration levels. Australia has faced delays in the rollout of its national broadband network project. Ireland and Canada fell on the E-participation Index, and Switzerland did not keep improving across all the variables of the Index.

Amongst emerging market nations, Mexico achieved the highest overall position in the Web Index 2013, followed by Colombia, Brazil, Costa Rica and South Africa. The Philippines was the developing country that achieved the highest overall ranking in the Web Index 2013, followed by Indonesia, Kenya, Morocco and Ghana.

SPOTLIGHT ON: Estonia – Using the Web to Build Democracy

Estonia takes the 18th position in the 2013 Web Index, just below Switzerland, which is five times richer than it in per capita income terms. This strong showing is a result of the nation punching above its weight in the areas of Freedom, Education and Awareness and Empowerment.

Innovation in the ICT sphere is not new to Estonia. The Soviet regime tried to boost technology-led advances in education and research. However, the lack of physical infrastructure remained a crippling constraint. When a new democratic government came to power in 1991, it brought a new vision of universal access to the internet as a means to build a more participatory and transparent society. “For other countries, the internet is just another service, like tap water, or clean streets. But for young Estonians, the internet is a manifestation of something more than a service – it’s a symbol of democracy and freedom,” Linnar Viik, a government IT adviser, told The Guardian last year.

The resulting policy initiatives launched by the Estonian government have focused on both demand and supply. Telecommunications reforms have encouraged competition so as to incentivise private companies to build state-of-the-art ICT infrastructure. After parliament passed a law in 2000 declaring internet access a fundamental human right, a huge network of free public internet access points was rolled out. The government has also sought to stimulate demand through digital skills initiatives, investment in e-government services, and subsidies and incentives to help technology companies grow. In parallel, Estonia has been a strong defender of online rights and freedoms at home and abroad. Last year, the country made headlines when it launched an experiment to crowdsource its new constitution. In the first half of 2013, citizens submitted over 2000 proposals for legislative change online, including a call to let taxpayers allocate one percent of income taxes through a direct vote.

Source cited: Kingsley, P. 2012, “How tiny Estonia stepped out of USSR’s shadow to become an internet titan,” The Guardian, 15 April. <http://www.theguardian.com/technology/2012/apr/15/estonia-ussr-shadow-internet-titan>

Countries ranked in 2012 and 2013 Top 10	New countries in the Top 10 group in 2013	Countries that have dropped from 2012 Top 10
Finland New Zealand Norway Sweden United Kingdom United States	Denmark France Iceland Korea	Australia Canada Ireland Switzerland

SPOTLIGHT ON: Costa Rica – ICT as a driver for Economic Change

Costa Rica ranks 34th in the Web Index global ranking and fifth among Latin American countries. Its path to this strong position has been an interesting one.

In the mid-1990s, the government launched a new economic strategy to diversify from the traditional agricultural activities to technology-based initiatives. Costa Rica was in a strong position to implement such a policy: it enjoyed a relatively advanced telecommunications system, as well as access to the internet, fiber-optic rings, and multimedia services. Telecommunications costs were also among the cheapest in Latin America. In addition, Costa Rica had arguably the best education system in Central America, with the highest literacy rate (95 percent).

The vision of technology-led growth took off when the Social Digital Agreement (2010) made tackling the digital divide a primary objective and was reinforced by a Supreme Court ruling entrenching the right to gain broadband access for all Costa Ricans. The Development of National Broadband Strategy (2012) extended these reforms and included a set of social and economic targets for coverage, adoption and speed, alongside an integrated model based on a technology-neutral framework, public-private financing partnerships, and extensive competition.

Costa Rica is well on the way to fulfilling the strategy’s challenging targets, which include 100 percent coverage by 2014. As a result, the Web is increasingly delivering value and impact to all social groups, and Costa Rica tops the Global Innovation Index (<http://www.globalinnovationindex.org/>), as published by Cornell University, INSEAD and the World Intellectual Property Organisation) rankings for Latin America.

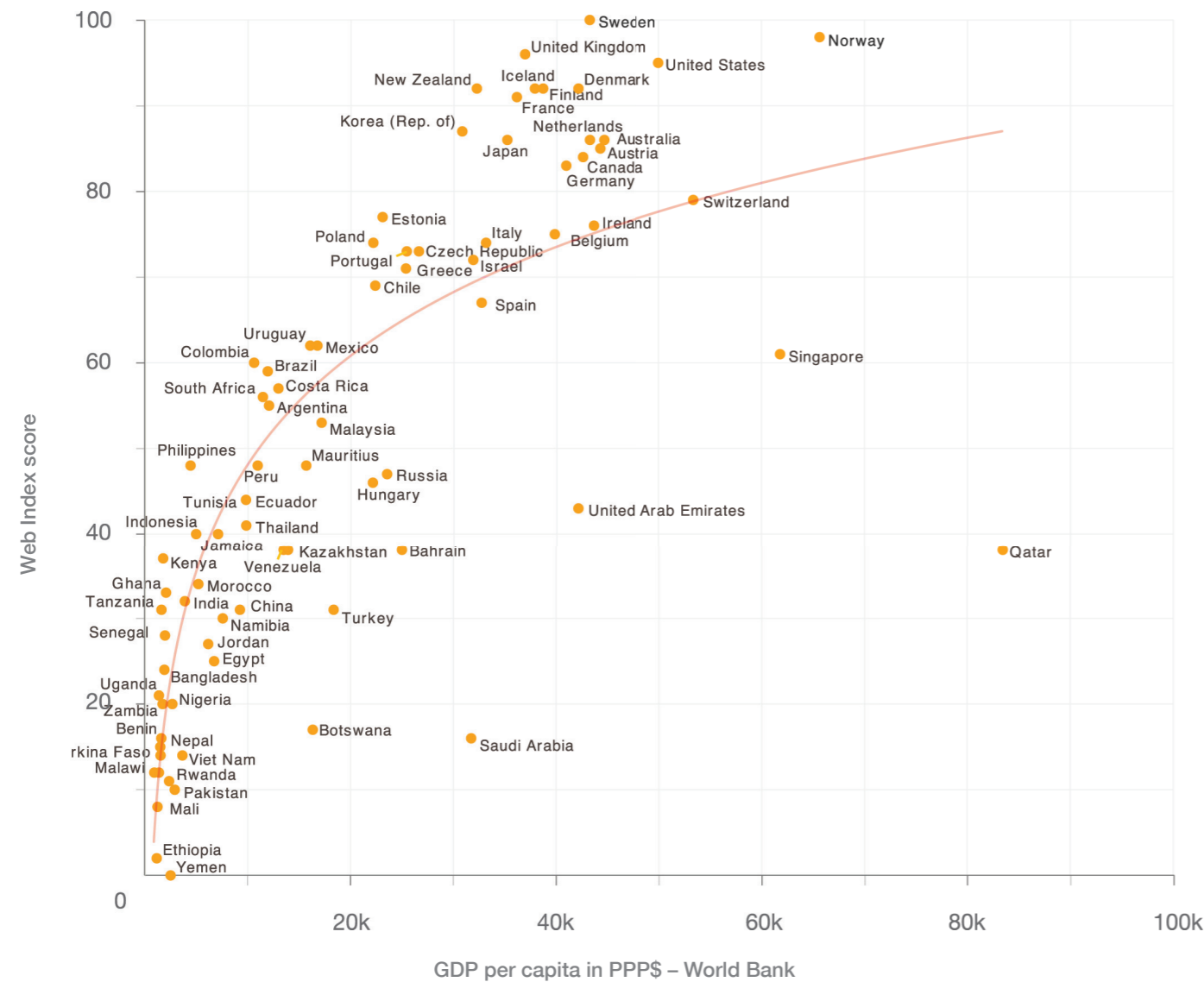
Wealth and Web Index rankings: an analysis

In low and lower middle income countries, overall performance on the Index tracks the trend of per capita incomes fairly closely, as shown by the scatter chart of GDP per capita vs. Web Index rankings below. This suggests that in poor countries, steps to expand ICT skills and access should be made in tandem with investments in other development priorities, such as better education, stronger protections for civil and political rights, and overcoming infrastructure bottlenecks.

However, once countries surpass US \$12,000 per capita (the threshold at which the World Bank considers a country to be “high income”), the relationship between wealth and Web Index ranking becomes much weaker. Some of the world’s richest countries are mediocre or poor performers, while countries like Costa Rica and Estonia (page 13) are doing much better on the Index than wealth alone would predict. Seemingly, once basic infrastructure and skills are in place, the amount of value countries derive from the Web is neither predetermined nor an accident, but depends on the imagination and determination governments (and other stakeholders) bring to maximising its potential, and their willingness to embrace the online freedoms this demands.

On this year’s Index, the biggest overachievers, achieving a Web Index rank at least 14 places ahead of their rank by per capita income, included the Philippines, New Zealand, Colombia, Korea, Kenya, the UK and Estonia. Notable underperformers, turning in a Web Index rank far below their income ranking, include some of the richest countries in the world: Qatar, Saudi Arabia, UAE and Singapore.

GDP PER CAPITA VS. WEB INDEX SCORE



Overachievers vs. Underperformers: How selected countries' Web Index rank compares to their level of wealth	Income rank*	Web Index rank	Difference
UNDERPERFORMERS			
Qatar	1	51	-50
Saudi Arabia	25	69	-44
UAE	13	45	-32
Botswana	39	68	-29
Singapore	3	31	-28
Turkey	36	58	-22
Bahrain	30	50	-20
Yemen	64	81	-17
Pakistan	62	77	-15
OVERACHIEVERS			
Philippines	59	38	21
New Zealand	23	5	18
Colombia	48	32	16
Korea (Rep of)	26	10	16
Kenya	68	53	15
UK	18	3	15
Estonia	32	18	14

* Income rank is based on World Bank, GDP per capita, PPP (current international \$), World Development Indicators database. Most data for 2012.

3. Measuring Progress Towards the Information Society

Introduction

Knowledge has always been one of the most valuable and unequally distributed resources in the world. Even though average levels of education and literacy have climbed dramatically in the past 100 years, the gulf between the information-rich and the information-poor remains. Some experts warn that the divide may be increasing, as the complexity of decision-making and the power of new technologies increases.¹⁷

The Web expands people's ability to gain knowledge, reducing or eliminating the cost of acquiring information, and offering instantaneous access to trillions of pages and billions of gigabytes of data.¹⁸

Recognising this, 175 governments gathered in Geneva for the World Summit on the Information Society in 2003. They committed to harnessing the internet to build a world "where everyone can create, access, utilize and share information and knowledge", enabling people "to achieve their full potential... and improve their quality of life."

On the ten-year anniversary of the World Summit, this year's Web Index assesses progress towards the WSIS goals (see Box 1). Our research, carried out in 81 countries in mid-2013, explores how far ordinary people around the world can use the Web to obtain basic knowledge that is key to achieving the Millennium Development Goals and improving quality of life. We also assessed how far the Web is empowering people not just to receive information, but to voice their own views, and to collaborate and take action to improve their lives – a second important pillar of the WSIS vision, and one which is consistent with Sir Tim Berners-Lee's vision of the Web as a platform for collaboration and conversation.

The turbulent decade since the Geneva summit has thrown up new social, political and environmental challenges that make the WSIS goal of an inclusive information society more necessary and compelling than ever before.

- Many countries are grappling with rising inequality in the wake of the 2008-10 global economic crisis, exacerbated by persistently high unemployment.¹⁹ As long as ICT skills and access remain so unevenly distributed, technological change will accelerate, not reduce, economic inequality.²⁰

- Climate change poses an imminent threat to the livelihoods, health and food security of billions,²¹ yet awareness of the environmental crisis facing us, and the knowledge and skills needed to cope with it, remains minimal.²²
- Basic rights that are fundamental to participation and accountability are under threat from several quarters. Authoritarian governments increasingly use censorship and surveillance, threatening the advances made by a rising tide of free expression on the Web and social media. Religious fundamentalists of different stripes seek to limit freedom of opinion and information, and to deny women control over their bodies and sexuality. Most recently, we have learned that intelligence agencies of many Western governments are secretly intercepting the private communications of millions of civilians. Such trends are worrying in themselves, but they also undermine the basis for active citizen participation and strong state accountability in tackling the global and local challenges we face.²³

Against the background of these threats, the WSIS goal of an inclusive information society is more necessary and compelling than ever before. But beyond the digital divide, the world faces a participation divide, as unequal access to knowledge and speech online denies millions the necessary tools for free and informed participation in public life.

¹⁷ See for example Knight Commission on the Information Needs of Communities in a Democracy, 2010. Informing Communities: Sustaining Democracy in the Digital Age, <http://www.knightcomm.org/>.
¹⁸ See <http://www.worldwideWebsize.com/>.
¹⁹ OECD, 2012. "An Overview of Growing Income Inequalities in OECD Countries: Main Findings," <http://www.oecd.org/eis/soc/49499779.pdf>.
²⁰ IMF, 2007. "Globalization and Inequality," World Economic Outlook, IMF, Washington, pp. 31-65, October.
²¹ Mora, C et al., 2013. "The projected timing of climate departure from recent variability," Nature, advance copy published at <http://www.soc.hawaii.edu/mora/PublicationsCopyRighted/Mora%20038.pdf>.
²² Gallup World, 2009. "Awareness, Opinions About Global Warming Vary Worldwide" <http://www.gallup.com/poll/117772/awareness-opinions-global-warming-vary-worldwide.aspx>.
²³ See for example Quentin Skinner's interview with Richard Marshall, 26 July 2013, published at <http://www.opendemocracy.net/ourkingdom/quentin-skinner-richard-marshall/liberty-liberalism-and-surveillance-historic-overview>.

BOX 1: The WSIS Commitments

Governments, civil society organisations and private sector stakeholders gathered for the World Summit on the Information Society in 2003, where they committed to a number of important principles and goals:

- They affirmed that the information society must be founded on the right of everyone to **freedom of opinion and expression**; and that this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.
- They undertook to ensure that **more than half the world's inhabitants have access** to ICTs.
- They promised to encourage legal steps to guarantee the **independence and plurality of the media**.
- They committed to providing adequate access through various communication resources, notably the internet, to **public official information**.
- They promised to **empower local communities** in ICT use and promote the production of **useful and socially meaningful content** for the benefit of all.
- They committed to **equal training opportunities** in ICT-related fields for women and girls.
- They promised to use ICTs to **expand access to important knowledge and services in areas such as health, education, agriculture and disaster early warning systems**.

1. ACCESS TO THE INTERNET

Access to [information and communication] technologies [has] become a basic tool to facilitate the exercise of fundamental rights and democratic participation and citizen control... This includes the fundamental right of access to these technologies, in particular, the right of access to the internet or World Wide Web. – Supreme Court of Costa Rica, July 2010.

The internet, as Costa Rica's Supreme Court affirms, has become fundamental to enabling people to exercise their rights. Therefore, States have a human rights obligation to ensure that the Web is available, accessible and affordable to all segments of the population.²⁴ Several other Web Index countries (Estonia, Finland, France, Greece, Mexico, and Spain) have joined Costa Rica in taking legal steps to ensure rights of access to and freedom on the internet.

Universal access is also important to tackle rising inequality in many countries around the world by empowering the groups who lack voice, knowledge and social capital. On current trends, a largely affluent, urban elite, predominantly but not only located in rich industrialised countries, and representing more men than women, is capturing the greatest benefit from the Web.

Unequal connectivity stifles the Web's potential as an accelerator of development and innovation, and results in lost opportunities for economic growth. The World Bank estimates that in low- and middle-income countries, every 10 percentage point increase in broadband penetration accelerates economic growth by 1.38 percentage points.²⁵ Intel claims that doubling connectivity among women in developing countries could contribute US\$15bn to global GDP.²⁶

Expanding access to ICTs to at least 50 percent of the world's population is therefore the foundational WSIS goal, but progress towards achieving it is not nearly good enough. The number of internet users worldwide has more than doubled since WSIS, from 16 percent of the global population in 2005 to 39 percent in 2013. In the past five years alone, 13 Web Index countries (Argentina, Bahrain, Brazil, Chile, Greece, Kazakhstan, Morocco, Poland, Portugal, Qatar, Russia, Saudi Arabia, Uruguay) have rapidly increased connectivity, with some recording gains of over 30 percent, showing what is possible when political will exists. With the spread of cheap internet-enabled phones, mobile is becoming the predominant way for people in developing countries to get online.

Nevertheless, in the developing world, only a minority of mobile phone owners use their phones to get online; the proportion ranges from a low of only six percent in Pakistan to a high of 37 percent in China.²⁷ Hence, the mobile revolution notwithstanding, the most powerful information technology – the internet – is still out of reach for three in five of the world's people, and for over four in five Africans.²⁸ **Only one developing country in the Web Index – Morocco – has achieved the WSIS target level of 50 percent internet use.** There are a surprising number of high-income countries that are languishing just above this threshold, including two G8 members – Italy and Russia.

Affordability

On average, a basic broadband package in the developing countries in the Web Index costs 65 percent of average monthly income. Between 50 and 70 percent of Africans cite high costs as the main reason they are not online.²⁹ A high-cost Web is inevitably an unequal Web. In fourth ranked USA, over 80 percent are online, but that figure drops to only 57 percent among people living close to or below the poverty line, a fact that is probably closely related to the relatively high cost of broadband in the US.³⁰ Using tertiary education as a proxy for high socioeconomic status, a Pew Research survey in 22 countries found those with higher education are significantly more likely to be online than those with secondary school or less; in six countries (Jordan, Brazil, Kenya, Egypt, Turkey and Mexico) the education differential was greater than 50 percentage points.³¹

As mobile is fast becoming the predominant means for people in developing countries to get onto the Web, governments need to pay special attention to enabling more people to access the internet using their phones – both by spurring cost reductions in the mobile broadband market and by incentivising innovative re-use of spectrum for community wi-fi initiatives.³²

Social barriers

Only half of the Web Index countries have established a national policy on gender equity in internet use. Lack of political and policy focus is compounded by failure to collect gender-disaggregated statistics. Estimates of the gender gap in internet use in the developing world range from as little as a few percentage points to as much as 25 percent.³³ Hence, the ways in which gender affects Web access and use are still poorly understood – a problem that next year's Web Index will tackle.

Encouragingly, among those who are connected, women are participating in social networking in equal or slightly greater numbers than men, across most regions of the world.³⁴ Yet while women may have access, they frequently do not necessarily have, or feel entitled to, control and privacy. There are reports from Uganda, India and other countries of fathers and husbands attempting to monitor and constrain women's use of mobile phones.³⁵ One in five women in India and Egypt believe the internet is not "appropriate" for them.³⁶ However, nearly all of the same women agree that internet access should be a fundamental right of all people.³⁷

Relatively little attention is being given to multi-channel approaches that can reach poor and marginalised groups, combining the power and interactivity of the Web with the accessibility of text messaging or community radio. **Only fifteen Web Index governments have full multi-channel strategies,** with Asia leading the way on integrating mobile channels (such as SMS queries and notifications and mobile apps). Significantly,

government use of mobile channels is lowest in Africa, where it could make the biggest difference; for example, only seven percent of African governments use mobile channels as part of their e-government strategy.

Poor education remains a barrier to Web use for many. Worldwide, one in five women is illiterate, and two in five children don't attend secondary school.⁴⁰ This is not just a developing world problem: 40 percent of US adults, for example, would have trouble "consulting reference materials to determine which foods contain a particular vitamin."⁴¹ A priority for many countries to improve their Web Index score must be to **improve their basic education systems and teacher training.** A next step would be to incorporate digital and data literacy into teacher training. In 19 mainly middle-income countries surveyed by the ITU in 2008-9, on average only about three percent of primary and secondary teachers were certified to teach basic ICT skills.⁴² Finally, more investment in digital and media literacy programmes is needed, both inside and outside of schools. **Only 56 percent of Web Index countries were assessed as allocating "significant" resources to gender-equitable ICT training programmes.**

Those initiatives that do exist often focus on mechanical topics such as "What is an internet service provider?" or "How do you turn the computer monitor on and off"? Few have been designed to empower youth and consumers to understand and exercise their rights online, and good evaluations of their impact are scarce. A digital rights education agenda would include teaching users how to protect their privacy and safety; to navigate the intense social pressures that online networking platforms can generate, especially among young people; to assess information credibility and understand the non-neutral processes applied by commercial search engines to generate results, and how pictures and video footage can be manipulated.⁴³

Disability still prevents sizeable minorities from accessing the Web. **Only 16 of 81 countries in the Web Index have a legally binding requirement that government Websites be accessible to people with disabilities.** Of those, only France, Germany, Korea and Qatar have accessibility also cited as a government priority. Korea is the only country where access for the disabled is also seen as a priority for tech and Web developers.

Overall, the country that has made the most progress on achieving affordable and universal access to the internet, while also providing good access to education and skills, is Iceland, followed by Sweden, Finland, the US and Switzerland. Mauritius ranks highest in Africa, Singapore leads in Asia-Pacific, and Israel ranks highest among Middle Eastern nations. In the Americas, Chile ranks just behind the US and Canada, for third place.

²⁹ Gillwald, A. 2012, op cit.

³⁰ Jansen, J. 2010, "Use of the internet in higher-income households," Pew Internet & American Life Project, <http://www.pew.org/Reports/2010/Better-off-households/Overview.aspx>

³¹ Pew Research Center, 2010, "Global Publics Embrace Social Networking," December, <http://www.pewglobal.org/2010/12/15/global-publics-embrace-social-networking/>

³² At the same time, surveys show that PC use in public libraries, schools and internet cafes remains important, even among people who also access the internet from their phones.

³³ The ITU estimates the gender gap in internet use at 16 percent in developing countries, while a 2013 study by Intel, drawing on Facebook user data, put it at 25 percent. Pew Research, on the other hand, found that gaps were insignificant overall, and were not necessarily larger in developing countries than in developed ones. According to their late 2010 survey, differentials in Germany and Japan were bigger than those in many developing countries, including India, Kenya, and China. Research ICT Africa's household surveys in 17 African countries found that the gender gap in ICT use largely disappeared if results were controlled for income.

³⁴ ITU, 2013, Measuring the Information Society; Intel 2013, op. cit; Gillwald, A. op cit.; Pew Research Center, 2010, "Global Publics Embrace Social Networking," loc cit.

³⁵ Pew Research Center, op cit., and Comscore, 2012, "It's a Social World: Top 10 Need-to-Knows About Social Networking and Where It's Headed," http://www.brandchannel.com/images/papers/534_comscore_wp_social_media_report_1212.pdf

³⁶ Mandanda, A. et al., 2009, "Uganda: Violence against Women and Information Communication Technologies," APC Brief, <http://www.genderit.org/content/uganda-violence-against-women-and-information-communication-technologies>

³⁷ Intel 2013, op cit.

³⁸ Ibid.

³⁹ United Nations Department of Economic and Social Affairs, 2012. UN E-Government Survey 2012, <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>

⁴⁰ UNESCO Institute for Statistics, 2012. "Adult and Youth Literacy," Factsheet no 20, <http://www.uis.unesco.org/FactSheets/Documents/Is20-literacy-day-2012-en-v3.pdf>

⁴¹ UNICEF data, last updated January 2012, http://www.childinfo.org/education_1057.htm

⁴² Literacy survey of the National Center for Education Statistics, 2003, cited in Knight Commission, op cit.

⁴³ ITU, 2010. "Monitoring the WSIS Targets," http://www.itu.int/ITU-D/ict/publications/widr_10/material/WIDR2010_Target7_e.pdf

⁴⁴ Miller, C. and Bartlett, J. 2012. "Digital fluency: towards young people's critical use of the internet," *Journal of Information Literacy*, 6(2), pp. 35-55. <http://ojs.liboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V6-I2-2012-3>

²⁴ UN Human Rights Council, 2011. "Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue," 17th session Agenda Item 3, United Nations General Assembly, 16 May.

²⁵ Zhen-Wei Qiang, C. and Rossotto, C., 2009. "IC4D: Extending Reach and Increasing Impact," Economic Impacts of Broadband, ch. 3, GICT Dept. World Bank.

²⁶ Intel, 2013. Women and the Web: Bridging the Internet gap and creating new global opportunities in low and middle income countries, <http://www.intel.com/content/dam/www/public/us/en/documents/pdf/women-and-the-Web.pdf>

²⁷ About three-quarters of the world's people, according to World Bank estimates, now have access to a mobile phone. In emerging and industrialised countries, most of these phones are internet-enabled, but in the developing world, voice calls remain the predominant use of mobiles, followed by text messaging (used by anything from half of mobile owners in Pakistan to nearly all in Indonesia), with internet access a distant third. World Bank, 2012. Maximising Mobile: Information and Communication Technologies for Development 2012, <http://go.worldbank.org/UJ2CTQTYPO>. Figures on text messaging and internet use from Pew Research Centre, 2011. The figure of 75 percent mobile use is lower than the total number of mobile subscriptions per 100 inhabitants because each mobile subscriber has, on average, 1.85 SIM cards, according to GSMA research. However, the World Bank model also accounts for the fact that phones are often shared with family members or friends. <https://gsmaintelligence.com/analysis/2012/10/global-mobile-penetration-subscribers-versus-connections/354/>

²⁸ ITU data on the number of internet users per 100 inhabitants; this figure includes mobile as well as fixed line internet use. <http://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>

2. ACCESS TO INFORMATION

As Sir Tim Berners-Lee has said, “bringing people into the information society is as important as ensuring they have access to water and vaccinations.”⁴⁴

Over 100 countries now have laws guaranteeing access to information. In just over half of the Web Index countries, right to information laws exist that are judged to be robust and well enforced.⁴⁵ The number of open data initiatives has grown from two to over 300 in just four years, and over half of the countries in the Web Index have committed to some form of proactive disclosure through national Open Government Data initiatives. Guaranteeing citizens’ rights to demand information from the state, and proactively releasing raw government data for re-use, are important steps to institutionalise transparency and promote a free flow of knowledge (see Box 2).

However, the main focus of this report is on a much more basic question: can people find basic facts online that will help them to secure their rights to health, education, livelihoods, a healthy environment and participation in society?

2.1 Can women obtain accurate, unbiased advice on their rights and means of redress?

Legal rights

In the majority of Web Index countries, including many developed nations, women can access limited or no information on their legal rights online (for example, right to inheritance, right to equal opportunities, rights of protection and redress against sexual abuse and violence). In only one-fifth of Web Index countries is up-to-date and complete information about women’s rights available online in local languages. Although women in most developing countries are much more likely to have access to radio and conventional mobile phones than PCs or smartphones, we found relatively few examples of multi-channel approaches to information provision for women utilising SMS, voice or radio as well as Websites.

One encouraging counter-example highlighted by our researchers is Uganda’s Barefoot Law, a non-profit organisation serving 128,000 people monthly with free legal advice via Facebook, Twitter, email and SMS. Its mandate is “to use available tools of Information Technology to disseminate... law services and education cost-effectively.” Although not specifically targeting women, a glance at their Facebook page shows that in recent months they have tackled issues such as rape, the rights of pregnant women to essential medical services, consent rules for early marriage and how to end a customary marriage.⁴⁶

Recent years have seen “constitution apps” downloaded by millions in Nigeria, Ghana, Zimbabwe and India. These free tools, which enable people to access a searchable version of their national constitution on their mobile phone and in some cases to participate in discussion forums or find legal advice, could provide interesting models for accessible, cost-effective dissemination of legal information on the rights of women.⁴⁷ Interestingly, most of these apps were developed by entrepreneurs and start-ups, rather than by government or non-profits.

Sexual and reproductive health

Information and services relating to sexual and reproductive health (SRH) rights of women and sexual minorities is often particularly hard to come by through traditional means, due to a combination of cultural taboos, lack of adequate sex education in schools, and pervasive under-investment in SRH services. Poor sexual and reproductive health accounts for an estimated one third of the global burden of illness and early death among women of reproductive age. Gender experts view the denial of sexual knowledge to women and girls as a factor in the underlying problem of unequal power relations between men and women, which makes it difficult for women and girls to exercise control over their own bodies and negotiate safer sex.⁴⁸

The most recent household survey data for a selection of Web Index countries in Africa confirms that despite years of large-scale AIDS education efforts, women still are significantly less likely than men to possess potentially life-saving knowledge needed to keep safe from HIV (see Table 2).

While the Web could help to overcome some of these barriers (largely due to the anonymity and privacy that users enjoy), it is not being well utilised. Some women’s health information is available online in just over 40 percent of the Web Index sample; but in many cases it is limited to family planning or maternal health advice only, and does not cover women’s wider sexual health and rights.

Mexico is a welcome exception to this trend. The government uses the Web to disseminate user-friendly FAQs, pamphlets and videos on a wide range of topics including prevention of violence, gender equality, sexual and reproductive health, family planning – although unfortunately only in Spanish. Additionally, it provides online training for matters such as sexual harassment and specialised pages addressing teenagers (with information on relationships, HIV, pregnancy). Moreover, the special prosecutor for crimes against women (Fevimtra) provides good information online and each state has a local women’s institute with interactive sites that provide information like the one managed by Mexico City.

A common theme emerging from our research into the success stories in several Web Index countries is the importance of emotional support as well as factual, unbiased information, and the ways in which online spaces can fill those needs without compromising privacy.

In Nigeria, people commonly economise on airtime by “flashing” (hanging up before the other party answers) to send a signal. International NGO Ipas encouraged women to “flash” their reproductive health hotline, promising a fast call-back from one of their network of trained advisors. They originally turned to online social networks as a way to help publicise the “flash” service, along with posters, billboards and airtime vouchers, but quickly found that online networking played a more important function: creating an anonymous but highly supportive space where stigma and cultural taboos can be overcome. “The judgment and stigma about what choices [a woman] makes are barriers to real choice,” says Ipas’ Sarafina Ojimaduka. Strengthening the social network among and around women will increase their options, Ojimaduka adds, and she feels that innovative communications technologies are one of the best ways to do that.⁴⁹

⁴⁴ Web Foundation, 2012. The Web Index 2012. <http://thewebindex.org/2012/10/2012-Web-Index-Key-Findings.pdf>

⁴⁵ World Bank Institute and Open Contracting Partnership, 2013. “Open Contracting: A New Frontier for Transparency and Accountability,” Research Paper.

⁴⁶ <https://www.facebook.com/Barefootlaw>

⁴⁷ See, e.g. the Nigerian Constitution app and others like it in the Android Marketplace: <https://play.google.com/store/apps/details?id=com.pledge51.nigerianconstitution>

⁴⁸ UNFPA, 2008. “Making Reproductive Rights and Sexual and Reproductive Health a Reality for All.”

⁴⁹ <http://www.ipas.org/en/News/2012/May/Innovative-communication-technologies-reach-women-worldwide-with-life-saving-information.aspx>

BREAKING DOWN KNOWLEDGE BARRIERS

Is the Web expanding access to knowledge in areas key to improving livelihoods and securing human rights?

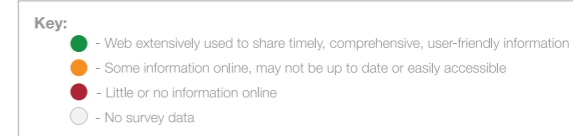
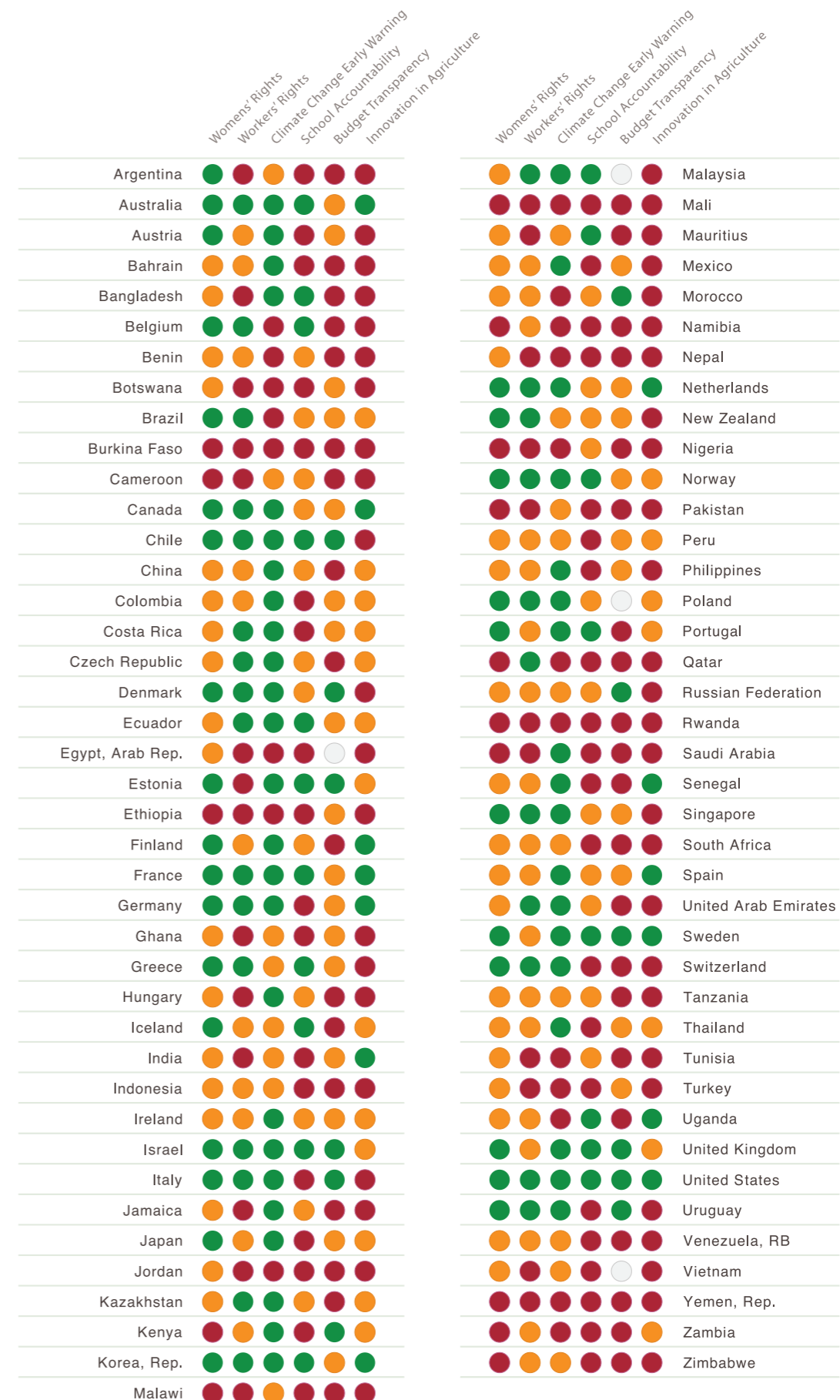


Table 2: HIV knowledge and awareness in selected Web Index countries

Country and year of survey		Know how to prevent HIV		Know where to get condoms	
		Female 15-49	Male 15-49	Female 15-24	Male 15-24
Ethiopia	2011	43%	64%	42%	74%
Ghana	2008	64%	81%	64%	81%
Nigeria	2008	48%	69%	37%	68%
Senegal	2010/11	44%	75%	44%	75%
Burundi	2010	79%	84%	38%	68%
Malawi	2010	66%	66%	79%	89%
Zimbabwe	2010/11	77%	78%	64%	83%

Source: Measure DHS, HIV/AIDS Survey Indicators Database, <http://hivdata.measuredhs.com/>

In the UK, YouthNet's interactive Web platform (thesite.org), underpinned by a team of 250 youth volunteers, reaches a socially and ethnically representative audience of about one million young people per year. Though not specifically targeting young women, it provides unbiased, easy-to-understand information on sex, drugs, health and wellbeing, work and study. It also connects young people to peers and experts for immediate online or offline support (discussion rooms, live chats, expert advisory service). User evaluations show that 81 percent felt less isolated; 89 percent felt better able to take informed decisions; and 89 percent felt TheSite improved their ability to cope with the issue they faced.⁵⁰

Gender based violence

Gender based violence (GBV) is another pervasive problem that is complicated by “cultures of silence” and the stigma and shame facing victims; lack of counsellors, police officers or health workers trained to deal with GBV; and the onerous, complex procedures that victims often must navigate to get help or redress. The Web has an unfulfilled potential to provide an anonymous safe space to spread awareness of GBV issues, combat stigmatisation and help many more women seek support.

However, less than a fifth of the governments in Web Index countries provide high quality information online for victims of gender violence. Many have not even taken the basic step of setting up a free telephone number, let alone exploiting the potential of newer communication tools. In other countries, there is a good strategy for fighting GBV, but the potential of the Web is not being creatively used as a tool to help deliver the strategy. The Netherlands provides a best practice example – the Website huiselijkgeweld.nl allows domestic violence victims to enter their postal code, after which they will receive a list of available help nearby, such as safehouses and legal assistance. In some Latin American Web Index countries (Brazil, Colombia, Argentina and Mexico), the police run toll-free hotlines for victims of violence, and both national and local governments maintain Websites that list available services as well as promoting awareness

campaigns. Nevertheless “use of the internet is primarily static, with no interaction that moves beyond the provision of information to include, for example, the possibility of reporting acts of violence. There are no links among the different agencies and institutions that deal with violence against women, either. This type of interconnection could be very simple to achieve with ICTs, and would significantly contribute to assisting and protecting victims of violence.”⁵¹

Civil society is generally more proactive, providing high quality information in 36 percent of the countries studied. Danish NGOs maintain around-the-clock Web presence and hotlines for victims of domestic violence, offering referrals to shelters and contacting the police when requested. In Malaysia, the Website of the Women's Centre for Change offers practical advice in multiple languages on domestic violence, sexual harassment, rape, child sexual abuse, marriage and divorce; each topic includes an FAQ and a section on “What should I do?” as well as a guide to relevant laws.

2.2 Can farmers get timely early warning signals about climate-related threats?

Climate-related threats to food production, such as droughts and floods, are steadily increasing in scale and frequency. The capacity of farmers to anticipate and plan for such threats is key to food security (nationally, regionally and internationally) as well as environmental sustainability.

Farmers in just over half of the countries in the Index can access good “one-stop-shop” information services that pull together data from various agencies and provide real-time or near real-time warnings of climate-related threats. The best services provide forecasts and real-time information (including water levels in rivers) on Websites with high functionality, such as the Asia-wide SWIldget early warning application, Project Noah's geo-hazard maps with a vulnerable community focus (in the Philippines) or an early landslide detection system with colour coded warning levels (in Austria). In developed contexts this extends to innovative use of social media, like Twitter and Facebook, to circulate alarms or alerts. In another 20 percent of countries, there is early warning information online, but it may be infrequently updated, or farmers may need to search several different government Websites to piece together the data they need.

Providing information in user-friendly formats that is accessible to small-scale farmers is especially important, since they are responsible for over half of the world's food production and as much as 90 percent in Sub-Saharan Africa.⁵² In some contexts, farmers and local cooperatives have developed their own internet based systems where the national system is not user friendly (Thailand being one example). In Senegal, the Ministry of Agriculture has taken advantage of the inclusion of GPS in many mobile phones to collect and share information related to early warning of livestock and crop diseases, and monitoring of management and adaptation strategies. Similarly in Bangladesh, SMS and interactive voice response (IVR) systems are used to offer agricultural advice and disseminate warning information. Farmerline, a commercial service, uses open source technology developed by the Web Foundation to provide a voice-based call-in tool linked to a Web database. The tool offers Ghanaian farmers a simple method to access information on demand in any local language, while also enabling extension workers and others to monitor uptake of information or carry out surveys of farmers.

The Web can also be a powerful tool for local, state and national government agencies to improve planning and make better decisions on climate adaptation and mitigation priorities.

In about half of the countries examined, government agencies are making extensive use of the Web to access data to inform their decision-making on environmental issues. Use of the Web to educate people on climate and environmental information is widespread in 63 percent of Web Index countries.

2.3 Can parents assess and compare school performance?

The economic development of any society rests in part on its ability to provide good education to all. Information about the performance of local schools is a key measure of government delivery, allowing parents to exercise informed choice and communities and voters to demand accountability.⁵³ We looked for the availability of comprehensive information on pupil-teacher ratios, textbook availability and other indicators of equipment and infrastructure (where relevant), budget allocations and resource management, disaggregated by area and school.

Governments provide good to excellent online information about schools in only a quarter of the Web Index countries.

The UK Department of Education provides information about school performance and socioeconomic characteristics, as well as spend per pupil, via a Website searchable by postcode or town. Australia's My School Website offers users various ways to compare a school's progress over time with other schools nationwide whose students have similar socioeconomic backgrounds. Many state and/or municipal level sites have sprung up in the US, appropriate to its highly decentralised education system. The City of Chicago's School Sparrow app not only shows parents how local schools are ranked, but also allows them to read or write their own reviews, and search for real estate available for rent or for sale in that area.

Only five of the countries providing good Web-based information on schools – Bangladesh, Benin, Korea, Tanzania and Uganda – are in the developing world. Uganda and Bangladesh provide comparative information on results, even if not all the necessary information on school performance is available. Notably, in Uganda, a request can be made by mobile phone for school performance on exams and the parent will receive an instant SMS with the data.

Greater efforts to make education-related datasets available in open formats online could make a significant contribution to improving the accountability and performance of schools (see Box 2). In particular, data on school budgets, spending and equipment is very hard to find in most of the countries we studied, both developed and developing. South Africa's database of school infrastructure needs, covering almost 25,000 public schools and designed to be regularly updated, reveals issues of serious concern – for example, 68 percent of schools do not have any computers and almost 80 percent do not have libraries. While Equal Education, a campaigning NGO, has used the Web to popularise the aggregate findings,⁵⁴ the data itself is not available to the public online (results were last published in 2011 in PDF format).⁵⁵

⁵² UNEP, 2011. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication, www.unep.org/greeneconomy

⁵³ <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/right-to-education/>

⁵⁴ See <http://www.equaleducation.org.za/page/school-infrastructure>

⁵⁵ Government of South Africa, Department of Basic Education, 2011. NEIMS (National Education Infrastructure Management System) Reports, May. <http://www.education.gov.za/LinkClick.aspx?fileticket=-hHaBCAerGXc%3D&tabid=358&mid=1802>

⁵⁰ YouthNet.org, n.d. “About YouthNet” and telephone interview with Martyn Lewis, October 2013.

⁵¹ Davidziuk, M. and Davidziuk, M.A., 2009. “Mexico, Argentina, Brazil and Colombia: Cross-country Study on Violence against Women and Information Communication Technologies.” APC briefing paper, http://www.genderit.org/sites/default/upload/APC_WNSP_MDG3_VAW_ICT_en_lac_dec2009_1.pdf

2.4 Can citizens track government budget allocations and spending?

The International Budget Partnership argue that “if you want to fight poverty, you need to care about government budgets”.⁵⁶ Access to budget information can enable citizens to scrutinise government plans and to get involved in shaping spending priorities, and access to information on government spending can play an important role in challenging corruption and increasing government efficiency.

We looked at whether budget and spending information was available online in any form, and whether they were published as open data. Making government budget and spend information available as open data can increase their accessibility and usefulness (see Box 2).

All but four of the countries surveyed had some form of budget information online, but only two-thirds provide information on government spending.⁵⁷ Just 16 percent of countries provided some form of bulk machine-readable budget data online, with 18 percent offering some form of bulk machine-readable spending data. Taking into account other aspects of data accessibility, timeliness and open licenses that permit re-use, the average openness level of budget and spending datasets across our sample was very poor, at only 35 out of a possible 100 points.

The lowest availability of budget data is in the Middle East and Asia, followed by Africa. Budget data is most likely to be available in Europe. The Americas lead on the publication of spending data, with Brazil's transparency laws that mandate real-time publication of public spending providing one example of a clear government commitment to opening up government spend data.

One African success story comes from Nigeria, where lack of popular understanding of fuel subsidy reforms and oil revenues contributed to violent protests last year. Local NGO BudgIT helped to address this through infographics, simplifying these complex processes in a visual format. “Utilising the power of social media, this sparked more informed debates and dialogue that contributed to restoring order.”⁵⁸ BudgIT has gone on to produce creative visualisations of the Nigerian budget by state and sector, designed to reduce literacy barriers and to span various platforms such as desktop browser, mobile and Twitter. The team are working towards persuading government to introduce “a participatory budget model whereby a few months before budget presentation, town hall meetings, referendum, social media meet-ups are constituted [so that] citizens can inform government of their pressing issues, hence improving service delivery and efficient allocation of government resources.”⁵⁹

2.5 Can low-paid workers find out about their rights?

The Millennium Development Goals seek to “achieve full and productive employment and decent work for all, including women and young people”. However, according to UNICEF, “global labour markets have... been increasingly characterized by... low-paying jobs and difficult working conditions where wage inequality is high and fundamental worker's rights are likely to be in jeopardy.”⁶⁰ Since 2007, such “vulnerable” employment has accounted for nearly 70 percent of all employment growth in Sub-Saharan Africa, and more than 50 percent of all jobs growth in South-East Asia and the Pacific. Such jobs are also heavily concentrated among women.⁶¹

Vulnerable jobs tend to be short-term and the work is often solitary, meaning social networks are weak. Traditional trade unions usually have limited or no reach in these sectors. Since people in such jobs earn too little to afford domestic help, they face a double burden of unpaid care work in the home, which falls most heavily on women.⁶² All of these factors make low-paid workers information-poor, time-poor and isolated, which makes it hard for them to improve their situation or challenge exploitation – problems that ICTs could help to mitigate.

About one-third of the Web Index countries have made good strides in using the Web and other ICTs to narrow the information asymmetries facing low paid and vulnerable workers. In Ecuador, for example, a website maintained by the Ministry of Labour not only provides comprehensive information on the rights of low-paid workers but also enables people to report labour abuses or claim unpaid wages. In South Korea, the two largest labour organisations, the KTCU and FKTU, make available online extensive advice on the legal rights of workers in low-paid, unskilled, and vulnerable jobs. Provincial and municipal labour groups in Korea also provide online information and telephone hotlines in a variety of languages spoken by migrant workers. Australia's Fair Work Ombudsman is another organisation that makes sure to cater to foreign as well as local workers on its Website, providing information on minimum wage, overtime pay, leave rights, the right to regular payments of wages and the right to a safe workplace as well as complaint handling processes.

However, **in two-thirds of Web Index countries, online help for low-paid workers remains sparse.** In Colombia, for example, our researcher noted that government offices are always crowded with those seeking labour advice and although ample information exists, none of it has been put on the Web, nor is there any way for workers to get help online instead of joining the queues.

Online tools to find employment are widespread. In 46 of the countries surveyed, local jobs boards are common and, in many instances, include listings in local languages. In most developing countries, however, our researchers found that they mainly serve the market for skilled and professional employees.

2.6 Can SMEs and entrepreneurs use online information to build their businesses?

The Web can help to spark the creation of new businesses, or enable existing businesses to expand their products and markets. In many developing countries, traditional small and medium enterprises (SMEs), particularly small farmers and agro-processing firms, are still the backbone of the economy. We looked at the extent to which the Web is helping them to innovate, expand markets and improve incomes, particularly through the use of online market price information and weather information. In 20 of the countries (25 percent of the sample), while some innovation occurred using online weather or market price information, it was on a small scale and not transformative. **In 13 countries, there was evidence that innovations using online weather and market price information did have an impact.** In the developing country contexts where this occurred, the innovations resulted in significant improvements in the livelihoods of the firms and farmers involved in the particular value chain – although in most cases, more thorough evaluation would be needed to verify this.

Access to agricultural market price information (AMIS) via Web and SMS has helped farmers in many developing countries to make better decisions about when and where to sell. The Uganda Coffee Development Authority (UCDA) monitors online data on world and local prices for coffee, as well as information on quality standards and management of inputs, and transmits what is relevant to Ugandan farmers – in formats they know are understandable – using mobile phones. The value chain is enhanced by the Uganda Export Promotion Board, which uses the Web to keep farmers informed of international markets and their requirements. In some countries, governments and/or donors are subsidising commercial AMIS services in the hopes they will eventually become self-sustaining. Manobi-Senegal, a private company, had donor support to distribute cheap internet – and wireless-enabled phones to farmers in remote areas of Senegal, allowing them to use the company's services to check real-time market prices. Early evaluations show that users are earning about 15 percent more on the sale of their products, after deducting the cost of using the service.

In Korea, paprika farmers are able to monitor greenhouse temperatures and conditions online in real time, allowing them to produce higher quality paprikas. The paprika association, KOPA, significantly increased its export revenues in 2012 partially as a result of this government-sponsored initiative. The information is updated and can be checked by importing countries through a mobile application, giving buyers and sellers a venue to determine prices and quality.

CONCLUSIONS

Overall, the UK is placed the highest for the availability of locally useful information online, followed by the United States, France, the Republic of Korea and Sweden. Amongst the emerging markets, Mexico does best, followed by Brazil, Colombia, Kazakhstan and Costa Rica. Morocco puts in the strongest performance among developing countries, followed by Kenya, Bangladesh, Indonesia, and the Philippines.

There are two factors common to the countries that are lagging behind in this area. The first is a lack of understanding or focus on the Web as a tool for empowering people, and a corresponding failure to give priority to increasing the knowledge, voice and participation of excluded groups such as women, low-paid workers and farmers. The second, and related, challenge is an outdated approach to communication, more generally. The spread of cheap Web-enabled phones, and the rise of social networking, is bringing about a sea-change in how we communicate, seek information and news, and form connections. As expressed by a recent UNICEF study of Kenyan young people's communication habits, “the words chatting, texting, and messaging are used interchangeably to refer to communicating with friends online via emails, social media platforms or via mobile phones (SMS or calling). While describing their digital use, they do not separate mobile phone use from [PC] use. It is part of an integrated digital experience.” However, few CSOs and even fewer governments are responding adequately to this change. Not only is the importance of mobile frequently receiving too little attention, but websites are still predominantly used to push information out in a static way, not to invite citizens to talk back, request help, report issues and contribute information of their own.⁶³

Better evaluations of the uptake and impact of public information campaigns would assist governments, CSOs and private sector players to use ICTs more effectively. Our researchers found very limited evaluation data on which audiences are reached by which media, and whether those audiences are able to use, apply or retain the knowledge gained.

On the whole, CSOs and ICT entrepreneurs seem to be better placed than governments to capitalise on the creative, participatory dimensions of the Web, particularly when it comes to engaging marginalised and excluded groups. Governments should consider shifting emphasis towards supporting them to be more effective information intermediaries, instead of concentrating resources on ministerial and agency websites that too often become graveyards for outdated and little-used content. Releasing government data for free re-use is one powerful enabler for non-government actors (see Box 2); but in addition, providing direct funding, subsidies and incentives is a necessary step to enable them to develop content and services that can fill public information needs.

⁵⁷ The Open Data research included in the Web Index covered a sample of 77 of the 81 Index countries.

⁵⁸ Treisman, L. 2013. “We are watching you! Tech helps Africans hold governments to account,” blog post, CNN Inside Africa, August 12. <http://edition.cnn.com/2013/08/12/opinion/we-are-watching-african-governments/index.html>

⁵⁹ BudgIT, 2013, “Opening the Nigerian Budget,” blog post, September 17. <http://www.yourbudgit.com/posts/view/2>

⁶⁰ Ortiz, I and Cummings, M. 2012. “When the Global Crisis and Youth Bulge Collide,” UNICEF Policy and Practice, http://www.unicef.org/socialpolicy/files/Global_Crisis_and_Youth_Bulge_-_FINAL.pdf

⁶¹ ILO, 2012. Global Employment Trends 2012: Preventing a Deeper Jobs Crisis. Geneva: ILO.

⁶² Kabeer, N. 2012. “Women's economic empowerment and inclusive growth: labour markets and enterprise development,” SIG Working Paper 2012/1, https://www.empowerwomen.org/~/_media/Files/UN%20Women/Knowledge%20Gateway/ResourceFiles/2013/11/01/08/00/NK-WEE-Concept-Paper%202013.ashx?mw=320; UNDP, 2009. “Unpaid Care Work,” Gender Equality and Poverty Reduction Policy Brief 01, October. <http://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Poverty%20Reduction/Unpaid%20care%20work%20English.pdf>

⁶³ Internews, 2013. A (Private) Public Space: Examining the Use and Impact of Digital and Social Media Among Adolescents in Kenya, http://www.unicef.org/infobycountry/files/A_Private_Public_Voices_of_Youth_Kenya_study.pdf

BOX 2: HOW RELEASING RAW DATA CAN POWER BETTER ACCESS TO INFORMATION

The Web is not just a platform for publishing documents and information – it can also be used to publish data. In fact, many of the Websites and platforms that citizens and businesses may use to get information are driven by data. Often that data remains locked-up inside governments and companies, with only a small sub-set published online, interpreted by the owner of the data. The idea of open data challenges this – calling for datasets to be published directly on the Web, in formats that can be re-used by businesses, journalists, civil society organisations and other government departments.

The release of raw data cannot, by itself, close the information gap that we have identified in this report. Before it becomes information, data needs to be processed, organised, structured and contextualised so as to make it useful. In this distinction between data and information, paradoxically, we also find the power of raw data: it can be analysed and combined by different groups in different ways to generate new kinds of insights and tools.

For example:

- Opening up public transport timetable data has enabled third-party developers to create mobile applications with real-time transport information and advanced route-finders.
- Open data from police forces has allowed citizens to track levels of crime in their neighbourhoods, and to assess the performance of local policing.
- Open data on public spending has been used by groups such as Open Spending to visualise where public resources are flowing. When the UK Government published detailed government spending as open data online in 2010, journalists dug into the data to highlight overspends, bad debts and details of the suppliers getting most money from government; civil society groups visualised the data to give citizens the ability to drill down into spending categories; and private sector spend analytics firms used the data to highlight where government could save money.
- Open Company registries have been used by Open Corporates to understand the complex ownership networks of large firms and to highlight corporate structures that enable tax avoidance.

Many of these uses of open data rely on intermediaries, including entrepreneurs and volunteer communities, to translate data into information, interfaces and services. It is generally easier to re-use data when it is provided in bulk and published using standard open data formats. Intermediaries and direct re-users of data also benefit when there is a clear license that sets out that permission is granted for anyone to re-use the data.

In our Open Data Barometer (opendatabarometer.org) we surveyed the availability of 14 key datasets in each country, and whether they were available openly, in ways that supported re-use. Less than 10 percent of the government datasets we surveyed were available as open data, and in developing countries many key datasets were simply not available online at all. Key datasets like land ownership and company registration data were least likely to be available, whilst census data was the most likely to be openly available.

The Open Data Barometer also looks at the readiness of government, citizens and civil society, and entrepreneurs and business, to secure benefits from open data. It highlights that there is a long way to go before governments are able to claim to be 'open by default', and shows the capacity gap that many nations face when it comes to the availability and skills of intermediaries to translate data into information that can have a positive impact.

3. EXPANDING CITIZEN VOICE AND ACTION

Increased access to knowledge benefits individuals when they apply it to their own lives, but it becomes catalytic for wider social progress when individuals share and act on it collectively. Recognising this, the WSIS goals for an information society aimed not just to broaden access to knowledge, but also to enable everyone to communicate, to create and share knowledge, to exercise agency and voice.

What progress has been made since 2003 in using the Web to empower people, regardless of income, gender or social status, to share knowledge among themselves, express their opinions, organise and take action on things that matter to them?

Globally, the US leads the Web Index rankings for political, social, economic and environmental empowerment, followed by Sweden, the United Kingdom, and New Zealand and Norway (tied for fourth place). Amongst the emerging markets, Malaysia is the top performer, followed by Colombia, Brazil, Mexico and Costa Rica. The highest placed developing country is Kenya, followed by the Philippines, Morocco, Senegal and India.

3.1 Use of the Web by political parties, trade unions and civil society

Political parties in 60 percent of Web Index countries used the Web to publish manifestoes or political analysis; those in just under half of our countries used the Web as a tool to actively recruit and educate members. In newer democracies or countries experiencing political upheaval, like Pakistan, parties may have active Facebook pages but are not using online tools to recruit and register new members. In some countries, such as Turkey, government regulations require people to provide documentation to register with political parties and this restricts the extent to which the process can be online. Use of online tools or platforms for political party mobilisation is even lower. Parties in just 28 of the 81 countries actively use the Web and in the majority of cases, sites are used to simply list events or not at all; in Nigeria, for example, only two of the registered 25 parties have a functional Website or blog.

In Costa Rica, minority parties use the Web more than the dominant parties. Sweden's Social Democratic Party has made an innovative effort to embrace the "netroots" by convening an annual gathering of progressive bloggers that helps to set the party's agenda as well as influencing mainstream media discourse.

Traditional civil society groups mainly use the Web to educate and inform. In 70 of the 81 countries, civil society organisations have at least some presence on the Web and use it to share information, including information about government decision making and public policy. In just 14 percent of the countries, civil society does not use the Web in any significant way, either due to capacity or government restrictions.

Trade unions across our sample exhibit the slowest uptake of the Web as a tool in their internal organising or mobilisation. In some countries, this appears to be due to a generational gap compounding a skills gap in the use of ICT.

Across most countries in the Index, traditional intermediaries such as political parties, trade unions and NGOs have been somewhat slow to deploy internet-based tools, and still use them primarily to disseminate information rather than to engage and mobilise. However, more spontaneous forms of organisation and action have been bolstered by the growth of social media and social networks, which are playing a very significant role in engaging and mobilizing citizens.

“Unless people, armed with information, engage with their communities to produce a positive effect, information by itself is powerless.”

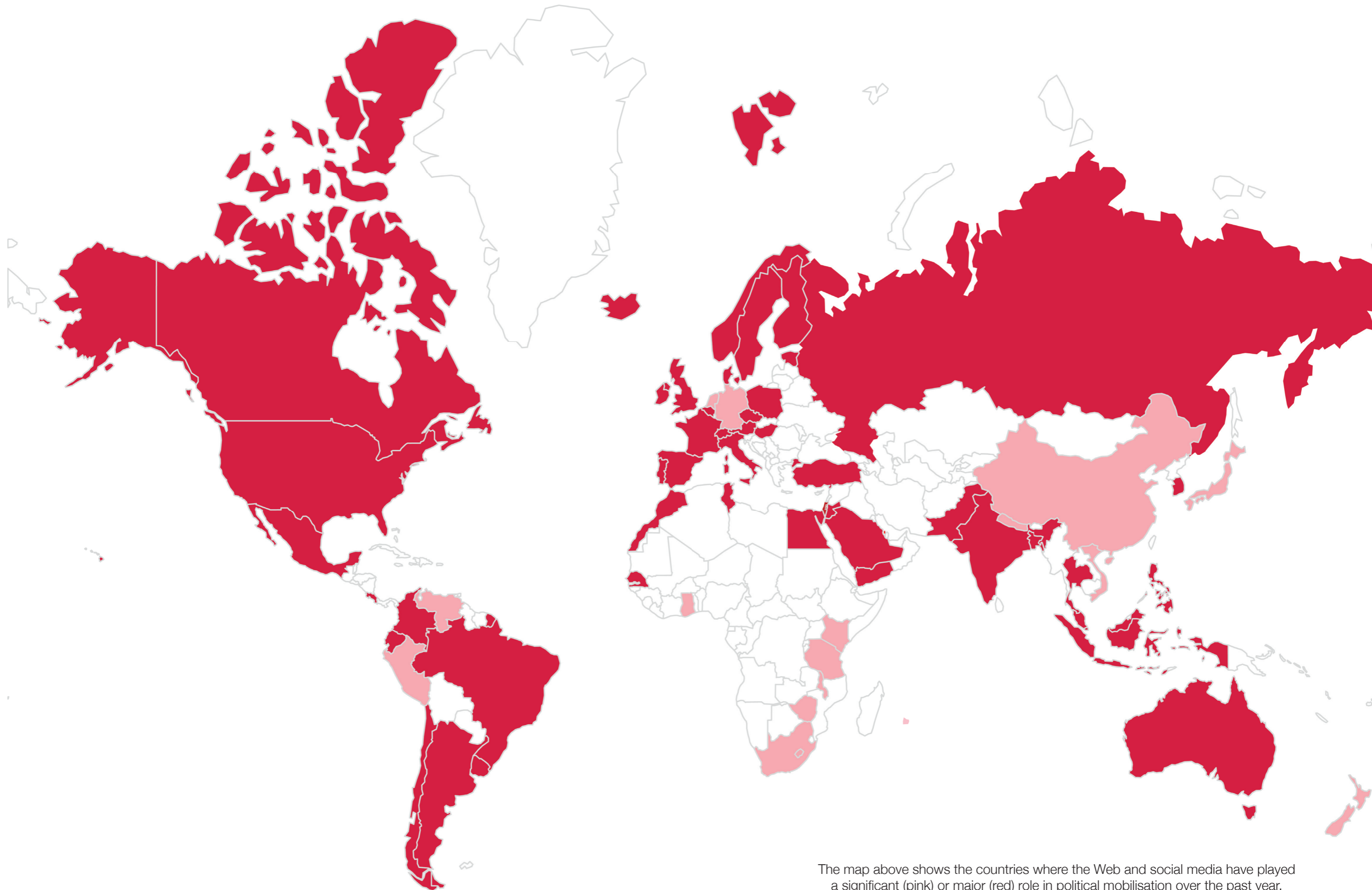
Knight Commission report, The Knight Commission 2010.

In 62 percent of the countries surveyed, civil society's use of the Web is active and frequent. However, CSOs under-utilise the Web as a tool for attracting and engaging members and have yet to realise the full potential of the social Web as a tool for organising, networking and influencing. **Civil society groups actively use the Web to engage citizens in influencing legislation and policy decisions or to hold government accountable in only half of the Web Index countries.** Some of our country researchers felt that low uptake of the Web may be at least partly due to reluctance to adopt new forms of organising that may attract unwanted attention or criticism from the authorities, suggesting that the chilling effects of online censorship and surveillance are having an impact.

Another factor is lack of skills to keep up with the new possibilities offered by the spread of internet-enabled phones and social networking platforms. In Nigeria, for instance, the majority of civil society actors and organisations do not regularly use Web or social media tools to mobilize members and the public to influence government policies. However, the recent use of Twitter to engage youth in the review of the constitution illustrates what can be done. The Youth Initiative for Advocacy, Growth and Advancement held two Twitter conferences (#constreview) on the constitution and attracted 50,495 contributions in August 2012 and 129,000 in June 2013.⁶⁴ In countries where internet access (whether mobile or non-mobile) remains very low, CSOs need to learn how to combine the power of Web-based tools with the accessibility of more basic tools such as community radio, voice, and SMS.

⁶⁴ <http://yiaga.org/>

POLITICAL IMPACT OF THE WEB AND SOCIAL MEDIA



The map above shows the countries where the Web and social media have played a significant (pink) or major (red) role in political mobilisation over the past year.

3.2 The growth of social media

The rapid uptake of social networking has spurred more spontaneous or loosely coordinated forms of collective action, sometimes described as “netroots” activism. **Social media’s use is described as “widespread” in over 60 percent of Web Index countries**, and while political debate and action may represent only a tiny sliver of the total flow of communications taking place via social media,⁶⁵ it is playing a significant role in facilitating what Yochai Benkler describes as “the capacity of individuals, acting alone or with others, to be active participants in the public sphere as opposed to its passive readers, listeners, or viewers”.⁶⁶ **In 80 percent of the countries under study, our experts indicate that awareness raising using the Web, predominantly social media, has played a notable role in political mobilisation in the last year and in half of these cases, the Web and social media were felt to have played a leading role.** Even in countries like Pakistan and Zimbabwe, where Web use is growing but still sparse, online platforms are beginning to play a significant role in shaping opinions on political issues. Conversely, as we discuss later in the report, government efforts to control, monitor or subvert electronic communications are on the increase, with potential chilling effects on the growth and impact of this “networked public sphere”.

In the Middle East and North Africa, social media continues to have a catalytic role in political unrest and change. Bahrain, one of the original countries involved in the “Arab Spring” witnessed widespread protest on the streets as a direct result of online mobilisation via sites like Facebook and Twitter and continues to see high levels of online engagement. Since the first wave of protests in 2011, Egyptians have increasingly relied on social media for political purposes, buoyed by government investments in infrastructure that are widening access to the Web (albeit with clear signs of blocking occurring at moments of political crisis or popular unrest).

Tunisians used what our country researcher called “e-meetings” to organise rallies in two major cities within two hours of the shooting of an opposition leader in February this year. Social media and websites made it possible for opposition leaders to mobilise thousands of people in front of the Ministry of Interior in Tunis and through the Jasmine Revolution. In Saudi Arabia, while protests and rallies are banned, local social mobilisation has occurred and is ongoing in the Eastern province linked to the “Arab Spring”. Where protests do occur in Saudi Arabia, our research suggests that small-scale, sporadic and short-lived though they may be – due to the repressive environment – they are the result of organising online, especially via social media.

In Europe, simmering discontent over high unemployment and tough austerity policies has led many to turn away from traditional party politics, giving rise to a new generation of social movements that rely heavily on the Web for outreach and mobilisation. The May 15 movement in Spain has gained momentum and support through online organising. Austerity protests in Greece, organised with little or no use of the Web, are an interesting exception that tends to prove the general rule.

Youth in different countries have been especially quick to adopt social media for political activism. Yem a marre was a group of youth who rebelled against the candidature of President Wade in Senegal in 2012 using a combination of music, the Web and social media to communicate their message. In the same

year, youth in Mexico mobilised via #YoSoy132 (I am 132) to democratise the mass media and protest against the return of the Institutional Revolutionary Party (PRI) to the presidency. Rallies, attended by tens of thousands of citizens in different cities, were organized through social media.

Capitalising on social media’s dual role as a vehicle for entertainment, successful online campaigns often contain a large element of fun. In the Philippines, for example, the “anti-Epal” movement mocks politicians’ habit of plastering their own names over clinics, libraries and other initiatives funded by taxpayers. Tens of thousands of people have “shamed the shameless” by posting photos of self-aggrandizing plaques, billboards, and advertisements on Facebook and Instagram. Behind the mockery, a serious principle is being promoted: “They’re OUR employees, and WE pay their wages,” as one anti-Epal Facebook post reads. Meanwhile, through their satirical YouTube videos, a small group of Filipino artists and activists is making a big impact on public support for freedom of information and other political reforms. Featuring a cast of dubious politicians such as “Rep Juana Change” (whose name can mean either “we want a change” or, in local dialect, “change is hopeless”), the videos have become so popular that the actress who plays Juana was recently invited to testify to the Senate hearing on the draft Freedom of Information bill.

Informal movements have found a natural affinity with the Web’s capacity to rapidly build decentralised networks and facilitate distributed action. Clearly, social platforms have enabled messages to spread and movements to grow far more rapidly than would have been possible using traditional media and traditional forms of organising alone. And in more repressive environments, where persecution for physical protest can be harsh, the ‘virtual’ and partially anonymous nature of online opposition is vital to increase activists’ room for manoeuvre. In Russia, activists told our researcher that online mobilisation has helped to sustain the protests that started after the 2011 elections, even as other spaces for dissent have been progressively closed down.

However, activists interviewed for this study in diverse countries (including the Philippines, Russia, Portugal and the Netherlands) observed that the ease and speed of virtual mobilisation can be a weakness as well as a strength. While thousands may sign online petitions, the number who actually take part in further actions may be small. Social media momentum does not automatically translate into sustained organising and movement-building for change – but it can. Much depends on the skills, resources and institutional linkages of movement leaders. Massive Web “blackouts” and social media mobilisation, alongside traditional advocacy, were instrumental in defeating or suspending restrictive copyright or cybercrime laws in the US, Europe and the Philippines, although similar online campaigns in Jordan failed to stop a controversial internet censorship amendment.

Also in the Philippines, the anti-Epal movement mentioned above resulted in a Senate bill that would make it illegal for officials’ names or party logos to be displayed on public works signage. Although the bill has yet to be passed, the government instructed the Public Works Department to remove self-promoting signs from roads and highways ahead of the 2013 elections. The movement has also been adopted by the social welfare department, which launched its own anti-Epal public

information campaign to prevent politicians exploiting a popular national social benefits scheme to win votes. Costa Ricans have used the Web to force the cancellation of corrupt government tenders and the resignation of at least four government ministers based on negative reactions on social media and networks to actions they had undertaken.

In some countries, a great deal of social media’s impact comes from its ability to increase the visibility of causes in the mainstream international media, as our researcher in France pointed out and as has been shown in analyses of the role of social media in the Arab Spring. However, this is not universally true; in some cases, social media is increasingly viewed as an alternative to mainstream media.

In Brazil, for example, social networks not only helped to bring millions onto the streets during this year’s protests, but also gave a huge boost to independent media like the Ninja collective (Narrativas Independentes, Jornalismo e Ação, or Independent Narratives, Journalism and Action), who reported live from the scene of the protests, live streaming video on a website linked to Facebook and Twitter. “Social perception in general is that the [mainstream] media defends its own interests,” according to an academic expert, while independent media like Ninja gain credibility from being on the ground, getting diverse points of view.⁶⁷ In contrast to the tiny niche audiences achieved by Brazilian bloggers in the past, Ninja’s viewership rose to 200,000 people, who in turned shared with 3.5 million more people on Facebook. Interestingly, its appeal seems to be outlasting the protests – the collective is expanding, and plans to cover the World Cup and the elections in 2014.

During the Gezi Park protests in Turkey, 90 percent of geo-located tweets came from within Turkey, and 88 percent were in Turkish. This is in stark contrast to the Egyptian uprisings in 2011, when only 30 percent of the most frequently re-tweeted tweets were coming from within Egypt. Turks also used social media, particularly Twitter, to circumvent what they perceived as inadequate local media reporting – adopting the hashtag #BugünTelevizyonlariKapat (“turn off your television today”).⁶⁸

Unsurprisingly, our researchers found that social media’s popularity as an alternative to mainstream media is also on the increase in countries where traditional media are heavily controlled by the government or commercial monopolies, such as Malaysia and Russia. However, government censorship of social media and Web content is also increasing in such countries (see next section).

Web-based mobilisation is not always political. **In about two-thirds of Web Index countries, the Web and social media played a role in getting people to take action on environmental issues, and about a third its role was seen as “central” to action on these issues.**

Issues of social justice at national or local level have also inspired online action. An example is the successful online petition (which gained 2 million signatures in less than two months) to get the Florida State Attorney to bring charges of second degree murder against the neighbourhood watch captain who shot Trayvon Martin, a black teenager, in the USA.

In Finland, our researcher noted, “nowadays activism has often to do with creating a sense of community rather than demonstrating against serious issues.” The Kallio movement, for example, aims to make the neighbourhood Kallio in Helsinki a nicer place to live through block parties and garage sales organised online, and the movement has now spread to other neighbourhoods. In the Finnish presidential election of 2012, the campaign of Pekka Haavisto (the Greens) mobilised people who wanted to promote humanism, tolerance and other non-party political values. He progressed to the second round of the election following a campaign driven by Facebook, Twitter and supporter’s Websites.

In some rich countries, there are minorities who do not engage with or via social media; this includes as much as 40 percent of the population in Ireland, for example.⁶⁹ Some research suggests that active users tend to be people who already have high levels of social capital: they belong to offline community groups, participate in community activities, and exhibit higher levels of political participation.⁷⁰ Content creation beyond the simple posting of status updates or personal photos remains a minority activity. While 60 percent of the UK online population now participate in “easy” forms of content creation, such as sharing photos, less than one in five are engaged in more intensive activities such as blogging or contributing to Wikipedia.⁷¹

Globally, although more than 20 million named accounts have been created that allow editing access to Wikipedia, over 90 percent of active contributors are men, most are middle or upper class, and over 95 percent come from Europe and North America.⁷²

In the low and middle income countries in the Web Index, as our India expert noted, “Social media and networking sites are still a medium of middle, upper middle and the rich class. The vast majority of the poor have [a] very tenuous connection to use of social media and social networking sites... the good news is that with the spread of [the] mobile revolution... even the poor [are] slowly getting exposed to use of social networking sites. But [there is] a long way to go.”

⁶⁵ See, for instance, the debate over entertainment vs. political uses of Weibo in China at <http://popchinese.com/lessons/sinica/chinese-twitter-and-the-big-v-takedown>.

⁶⁶ Benkler, Y. 2006. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, p. 212. Yale University Press.

⁶⁷ Chao, L. 2013. “Brazil Protests Prompts Shift in Media Landscape,” *Wall Street Journal*, June 29. <http://online.wsj.com/news/articles/SB10001424127887323873904578570244226440374>

⁶⁸ Alexander, K., 2013. “From Tahrir to Taksim: Are the Taksim Square Protests Turkey’s Arab Spring?,” *The International*, 14 June, <http://www.theinternational.org/articles/433-from-tahrir-to-taksim-are-the-taksim-squ>

⁶⁹ Ipsos MRBI, 2012. “Social Media Survey November 2012,” <http://www.ipsosmrbi.com/social-networking-quarterly-survey-november-2012.html>

⁷⁰ Gibson RK et al., 2000. “Social capital, internet connectedness, and political participation: A four-country study,” 2000 International Political Science Association Meeting Quebec, Canada.

⁷¹ See http://www.bbc.co.uk/blogs/bbcinternet/2012/05/bbc_online_briefing_spring_201_1.html

⁷² <http://en.wikipedia.org/wiki/Wikipedia:Wikipedians>.

3.3 Online freedoms: censorship and surveillance

For freedom and openness, Norway scored the highest overall. Amongst emerging markets and middle-income countries, South Africa was placed highest for freedom and openness, followed by Costa Rica, Peru, Mexico and Mauritius. Amongst developing countries, Ghana recorded the highest position in the rankings, followed by Benin, Tanzania, the Philippines and India.

“Don’t block me, don’t spy on me.”

Sir Tim Berners-Lee, speaking at the Open Government Partnership Summit in London, November 2013.

Surveillance

While developing countries, as discussed below, are most likely to resort to blocking and filtering to control online communication, thanks to Edward Snowden we now know that the developed world is far more likely to spy on such communications. It has been suggested that the knowledge that someone is tracking what you say and do online may be more likely to produce self-censorship than overt banning of certain websites. As Dilma Rousseff recently said in her speech at the UN General Assembly, “In the absence of the right to privacy, there can be no true freedom of expression and opinion, and therefore no effective democracy.”

According to UN expert Frank LaRue, “technological advancements mean that the State’s effectiveness in conducting surveillance is no longer limited by scale or duration. Declining costs of technology and data storage have eradicated financial or practical disincentives to conducting surveillance. As such, the State now has a greater capability to conduct simultaneous, invasive, targeted and broad-scale surveillance than ever before.”⁷³

LaRue has highlighted that the potential for mass electronic surveillance with weak or no oversight is a concern not just in the US and UK – the countries most in the media spotlight following Edward Snowden’s revelations – but in a wide range of countries around the world. Freedom House notes that two-thirds of the countries it researched had upgraded their technical or legal surveillance powers over the past year.⁷⁴

Such trends are being exacerbated, LaRue added, by the fast-growing and “virtually unregulated” trade in surveillance technologies, including their export to “countries in which there is a serious risk that they will be used to violate human rights, particularly those of human rights defenders, journalists or other vulnerable groups.”⁷⁵

These warnings are borne out by our research. The scale and scope of government spying is thrown into stark relief by the finding that only five countries in the Web Index sample – six percent – meet best practice standards for privacy of electronic communications, in which both an order from an

independent court and substantive justification are required before law enforcement or intelligence agencies can intercept electronic communications, and information on the granting of court orders is made public. If the standard is lowered slightly, 28 (not 30) countries provide adequate safeguards for the privacy of electronic communication. However in 54 countries (67 percent of those under study), the law allows for interception based on substantive justification or less from the relevant agencies. In 14 countries, including the United Kingdom, a non-particularised warrant is sufficient, and in a further 12 countries like the USA and Sweden there is provision for a very weak form of court oversight. Meanwhile, just under 50 percent of countries in the Index have a robust or reasonably robust framework in place to protect the privacy of personal data.

Our findings support the conclusion of Frank LaRue earlier this year: in most Web Index countries, “legislation has not kept pace with the changes in technology... legal standards are either non-existent or inadequate to deal with the modern communications surveillance environment.”⁷⁶ There is an urgent need for all countries to review existing laws and practices to better address the challenges of powerful new digital surveillance technologies. This extends to the responsibility of technology companies to respect users’ rights, including by accelerating and improving their own adoption of privacy enhancements, refusing to adopt specifications that enable excessive government intrusion, and cooperating in the development of regulations on the export of surveillance and censorship technologies to repressive regimes.

THE WEB AS A (PRIVATE) PUBLIC SPACE IN KENYA

A recent study of young people’s internet use in Kenya highlighted that there is a valuable process of self-discovery and personal and political growth taking place through their interaction with the Web and social media, which hinges on trust in the privacy of online spaces.

“Most of all, the young people we spoke with want to seek information and connections on their own terms, to have a private world where they can explore, be inquisitive, be social or even exhibitionist among those they choose to befriend. They see this as part and parcel of their self-discovery and transition to adulthood, and digital and social media give them the private space that they often lack in their offline adult-controlled lives.”

Source: Internews, 2013. A (Private) Public Space: Examining the Use and Impact of Digital and Social Media Among Adolescents in Kenya. http://www.unicef.org/infobycountry/files/A_Private_Public_Voices_of_Youth_Kenya_study.pdf

⁷³ UN Human Rights Council, 2013. “Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue,” April 17, A/HRC/23/40. http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A.HRC.23.40_EN.pdf

⁷⁴ Freedom House, op cit.

⁷⁵ UNHRC, op cit.

⁷⁶ UNHRC, op cit.

Censorship

Like surveillance, targeted blocking and filtering of politically sensitive Web content by governments is also on the rise across the globe, with moderate to extensive blocking reported in over 30 percent of Web Index countries during the past year.⁷⁷ In 20 percent of the Web Index countries (16), a large portion of Web content has been blocked either permanently or for extended periods of time over the past year, and access to key internet tools (such as Voice over internet Protocol (VoIP) telephone service or search engines) is also blocked to a large extent.

Our researchers noted the growing dexterity of governments in using laws against blasphemy, cybercrime, extremism or defamation to justify internet censorship. The case of Korea – a country which scores highly on our Index overall – highlights the danger of having defamation laws that are open to abuse. The recent elections witnessed an intensification of the use of criminal and civil defamation laws, as well as the 1948 National Security Law, to block online comments, and to harass and jail critics who challenged or satirised the decisions of government officials online. However, Korea’s constitutional court struck down an attempt to make people register with their real names when posting comments on websites.

Blasphemy laws are also increasingly used by some governments to clamp down on online freedom. The government of Bangladesh recently blocked YouTube, several blogs and Facebook pages, moves made allegedly on religious grounds, but widely interpreted as having political significance.

In Saudi Arabia, broad definitions of the type of content that can be censored together with the lack of a written legal code gives courts discretion to declare almost any site contrary to Islam and the regulations of the country. The government began blocking some VoIP services in mid-2013, and is reportedly considering linking Twitter accounts to the ID numbers of citizens and residents so they can monitor what the public are saying online.

Cybercrime laws can also be abused. A new cybercrime law in the UAE has clauses that allow for prosecution based on online content, while the Telecom Fraud Offenses Law in Ethiopia is seen by experts as reinforcing the existing ban on VoIP.

National security and the prevention of “extremism” or “terrorism” is another popular way for governments to justify increasingly severe restrictions on internet freedom. Qatar, where the popularity of social media is growing and even the government is using it as a channel to connect with citizens, is one among several countries that are drafting laws to circumscribe the use of social media, prohibiting and punishing individuals or sites if posts are seen to threaten “state security” or the “general order”. Kazakhstan’s courts have blocked or banned hundreds of websites on grounds of propagating terrorism, violence and extremism, and the Computer Emergency Response Team (CERT), established in 2010, continues to filter media and opposition Websites without any court decision at all.

Rwanda, which has a historical legacy of restrictive media laws, witnessed some progressive change in terms of the rights of journalists and access to information in 2012. At the same time, there are concerns about the extent to which national security exceptions will allow for excessive control and undermine safeguards against interception of communication where national security is used as a justification. In Russia, laws against “extremism” have led to a growing number of restrictions on internet freedom: Agora, a local NGO, recorded 1197 cases of restrictions on internet freedom in 2012, up from 500 in 2011. More users were prosecuted, access was blocked to more websites; and administrative pressure increased.

Singapore, by contrast, has pioneered a fiscal approach to controlling online media through new rules requiring bloggers and news websites with more than 50,000 visitors to obtain licenses costing almost US\$40,000. As a condition of the license, they must also agree to remove articles judged by the media regulator to undermine “racial or religious harmony” within 24 hours.

The extent to which the “chilling effect” of government control leads to self-censorship remains uncertain. Our researcher in Thailand reported that the persistent blocking of content and monitoring of online activity has resulted in acknowledged self-censorship by individuals, particularly given government initiatives to encourage netizens to report on the activity of others. On the other hand, our researchers in China and Kazakhstan noted that a culture of mutual assistance has developed, with Web users sharing tips about how to get access to banned sites. Activists in Turkey were remarkably quick to turn to encryption technologies when they suspected their browsing and content creation might be monitored or censored. According to Anchor Free, a software provider which makes Virtual Private Networks (VPNs), VPN downloads jumped tenfold in a single day.⁷⁸

Beyond blocking and filtering, governments are finding new ways of restricting or controlling online content, which we were not able to cover in depth in our research. According to the excellent Freedom on the Net 2013 report, there has been an increase in tactics such as the criminalisation, arrest and harassment of users who post content critical of the government; hiring paid pro-government commentators to manipulate online discussion; requiring internet users to register with their names and ID numbers; making service providers legally liable for content; or deliberating interrupting or throttling internet and mobile service.⁷⁹

What can be done to reverse the evident trend towards repression of online speech and association? International condemnation of online censorship does appear to have some effect, but it may be superficial, as noted by our researcher in Ethiopia: “Whenever [foreign] media and human rights organisations release reports about blocking of certain websites, government [temporarily] lifts blocks from those websites and tries to disseminate propaganda stating that the organisations or media which reported the blocking are not trustworthy... In this case what was blocked yesterday may be active today [so that] the government [can] attack the [international organisation] as enemies of Ethiopian people.”

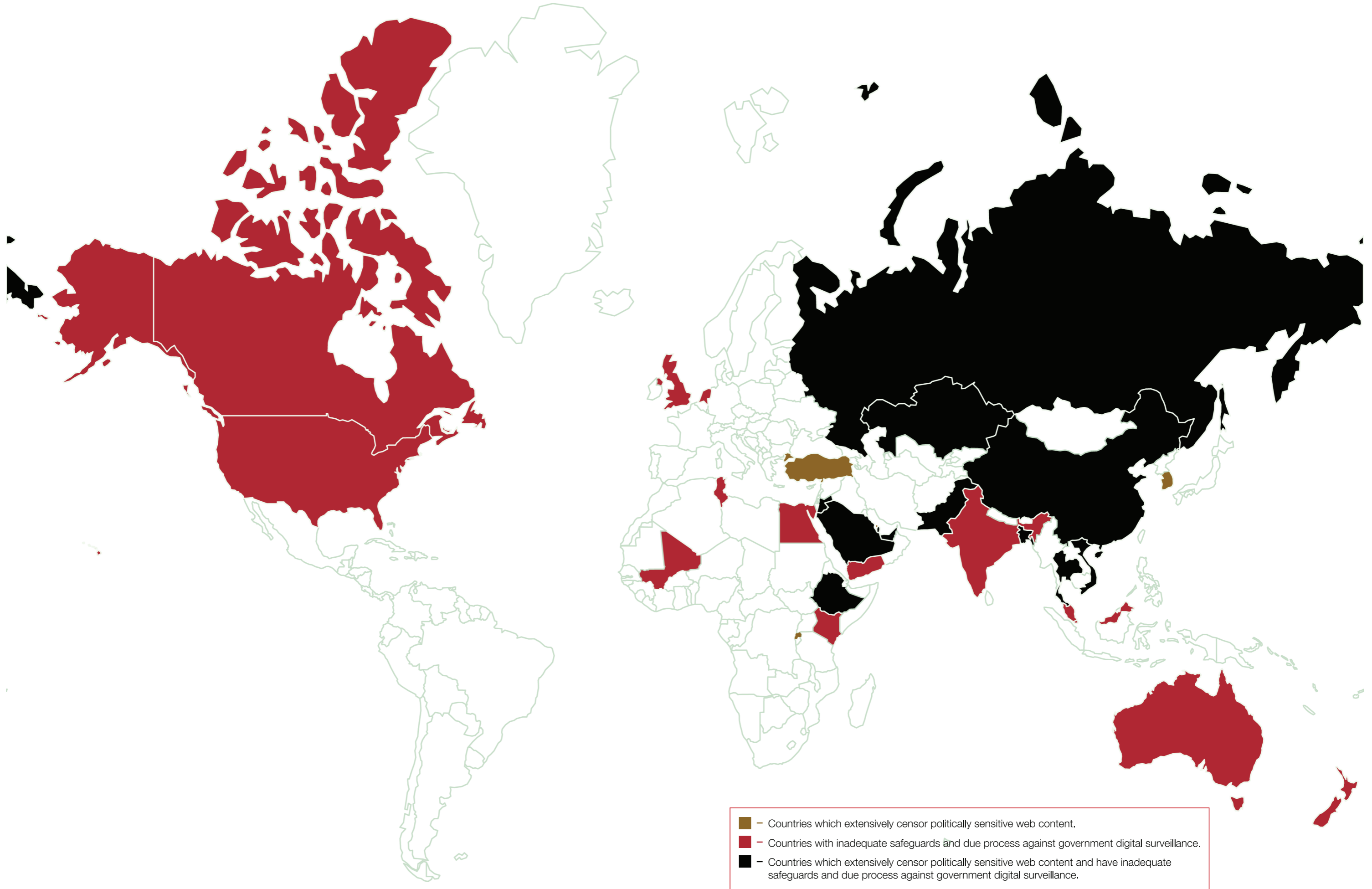
⁷⁷ A similar trend is reported in Freedom House’s excellent recent survey of internet freedom in 60 countries worldwide: Freedom House, 2013. Freedom on the Net 2013: A Global Assessment of the

⁷⁸ Internet and Digital Media. http://www.freedomhouse.org/sites/default/files/resources/FOTN%202013%20Summary%20of%20Findings_1.pdf

⁷⁹ Alexander, K. 2013. “Social media’s role in Turkey’s dissent,” New Internationalist, July 4, <http://newint.org/blog/2013/07/04/social-media-turkey/#sthash.KFKwWJZ.dpuf>

Freedom House 2013, op. cit.

CENSORSHIP AND SURVEILLANCE



Domestic processes to define and defend online rights may have more impact. In the Philippines, groups organising against a repressive cybercrime bill filed 15 petitions with the Supreme Court, which temporarily stopped the application of the law. At the same time, activists used Twitter and Facebook to initiate a crowdsourced process of building a “Magna Carta for the internet,” which was tabled as a bill in the legislature in July. The Magna Carta bill would repeal the cybercrime law altogether and enshrine new rights for users.⁸⁰ In Mexico, a public campaign by a coalition of civil society groups led to a constitutional amendment earlier this year, guaranteeing freedom of access to the internet.

Brazil’s civil law for the internet (Marco Civil da Internet), though still not passed at the time of writing, is especially notable for the ambition of its vision to enshrine users’ rights to a free and open Web and to network neutrality, and for broad popular participation in drafting it. Born from the activism of civil society groups who fought against the approval of a cybercrime bill that they feared would impinge on civil liberties, the Marco Civil was initially championed by a partnership between the Ministry of Justice and a think-tank with close links to civil society (the Center for Technology and Society of the Getulio Vargas Foundation). Drafting was done in a collaborative process that elicited more than 800 substantive contributions. The draft then went through a period of public comment both offline (through public hearings) and online, attracting input from over two thousand actors.

This process, as much as the content of the bill itself, has helped to build a wide constituency of Brazilian internet users who are committed to a democratic, inclusive Web. This constituency is both informed and active. Recent efforts to introduce a Marco Civil amendment requiring Brazilian user data to be stored in Brazil (a reaction to reports about interception of foreign citizens’ electronic communications by the US National Security Agency) have met with widespread debate inside Brazil, and stakeholders from both the private and non-profit sectors have been quick to introduce alternative proposals.

While the outcome was not known at the time we went to press, what is clear is that decisions about the future of the internet in Brazil can no longer be made behind closed doors, but have earned a prominent place on the public agenda. In view of the rapid evolution of surveillance technologies and censorship techniques, it is urgently necessary for other countries to initiate similar processes to encourage broad national debate and participation in reviewing existing laws and defining the rights and responsibilities of all internet stakeholders.

4. Conclusion

⁸⁰ See “Crowdsourcing: The Story of the Drafting of the Magna Carta for Philippine Internet Freedom,” November 26, 2012, <http://alpha.propinoy.net/2012/11/26/crowdsourcing-the-story-of-the-drafting-of-the-magna-carta-for-philippine-internet-freedom/>

The world is facing unprecedented challenges – crises of massive climate risk, rising inequality, and the erosion of fundamental freedoms – that cannot be resolved without an informed, active and engaged global citizenry able to share knowledge and coordinate across physical and social borders. The Web's potential as a tool to reduce knowledge divides, broaden civic participation and invigorate democracy has never been more important.

There is exciting evidence from the Web Index and other sources that the growth of user-driven spaces on the Web and social media can help to create an expanded public sphere, breaking down barriers to knowledge, and giving a voice to previously unheard groups.

But by and large, governments are failing to meet their WSIS commitments. As a result, a second Gutenberg revolution has yet to arrive for the majority of the world's people. Concerted

action is urgently needed to increase internet access, affordability and digital capacities; to provide adequate access to critical information; to find creative ways to bring currently unheard voices into the Web's global conversation; and to protect privacy and freedom of opinion online.

Without these steps, the Web and social media may largely amplify the voices and harden the interests of those who already have control over knowledge and access to influence – cancelling out the ambitious but necessary WSIS vision of creating an information society that furthers inclusion, participation, and human rights.

We call on governments, civil society organisations and companies gathering to review progress on the WSIS goals to commit to the following actions to re-energise the information society:

Recommendations:

1. Reverse the rising tide of online censorship and surveillance.

The rights of all citizens to freedom of expression, opinion, and association and privacy both online and offline must be enshrined in law and respected and upheld by all stakeholders. Governments and civil society groups should initiate robust and participatory national debates on the role of the Web in achieving human rights and advancing national development – bringing together all social groups and stakeholders to build a vision for the role of the Web in achieving human rights and national development, and to participate in defining the legal safeguards, policies and programmes needed to achieve that vision. Technology companies should accelerate their deployment of privacy-enhancing technologies; oppose the development of specifications that enable excessive and invasive violations of internet users' rights; and cooperate in developing regulations on the export of censorship and surveillance technologies to repressive regimes.

2. Make broadband affordable and accessible to all.

Accelerate actions to achieve or surpass the UN target of reducing the cost of broadband to below 5 percent of average per capita income by 2015. Encourage community wi-fi and other innovative uses of spectrum for public benefit, and re-invest some of the revenue raised from the ICT sector (such as license fees and Universal Service Fund contributions) in achieving universal access to mobile and fixed line internet.

3. Guarantee that all women, men, girls and boys can access essential information.

They need to understand and secure their rights to health, education, shelter, livelihood, healthy environment and public participation. Steps needed include ensuring information is widely disseminated via the Web, in formats and languages accessible to excluded groups; allocating specific funds and creating incentives to support non-government actors and independent media to develop innovative public outreach strategies; proactively releasing government data for anyone to download and re-use; and strengthening the legal right of citizens to obtain information on request.

4. Educate everyone on digital rights and skills.

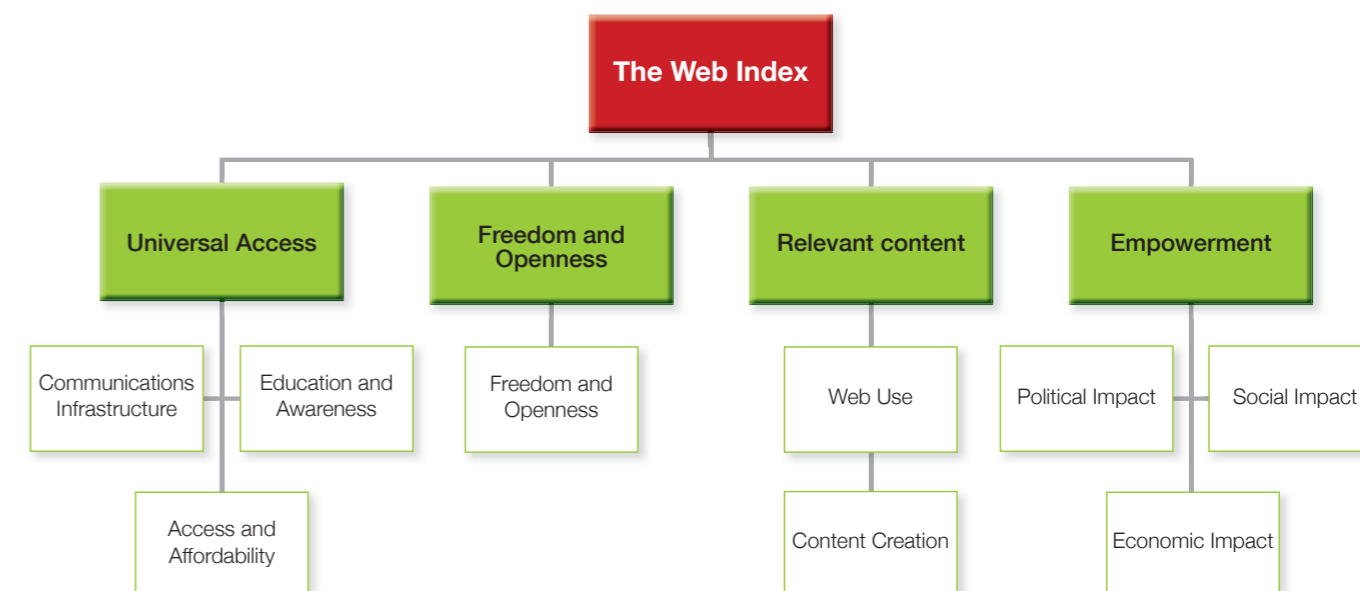
Ensure that all teachers receive basic ICT training as part of their professional education, and that all schools and public libraries offer digital literacy and skills training by 2015, with a focus on empowering consumers and young people to take a creative and critical approach to online communication, to make full use of technology to enhance their lives and livelihoods, and to ensure their own privacy and safety on the Web.

APPENDIX - METHODOLOGY

2013 Web Index: design and structure

The Web Index is a composite measure that summarises in a single (average) number the health and social utility of the Web in various countries. For an overview of the principles and values underlying the design of the Web Index please see Section II, The Web Index: A Global Picture. This section describes in detail the methodology used to research and build the Index.

Overall structure



Following feedback on the pilot Index which was launched in 2012, we have made a few refinements to the 2013 Web Index that we trust will improve the usefulness of the results. Not only are there 20 more countries compared with the pilot Index, but both the primary and secondary indicators have also been expanded and refined.

Given the changes made in 2013, it is not possible to compare directly the results of 2012's Index to this version. However, while the 2013 "headline Index" consists of both secondary and primary indicators (see: www.thewebindex.org), we also compute the Index for the historical period 2007-2012 based on secondary data alone, so that we can see progress over time for the countries covered.

The trends visible in the time-series data are important and produce very interesting results, but they should be treated with caution and should not be compared to the headline 2013 Index. The former consist of 34 underlying indicators each, compared to 88 underlying Indicators in the headline 2013 index (54 of which are from primary data and 34 indicators are from secondary data sources). The full list of indicators and countries covered can be found on the Web Index website.

Methodology

Two types of data were used in the construction of the Index: existing data from other data providers (“secondary data”), and new data gathered via a multi-country expert survey (“primary data”) that was specifically designed by the Web Foundation and its advisers. These primary data will begin to fill in some of the gaps in measurement of the utility and impact of the Web in various countries.

Survey questions were scored based on predetermined criteria by country experts. The country experts must provide evidence and justification for each score. The scores were checked and verified by a number of peer and regional reviewers (for more details see www.theWebindex.org). Some of the questions (or indicators) are the same as – or very similar to – the questions we fielded in last year’s survey, but we also added some new questions that gathered valuable information for the Index.

Multiplicity of indicators and clustering

For some dimensions of the Web Index we have used secondary indicators from multiple sources, and combined this in some instances with our own primary findings. A question often arises: is that not double-counting? Particularly for complex topics that always entails a level of subjective judgment, such as media freedom, clustering (or averaging) the data from several sources together to form one clustered indicator is a useful method to reduce potential bias and subjectivity errors.

Data sources and data providers

Similar to our 2012 Index, the sources of the secondary data that we use are highly credible organisations that produce consistent and valuable data in various fields. We are grateful to those organisations for allowing us to use and reproduce their data. A complete list of data sources and the individual indicators used from each is available on the Web Index Website: www.theWebindex.org

INDICATOR INCLUSION CRITERIA

We searched a very large number of international databases to find indicators that measure or proxy the dimensions under study.

Before an indicator is included in the Index, it needs to fulfil five basic criteria:

1. Data providers have to be credible and reliable organisations, that are likely to continue to produce the same data (e.g. theirs is not a once-off dataset being published).
2. Data releases should be regular, with new data released at least every three years.
3. There should be at least two data years for each indicator, so that basic statistical inference could be made.
4. The latest data year should be no older than three years prior to publication year. For example, if the first Index is published in 2012, data must be available, at a minimum, for 2009 and before.
5. The data source should cover at least two-thirds of the sample of countries, so that possible bias – introduced by having a large number of indicators from one source that systematically does not cover one-third or more of the countries – is reduced.

Index computation

There has been no change from 2012’s Index in the statistical approach used for the computation of the Web Index.

There are several steps in the process of constructing a composite Index. Some of those involve deciding which statistical method to use in the normalisation and aggregation processes. In arriving at that decision, we took into account several factors, including the purpose of the Index, the number of dimensions we were aggregating, and the ease of disseminating and communicating it, in an understandable, replicable and transparent way.

The following 10 steps summarise the computation process of the Index:

1. Take the data for each indicator from the data source for the 81 countries covered by the Index for the 2007-2012 time period (or 2013, in the case of the Web Index expert assessment survey).
2. Impute missing data for every secondary indicator for the sample of 81 countries over the period 2007-2012. Some indicators were not imputed as it was not logical to do so. Those are noted at www.thewebindex.org. None of the primary data indicators were imputed. Hence the 2013 Index is very different from the 2007-2012 Indexes that were computed using secondary data only.

Broadly, the imputation of missing data was done using two methods: country-mean substitution if the missing number is in the middle year (e.g. have 2008 and 2010 but not 2009), or taking arithmetic growth rates on a year-by-year basis. Most missing data for 2011 and 2012 are imputed by applying the arithmetic growth rate for the period, to the 2010 number. For the indicators that did not cover a particular country in any of the years, no imputation was done for that country/indicator.

Choice of weights

This year, given the feedback from last year and the change to the structure and design of the Web Index compared to last year, we have assigned equal weights to each component and sub-index.

3. Normalise the full (imputed) dataset using z-scores, making sure that for all indicators, a high value is “good” and a low value is “bad”.
4. Cluster some of the variables (as per the scheme in the tree diagram), taking the average of the clustered indicators post normalisation. For the clustered indicators, this clustered value is the one to be used in the computation of the Index components.
5. Compute the nine component scores using arithmetic means, using the clustered values where relevant.
6. Compute the min-max values for each z-score value of the components, as this is what will be shown in the visualisation tool and other publications containing the component values (generally, it is easier to understand a min-max number in the range of 0 - 100 rather than a standard deviation-based number). The formula for this is : $[(x - \text{min})/(\text{max} - \text{min})]*100$.
7. Compute sub-index scores by calculating the weighted averages the z-scores of the relevant components for each sub-Index.
8. Compute the min-max values for each z-score value of the sub-Indexes, as this is what will be shown in the visualization tool and other publications containing the sub-index values.
9. Compute overall composite scores by calculating the weighted average of the sub-indexes.
10. Compute the min-max values (on a scale of 0-100) for each z-score value of the overall composite scores, as this is what will be shown in the visualisation tool and other publications containing the composite scores.

BOX 3: DATA ISSUES

As the Web Index is a composite that relies substantively on the availability of existing (secondary) indicators from various data providers, the strength to which the constituent indicators capture each dimension accurately depends to a large extent on the availability and quality of indicators from other data providers. In searching existing databases thoroughly for credible and reliable internationally comparable indicators on the various dimensions we assess, five main areas seem inadequately captured through existing datasets:

1. The Web’s impact on society, especially in the political and social dimensions, and including negative trends (cybercrime, bullying, abuse of women) as well as positive ones.
2. The variety and richness of local content creation, including local-language Web content in every country, and a better understanding of who participates in creating which kinds of content.
3. The size and nature of gender gaps and socioeconomic divides in internet access and Web use. Related to this, up-to-date internationally comparable data on income distribution and poverty levels is not available for many countries.
4. The extent of restrictions on freedom of opinion and expression online (such as blocking, filtering, harassment or arrest of bloggers, registration or licensing requirements, intermediary liability laws) and the strength of safeguards against unwarranted electronic surveillance. Although several organisations produce good research and surveys on these areas, there is a pressing need to expand country coverage and/or frequency.
5. The real cost of fixed and mobile broadband. Although the ITU’s price-basket work has been making progress in this area, international comparisons remain fiendishly difficult due to the wide variety of packages available to consumers and frequent lack of transparency on pricing.

Given how important these issues are, we are hoping to be able to work with other organisations to expand country coverage and develop valuable datasets that will be useful for a variety of research projects, including the Web Index.

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WEBINDEX

