Global Information Technology Report 2009-10

(Excerpts from WEF's Global IT Report 2009-10)

Sweden tops the rankings of ***The Global Information Technology Report 2009-10***, released recently by the World Economic Forum. The report highlights the key role of ICT as an enabler of a more economically, environmentally and socially sustainable world in the aftermath of one of the most serious economic crises in decades. Sweden is followed by Singapore and Denmark, which was in the number one position for the last three years.

Sweden, Singapore and Denmark's superior capacity to leverage ICT as an enabler of sustainable, long-term economic growth is built on similar premises, relating with a long-standing focus placed by governments and private sectors alike on education, innovation and ICT access and diffusion. The success of these countries underlines the importance of a joint ICT vision, an implementation, by all the different stakeholders in a society for a country to take full advantage of ICT advances in its daily life and overall competitiveness strategy

India's Ranking

Significant improvements across the board help in lifting India's position from 54th to 43rd. In particular, India benefits from the new method of computing telecommunication costs, which boosts the performance in the Individual readiness pillar (7th). Also business readiness remains high (23rd), and India progresses in the market environment pillar, in which it now ranks 35th, up from 50th.

The Networked Readiness Index (NRI), featured in the report, examines how prepared countries are to use ICT effectively on three dimensions: the general business, regulatory and infrastructure environment for ICT; the readiness of the three key stakeholder groups in a society individuals, businesses and governments , to use and benefit from ICT; and the actual usage of the latest information and communication technologies available.

The NRI uses a combination of data from publicly available sources, as well as the results of the Executive Opinion Survey, a comprehensive annual survey conducted by the World Economic Forum with its network of partner institutes (leading research institutes and business organizations) in the countries included in the report. The survey provides unique data on many qualitative dimensions important to assess national networked readiness.

The report contains detailed country profiles for the 133 economies featured in the study, providing a snapshot of each economy's level of ICT penetration and usage. Also included is an extensive section of data tables, as well as each indicator used in the computation of the Index.

Highlights

Sweden tops the Networked Readiness Index (NRI)'s rankings as the most networked economy in the world. A runner-up in the last three editions, the country overtakes Denmark as the world's best performer for the first time since the NRI's inception. The other Nordic countries also continue to optimally leverage ICT in their competitiveness strategy, with **Denmark**, **Finland**, **Norway** and **Iceland** at 3rd, 6th, 10th, and 12th place, respectively.

Among the top 10, **Singapore** leads Asia and the world in networked readiness, climbing two positions to 2nd, followed by Denmark, **Switzerland** (4th), and the **United States** (5th).

Europe remains one of the most networked regions of the world, with 12 economies ranked among the top 20 best performers, as follows: the Nordic countries mentioned above, the **Netherlands** (9th), the **United Kingdom** (13th), **Germany** (14th), **Luxembourg** (17th), **France** (18th), and **Austria** (20th). Five other economies from the Asia and Pacific region besides Singapore place in the top 20 this year: **Hong Kong** (8th), **Taiwan** (11th), **Korea** (15th), **Australia** (16th) and **New Zealand** (19th).

With regard to the largest Asian emerging markets, **China** and **India** continue their progression in the NRI rankings, leapfrogging another 9 and 11 places, to 37th and **43rd**, respectively.

The assessment for Latin America and the Caribbean is less positive, although fairly varied in terms of country performances with respect to last year, with no economy from the region appearing in the top 20 and only four in the top 50, namely **Barbados** (35th), **Chile** (40th), **Puerto Rico** (45th), and **Costa Rica** (49th).While **Brazil** is fairly stable at 61st, **Mexico** and **Argentina** seem to be losing ground, placing themselves at 78th and 91st, respectively.

Despite some positive trends displayed by a number of economies, most of sub-Saharan Africa trails behind the rest of the world in networked readiness, with only **Mauritius** (53rd) and **South Africa** (62nd) featuring in the top half of the NRI rankings. In North Africa, **Tunisia** (39th) remains
the best performer by far. With the exception of Egypt, improving six positions from 76th to 70th, all other countries in the region either remain rather stable or drop in the rankings. By contrast, the Middle East continues by and large to improve in networked readiness, with all countries but two (**Kuwait** and **Syria**, at 76th and 105th, respectively) appearing in the top half of the NRI rankings, namely the **United Arab Emirates** (23rd), **Israel** (28th), **Bahrain** (29th), **Qatar** (30th), **Saudi Arabia** (38th), **Jordan** (44th), and **Oman** (50th).

A runner-up in the last three editions, **Sweden** overtakes Denmark as the world's most networked economy for the first time since the Index's inception. The country's showing is outstanding across the board: 1st, 4th, and 3rd for environment, readiness, and usage, respectively. This highlights the role of an ICT-conducive environment as a precondition for national stakeholders to fully leverage technology. Indeed, Sweden displays the best and second-best infrastructure and regulatory environments in the world, with comprehensive and efficient hard infrastructure, top-class human resources and education infrastructure, and an extremely friendly regulatory framework ensuring full protection of intellectual property (2nd) and providing for comprehensive ICT laws (4th). The market environment is also assessed as being very ICT-friendly at 5th place, notwithstanding very high taxation levels with a perceived distortive impact. The three stakeholders show an important degree of propensity and capacity to use ICT, notably businesses (3rd) and individuals (6th), thanks to affordable ICT costs and top-class education and research fundamentals, among other factors. This provides the ideal context for extensive ICT usage, especially by the citizens (1st for individual usage) The extremely sophisticated and innovative Swedish business sector is also taking full benefit of ICT in its activities and operations, ranking 1st in the world for the extent of business Internet usage.

The **Nordic countries** keep leveraging ICT to the fullest in their national competitiveness strategies, with **Denmark**, **Finland**, **Norway**, and **Iceland** at 3rd, 6th, 10th, and 12th place, respectively. They have built on a number of enabling common factors that have allowed them to feature consistently among the best performers since the NRI's inception. Among these factors, one can cite an ICT-conducive market, regulatory, and infrastructure environment; a consistent focus on education as a key competitiveness lever, which resulted in top-class educational and research systems; a strong culture for innovation both at the private and public level; and, last but not least, the central role given to ICT in the government's agenda, as an enabler of efficiency and sustained growth, coupled with a constant effort to promote ICT diffusion. The **EU15** economies present a more mixed picture, with different degrees of ICT prowess displayed throughout the region. While Sweden, Denmark, Finland, the Netherlands, Norway, Germany, the United Kingdom, Austria, France, **Belgium** (22nd), and **Ireland** (24th), among other countries, continue to be at the forefront of networked readiness and fully leverage ICT for the enhanced competitiveness of their economies, **Greece** (56th) and, to a lesser extent, **Italy** (48th) trail behind because of a number of similar weaknesses. In particular, in both countries the market and regulatory environment does not seem to be very conducive to ICT and innovation development, with little priority given by the two governments to ICT usage and diffusion in their overall strategy (93rd and 120th for government readiness and 70th and 87th for government usage for Greece and Italy, respectively).

Although losing some ground from last year (down seven places), **Estonia** (25th) continues to lead the **EU accession 12**, with a solid networked readiness performance notwithstanding the economic turmoil prompted by the recent major global economic crisis. **Slovenia** (31st), the **Czech Republic** (36th), and, to a lesser extent, **Lithuania** (41st) follow closely, with satisfactory levels of networked readiness. **Poland** (65th) and **Bulgaria** (71st) remain the laggards in the region. In particular, while Poland posts a remarkable fourplace improvement over last year, Bulgaria appears to be losing some ground in networked readiness, with a three-place fall from 2008-09.

Russia drops six positions to 80th place, with a deteriorating performance especially in the environment component. Russia's showing appears quite mixed, with important elements of strength not able to completely offset the worrisome shortcomings highlighted by the NRI. An ICT-conducive infrastructure (43rd), supported by good education and research bases and a fairly satisfactory individual readiness and usage (60th and 52nd) coexist with a bleak market (116th) and regulatory (109th) environment for ICT. There is also an almost nonexistent focus on ICT in the government's agenda, reflected in particularly poor marks for government readiness and usage (99th and 107th respectively).

Up two positions from last year, **Singapore** places 2nd as a result of one of the most impressive development strategies based on ICT and innovation and a successful coherent multi-stakeholder effort in its implementation. The city-state ranks 1st in three of the nine pillars of the NRI (political and regulatory environment, individual readiness, and government readiness) and 2nd in government usage, reflecting the remarkable vision and role of the government in driving ICT penetration and leveraging ICT for economic and social modernization and increased competitiveness. The government continues to spearhead ICT diffusion and development with yet another set of initiatives launched in 2006: the Intelligent Nation 2015 10-year master plan.

Hong Kong SAR (8th) improves four ranks, with the most conducive market environment for ICT in the world, owing to its developed financial sector, minimal taxation, and limited red tape. In this pillar, however, one observes a continuous deterioration in the assessment of the freedom of the press (51st, one of lowest-ranked indicators). Hong Kong excels in individual readiness (2nd behind Singapore) and individual usage, thanks to one of the densest levels of ICT diffusion in the world. Also impressive is the government's use of ICT (7th).

Taiwan (11th) posts a strong performance largely in line with last year, with high ICT penetration rates and the highest number of utility patents per capita per million population in the world. Furthermore, nearly half of Taiwanese exports are high-tech products. On a less positive note, its low rank in the political and regulatory environment pillar (44th) is a concern: Taiwan ranks no higher than 23rd on any of the nine indicators composing the pillar, and as low as 120th for the number of procedures required to enforce a contract.

Korea drops four places to 15th, with a worsening performance in most NRI indicators but nonetheless a convincing showing. The country continues to display outstanding levels of ICT usage by individuals (13th) and businesses (5th). Dense penetration of mobile telephony, Internet, and PCs; one of the world's best rates of patenting (5th); and high-tech exports (6th) contribute to this excellent result. Last but not least, the country tops the government usage pillar, with the best-developed e-government services and most extensive e-participation in the world according to the United Nations. On the other hand, the environment for ICT development is assessed comparatively poorly at 29th, with particularly middling marks in its market (43rd) and regulatory (38th) components.

Australia is fairly stable at 16th, with its best showing in the market environment pillar (14th), thanks to intense competition and ICT-friendly regulations, among other indicators. The performance is more mixed when it comes to individual (31st) and business (21st) readiness, notably due to high telephony costs (76th and 82nd for mobile cellular and fixed telephone tariffs respectively). On the other hand, business (30th) and, to a lesser extent, individual (20th) usage could be improved. This contrasts with the good results obtained in the government usage pillar (5th).

Japan (21st) remains one of the world's most innovative countries when measured in terms of utility patents per million habitants (263.35, 2nd). The country's satisfactory performance is largely driven by its sophisticated and innovative business sector, with world-class clusters (1st) and intense business competition (8th). Business readiness is excellent (13th) and business usage outstanding (3rd). On the other hand, the government's showing appears much weaker. Public institutions are perceived as lacking efficiency, time to start a business is lengthy and procedures numerous, taxation is high (105th) and limits incentive to work and invest (101st). Moreover, both government readiness (38th) and usage (22nd) are limited. Also undermining ICT diffusion are the costly communication tariffs, notably for mobile telephony (106th).

China continues its progression in the NRI rankings, leapfrogging another nine places to 37th position. The country is the biggest exporter of products from creative industries when measured as a share of total world exports in these products, and a major exporter of high-tech products (8th). Moreover, China ranks an impressive 9th in the individual readiness pillar. Yet there remains considerable room for improvement in a number of dimensions, notably in the environment component (57th), displaying overregulated markets, high taxation (123rd), and poor financial market sophistication (78th), among other indicators. Also key to ICT penetration and optimal use, both hard and soft infrastructure (70th) suffers from serious shortcomings. Also the government has pinned down ICT as one of its priorities and already makes extensive use of ICT: China ranks an impressive 14th with respect to government readiness and 30th for government usage.

Significant improvements across the boards help in lifting **India**'s position from 54th to 43rd. In particular, India benefits from the new method of computing telecommunication costs, which boosts the performance in the Individual readiness pillar (7th). Also business readiness remains high (23rd), and India progresses in the market environment pillar, in which it now ranks 35th, up from 50th. However, India is unlikely to pursue its fast-paced rise in the rankings unless it addresses some critical shortcomings having to do partly with the sheer size of its market. Infrastructure at 83rd remains inadequate to support optimal ICT usage in the country (109th for individual usage).

Down two positions from last year, the **United States** places 5th. The country boasts a very conducive ICT environment (10th) thanks to intensive competition, excellent infrastructure, and top-notch education. The country ranks 2nd in ICT usage, with businesses (1st) and the government (4th) fully leveraging ICT. Individual usage is somewhat less satisfactory at 16th, mainly as a result of a comparatively low mobile subscription penetration rate (72nd). The enabling environment and widespread usage contribute to make the United States one of the world's most innovative countries. However, some aspects of US performance show margins for improvement, among which: high tax rates, excessive red tape and a poor general regulatory framework is fairly poor.

Brazil's performance is fairly unchanged at 61st this year, with a solid showing driven mainly by businesses and the government. Both stakeholders display rather satisfactory levels of ICT readiness (38th and 68th for business and government readiness, respectively) and use ICT extensively in their transactions, operations, and service provision (37th and 45th for business and government usage, respectively). The business sector is at the forefront of leveraging ICT advances (26th for extent of business Internet use, among other indicators), thanks to its R&D investment (29th for company spending on R&D) and innovation potential (28th for capacity of innovation), among other factors. On the other hand, Brazil's market (87th) and regulatory (73rd) environment needs to be upgraded and made friendlier to ICT by reducing red tape and improving intellectual property protection as well as educational and training standards.

With a fairly stable 53rd rank, **Mauritius** confirms its ICT prowess and leadership in the region. The country displays fairly good market and regulatory environments (both 31st). With regard to ICT usage, the three main stakeholders show an even performance (70th for individuals, 66th for business, and 77th for government), with margin for improvement. However, ICT technologies are prioritized to a large extent by the government (26th), which identifies them as an important factor for its vision of the future (53rd). On a more negative note, the infrastructure environment (84th) remains a reason for concern, especially in elements such as the accessibility to digital content (80th), availability of scientists and engineers (107th), and tertiary education enrollment (97th).

South Africa seems to be losing some ground this year, dropping 10 places to 62nd. The environment component (39th) continues to be one of the main strengths of the country, particularly in its regulatory (21st) and market (29th) components. Despite the weak individual preparation and uptake of ICT (115th and 89th for individual readiness and usage, respectively), South Africa's remarkable business readiness (43rd) benefits from extensive company spending in R&D (35th) and close university-industry collaboration (25th). Likewise, business usage is rather extensive (44th).

Israel drops three positions to 28th place, losing its supremacy in the region for the first time since the NRI's inception. Notwithstanding this slightly deteriorating performance, Israel continues to display an extremely conducive market (23rd) and infrastructure (22th) environment, notably with widespread availability of venture capital (14th), top-class scientific research institutions (3rd), and extensive availability of scientists and engineers (16th). Moreover, the business sector remains at the forefront of ICT readiness (19th) and usage (25th), displaying an outstanding innovation potential, with excellent marks for utility patents (4th) as well as creative industry and high-tech exports (36th and 35th, respectively).

The Networked Readiness Index 2009–2010

Country/ Economy	Rank	Score	Rank within income group*	
Sweden	**1**	**5.65**	**HI**	**1**
Singapore	2	5.64	HI	2
Denmark	3	5.54	HI	3
Switzerland	4	5.48	HI	4
United States	5	5.46	HI	5
Finland	6	5.44	HI	6
Canada	7	5.36	HI	7
Hong Kong SAR	8	5.33	HI	8
Netherlands	9	5.32	HI	9
Norway	10	5.22	HI	10
Taiwan, China	11	5.20	HI	11
Iceland	12	5.20	HI	12
United Kingdom	13	5.17	HI	13
Germany	14	5.16	HI	14
Korea, Rep.	15	5.14	HI	15
Australia	16	5.06	HI	16
Luxembourg	17	5.02	HI	17
France	18	4.99	HI	18
New Zealand	19	4.94	HI	19
Austria	20	4.94	HI	20
Japan	21	4.89	HI	21
Belgium	22	4.86	HI	22
United Arab Emirates	23	4.85	HI	23
Ireland	24	4.82	HI	24
Estonia	25	4.81	HI	25
Malta	26	4.75	HI	26
Malaysia	**27**	**4.65**	**UM**	**1**
Israel	28	4.58	HI	27
Bahrain	29	4.58	HI	28
Qatar	30	4.53	HI	29
Slovenia	31	4.51	HI	30
Cyprus	32	4.48	HI	31
Portugal	33	4.41	HI	32
Spain	34	4.37	HI	33
Barbados	35	4.36	HI	34
Czech Republic	36	4.35	HI	35
China	**37**	**4.31**	**LM**	**1**
Saudi Arabia	38	4.30	HI	36
Tunisia	39	4.22	LM	2
Chile	40	4.13	UM	2
Lithuania	41	4.12	UM	3
Montenegro	42	4.10	UM	4
India	43	4.09	LM	3
Jordan	44	4.09	LM	4
Puerto Rico	45	4.07	HI	37
Hungary	46	3.98	HI	38
Thailand	47	3.97	LM	5
Italy	48	3.97	HI	39
Costa Rica	49	3.95	UM	5
Oman	50	3.91	HI	40
Croatia	51	3.91	HI	41
Latvia	52	3.90	UM	6
Mauritius	53	3.89	UM	7
Vietnam	**54**	**3.87**	**LO**	**1**
Slovak Republic	55	3.86	HI	42
Greece	56	3.82	HI	43
Uruguay	57	3.81	UM	8
Panama	58	3.81	UM	9
Romania	59	3.80	UM	10
Colombia	60	3.80	UM	11
Brazil	61	3.80	UM	12
South Africa	62	3.78	UM	13
Brunei Darussalam	63	3.77	HI	44
Azerbaijan	64	3.75	LM	6
Poland	65	3.74	UM	14
Jamaica	66	3.73	UM	15
Indonesia	67	3.72	LM	7
Kazakhstan	68	3.68	UM	16
Turkey	69	3.68	UM	17
Egypt	70	3.67	LM	8
Bulgaria	71	3.66	UM	18
Sri Lanka	72	3.65	LM	9
Macedonia, FYR	73	3.64	UM	19
Dominican Republic	74	3.64	UM	20
Senegal	75	3.63	LO	2
Kuwait	76	3.62	HI	45
Gambia, The	77	3.61	LO	3
Mexico	78	3.61	UM	21
Trinidad and Tobago	79	3.60	HI	46
Russian Federation	80	3.58	UM	22
El Salvador	81	3.55	LM	10
Ukraine	82	3.53	LM	11
Guatemala	83	3.53	LM	12
Serbia	84	3.51	UM	23
Philippines	85	3.51	LM	13
Botswana	86	3.47	UM	24
Pakistan	87	3.44	LM	14
Morocco	88	3.43	LM	15
Namibia	89	3.40	UM	25
Kenya	90	3.40	LO	4
Argentina	91	3.38	UM	26
Peru	92	3.38	UM	27
Georgia	93	3.38	LM	16
Mongolia	94	3.36	LM	17
Albania	95	3.27	LM	18
Mali	96	3.27	LO	5
Zambia	97	3.26	LO	6
Ghana	98	3.25	LO	7
Nigeria	99	3.25	LM	19
Guyana	100	3.22	LM	20
Armenia	101	3.20	LM	21
Mauritania	102	3.19	LO	8
Libya	103	3.16	UM	28
Côte d'Ivoire	104	3.16	LM	22
Syria	105	3.13	LM	23
Honduras	106	3.13	LM	24
Lesotho	107	3.12	LM	25
Burkina Faso	108	3.10	LO	9
Tajikistan	109	3.09	LO	10
Bosnia and Herzegovina	110	3.07	UM	29
Benin	111	3.06	LO	11
Venezuela	112	3.06	UM	30
Algeria	113	3.05	UM	31
Ecuador	114	3.04	LM	26
Uganda	115	3.03	LO	12
Mozambique	116	3.03	LO	13
Cambodia	117	3.03	LO	14
Bangladesh	118	3.01	LO	15
Malawi	119	3.01	LO	16
Tanzania	120	3.01	LO	17
Madagascar	121	3.00	LO	18
Ethiopia	122	2.98	LO	19
Kyrgyz Republic	123	2.97	LO	20
Nepal	124	2.95	LO	21
Nicaragua	125	2.95	LM	27
Suriname	126	2.92	UM	32
Paraguay	127	2.88	LM	28
Cameroon	128	2.86	LM	29
Burundi	129	2.80	LO	22
Timor-Leste	130	2.69	LM	30
Bolivia	131	2.68	LM	31
Zimbabwe	132	2.67	LO	23
Chad	133	2.57	LO	24

(Cont'd.)

* Income groups: HI = high income; UM = upper-middle income; LM = lower-middle income; LO = low income. The highest-ranked economy of each income group appears in bold blue typeface. Country classification by income group is from the World Bank (situation as of December 2009).