
Global Information Technology Report 2013 Highlights

Measuring the Power of Networks

Finland leads world in embracing information technology according to index

Business-friendly environment, top education system key to success

Finland has toppled Sweden from the top spot in a ranking of economies that are best placed to benefit from new information and communication technologies (ICTs). Singapore came in second and Sweden third in the 2013 Networked Readiness Index, compiled by the World Economic Forum for its Global Information Technology Report.

The Forum's report also shows that digitization has a measurable effect on economic growth and job creation. In emerging markets, a comprehensive digital boost could help lift over half a billion people out of poverty over the next decade. New technologies have already transformed sectors from healthcare to farming, case studies in the report show.

The Networked Readiness Index, calculated by the World Economic Forum, and INSEAD, ranks 144 economies based on their capacity to exploit the opportunities offered by the digital age. This capacity is determined by the quality of the regulatory, business and innovation environments, the degree of preparedness, the actual usage of ICTs, as well as the societal and economic impacts of ICTs. The assessment is based on a broad range of indicators from Internet access and adult literacy to mobile phone subscriptions and the availability of venture capital. In addition, indicators such as patent applications and e-government services gauge the social and economic impact of digitization.

The Nordic countries and the so-called Asian Tigers – Singapore; Taiwan (China); South Korea; and Hong Kong SAR – dominate this year's index thanks to their business-friendly approach, highly skilled populations and investments in infrastructure, among other strengths. Finland, which arguably has one of the best educational systems in the world, stands out as a digital innovation hub. It boasts the world's highest number of patent applications per capita in the domain of ICTs), which are ubiquitous in Finland. Ninety per cent of Finnish households have Internet access, compared to about 70% in the United States and 85% in the United Kingdom.

Among the top 10, the United Kingdom posts the biggest rank improvement to 7th place, above the United States, which slips to 9th place despite a performance essentially unchanged from the previous year.

The BRICS economies, led by Russia (55th) continue to lag behind in the rankings. The report suggests that their rapid economic growth may be in jeopardy unless the right investments are made in ICT, skills and innovation. Down seven, China ranks 58th, followed by Brazil (60th), India (68th), and South Africa (70th).

Mind the Digital Gap

In Europe, the NRI reveals the deep divide between the most advanced Nordic economies and countries in Southern, Central and Eastern Europe is remarkable – and alarming. Improving access to new technologies is not enough; creating better conditions for entrepreneurship and innovation is also crucial.

Latin America, the Caribbean and sub-Saharan Africa still suffer from a serious lag despite infrastructure improvements, an expansion of coverage and a push into e-government. Weaknesses in the political and regulatory environment, the existence of large segments of the population with a low skills base and poor development of the innovation system are all factors hindering Latin America's technological potential. In sub-Saharan Africa, costly access to technology, a low skills base and unfavourable business conditions are among the chief obstacles.

Can Digitization Kick-Start Growth?

For those who lag behind, the incentives for digitization remain strong. An analysis by Booz & Company has found that ICT could help lift millions out of poverty.

Digitization has boosted world economic output by US\$ 193 billion over the past two years and created 6 million jobs during that period, according to the study. Using a Digitization Index that ranks countries on a scale from zero to 100, Booz & Company found that an increase of 10% in a country's digitization score fuels a 0.75% growth in its GDP per capita. That same 10% boost in digitization leads to a 1.02% drop in a state's unemployment rate.

If emerging markets could double the Digitization Index score for their poorest citizens over the next 10 years, the result would be a global US\$ 4.4 trillion gain in nominal GDP, according to the study. It would generate an extra US\$ 930 billion in the cumulative household income for the poorest, and 64 million new jobs for today's socially and economically most marginal groups. This would enable 580 million people to climb above the poverty line.

Connected to Growth

Broadband, 3G and the intelligent use of big data could also revitalize economic growth. Governments play a crucial role in supporting this digital development, from funding broadband networks to addressing complex issues such as privacy and security. The economy as a whole will eventually reap the benefits as remote rural areas are tied into the national network, resulting in new jobs and broader educational opportunities.

For example, a study by Deloitte based on data from Cisco Systems finds that countries with a proportionately higher share of 3G connections enjoy greater economic growth than countries with comparable total mobile penetration but lower 3G penetration. For a given level of mobile penetration, countries that had a 10% higher 3G penetration between 2008 and 2011 experienced an increase in their average annual GDP per capita growth rate of 0.15 percentage points.

Intelligent interpretation of big data could energize the economy and improve the performance of businesses by allowing them to accurately predict different outcomes rather than relying on a "fail and fix" approach. In 2011 alone, 1.8 zettabytes of data were created – the equivalent of every person on the planet writing three tweets per minute for 1,210 years. This massive resource could be tapped in numerous ways. For example, using big data and analytics to match people to jobs could help governments tackle unemployment more efficiently.

The e-Doctor Will See You Now

ICTs could improve healthcare, reduce medical errors, cut administrative costs and keep patients better informed. Adverse drug reactions, for example, are among the leading causes of death in the United States. Electronic drug prescription systems could check for adverse drug reactions and warn patients who have allergies or take multiple drugs. ICTs could also improve coordination of care for patients with complex chronic diseases and increase the uptake of preventive screening services.

However, despite their tremendous promise, incorporating these technologies into daily use in healthcare has proven difficult, partly because of the significant upfront investments required, as well as the complex coordination between different players.

How Can Europe Boost its Network?

Europe risks losing out to the United States and Asia unless it boosts investment in its telecoms sector. However, relatively low growth, falling revenues and high dividends paid out to prop up stock prices mean that fixed and mobile operators are unable to come up with the necessary funds.

Public funding and support for co-investment initiatives could be part of the solution. Management consultancy firm McKinsey & Company offers four additional ideas to unlock investment:

Allow players to consolidate so they can operate networks and use resources more efficiently

Allow greater pricing flexibility so operators can charge more to customers who demand higher speeds and more services

Restrict wholesale access regulation to a few basic services, and allow “regulatory holidays” on any investments in new generation networks; this gives operators a greater chance to recoup their investment

Give operators more spectrum in which to operate so they have more options for extending network capacity

Digital Farmers: The Case of Rwanda

Landlocked Rwanda, which has limited natural resources, aims to fundamentally transform its agrarian economy into a knowledge-based one by 2020, using ICT. Investments in education, partnerships with foreign universities and the laying of fibre-optic cables have created a conducive environment. Services such as E-Soko, a mobile service that allows farmers to check market prices for their products, have already improved the daily life of many Rwandans. With the help of these new technologies, Rwanda intends to capitalize on its central location in Africa and act as a hub for banking, financial and outsourcing services.

Embracing e-government: The Case of Colombia, Uruguay and Panama

Colombia, Uruguay and Panama have become champions of e-government and connectivity. In Colombia, Internet connections have tripled to 6.2 million in the last 2.5 years. In Uruguay, small and medium-sized tech enterprises helped lift technology exports from US\$ 50 million in 2000 to US\$ 225 million in 2010.

Several challenges remain: public funds to build infrastructure are limited, and many people cannot afford Internet access. Nevertheless, e-government has already improved the lives of Latin Americans. More than 50,000 Colombians took part in designing the National Educational Plan for 2006-2015. In Panama,

entrepreneurs used to need five days to set up a company. Now, thanks to PanamaEmprende, they can do it in 15 minutes.