

# Connectivity Scorecard 2011

## Singapore



**Singapore**  
**6.40**

	Score	Weight
<b>Consumer</b> Infrastructure	0.73 (0.95)*	0.05
<b>Consumer</b> Usage and Skills	0.57 (0.79)*	0.05
<b>Business</b> Infrastructure	0.51 (0.86)*	0.33
<b>Business</b> Usage and Skills	0.73 (0.83)*	0.53
<b>Public sector</b> Infrastructure	0.29 (0.79)*	0.01
<b>Public sector</b> Usage and Skills	0.36 (0.79)*	0.02

\*The score of the leading performer for this component

Table 1: Component Scores & Weights 2011

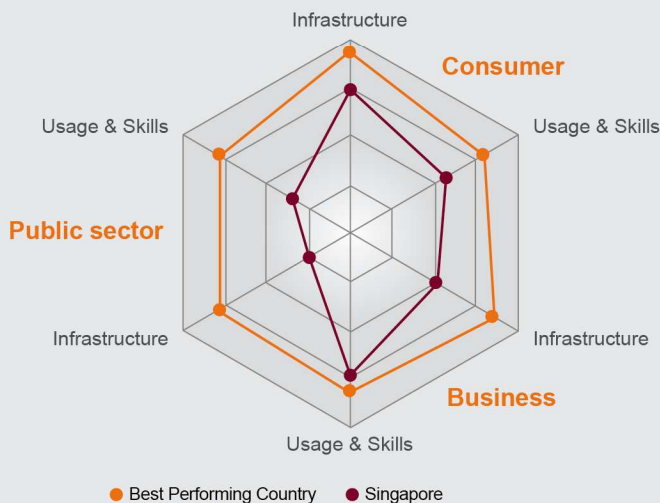


Fig 1: Component Scores 2011

### Overview

Singapore scores 6.40 and moves up one place to rank 10<sup>th</sup> among the Innovation-driven<sup>1</sup> economies on the Connectivity Scorecard 2011 index.

Singapore benefits this year from the inclusion of new consumer infrastructure indicators which track coverage as well as adoption. Given its urban nature, Singapore has the highest available coverage levels of both wired and wireless broadband networks. In the business sector, Singapore performs rather modestly on some of the business infrastructure indicators, but scores very well on several measures of business usage. The country's government is leading efforts to build a knowledge economy, particularly in the biotech area. There is enormous potential for ICT to assist in that process.

### Strengths

Singapore is the leading performer on several consumer infrastructure measures. Fixed broadband coverage is universal and broadband penetration per household is among the highest in the sample of countries considered this year. 3G coverage and wireless penetration are also nearly 100%. The country's geography no doubt plays a big part in these achievements, but they are impressive nonetheless. In terms of consumer usage, only the USA and Finland exceed the mobile voice usage levels observed in Singapore. Fixed voice usage is also above average.

From a business perspective, Singapore is a strong performer on several usage measures. On a per capita basis the country is a global leader in terms of corporate data services spending and cloud computing revenue. Another area in which Singapore does well is in terms of the large number of graduates it produces relative to its population.

<sup>1</sup> As defined by The World Economic Forum [www.weforum.org](http://www.weforum.org)

The government sector in Singapore receives reasonable scores from the UN on its government e-services and e-participation indices.

### Weaknesses

Consumers in Singapore have not yet taken full advantage of the possibilities afforded to them by the country's broadband infrastructure. The number of internet users per 100 inhabitants as well as the usage of online services such as internet banking and shopping is below the levels observed in Northern Europe and Korea. In addition, although fixed broadband coverage is universal, Singapore performs less favourably on measures of broadband quality. Average connection speeds and the proportion of IP addresses above 5 Mbps are well below the levels achieved in Korea and Japan.

The situation in the business sector is reversed. Business usage is generally impressive despite some noticeable weaknesses in the country's adoption of key business infrastructure. However business uptake of broadband is at the lowest level of any of the innovation-driven economies which is very surprising given the near universal acceptance of residential broadband. Some of this discrepancy may be explained by methodological or definitional issues however. Business uptake of mobile data and the use of new data protocols are also surprisingly lacklustre, although the same is true of Japan and Korea. In terms of business usage the one area in which Singapore performs poorly is the proportion of businesses that have websites. OECD data suggests that around one third of Singaporean businesses have websites, compared to figures of around 80% in Western Europe.

From a government perspective, Singapore performs poorly in terms of per capita spending on IT related spending in the health and education sectors. This is true of both infrastructure and services related spending. The country also performs poorly with respect to the proportion of businesses that make use of e-government services.

### Conclusions

The overall picture in terms of ICT in Singapore is average. Consumer infrastructure, particularly broadband related, is excellent, but it is surprising to see gaps in usage in areas such as internet shopping. In the business sector, Singapore does well on most measures of ICT usage but there are some areas of surprisingly soft performance in business infrastructure.

Rank [2010]	Country	Connectivity Score
1 [1]	Sweden	7.84
2 [2]	United States	7.82
3 [4]	Denmark	7.47
4 [5]	Netherlands	7.45
5 [3]	Norway	7.09
6 [8]	United Kingdom	7.06
7 [7]	Australia	6.93
8 [9]	Canada	6.88
9 [6]	Finland	6.78
10 [11]	Singapore	6.40
11 [15]	Belgium	6.31
12 [n/a]	Austria	6.27
13 [17]	Germany	6.27
14 [12]	Ireland	6.08
15 [18]	France	6.06
16 [10]	Japan	5.89
17 [16]	New Zealand	5.84
18 [13]	Korea	5.80
19 [20]	Spain	5.09
20 [19]	Czech Republic	4.93
21 [21]	Portugal	4.80
22 [22]	Italy	4.79
23 [23]	Hungary	4.50
24 [24]	Poland	4.26
25 [25]	Greece	4.22

\*last year's rank in parenthesis

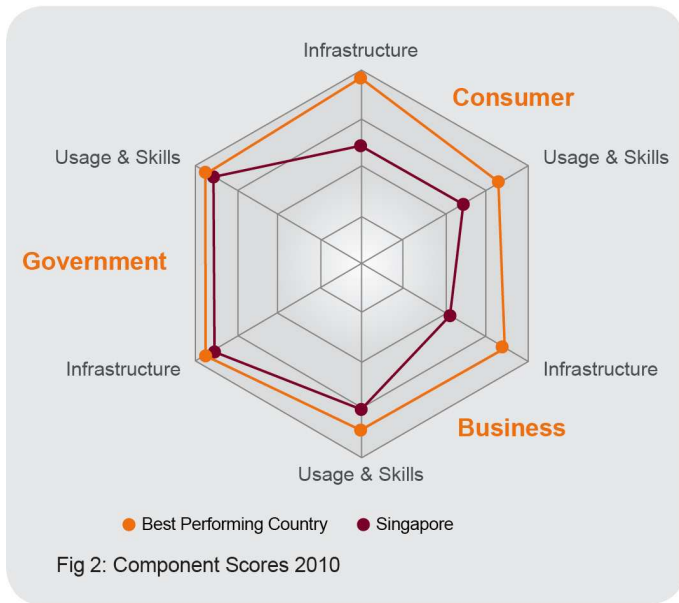
Table 2: Connectivity Scorecard 2011 Results – Innovation-driven Economies

Singapore's government has set out ambitious plans to develop a knowledge based economy and become a global centre for research and development. While the country has made great strides in this regard, better focus on improving the business sector's ICT infrastructure and boosting consumer internet usage could play a major role in supporting the government's ambitions.

### 2011 vs. 2010

Singapore scored 6.40 and ranked 10<sup>th</sup> in 2011 compared to 11<sup>th</sup> rank and a score of 6.68 in 2010. Only a small proportion of the change in scores this year<sup>2</sup> is due to the change in weights. Had last year's weights been used, Singapore's total score would have been 6.35 and the country's rank would have been unaffected. More significantly, the change in scorecard component scores highlights notable increase in consumer infrastructure scores and a decrease in both government sector scores.

<sup>2</sup> For more information download the Connectivity Scorecard 2011 Report from [www.connectivityscorecard.org](http://www.connectivityscorecard.org)



The change in most countries' consumer infrastructure performance owes to the inclusion of three indicators which tend to equalize countries' performance. These three indicators are (a) fixed broadband coverage, (b) 3G coverage, and (c) unique user mobile penetration. On the first two indicators, at least 80% to 85% of the population in most "innovation" nations is covered by wireless and fixed-line broadband networks. On the third metric, at least 60% of the population in these nations owns a mobile device, but the proportion seldom, if ever, exceeds 95%. Thus this indicator shows only limited variation. Had the more conventional, but less merited, indicator of "SIM cards per 100 population" (which is how many agencies measure mobile penetration) been used, there would be some more variation on the "mobile penetration" metric as some countries have SIM card penetration rates of 150 per 100 population or more. Overall, Singapore was a notable beneficiary from the changes to the consumer infrastructure component.

The decrease in many countries' government sector scores is due to the inclusion of additional metrics on public sector or quasi-public-sector investments in IT hardware, software and IT services. These new metrics had the effect of creating additional dispersion in country scores, with some country scores on the "public" or "government" subcategories falling substantially as a result of the inclusion of these metrics. The U.S. and some other countries did not experience this decline, whereas some countries like Singapore experienced a considerable decline.

The Connectivity Scorecard is based on comparative scores between countries, and, therefore, each country's performance is measured in relation to the best

performing nation in each component at a given point of time. As with other indices of relative rankings, it is difficult to interpret the Scorecard in terms of absolute "improvements" or "deteriorations" and to make comparisons of scores over time.

### About Connectivity Scorecard

The Connectivity Scorecard is a global ICT index which, unlike other available research, is the first of its kind to rank countries in terms of "useful connectivity". That is, not only on the deployment of ICT infrastructure but also to measure the extent to which consumers, businesses and the public sector "make use" of connectivity technologies to enhance social and economic prosperity. This "useful connectivity" is defined as the bundle of infrastructure, complementary skills, software and informed usage that makes ICT the key driver of productivity and economic growth.

Commissioned by Nokia Siemens Networks, the study was created by Professor Leonard Waverman, Dean, Haskayne School of Business, University of Calgary, and Fellow, London Business School. The study was conducted by the consulting firms Berkeley Research Group and Communicea.

For more information on the Connectivity Scorecard, visit [www.connectivityscorecard.org](http://www.connectivityscorecard.org)

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