

# Connectivity Scorecard 2011

## Denmark



	Score	Weight
<b>Consumer</b> Infrastructure	0.71 (0.95)*	0.11
<b>Consumer</b> Usage and Skills	0.75 (0.79)*	0.11
<b>Business</b> Infrastructure	0.74 (0.86)*	0.55
<b>Business</b> Usage and Skills	0.79 (0.83)*	0.10
<b>Public sector</b> Infrastructure	0.77 (0.79)*	0.11
<b>Public sector</b> Usage and Skills	0.79 (0.79)*	0.02

\*The score of the leading performer for this component

Table 1: Component Scores & Weights 2011

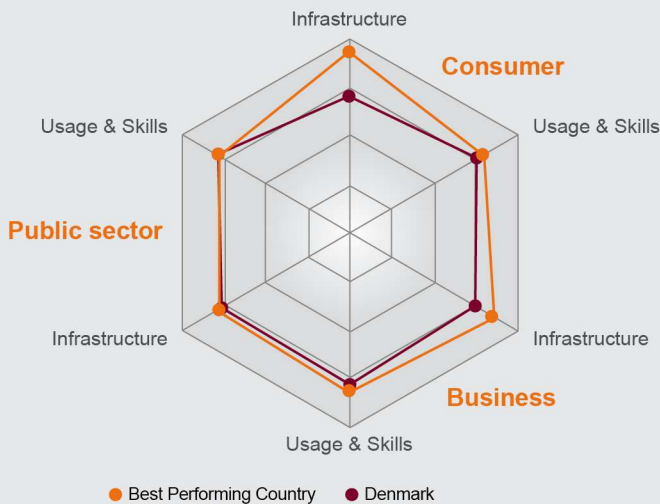


Fig 1: Component Scores 2011

### Overview

Denmark scores 7.47 and climbs one place to rank 3<sup>rd</sup> among the Innovation-driven<sup>1</sup> economies on the Connectivity Scorecard 2011 index. In 2010, Denmark held the 4<sup>th</sup> rank with a score of 7.54.

The country exhibits an excellent performance across all six components of the scorecard, obtaining the top position in government usage and skills, and second place in both business usage and skills and government infrastructure.

The country continues to slightly trail behind Sweden on many key ICT indicators, but has managed to edge ahead of Norway in 2011.

### Strengths

Denmark enjoys a number of strengths across all six components of the scorecard. Under consumer infrastructure, Denmark excels with universal broadband and virtually universal 3G coverage. The country also performs very well in terms of wireless telephone penetration (albeit with a low rate of 3G adoption) and relatively well (for a non-Asian country) in the percentage of IP addresses above 5 Mbps.

The majority of Denmark's consumer usage scores are impressive too. The country scores well on all measures of Internet usage. The proportion of the population making frequent use of Internet or using online services such as Internet banking and shopping is among the highest in Europe. Mobile voice usage in Denmark is above average, while text messaging and wireless Internet usage levels are also impressive.

Danish businesses do reasonably well in deploying ICT infrastructure and exceptionally well at utilising it. On the infrastructure side, the country performs well in terms of

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

ICT investment and secure Internet servers per capita as well as business uptake of mobile data services. On the usage side, Denmark spends substantially more on IT services per capita than the average innovation-driven economy, to finish near the top of the table. Denmark also scores well on measures of corporate data services spending, the proportion of businesses with websites and employment in scientific and technology related fields.

The government and public sector is an area of particular strength for Denmark. Government spending on IT hardware, software, communications and services is amongst the highest in Europe. The country also ranks 1<sup>st</sup> and 2<sup>nd</sup> respectively on the European Commission's measures of e-government usage by the population and enterprises.

### Weaknesses

Although Denmark scores well in all six scorecard components, there is some scope for improvement in the consumer infrastructure area. Surprisingly, given Denmark's per capita GDP level and high scores on most ICT metrics, 3G penetration in the country is below the innovation country average. Fixed penetration is also relatively low, but as with the rest of the Nordic region, this is most likely to be a reflection of an advanced state of fixed-mobile substitution. As noted last year, while Denmark ranks 1<sup>st</sup> in terms of fixed broadband coverage, it ranks somewhat lower on some measures of quality. Average connection speeds are still well below the levels of Korea and Japan.

From a business perspective, the two areas in which Denmark's performance is less than stellar are personal computer and business broadband penetration. It is unclear why this should be the case. Denmark's government and public sector however show no notable areas of relative weakness.

### Conclusions

Like its Nordic peers, Denmark continues to be a very strong and consistent ICT performer and has a well established knowledge economy. The country scores well on all six components of the scorecard and tops the table on several metrics. Denmark's only areas of relative weakness are 3G penetration amongst consumers, and PC and broadband penetration amongst businesses, although the causes of the last two factors are unclear. Improvement in both areas could push Denmark further towards the top of the Connectivity Scorecard rankings and extend the benefits ICT to the Danish economy.

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

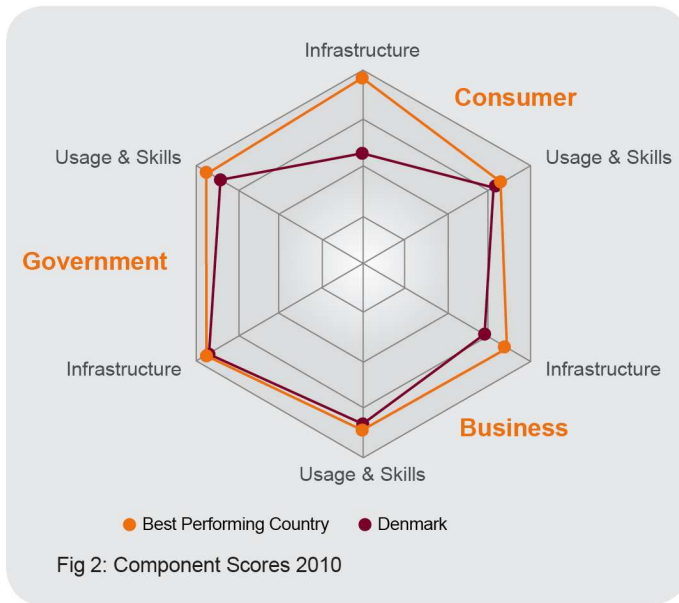
Table 2: Connectivity Scorecard 2011 Results – Innovation-driven Economies

### 2011 vs. 2010

Denmark scored 7.47 / 3<sup>rd</sup> place in 2011 compared to 7.54 / 4<sup>th</sup> place in 2010. The minor change in the scores is due to the change in weights. In fact, if the same weights were used as in 2010, Denmark would still be ranked 3<sup>rd</sup> with a score of 7.49. Of more significance is the change in scorecard component scores, most notably an increase in consumer infrastructure and a decrease in both government sector scores.

The change in most countries' consumer infrastructure performance this year<sup>2</sup> is owed to the inclusion of three indicators which equalize the countries' performance. These three indicators are (a) fixed broadband coverage, (b) 3G coverage, and (c) unique user mobile penetration. On the first two indicators, most "innovation driven" economies have at least 80% to 85% of their population

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



covered by wireless and fixed-line broadband networks. On the third metric, most nations have at least 60% of their population that owns a mobile device, but the proportion seldom, if ever, exceeds 95%. If a more conventional but less merited indicator of “SIM cards per 100 population” (which is how many agencies measure mobile penetration) were used, the “mobile penetration” metrics would have shown some more variation. The reason being that some countries have SIM card penetration rates of 150 per 100 population or more.

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, though many countries like Denmark did. Denmark’s performance on most of these new government measures is still relatively strong, though not as strong as it was on some of the measures included in the 2010 version of the Connectivity Scorecard.

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 therefore hard

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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