Germany
6.27

	Score	Weight
Consumer Infrastructure	0.66 (0.95)*	0.13
Consumer Usage and Skills	0.53 (0.79)*	0.13
Business Infrastructure	0.67 (0.86)*	0.59
Business Usage and Skills	0.66 (0.83)*	0.07
Public sector Infrastructure	0.38 (0.79)*	0.08
Public sector Usage and Skills	0.51 (0.79)*	0.01

*The score of the leading performer for this component

Table 1: Component Scores & Weights 2011

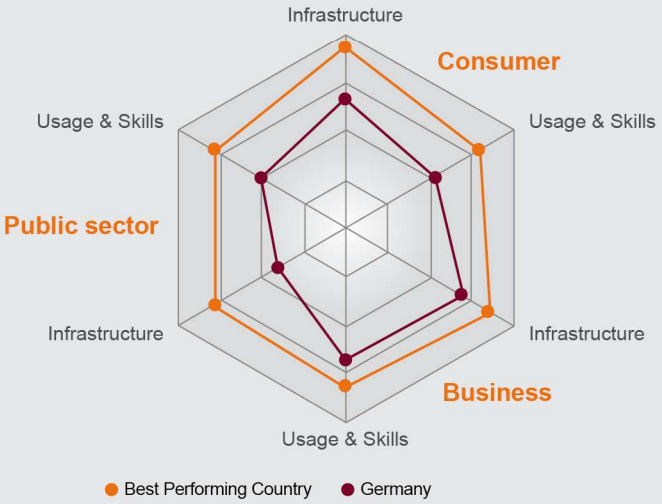

Fig 1: Component Scores 2011

Connectivity Scorecard 2011

Germany

Overview

Germany scores 6.27 and climbs four places to rank 13th among the innovation-driven[1] economies on the Connectivity Scorecard 2011 index.

Germany and Austria have virtually identical scores, and both should be considered moderately strong, if not spectacular performers. New indicators help explain the change in Germany's performance, and it is one of the most prominent movers in this year's rankings.

Germany's performance is summarized below.

Strengths

Germany scores the highest in fixed penetration, and has solid scores on most coverage indicators such as fixed and mobile broadband coverage, and business uptake of broadband, although this is a metric on which average scores tend to be rather high. Other areas of strength include the rollout of new corporate-facing broadband infrastructure such as Ethernet fibre, and the share of science and technology employees in total employment, although here Germany has fewer professionals and lots of technician-level workers compared to other advanced nations. Business uptake of mobile data is also a strong point for Germany.

Weaknesses

Germany has some areas where performance can improve. Notably, wireless usage of voice and text is comparatively lower than other countries. Further, the share of 3G subscribers in total mobile subscribers is not just far lower than in many East Asian nations, but also

[1] As defined by The World Economic Forum www.weforum.org

other European nations such as Sweden and even the United Kingdom. On the business front, Germany's performance on metrics such as corporate spending on hardware and software, and total ICT investment per capita is moderate. Further, Germany's scores are at best only moderately strong on most measures of government, healthcare and educational ICT spending. Its performance on the UN's e-Government index, or more accurately, on the sub-components of the index that are included in the Connectivity Scorecard is moderately good, but ranks behind that of a number of other European countries.

Conclusions

Germany is a moderately strong performer on the Connectivity Scorecard. However, it has a number of areas in which its performance can be improved. Specifically, German business investment in ICT and usage of IT services. This is a relevant in the context of the revival of Germany's economic status in the past year. Four or five years ago, Germany was seen as a laggard that had failed to modernise its economy and the lacklustre uptake of ICT was seen as part of this general problem, However, today it is seen as a manufacturing powerhouse that has got a strong economic strategy. Conversely, the U.K. was seen as an economy that had moved to a services-based, ICT-driven future - a far cry from its 1970s and 1980s reputation as the "sick man of Europe." Today, the U.K. might be seen as proof that the services-driven economy does not work, while Germany's manufacturing and export-driven outlook is back in fashion. However, between 1991 and 2011, the U.K. had the fastest growth in GDP per capita of any of the former G-7 economies. Thus one should be careful about dismissing the relevance of the studies linking ICT and broader economic performance. Even if the U.K.'s strong performance masked an unsustainable bubble, the U.K.'s per capita GDP is almost equal to Germany's; whereas for most of the 1970s, 1980s and 1990s, it trailed Germany by a long margin. Notably, low productivity in the German services sector has been mentioned as a major area where its economy still needs to improve its performance. In fact, Germany has been losing jobs in its vaunted manufacturing sector, and creating jobs in low-productivity service areas. The Conference Board wrote in 2009:

> In sum, it seems that the unbalanced growth of the German economy relative to other countries is in part the result of the creation of a more labour intensive services industry characterized by slow growth and limited demand vis-à-vis a very productivity-competitive external sector of the economy.[2]

Rank [*]	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

German policy-makers are right to stress domestic demand as a source of growth. However, they should also bear in mind the role of ICT in improving productivity in the still-problematic services sector. A look north should provide some inspiration, as Sweden has been an outstanding economic performer, at least in the European context, with ICT playing a substantial role in that performance. In this light, it should be emphasised that Germany has not fundamentally changed its colours in terms of ICT investment and usage despite the improvements in ranking and score. It has always been essentially a moderately strong performer.

[2] Conference Board, "Productivity, Performance and Progress: Germany in International Comparative Perspective", March 2009.

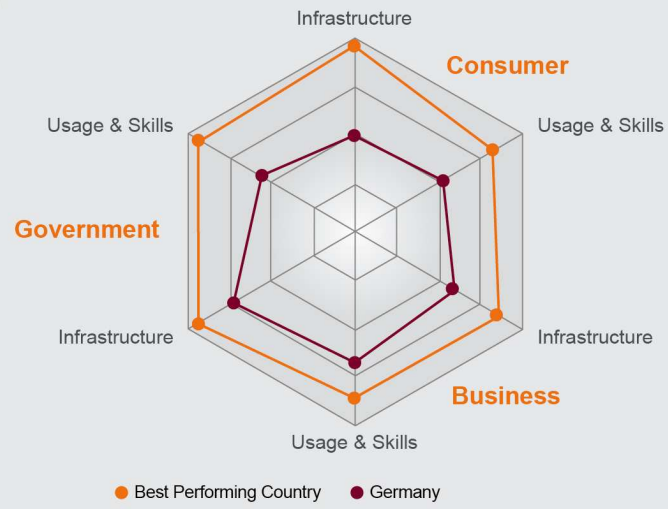

Fig 2: Component Scores 2010

2011 vs. 2010

Germany's score is up 0.5 points to 6.27 and 13th place this year vs the 5.77 and 17th rank in 2010. In Germany's case, the increase in scores is not driven by the use of new weights this year[3], since the weights are essentially unchanged from those used last year. Germany's improved performance can be credited to its improved consumer infrastructure scores (from 0.49 to 0.66) and the all-important business infrastructure component scores (from 0.59 to 0.67). The business infrastructure component scores mentioned here, which has the highest weight of any component, are driven by the inclusion of new indicators, such as business uptake of mobile data. These improvements outweigh the decline in performance, which was a secular decline experienced by many countries, on public sector or "government" components.

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, most "innovation" nations have at least 80% to 85% of their population covered by wireless and fixed-line broadband networks. On the third metric, most nations have at least around 60% of their population that owns a mobile device, but the proportion seldom, if ever, exceeds 95%. Thus this indicator shows only limited variation. Had we used the more conventional, but less merited, indicator of "SIM cards per 100 population" (which is how many agencies measure mobile penetration) 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. In Germany's case, the inclusion of fixed penetration and unique user mobile penetration helped Germany compared to other European nations.

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. Germany experienced this decline to a significant degree, but the low weight of the government components coupled with the substantial improvements in the consumer and business infrastructure categories meant that Germany was still able to improve overall. Furthermore, the fact that the business infrastructure category has a particularly high weight for Germany means that the effect of modest improvement in this category feeds well into the final score.

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,

[3] For more information download the Connectivity Scorecard 2011 Report from www.connectivityscorecard.org

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

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