

3rd ePerformance Report 2008

Management Summary

1 How Germany compares to the rest of Europe as a competitive ICT location

The “Monitoring the Information and Communication Economy 2008” report by TNS Infratest, commissioned by the Federal Ministry of Economics and Technology (BMWi), presents, for the eighth consecutive year, a comprehensive appraisal of the German information and communication (ICT) economy in an international perspective.

Since 2007, the breadth and depth of the data and interpretations published in the monitoring project's annual Factual Report has been supplemented by an ePerformance Report, which presents the results based on key indicators, and compares these in an aggregated overview. A current overview with details pertaining to each of the 26 key indicators can be found in the present “Third ePerformance Report 2008 – How Germany compares to the rest of Europe as a competitive ICT location”.

This year, in addition to the current trends and progress made in the German information and communication economy, the third ePerformance Report 2008 focuses in particular on a comparison of the top five countries in Europe (Germany, the UK, France, Italy and Spain). Depending on availability, the results are also compared with values from the US, China and/or India, as well as selected Eastern European countries.

Since a straightforward status report is not sufficient over the long term, the key indicators in this third ePerformance Report 2008 have, for the first time, been supplemented by medium-term forecasts up to 2011. Moreover, additional contributions were made to the analysis of the current and future outlook for the German information and communication economy by a panel of leading experts (referred to below), who took part in a survey and a related workshop.

1.1 Status of Germany's ePerformance in 2007

The main findings of the “Third ePerformance Report 2008 – How Germany compares to the rest of Europe as a competitive ICT location” are summarised below:

- Germany ranks above the European average with regard to 17 key indicators.
- Germany's results are either equal to or above the established European average with regard to 19 of the 26 observed key indicators.

Strengths

- Seven key indicators in total reveal particular strengths, with index values at least 25 index points or more above the relevant European average.

In Segment I, 'Overall ICT market', this is the case for the key indicator "e-commerce turnover per inhabitant", which measures 128 index points (the European average is 100 index points).

In Segment II, 'Infrastructure', Germany's particular strength is reflected by 160 key indicator points for "Telephone main lines".

The results are especially impressive in Segment III, 'Applications'. Here, Germany's ePerformance is at least 25 index points above the European average for as many as five key indicators. The top key indicators are "Purchases by companies via the Internet" and "e-commerce users" with 153 and 152 index points respectively. Meanwhile, the key indicator "Private use of e-government services" achieves a rating of 143 index points, while "Sales by companies via the Internet" and "Online availability of e-government services" score 141 and 125 index points respectively. The value of the latter indicator first exceeded the European average in 2007.

Average performance

- Germany's performance is average, i.e. its results are within plus or minus five index points from the relevant specified European average (100 index points), for six other key indicators. The key indicators with an average rating in 2007 are "Growth of ICT turnover" (99 index points), "Businesses with broadband" (98 index points), "Companies with Internet access" (100 index points), "IT security measures" (100 index points), in addition to "Broadband connections" (103 index points) and "Mobile phone users" (107 index points).

Weaknesses

- Three of Germany's core indicators confirm a fundamental weakness: that is, the core indicators are 15 index points or more below the European average.

In Segment II, 'Infrastructure', this is the case for the key indicator "Penetration with cable modem lines". Although there has been significant improvement in the indicator's performance, it still only scores 40 index points and thus clearly falls short of the European average. Germany's ePerformance is also below average in the area of "Mobile Internet", with an indicator value of 80 index points.

There is room for improvement in the area of “Use of e-government services in companies” in Segment III (‘Applications’), compared to the rest of Europe. With a score of 85 index points, this indicator is some 15 index points short of the European average of 100 index points in 2007.

Improvements on the previous year

Germany’s ePerformance improved in 11 key indicators. There was a particularly marked improvement in four of these key indicators when compared with 2006.

In Segment I, ‘Overall ICT market’, the first of these four key indicators “e-commerce turnover per inhabitant” increased from 119 index points in 2006 to 128 index points in 2007.

In Segment II, ‘Infrastructure’, the key indicator “Cable modem lines” surged dramatically, up from 19 to 40 index points.

Two indicators in Segment III, ‘Applications’, are worthy of mention. The key indicator “Sales by companies via the Internet” gained 28 points to reach 141 index points and “Private use of e-government services” rose to 143 index points, having attained 123 index points in 2006.

Successes

Germany performed particularly well in three of the total of 26 key indicators. In the case of these three indicators, the country managed to exceed the European average for the first time in 2007:

- In “Online availability of e-government services”, Germany exceeded the 100 points mark for the first time, with an increase of 41 indicator points boosting the key indicator value to 125 index points,
- The improvement in the field of broadband Internet access is particularly encouraging. A significant improvement in broadband connectivity was recorded in 2007 for the first time. Thanks in no small part to the efforts of politicians and people in the business sector, it was possible to make up for Germany’s diagnosed broadband deficiency of the past few years and catch up with the European average. Broadband penetration among the population improved by 19 index points to 103 points, while the number of DSL connections rose by 18 index points to 116 index points.

1.2 Outlook for the German Information Economy

To provide a comprehensive assessment of Germany as an ICT country, the following section combines the results of the status reporting from the 11th Factual Report, the overall comparisons from the Third ePerformance Report and the results of the expert survey and workshop. The information is summarised in a condensed analysis of strengths and weaknesses.

The objective of this analysis is to bring together the information obtained from three different sources: the 11th Factual Report, the Third ePerformance Report and the expert panel.

1.2.1 Strengths

In 2007, Germany's strengths were:

- High demand in almost all fields of application except certain e-government subsegments
- e-commerce turnover
- Exploitation of ICT's potential as a general purpose technology across a variety of applications
- R&D development activities
- Innovative small and medium-sized IT enterprises

High demand in almost all fields of application – except certain e-government subsegments

As the TNS Infratest calculations show, Germany attained an overall ePerformance average score in Segment III ('Applications') of 128 indicator points in 2007, thus ranking significantly above the European average. The strengths of the German information economy currently lie in the applications segment.

e-commerce turnover

Within a general economic context, the key indicator "e-commerce turnover per inhabitant" far surpasses the European average of 100 index points with a score of 128 index points. This result confirms Germany's leading role in the European Economic Area in e-commerce.

Capitalising on ICT as a general purpose technology

The experts from the German information and communication industry and media sector who were consulted in the survey and the workshop also stressed the following: at the level of individual products and services, the particular strength of the German ICT economy is its ability to apply general purpose technology to both cross-sector and industry-specific applications (e.g. ‘embedded systems’, or hardware and software technology embedded in products). Using ICT as an innovation driver bolsters Germany’s leading position in traditionally strong branches of the economy.

R&D development activities

According to the same experts, Germany is a country with outstanding research and development activities. The high international recognition of the “Made in Germany” seal as a hallmark of technological quality is another asset. This asset must be exploited and international recognition further enhanced.

Innovative small and medium-sized IT enterprises

The particular advantages of German small and medium-sized IT companies are considered to be a clear strength. In particular, their capacity to react flexibly to demand across the board with industry-specific software solutions is a rich source of innovation with great potential for the years ahead.

1.2.2 Weaknesses

However, Germany’s strengths are still a long way from being fully exploited. The status report identifies that Germany has a particular deficiency in the following areas:

- Comparatively low TC expenditure as a percentage of GDP and growth of ICT turnover;
- General political environment: research and development;
- Lack of cooperation between suppliers and users;
- Internationalisation;
- Insufficient skilled staff and qualifications;
- Use of e-government services in companies.

Market growth

In the discussion on future market potential, the experts forecast the greatest opportunities in the expansion of applications that will be used more frequently in the field of convergence in particular. In this regard, the development of new business models will lead to value creation and synergies in a process that will be fuelled by the increased availability of new content on new end devices (such as mobile TV). In the short term, there are excellent opportunities for ICT systems in the growth industries e-Energy, e-Health, e-Justice and also in the trend towards “green IT”. The constant evolution and rapid pace within ICT product developments will provide enormous opportunities.

Political framework – research and development

Research and development (R&D) are key factors for enhancing value creation and economic growth. In the view of the experts consulted, the R&D promotion policy should be improved in the long term by providing better economic conditions, with the introduction of more innovation-friendly tax laws, for example.

Another major weakness arises because the strengths in the field of R&D activities are no guarantee that innovations are always converted into marketable products. This conversion to marketable products should take place as quickly as possible. In this context, it is crucial that German small and medium-sized companies can act as innovation drivers and interfaces for transferring research findings from the scientific to the business world.

Lack of cooperation between suppliers and users

Lack of cooperation could be remedied by actively addressing and removing obstacles to cooperation between suppliers, users in the fields of business, politics, science and the public sector. The experts see opportunities in creating “innovation clusters”, which allow SMEs and large corporations to network with scientific institutions in developing innovative services and products. The powerful influence and effects of advisory services (such as the “Netzwerk Elektronischer Geschäftsverkehr” - “Electronic Business Network”) should be further promoted.

With its high-tech strategy, the German government has promoted cooperation between science and business through new alliances in a wide range of new projects and initiatives. The strategy has already played a part in ensuring Germany’s future success in the “embedded systems” strategic growth segments, in the enhancement of logistics processes with IT (for example RFID), and in the field of service-oriented architecture (SOA).

The federal government's beacon projects will also provide further stimulus. These projects include in particular the Internet of Things (RFID), Galileo, THESEUS, e-Energy and Next Generation Media.

Internationalisation

Poor internationalisation within the industry, evident from the very few internationally operating global players in the German ICT market, is another area where there is room for improvement. The experts stress that the ICT sector is in fact a broadly based field with many important structural ties to the old economy. In the expert panel's opinion, these structures could and should be used as an international basis for cooperation to promote internationalisation, not only for global players but also in particular for SMEs.

Shortage of qualified staff

Furthermore, the current often-cited shortage of qualified staff and trainees is a major weakness that stands in the way of improving Germany's performance. The task here is to improve the level of qualification in future.

In the experts' view, the shortage of qualified staff should be considered the "number one obstacle to innovation and growth". The shortage is particularly apparent in the fields of mathematics, information technology, natural sciences and technology (MINT). Overall, the experts consider that the action most urgently needed is to improve the general conditions for attracting qualified foreign employees and for students of German ICT courses following graduation.

Qualifications

The central recommendation of the experts is to promote practical, high-quality training through close, intensive cooperation between private industry and the education establishments. This would ensure that courses of study would offer greater practical relevance. Another possible consideration would be the introduction of technology as a school subject .

e-government

In Germany, implementation of e-government has yet to reach the desired level. Most importantly, the below-average use by businesses of e-government services needs to be improved. However, the efforts of the past few years are beginning to bear fruit. These achievements must be sustained into the future. We can view the specifications for implementing the EU Services Directive as a further incentive to forging ahead with the national e-government process. The two central success factors in this process are: first, an integral approach that is supported equally by the na-

tional government, federal states and municipalities and second, an approach that elicits the trust of citizens and the business world.

1.2.3 Opportunities

Particular opportunities for the German ICT industry are offered by:

- Good conditions for access to infrastructure;
- Broadband: penetration, mobile broadband, competition, price policy;
- Media convergence and Web 2.0;
- Use of ICT in small and medium-sized companies;
- Equal participation for all
- IT security;
- RFID.

Good conditions for access to infrastructure

As figure 1 makes clear, ePerformance in Segment II 'Infrastructure' in 2007 was slightly above the European average, with an average result of 102 indicator points. Based on the developments of the past few years and the forecasts from TNS Infratest, this segment is capable of enjoying strong growth in the years to come.

Broadband

Broadband has been the outstanding area of growth in 2007 and 2008. Significant advances have been made in this area. In 2007, Germany caught up with the European average. Provided sustained and coordinated development is available, the country could advance to become one of the broadband leaders in Europe. This is vital: development of the media sector on the one hand and of the Internet and convergent trends in the ICT industry on the other offers major opportunities in the area of business applications and for end users. In future, broadband, whether stationary or mobile, will be the basis for applications and services offered on the Internet, especially following Web 2.0. The experts call for concerted efforts to close the broadband gap. One encouraging factor is that the increasing development of the cable modem will reduce the technological monopoly held by DSL and falling broadband prices will promote wider distribution. The options available as a result of mobile broadband use of the Internet will also support the expansion of infrastructures and their associated applications down the line.

Media convergence and Web 2.0

In the area of media convergence, the development of transmission channels is expected to increase diffusion of IPTV while new radio technologies will kick-start mobile television.

Use of ICT in small and medium-sized companies

Reinforcing e-business will also lead to more interoperability and standardisation of business processes within small and medium-sized companies. By expanding their use of e-business to new levels, business enterprises – particularly SMEs – can help to improve value creation in this sector. However, before this can happen, an adequate supply of e-qualifications on the job market must be guaranteed. According to the experts, in the SME sector in particular, encouraging cooperation, forming networks and creating appropriate regulatory frameworks will help overcome previous barriers to implementation. More intensive implementation of ICT in the SME sector will have a multiplier effect that will improve competitiveness in Germany in the long term.

Equal participation for all

Improved access for all sections of the population to the information and knowledge society is still required. In the experts' view, continued efforts must be made to reduce the digital divide with respect to gender, age, education and income. Barrier-free and equal participation for all must also be guaranteed. Measures must also be taken to improve Germany's existing general lagging position in the field of media competence to further counter the mismatch between the supply and demand of qualifications.

IT security

In the experts' view, IT security is a success factor for e-business and e-commerce. Compared to their international counterparts, German users reveal a relatively high need for security. This factor may be viewed as an opportunity and also as a driving force for development that is innovative and matches end customer requirements. Security awareness among the German population and in companies must be heightened and the functional reliability of ICT in general must be ensured. The challenge lies in creating secure communication infrastructures for citizens, companies and administrative bodies. An appropriate legal framework also needs to be established to provide a secure basis for these requirements.

RFID

RFID is already one of the key strengths of the German ICT industry. In this area, German technology suppliers currently hold a leading position worldwide. According to the experts, the task now facing the industry is to exploit this position and make sustained and future-oriented progress to become a global market leader. Germany can then also focus on excelling in the relevant fields of application.

1.2.4 Threats

Furthermore, threats still exist that cannot be tackled directly at a microeconomic level within the information economy. According to the experts, these include a particular vulnerability in the ICT industry to economic cycles. It is precisely the success of the information economy that has led to a marked dependence on the economic situation in the key client industries and also on exchange rates. In this respect, any measures that can increase macroeconomic domestic demand over the long term and in particular, accelerate the “information economy investment cycle” will greatly help support the development of the information economy.

In addition, the legal framework is increasingly becoming a factor in relation to international competition. For example, in the field of media-related legislation, copyright and digital rights management, the experts see a need for modernisation and continuous monitoring. The legal framework must be continuously adapted to the new conditions prevailing in convergent markets.

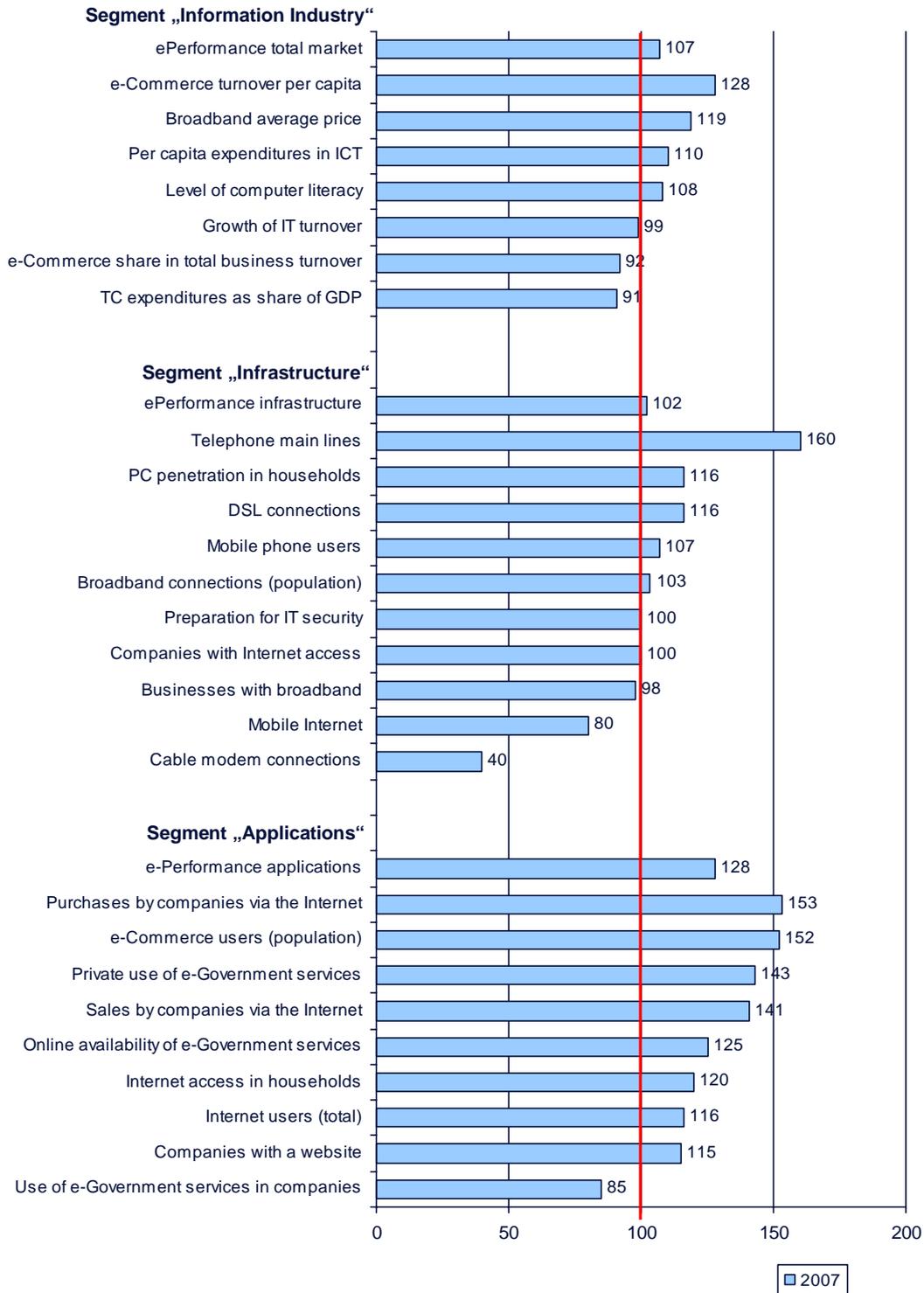
1.2.5 Germany: turnabout achieved

The results of the status report, current performance evaluation and assessment of future developments, prospects and measures show that Germany is carving out a globally leading position within the information economy. Just how productive and how competitive Germany is compared to its competitors will increasingly depend on how effectively and efficiently technologies are developed and then used by the general population, in companies, by present and future employees and public administrative bodies.

Amongst the top five countries in Europe, Germany comes second only to the UK. Provided that the infrastructure is further developed and the agreed measures are consistently implemented, there is nothing to stop the turnabout from taking place.



Current Performance of the Information and Communications Industry 2007 compared to Europe – Overview





Future Performance of the Information and Communications Industry 2006 to 2007– Overview

