

Mridul Chowdhury, *Harvard University*
with **Juergen K. Faust**, *A.I.M. Consultants, Germany*
Bernd Almstedt, *ASCARON Software GmbH*

“ E-commerce in Germany experienced a dramatic setback in 2001, due to the inexperienced entrepreneurship of young German IT managers.”

—*German IT consultant*

“ DSL has been growing fast in Germany in recent times. The flat rates are reasonably priced, thus a lot of home users have recently got and are getting (mid-) broadband access to the Internet, which opens new opportunities for B2C activities.”

—*Multimedia company executive, Germany*

Germany, with an overall Networked Readiness ranking of seventeen in this year's Index, is a nation of interesting contrasts. While it has one of the world's largest and most vibrant telecommunications markets, German Internet penetration and, to a lesser extent, mobile penetration, have progressed rather slowly compared to most other major OECD countries. Germany has established itself as a European leader in e-commerce, but has been less successful in e-government. Also, within its dynamic e-commerce sector, B2B e-commerce largely dominates, while B2C e-commerce shows a conservative growth pattern.

Germany has one of the most advanced information infrastructures in Europe (Ranking in Network Access subindex: 9) with the Regulatory Authority for Telecommunications and Post (RegTP) playing an effective role in regulating the telecommunications sector. Although some hindrances remain, such as the dominance of the local loop by the ex-monopoly provider, Deutsche Telekom, the German telecommunications sector is characterized by fierce competition that has led to dramatic price decreases since 1998 (Ranking in Effect of Telecommunications Competition: 3). Nevertheless, this competition has not led to a corresponding increase in Internet penetration, which is currently about half of that of the United States.

Despite relatively low Internet penetration, Germany has become an innovative B2B e-commerce leader and a pioneer in the production of knowledge-management software. The nation's fast growth in B2B e-commerce has largely been driven by its vibrant venture capital community (Ranking in VC Willingness to Invest in e-Commerce: 1), energetic entrepreneurship in the dot-com sector (Ranking in Prevalence of Internet Start-ups: 2), and rapid adoption of sophisticated B2B e-commerce by internationally competitive industries, such as automotive, aerospace,

chemicals, finance, and insurance. At the same time, B2C e-commerce has had only a modest uptake, hindered by distrust of online security, general reluctance among Germans to use credit cards, and inadequate consumer protection laws. Online banking and trading are popular among German Internet users. Germans are also leaders within Europe in Short Messaging Service (SMS) use.

In e-government, the German government has yet to demonstrate effective leadership in putting its services online (Ranking in Online Government Services: 31). Since unification of East and West Germany, equitable distribution of resources has been an important priority for the government. To that end, programs such as Internet for All and Germany 21 are designed to ensure widespread Networked Readiness throughout the nation.

One of the primary challenges in ICT development in Germany is the inadequate supply of an ICT-skilled workforce. Despite the growth of ICT jobs in Germany (Ranking in ICT Opportunities micro-index: 4), the nation is facing a grave manpower shortage. The Green Card Initiative to attract foreign workers and other campaigns to lure back expatriates have shown limited success so far.

In 2000, several telecommunications companies made heavy commitments at auction to invest in third-generation UMTS cellular telephony licenses in Germany; the excessive final bids precipitated painful restructuring processes and asset sales among the winners. RegTP is seeking ways to alleviate these companies' financial risk by allowing them to share infrastructure.

Key Facts

Population	82,200,000
Rural population (% of total population) 1999	12.70 %
GDP per capita (PPP)	US\$24,931
Global Competitiveness Index Ranking, 2001–2002	17
UNDP Human Development Index Ranking, 2001 (adjusted to GTR sample)	14
Main telephone lines per 100 inhabitants	60.11
Telephone faults per 100 main telephone lines	8.70
Internet hosts per 10,000 inhabitants	248.30
Personal computers per 100 inhabitants	33.64
Piracy rate	28.00 %
Percent of PCs connected to Internet	7.38 %
Internet users per host	11.76
Internet users per 100 inhabitants	29.21
Cell phone subscribers per 100 inhabitants	58.58
Average monthly cost for 20 hours of Internet access	US\$24.81

RANK

Networked Readiness Index 17

Network Use component index 18

Enabling Factors component index 10

■ Network Access 9

Information Infrastructure 12

Hardware, Software, and Support 5

■ Network Policy 13

Business and Economic Environment 15

ICT Policy 11

■ Networked Society 10

Networked Learning 17

ICT Opportunities 4

Social Capital 10

■ Networked Economy 9

e-Commerce 3

e-Government 22

General Infrastructure 1