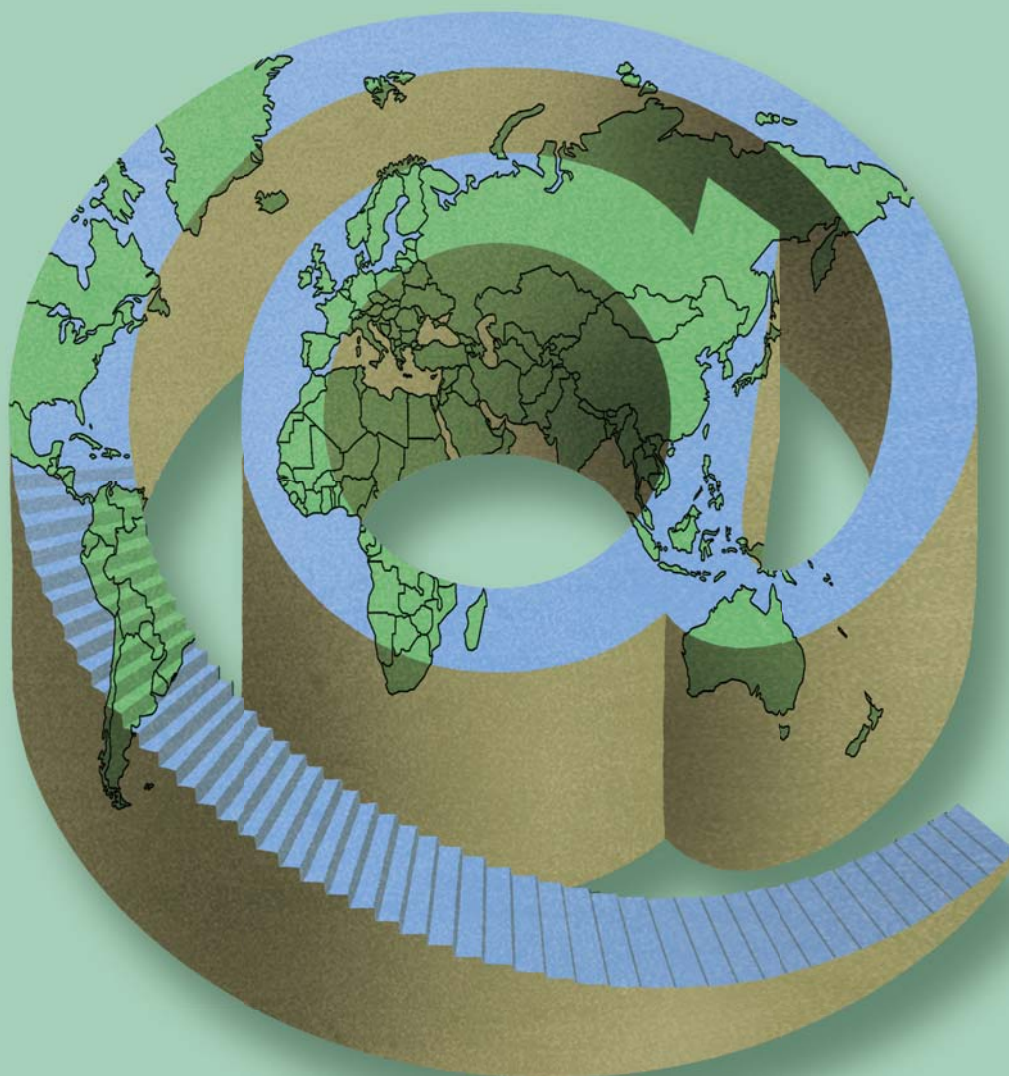


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Turning Local

From Madrid to Moscow, the Internet Is Going Native



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Turning Local

From Madrid to Moscow, the Internet Is Going Native

David Dean and Paul Zwillenberg

September 2011

AT A GLANCE

The global Internet is not dead. It continues to spawn local offspring, acquiring flavors that spring from national heritage as well as economic, political, and social influences.

BCG E-INTENSITY INDEX

To generate a nuanced picture of Internet activity across countries, the BCG e-Intensity Index analysis compares measures of Internet infrastructure and usage.

FROM NATIVES TO ASPIRANTS

Nations show varying levels of achievement in Internet infrastructure, spending, and engagement. The 50 nations under study fall into five clusters.

THE ECONOMIC IMPACT OF THE INTERNET

The Internet is contributing to the growth of both local economies and the businesses that take advantage of it—with big differences among countries.

SHAPING THE FUTURE

The rise of electricity created some industries, destroyed others, and transformed most of the rest. The Internet is doing the same. Stakeholders should be encouraging businesses, consumers, and government itself to exploit potential.

THE INTERNET IS HERALDED as a global “network of networks,” but it is increasingly acquiring a local character that springs from national heritage as well as economic, political, and social influences. It has helped to digitally knit the world closer together but has also spawned many local offspring.

In some countries, such as the U.K., consumers have become avid online shoppers, but this has not happened in the Netherlands, even though the fixed-broadband infrastructure is much stronger there. The reason lies largely in the physical world: the Dutch are light credit-card users. Hong Kong, which also has a strong Internet infrastructure, has relatively weak business-to-consumer activity. Traditional merchants in this densely populated “shoppers’ paradise” have an easier time holding onto nearby customers. But strong business-to-business Internet activity exists. Pioneering trading companies such as Li & Fung Limited, a global supply-chain manager, have leveraged the strong Internet infrastructure to become global giants, relying on the Internet to enable efficient and cost-effective information flows among trading partners. In Indonesia, mobile Internet usage is skyrocketing as consumers bypass fixed-broadband Internet access and jump to mobile services. The same is true in India, where, for many customers, their first bank account could well be a mobile one.

Although Facebook has had remarkable success in Western Europe, it faces stiff local competition in China, Brazil, and Russia from firms such as Renren, Orkut, and VKontakte, respectively. Likewise, Amazon.com and Google have strong local competitors in countries such as Japan and Russia.

These developments are less about Balkanization than localization—and, in some cases, the population’s fluency in English and national aspirations. Google has a larger market share in India, for example, than in China or Russia.

English’s sway online, however, is in decline. Within five years, Chinese could become the most popular language on the Internet. Arabic, during the past ten years, has been the fastest-spreading language. The dwindling influence of English and the rapid growth of real-time language translation will further encourage local flavors and permutations of the Internet.

It should not be surprising that the Internet is evolving differently in different places. The way in which technology and media take root has depended on each country’s local characteristics. Cable television, for example, has been much more successful in the small high-density Benelux countries than in Italy, where satellite providers skimmed the best customers while cable companies were still digging

The winners will be the companies and countries that can successfully marry bricks and clicks.

ditches. In Eastern Europe, magazine publishing is a growth business because the nations there are still developing the consumer economy upon which magazines depend for advertising revenue. Not so in the U.S.

In Sweden, a nation known for its “permissive society,” the Internet has spawned the Pirate Party, a political party that supports greater openness—for example, legal file sharing—and fewer intellectual-property restrictions. The party even won a seat in the European Parliament in 2009.

Likewise, as the Internet becomes increasingly enmeshed in commerce and society, its evolution is being influenced by the physical world—for instance, the rise of secure-payment mechanisms through credit cards and strong logistics infrastructure. At the same time, traditional companies that embrace digital technologies such as social networking can enhance their existing strengths. We are witnesses to a real-time blending of the real and online worlds that has nothing to do with online games, virtual reality, or other entertainment. The winners will be the companies and countries that can successfully marry bricks and clicks.

If there are differences among nations and how they are adapting to the digital era, there are also remarkable similarities, particularly when it comes to growth. Small and medium enterprises (SMEs)—the growth and job creation engines of most national economies—grow faster when they embrace the Internet.

These observations emerge from several strands of research conducted by The Boston Consulting Group. We independently analyzed the current and projected size of the Internet economy in 13 markets as part of an initiative commissioned by Google. In addition, we have conducted a similar analysis of Germany. The Internet is a large contributor to many national economies today and will help provide a significant boost to future growth in those nations that foster and encourage e-commerce. Furthermore, we have conducted primary research in Brazil, Russia, India, China, and Indonesia (the BRICI nations) in order to understand the habits of new Internet users. Finally, our client work throughout the world touches on many of these themes.

The BCG e-Intensity Index, a yardstick of Internet strength and activity across nations, is the instrument that pulls these strands together.

BCG e-Intensity Index

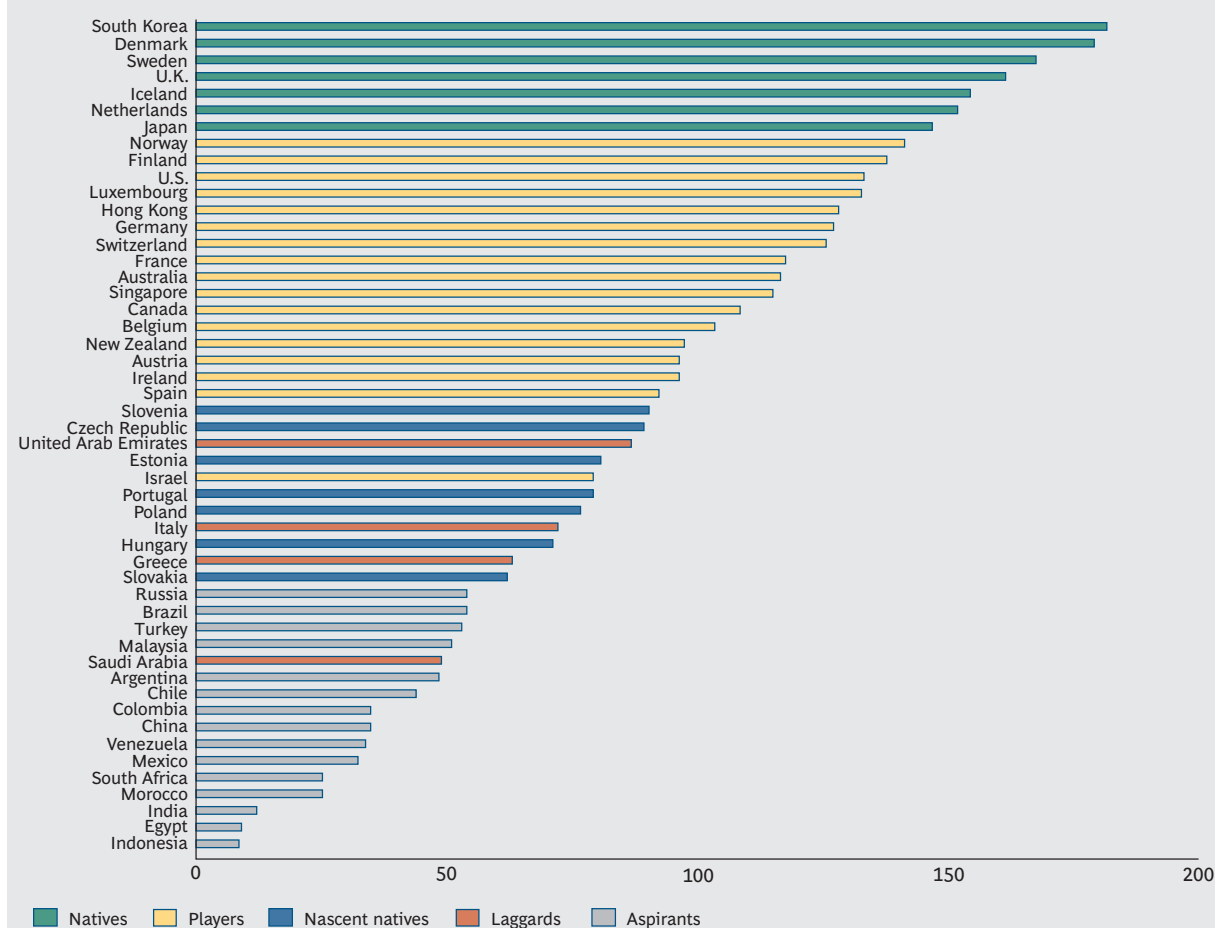
Stakeholders want to know how the digital economy can contribute to growth and job creation and to learn from countries that “get it.” Business leaders want to learn how they can take advantage of the Internet’s speed, reach, and potential to create new business models built, for example, around collaboration and scale.

To generate a more nuanced picture of the depth and reach of digital activity across countries, the BCG e-Intensity Index analysis compares different measures of Internet activity for 50 countries. These include all Organisation for Economic Co-operation and Development (OECD) members, the BRICI nations, and other noteworthy economies such as Hong Kong, Saudi Arabia, Singapore, and South Africa. It measures the three things that matter most:

- *Enablement*. How well built is the infrastructure and how available is access? (This has a weighting of 50 percent.)
- *Expenditure*. How much money is spent on online retail and online advertising? (25 percent.)
- *Engagement*. How actively are businesses, governments, and consumers embracing the Internet? (25 percent.)

BCG e-Intensity Index analysis allows us to sort countries into five categories, which are defined in the next section. (See Exhibit 1.) It captures a nation's supply of Internet infrastructure (enablement) and the demand for Internet services (expenditure and engagement), providing a clearer understanding of a nation's strengths and weaknesses than other global rankings. (See the sidebar "The Three Es Behind e-Intensity.")

EXHIBIT 1 | BCG e-Intensity Index Highlights Internet Prowess Across Economies



Sources: ComScore; Economist Intelligence Unit; Euromonitor International; Gartner; International Telecommunication Union (ITU); Magnaglobal; Ovum; Pyramid Research; Speedtest.net; United Nations; World Bank; World Economic Forum; BCG analysis.

Note: The index is scaled so that the geometric mean is 100 for the 34 OECD member countries.

THE THREE ES BEHIND E-INTENSITY

How can nations improve their digital economies? What drives Internet engagement—or different levels of Internet spending—in one country and not another? The subindexes tell the story behind the story. (See the exhibit “BCG e-Intensity Index Stacks Up Economies in Three Ways.”)

Enablement. Hong Kong, with the highest infrastructure score, is the most “enabled” country, followed closely by Iceland, Sweden, and South Korea. Indonesia and several other nations rank significantly higher in mobile-broadband penetration than in fixed-broadband penetration. By channeling their future investments, these nations may soon become leaders in the mobile delivery of Internet services.

Expenditure. Denmark leads the expenditure subindex, followed by the U.K., South Korea, and Sweden. This subindex measures the value of business-to-consumer online retail and online advertising.

U.K. retailers have been successful at selling goods such as high-end fashions, electronic goods, and expensive travel packages online. The Czech Republic ranked higher than all other Eastern European nations, as well as Austria and Ireland, reflecting the poor retail experience in physical stores.

In such developing markets, consumers are willing to research goods online, but, because of concerns about security, they are reluctant to make online purchases. We call this research online, purchase offline (ROPO). In

Russia, for example, the volume of ROPO transactions is twice that of online purchases, which are held back by complex product-return procedures and long delivery times. In more developed markets such as Denmark, Sweden, and the U.K., the ROPO-to-online ratio is less than one, demonstrating the potential explosion in e-commerce awaiting nations that create a credible online shopping, payments, and security environment.

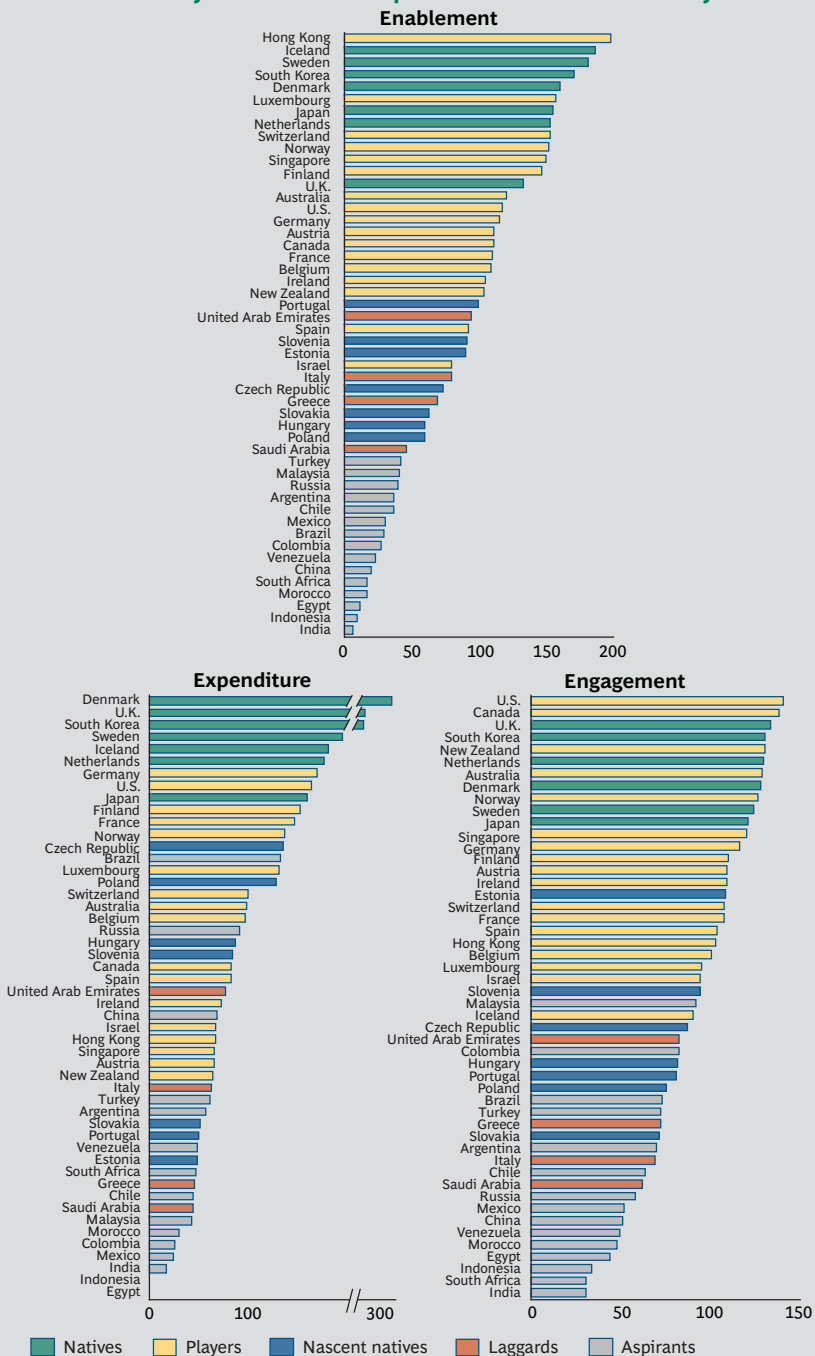
Engagement. The U.S. has the highest score on the engagement subindex, which itself is a composite of three other indexes that measure the involvement of consumers, business, and government. Canada, the U.K., and South Korea follow closely behind.

Scores for business engagement somewhat track those for consumer engagement. Canada, Denmark, the Netherlands, Sweden, the U.K., and the U.S. appear in the top ten for both business and consumer engagement. In other countries, such as Belgium and Poland, business engagement lags behind consumer engagement.

It is interesting that government engagement only loosely tracks the socioeconomic status of nations, with South Korea in the lead, followed by Australia, Canada, and the U.S. At the bottom, the BRICI nations outperform those in the Middle East and North Africa.

In some developing markets, consumers are willing to research goods online, but, because of concerns about security, they are reluctant to make online purchases.

BCG e-Intensity Index Stacks Up Economies in Three Ways



Sources: ComScore; Economist Intelligence Unit; Euromonitor International; Gartner; ITU; Magnaglobal; Ovum; Pyramid Research; Speedtest.net; United Nations; World Bank; World Economic Forum; BCG analysis.

Note: The indexes are scaled so that the geometric mean is 100 for the 34 OECD members.

From Natives to Aspirants

We analyzed the strengths and weaknesses of the 50 nations and found that, based on the level of their digital activity, the nations break down into five clusters.

Natives. The seven nations that top the index are from Northern Europe and the advanced economies of Asia: Denmark, Iceland, Japan, the Netherlands, South Korea, Sweden, and the U.K. Strong infrastructure and broadband penetration help power these nations to the top of the index, but many of them have more than just better pipes. South Korea, the top-ranked nation, placed in the top four across the board: in enablement, expenditure, and engagement. Denmark, the nation with the second-highest overall ranking, scored fifth in enablement, first in expenditure, and eighth in engagement. The lesson for executives and stakeholders in developing nations and other countries that want to improve their Internet profile is clear: investments in infrastructure need to be accompanied by other strengths such as a favorable regulatory environment, strong payment systems, and consumer protections for e-commerce transactions.

Players. The next group is the largest, comprising 17 nations, mostly from Western Europe and rounded out by other developed economies such as Australia, Canada, Hong Kong, Singapore, and the U.S. These nations generally have what might be termed “good enough” Internet infrastructure, commerce, and civic activity.

A lack of consistency across the three Es is what keeps these nations from rising to the top. Hong Kong, for example, had the highest enablement score but fell to twelfth overall by ranking in the 20s in both expenditure and engagement. Belgium could move up in the rankings if companies and consumers embraced online shopping. Seventy-five percent of all Internet users go online nearly every day. But they are engaged more in social than in commercial pursuits. In 2010, the annual volume of online retail sales per capita was approximately \$200, one-third that of the U.K.

All the Natives significantly outperformed what is suggested by their per capita GDP. But among the Players, ten nations—Australia, Austria, Belgium, Canada, Ireland, Israel, Luxembourg, Norway, Singapore, and Switzerland—underperformed expectations (See Exhibit 2.)

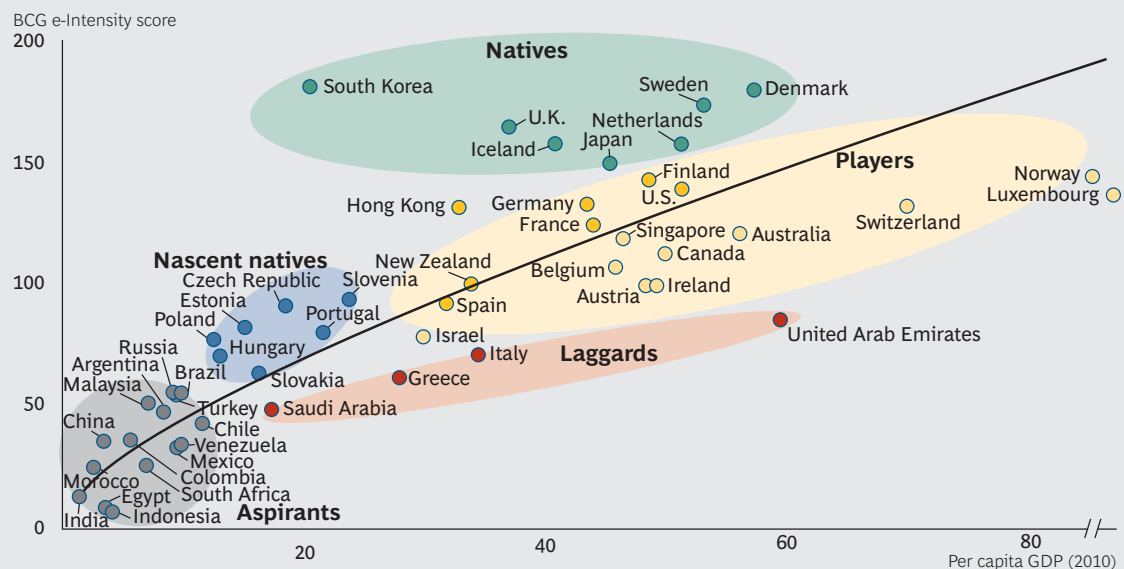
The U.S.—the birthplace of the Internet—proves that nations need more than great infrastructure to do well on the index. The U.S. has only the fifteenth-highest enablement score but the top engagement score and the eighth-highest score in expenditure, giving it an overall ranking of ten.

In the future, however, weak infrastructure may start to hobble U.S. performance. Innovative services that require high bandwidth will have a hard time finding a mass-market home in the U.S. outside of high-speed corridors. Less than 40 percent of U.S. Internet connections exceed 5 megabits per second, according to Akamai’s most recent *State of the Internet* report.

A large share of the U.S. population is simply priced out of the market. “The poverty problem provides a new and sobering lens for any serious analysis of the telecom and media sectors,” says Craig Moffett, an analyst at research firm Sanford

The U.S.—the birthplace of the Internet—proves that nations need more than great infrastructure to do well on the index.

EXHIBIT 2 | BCG e-Intensity Index Correlates with Per Capita GDP



Bernstein, in *The Poverty Problem*. “At the low end, customers aren’t just choosing between one provider and another. They’re often choosing between these services and a third meal.”

Nascent Natives. The third group consists of a cluster of seven nations from Southern, Central, and Eastern Europe. They generally underperform in at least one dimension. But there are also examples of leading-edge innovation within these nations, and they could advance quickly if they make the right moves.

The Czech Republic, in particular, manages to overcome a low enablement score by doing well on the expenditure index. More significantly, that nation is using the online environment to replace immature or undeveloped retail channels. Planet Retail, an analyst firm, estimates that the German and U.K. markets have 35 to 75 percent more retail space per capita and 20 to 30 percent lower relative prices in some categories.

Rather than build out retail space and the accompanying logistics systems, Czech companies are moving online. While the share of online sales varies among product categories, 17 percent of domestic appliances and 14 percent of sports equipment were bought online in 2009.

The challenge for stakeholders and companies is to understand the constraints on Internet activity and remove them. Czech consumers, for example, pay cash on delivery for nearly one-half of online sales. Their unwillingness to accept online payment will eventually constrain growth.

Laggards. Four countries—Greece, Italy, Saudi Arabia, and the United Arab Emirates—should have stronger Internet profiles than they do. They all rank lower on expenditure and engagement than they do on enablement and perform worse on the BCG e-Intensity Index than predicted by their per capita GDP. These nations have the ability and potential to exploit the Internet more fully and could move quickly up in the rankings with focused effort.

The contrast between the Czech Republic and Italy—a country with higher per capita GDP and a longer history of market economics and modern retailing—is stark. Although Italy has a higher enablement score, its overall score is lower. Italian companies and consumers have not yet embraced the Internet to the same extent as their Czech peers. Traditional retailers, for example, have been reluctant to sell online: some 70 percent of online apparel sales are conducted by companies without physical stores.

On the Internet, time often moves at warp speed, and Italy may be overcoming its slow start. Online retail sales in Italy grew by 18 percent last year, according to Euromonitor International, and online advertising also grew by 18 percent—more than twice the rate in France (8 percent), according to Magnaglobal. Fashion houses such as Ermenegildo Zegna, Roberto Cavalli, and Dolce & Gabbana have started selling online in the past two years, helping to boost online sales of clothing by 43 percent from 2009 through 2010. Clothing designers are also starting to embrace YouTube; Benetton, for example, used the site in 2010 to cast 20 characters in an advertising campaign. Amazon.com and Groupon recently opened Italian sites; in Italy, 15 percent of Internet users have already become Groupon subscribers, ranking third after France (21 percent) and the U.K. (17 percent) among European nations.

By 2015, the BRICI nations, for example, will have more than 1.2 billion Internet users, more than three times the total in Japan and the U.S. combined.

Greece has many things to do these days to get its economic house in order, and the Internet should definitely be part of the nation's medium-term plans to rebuild its economy. Despite being less prosperous, most Eastern European nations and Portugal all have stronger Internet performance.

Aspirants. The final group of 15 nations consists of developing economies that trail far behind on several key dimensions. Most of these countries are physically large. On average, the quality and reach of their infrastructure are inadequate, and broadband penetration, online spending, and usage rates are low. But averages belie the fact that many of these nations are truly on the move. Indeed, in some of their metropolitan areas, the Internet experience is virtually indistinguishable from that in London, New York, or Tokyo.

By 2015, the BRICI nations, for example, will have more than 1.2 billion Internet users, more than three times the total in Japan and the U.S. combined. Internet penetration is surging in most of the BRICI countries, with projected annual growth rates ranging from 9 to 20 percent from 2009 through 2015. In China, the average Internet user spent 2.67 hours per day online in 2009, more than the average U.S. user (2.27 hours) and close to the mark of the average user in well-connected Japan (2.87 hours). The number of Internet users in China is projected to grow from 384 million in 2009 to 650 million in 2015.

Furthermore, the level of experimentation and innovation is especially high in these countries. In India, Internet-enabled mobile services are meeting people's agricultural, health, and educational needs. Nearly half of China's digital consumers use their mobile phones for multimedia messaging, photos, and streaming or downloading music. Nearly 40 percent of China's users play games on their mobile phones, and around one-quarter use mobile video, Internet, and news services. Brazil is a hub of online commercial activity, ranking in the top half for business engagement.

In Turkey, "private shopping"—a form of online retail—has recently taken off, suggesting that the nation is playing catch-up with other European nations that sped ahead early. An online retailer such as Markafoni, the market leader, offers members heavy discounts on selected merchandise for specified periods of time. Markafoni's competitor, Trendyol, is experimenting with social marketing, which is more common in the advanced Internet economies. Trendyol, for example, developed an online competition in which users were asked to submit fashion shots of themselves. The winner, whose photo was featured in *Vogue Turkey*, was awarded a cash prize.

In Egypt, of course, the Internet helped engender and amplify the Arab Spring uprising. Otherwise, however, adoption has proceeded slowly. Online shopping is still nascent, with consumers still unfamiliar with e-commerce and wary about online security.

To be sure, these countries have a long way to go before their Internet activity and economies catch up with those of developed nations. But, increasingly, they are doing it their own way rather than simply importing the services of U.S. Internet giants.

In China and Russia, in particular, developments largely resemble the early days of the Internet in the U.S., with vast experimentation, innovation, and imitation. By contrast, Internet activity in many parts of Western Europe has been more a matter of paving over wagon trails—digitizing traditional businesses rather than creating new ones.

Eight of China's ten most popular sites are local. Local companies have succeeded by tailoring their offerings to Chinese preferences. They have deep understanding of the consumer population, localized product offerings, and the ability to work flexibly with Chinese regulators. The top ten sites include search engine, news portal, Web video, business-to-business e-commerce, and instant-messaging sites.

Companies such as Tencent and Alibaba.com have come to dominate the market. Now among the largest digital companies in the world, they have global ambitions. Alibaba.com has 65 million registered users in more than 240 countries and regions, and Tencent—a provider of the instant-messaging platform QQ, online games, and social networking—recently invested in Digital Sky Technologies, a Russian company with significant stakes in Facebook and other global online platforms.

In Russia, also, local companies are leading the way. Yandex is the largest search-engine company and Ozon.ru, the largest online store. Ozon.ru has more than 4.8 million users and is adding 90,000 new users each month. The company generated around \$140 million in revenues in 2010. Customers can choose from 18 methods of payment and 14 methods of delivery.

Internet activity in many parts of Western Europe has been more a matter of paving over wagon trails—digitizing traditional businesses rather than creating new ones.

Ozon.ru is using the Internet to improve the customer's shopping experience, creating a highly visual and informative portal. Along with features that imitate the offline shopping experience, such as high-quality photos and turn-the-page capabilities, the company also offers Internet-exclusive options such as personal recommendations and customer reviews.

KupiVip.ru was the first retailer to provide Russian customers with easy access to special offers and promotions for different brands. Every day, the shopping club's 4 million subscribers in Russia and Belarus receive 17 promotions featuring reductions as high as 70 percent off original prices.

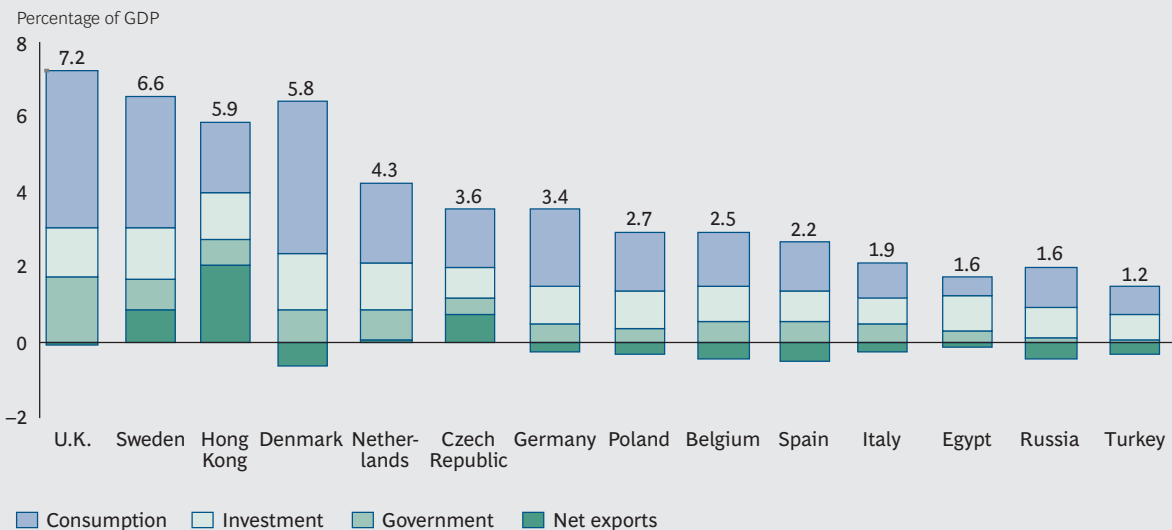
The Economic Impact of the Internet

The size and nature of the Internet economy provides another lens through which it is possible to explore capabilities and online activities. Below we look briefly at the macroeconomics (the size of the Internet economy) and microeconomics (the ability of the Internet to enable and strengthen SMEs).

GDP and Macroeconomics. BCG analyzed and determined the size of the Internet economy in 12 European countries, Egypt, and Hong Kong. In these countries, the Internet economy ranges from 7.2 percent of GDP in the U.K. to 1.2 percent in Turkey. The size of the Internet economy in each of these countries roughly tracks the country's performance on the BCG e-Intensity Index. (See Exhibit 3.) In the

EXHIBIT 3 | The Internet Makes Up the Largest Share of U.K. and Nordic Economies

The Internet economy as a percentage of GDP in 2009



Sources: The sources include Danish Ministry of Science; Datamonitor; DIBS Payment Services; Economist Intelligence Unit; European Information Technology Observatory; Eurostat; Gartner; IAB Europe/Google Consumer Commerce Barometer survey; International Data Corporation; OECD; Ovum; Post-och telestyrelsen (PTS); SIFO; Statistics Denmark; Statistiska centralbyrån; Svenska Distanshandel; Sveriges Officiella Statistik; Technology and Innovation; Tieto; TNS; World Internet Institute; BCG analysis.

future, the Internet will also be a major contributor to performance, providing a large share of growth in nations struggling to find economic traction.

The Czech Republic and Hong Kong, both net exporters of Internet-related equipment, have larger Internet economies—measured as a percentage of GDP—than the BCG e-Intensity Index analysis would suggest. (See the sidebar “Calculating the Size of the Internet Economy.”)

CALCULATING THE SIZE OF THE INTERNET ECONOMY

Our analysis of GDP is based on the expenditure method, which looks at four types of outlays:

Consumption. Goods and services bought by households over the Internet and consumer spending on accessing the Internet—both payments to Internet service providers and the cost of the relevant portions of devices

Investment. Telecom companies’ capital investment related to the

Internet and Internet-related private investments in information and communications technology (ICT)

Government Spending. Internet-related public ICT spending

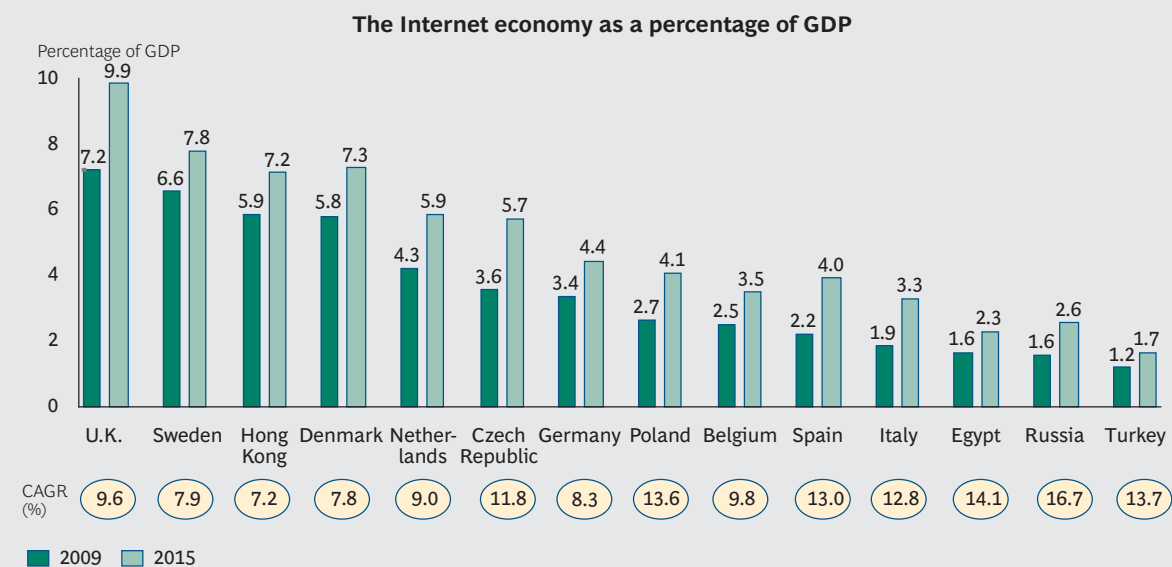
Net Exports. Exports of online goods and services and Internet-related ICT equipment, less comparable imports

In most markets, consumption makes up the largest share of the Internet economy. In around two-thirds of markets such as Denmark, the Netherlands and Sweden, corporate investment was responsible for 60 to 70 percent of investments, while in less developed countries, this percentage was larger—up to around 90 percent in Russia. Telecom operators in countries with less developed infrastructure, especially Egypt and Turkey, are investing heavily in Internet-related technology—largely 3G and 4G mobile networks that facilitate access to Internet services. These investments could pay dividends down the road by providing infrastructure that will enable e-commerce and other Internet activities to flourish.

To get an idea of the future size and contribution of the Internet economy, we made several projections about its size in 2015. The most important projections were broadband adoption and consumers’ enthusiasm for online shopping, both of which drive consumption. Looking forward, we tried to be conservative. Still, several underlying trends—and the response of governments, businesses, and consumers—will be strong and unpredictable influences on growth and value. (See Exhibit 4.)

The three nations with the smallest Internet economies, in relative terms, Egypt, Russia, and Turkey, have the fastest projected growth rates. Online retail sales account for most of this growth. Although these nations are starting from a smaller base—thus amplifying future gains—their progress is nonetheless encouraging.

EXHIBIT 4 | Internet Newcomers Are Likely to Grow Fastest



Sources: The sources include Danish Ministry of Science; Datamonitor; DIBS Payment Services; Economist Intelligence Unit; European Information Technology Observatory; Eurostat; Gartner; IAB Europe/Google Consumer Commerce Barometer survey; International Data Corporation; OECD; Ovum; PTS; SIFO; Statistics Denmark; Statistiska centralbyrån; Svenska Distanshandel; Sveriges Officiella Statistik; Technology and Innovation; Tieto; TNS; World Internet Institute; BCG analysis.

Note: Growth is quoted in nominal terms. For comparative purposes, the figures for Egypt, Russia, and Turkey have been adjusted to an average inflation rate of 2 percent, as seen in the other countries.

With many nations still struggling with the aftershocks of the Great Recession, the Internet can meaningfully contribute to GDP growth. The higher the nation's current score, the larger the likely contribution will be.

In the top-ranking nations on the BCG e-Intensity Index—for example, Denmark, the Netherlands, and the U.K.—the Internet is likely to contribute as much as 15 to 20 percent to GDP growth from 2009 through 2015. In countries in the next tier—for example, Germany and Hong Kong—it will contribute around 10 percent to GDP growth. Among Aspirants such as Russia and Turkey, the Internet is expected to contribute less than 5 percent to overall GDP growth.

These, of course, are just projections. Nations can shape their own economic destinies, with the Internet serving as a powerful tool for those that operate with foresight and conviction.

Among the countries with more developed Internet economies, the U.K. will become a net exporter of Internet goods and services, powered by strong online retail sales to other nations. The Czech Republic and the Netherlands are likely to benefit from the acceptance of online payment mechanisms and greater online selections of goods and services.

The Internet's contribution to the job market is a subject for debate. Its true value is difficult to calculate. However in the U.K., for example, companies that power the

Internet—including telcos, IT companies, and software houses—employ about 250,000 people. In Russia, such companies employ about 130,000. The true number of Internet-related jobs is far larger, including Internet positions at traditional companies not captured by the economic radar, as well as positions at logistics, delivery, and fulfillment houses, for example, that owe their creation to the Internet.

SMEs and Microeconomics. Historically, SMEs have been the hidden job-creation and growth engines of many national economies. Now they are also aggressively exploiting the Internet to take advantage of its ability to allow companies to expand geographically and collaborate with customers. The Internet helps level the playing field, giving SMEs access to larger markets through cost-effective online advertising and tools once available only to large companies.

In order to understand the Internet activities of SMEs, BCG surveyed around 9,000 of them. We divided the survey respondents into three groups: “high-Web” businesses market or sell goods or services online, “low-Web” businesses have a website or social-networking site, and “no-Web” businesses do not have a website.

The key overall finding: the Internet is paying dividends for SMEs that take advantage of it. In the U.K., overall sales of high-Web businesses grew by 4.1 percent annually from 2007 through 2010—about seven times faster than the overall sales of low- and no-Web businesses. In Hong Kong, 79 percent of high-Web businesses reported higher sales over the past five years, compared with 63 percent of no-Web businesses. In Russia, sales of high-Web businesses increased over the past three years, while sales of low- and no-Web businesses decreased.

Shaping the Future

From Boston to Beijing, from Madrid to Moscow, the Internet is reshaping economies and lives. The Internet is still very young, and in order for it to reach its full potential, several factors will need to come into play.

Better Broadband Infrastructure. Advanced Internet services, such as high-quality video and mobile data services, need to run on a rock-solid infrastructure. The popularity of the iPhone and other smartphones, for example, has already taxed the capacity of mobile carriers in many markets. The ability of carriers to create additional capacity—and to set adequate prices—is critical to long-term growth in the Internet economy. Carriers will also need to make tough choices about the share of investments they devote to fixed rather than mobile technologies. Although businesses will depend on fixed infrastructure, the consumer experience will increasingly be a mobile one.

The ability of carriers to create additional capacity—and to set adequate prices—is critical to long-term growth in the Internet economy.

More Digital Inhabitants. In every country, there is a significant minority of adults who do not use the Internet, forfeiting its benefits. In the U.K., 1 in 5 adults—about 9 million—has never been online.

Universal access and adoption of the Internet are laudable goals and would provide a tremendous boon to national economies as well as new Internet users, who would benefit from better information, lower prices, and a greater range of enter-

Few truly open systems generate significant economic value: the closed nature of a system is what allows its owner to generate profits.

tainment choices. These goals, however, have proved difficult to achieve in developed markets, although some countries such as Finland are adopting supportive legislation. In developing markets, stakeholders will need to make tough decisions on the basis of the tradeoffs associated with access, speed, and investment.

Greater State Participation. If the government is engaged, consumers and businesses are somewhat more likely to follow. Denmark has created a public portal for individuals and businesses to interact with public authorities, and the Netherlands has developed the DigiD authentication system in order, among other things, to improve the efficiency of tax collection and benefits disbursement. The Hong Kong Hospital Authority has taken the lead in encouraging hospitals and clinics to use the Internet for sharing patients' electronic medical records.

Growing Consumer Confidence. The vitality of e-commerce depends on users' confidence in systems that protect privacy and consumer data and that prevent fraud. A failure in any of these systems could fundamentally alter consumers' willingness to make online purchases.

Coordinated Regulation. To fully exploit the Internet's potential, a multidisciplinary approach to regulation is necessary. Whether nations vest authority in a single body or several, they need to ensure that regulation is coordinated to encompass telecom, banking, commerce, and consumer affairs. This, though easier said than done, is nonetheless necessary. India, for example, has recently instituted a biometrics-based national identification system that could dramatically expand the ability of banks and merchants to offer Internet-enabled mobile banking and commerce and that could also improve government's ability to deliver social services.

Open Versus Closed. Openness has been a cardinal strength of the Internet, driving innovation and inclusiveness. Some people wonder whether this openness is under threat. The open-versus-closed debate can be polarizing and frequently unproductive. Few truly open systems generate significant economic value. Put differently, the closed nature of a system is what allows its owner to generate profits.

Navigating these issues is tricky. Although the Internet's founding fathers may fret over its evolution, regulators would be wise to be guided by restraint in trying to control these complex and fast-moving developments. Government should intervene only when market forces are not working to correct imbalances.

THE INTERNET HAS created vast wealth for some and changed the destinies of many companies and industries. In many emerging economies, it is contributing to economic growth and, as the recent Arab Spring uprisings so vividly demonstrate, enabling societal change. A century ago, electricity jolted economies and societies in a similar way, and it will not be too long before the Internet is as pervasive as electricity.

The rise of electricity created some industries, destroyed others, and transformed most of the rest. The Internet is doing the same, so it is not unnatural for stakehold-

ers to be inclined to intervene and attempt to chart the Internet's future. But they need to tread with caution. Picking winners is fraught with difficulty, and incubating the next Google, Facebook, or Twitter is unlikely to be successful. Instead, stakeholders—especially those in the developed economies—should ensure that market conditions encourage both existing companies to fully exploit the Internet and startups to create Internet businesses that play to a nation's core strengths. This approach will provide a platform for growth and societal benefit greater than wishing upon an Internet star.

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