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TURKEY ONLINE

HOW THE INTERNET IS TRANSFORMING THE TURKISH ECONOMY

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CONTENTS

PREFACE

THE SO-CALLED INTERNET ECONOMY is not well understood—a surprising fact, considering that the Internet has been analyzed and studied to death. It is not easy to determine the contribution of the Internet to a country's economy.

To understand the nature and size of commercial activity on the Internet in Turkey, Google Turkey commissioned The Boston Consulting Group (BCG) to prepare this independent report. The results have been discussed with Google executives, but BCG is responsible for the analysis and conclusions.

Both Google Turkey and BCG are pleased to present these findings in order to foster a better understanding of how the Internet helps power the Turkish economy.

EXECUTIVE SUMMARY

After a slow start, Turkish consumers and businesses are increasingly embracing the Internet, realizing its benefits and seizing its opportunities. Turkey's Internet economy is growing rapidly. However, both access to and use of the Internet by consumers vary greatly among regions and demographic groups. Similarly, although some business sectors have moved aggressively online, others have hesitated. This report describes and quantifies the Turkish Internet economy and makes some projections for its growth in the near future.

Turkey's large, fast-growing economy is increasingly influenced by the service sector. The country's population is young and expanding at a relatively brisk rate.

- In 2011, at 8.5 percent real GDP growth, the Turkish economy was the fastest-growing in Europe. GDP in 2011 was $773 billion, which equaled $14,520 per capita, less than (but catching up to) the European Union (EU27) per capita amount of $32,690 (dollars at purchasing power parity, or PPP).

- Services contributed 62.6 percent of GDP in 2011, with agriculture providing 9.3 percent and industry 28.1 percent—the latter very similar to the EU27 average of a 25 percent industry share of GDP.

- The population totals 74.7 million and is growing at around 1 percent compound annual growth rate, considerably higher than the Organization for Economic Co-operation and Development (OECD) average of around 0.6 percent.

- The median age is 29.7 years, significantly below the 2010 EU27 average of 40.9, according to Eurostat.

The Internet contributed an estimated 22 billion Turkish lira (TL), or 1.7 percent of GDP, to the Turkish economy in 2011.

- Consumption is the largest contributor, accounting for about 70 percent, or TL 15.8 billion, of the Internet economy. Turkish consumers spent approximately TL 8.8 billion on Internet access and charges and just over TL 4.4 billion on e-commerce in 2011.

- Private investment—primarily network capital investment by telecommunications companies—accounts for the next-largest share, 30 percent (TL 7 billion). Government spending is relatively low, and Turkey is a net importer of information and communications technology (ICT) equipment and e-commerce.

The Internet's contribution to the Turkish economy and society is much larger than the GDP figure suggests.

- Consumers benefit from the Internet by researching retail products online even if the actual purchase takes place offline; about TL 63 billion was spent this way in 2011. They also gain from consumer-to-consumer purchasing and from the free content, e-mail, and social networking sites online.

- Businesses benefit from the Internet through e-commerce between companies and through online advertising, which is now 13.8 percent of the total Turkish advertising market.[1] Businesses also enjoy real (if often difficult to measure) productivity gains as a result of their Internet use.

Internet activity in Turkey is on par with Internet activity in other developing economies, such as those of the BRICI nations (Brazil, Russia, India, China, and Indonesia). Many challenges, however, remain if Turkey is to bridge the divide between itself and the other OECD countries.

- On the BCG e-Intensity Index, which measures the depth and reach of the Internet across 85 markets, Turkey's scores are generally in line with those of the BRICI countries, but the country ranks lower than the OECD members in its population's access to the Internet; online expenditure; and the engagement of individuals, businesses, and the government with the Internet.

- The depth and reach of the Internet vary widely from region to region, with those around Istanbul and Ankara significantly ahead and the eastern Anatolia region significantly behind.

The Internet has brought to many sectors of the Turkish economy transformative change that is both "game changing" and empowering.

- In the retail sector, large companies are experiencing rapid changes as new players enter the value chain, new business models emerge, and consumer behavior adapts.

- Small and medium-size enterprises (SMEs) vary significantly, by industry and size, in their levels of Internet adoption. Some, for a variety of reasons, are more reluctant to move online.

- BCG estimates that Turkey's Internet economy is likely to grow by about 19 percent annually and reach 2.6 percent of GDP by 2017. Consumption will probably be the main driver of this growth because of an expected increase in Internet user penetration and e-commerce. The size and nature of the growth will depend on the extent to which Turkish businesses embrace new business models. Other significant variables include the degree to which the government supports closing the digital divide among different regions, how effectively it implements e-government initiatives, and how enthusiastically consumers embrace new mobile technologies and e-commerce.

NOTE
1. IAB Turkey Rakamlarla (2011).

TURKEY'S INTERNET ECONOMY

A SNAPSHOT

Although it has been more than 20 years since ".tr" was established as a domain name, it is only recently that Turkish consumers and businesses have really begun to embrace the Internet in earnest—and now Internet usage is growing quickly. Many Turks are still not online, however, and the level of engagement of those who are varies dramatically according to region, gender, and age group. Building the Turkish Internet economy is a significant challenge—and an equally large opportunity.

Except for Turkmenistan's, Turkey's economy has been the fastest-growing in the entire European and Commonwealth of Independent States (CIS) region, experiencing 8.5 percent real GDP growth in 2011.[1] Although the Internet's advance in Turkey has lagged behind that in Europe and North America, some important accomplishments have already been achieved: (1) Turkey is home to a number of local Internet giants, such as online retailers Hepsiburada, GittiGidiyor, Markafoni, Limango, and Trendyol; (2) it has attracted significant investment from important foreign players such as eBay, Amazon, and Intel; and (3) it has been a laboratory for the development of new ways of reaching out to consumers, as shown by multichannel retailers Teknosa, e-bebek, and Istanbul Bilisim. As it has elsewhere, the Internet is transforming both Turkey's commercial scene and the ways in which people interact. Turks are enthusiastic social networkers on Facebook and fanatical online gamers.

But how big is Turkey's Internet economy and how does it compare internationally? Although these questions encompass many factors that are difficult to measure directly, the answers are of huge strategic significance to policymakers, businesses, and investors. This report provides both an informed estimate of the size of the Turkish Internet economy and an overview of the ways in which Turkey is embracing the Internet now and will embrace it over the next few years. Our goal is to provide context and insight that decision makers can use for formulating the policies and strategies needed to meet the many challenges and exploit the vast potential of the Turkish Internet.

Young and Increasingly Connected

The percentage of Turks who use the Internet—47 percent—is much smaller than the European Union's (EU27) 71 percent,[2] but the number of Turkish Internet users is climbing rapidly. Indeed, between 2007 and 2012 the share of Turkish households accessing the Internet has more than doubled from 19.7 percent to 47.2 percent. According to Turkstat, the Turkish Statistical Institute, between 2007 and 2012 the number of users rose from 21 million to more than 36 million.

In Europe, only the U.K., France, Germany, and Russia have more. Considering that Turkey is a country of 75 million people with a median age of 29.7, this rapid growth is likely to continue. Those who cannot access the Internet at home are still able to go online elsewhere: of all Internet users, one-third sometimes access the Internet at work and 16 percent do so in Internet cafes.[3]

Although 47 percent of Turks use the Internet, less than 1 percent of retail buying occurs online.

Overall Internet penetration rates are low, but the number of broadband subscriptions has been growing fast at an annual average of 45 percent between 2004 and 2011.[4] However, although 91.5 percent of all households are now wired for broadband standard connection,[5] the broadband penetration rate is still only 43 percent. Although similar penetration rates are found in Slovakia and Romania, Turkey still has a long way to go to catch up with the Organization for Economic Co-operation and Development (OECD) average of 59 percent, in particular with countries like Switzerland, the Netherlands, and South Korea, where penetration is 80 percent or higher.[6] Fixed and mobile broadband connections will remain a key growth driver for the Turkish Internet economy.

Increasingly Engaged—Socially and at Work

According to comScore, Turkish Internet users spend on average 38 hours online each week, roughly the same as in other developing countries such as the BRICI nations (Brazil, Russia, India, China, and Indonesia) but much more than users in developed economies such as the U.K. (26 hours), France (24 hours), and Germany (20 hours).[7] Well over half of all Turkish Internet users employ e-mail (67 percent), read news and magazines online (73 percent), and search the Web for information on goods and services (61 percent). Turkish users are also big social networkers. Facebook is the second-most-visited website in Turkey after Google,[8] with the number of users booming since Facebook was translated into Turkish. Turkey now has the seventh-highest number of Facebook users in the world, with over 31 million profiles—almost half of the country's population—as of September 2012. Forty percent of users are "creators" (for example, blog writers) or "reviewers" (for example, product review writers). These figures are 9 and 18 percent, respectively, in the U.K., where social networkers are more passive.[9] Online retailing in Turkey, however, is low (although growing): less than 1 percent of retail buying takes place online, as many Turkish Internet users still prefer shopping in the bricks-and-mortar world. About a third of those surveyed by Turkstat say they are hesitant to buy online because they worry about security.[10]

Businesses in Turkey are embracing the Internet: in 2011, 92 percent of businesses with more than ten employees had Internet access, up from 80 percent in 2005.[11] Among small and medium-size enterprises (SMEs), the intensity of use differs across industries and with the size of the business. Comparatively few SMEs use the Internet for advertising. More than three-quarters of enterprises use the Internet for banking and financial services. Fewer than a third, however, use it for training and education,[12] and not many do much buying or selling online yet.[13]

Varied Connection and Engagement

Connectivity varies greatly from region to region in Turkey. Seventy-seven percent of the Turkish population live in urban areas, where 57 percent have Internet access, as opposed to just 26 percent in rural areas.[14] Around Istanbul—now the world's second-largest city (after Shanghai), with a population of 14 million[15]—broadband penetration is 59 percent, whereas it is as low as 21 percent in eastern regions of Anatolia.

Levels of Internet engagement also differ widely by age group and gender. In 2012, 68 percent of Turks between 16 and 24 years old used the Internet (as opposed to the EU27's 91 percent the previous year), whereas 43

percent of 35- to 44-year-olds and only 12 percent of 55- to 64-year-olds went online. Within the 16-to-24-year-old group, 81 percent of males use the Internet as opposed to 55 percent of females.[16]

Mobile Internet on the Rise

Mobile phone penetration in Turkey (around 90 percent[17] as opposed to the Western European average of 138 percent[18]) is expected to continue its rapid progress. This growth will be fueled especially by the sizable young population that typically constitutes early adopters of the latest technologies, including smartphones. Demand for mobile phones was jump-started by the introduction of competition into the Turkish mobile telecommunications market in 2008, mobile number portability, and the granting of three 3G licenses in 2009. Between July 2011 and July 2012, Turkey was one of the top ten fastest-growing smartphone markets in the world. Furthermore, Turkish 3G subscriptions reached 34.9 million in March 2012, with 47 percent of the entire population subscribed to 3G. This is equal to Italy's penetration rate and only slightly below the U.K.'s 53 percent. In fact, there are now significantly more mobile connections in Turkey than fixed connections. The spread of smartphones is likely to drive growth in online retailing as Turkish users take up mobile e-commerce (m-commerce). Also, the adoption of mobile phones in rural areas could narrow the urban-rural digital divide. Although few rural Turks own a desktop computer, laptop, or both (28 percent, as opposed to 72 percent in the cities), 89 percent have mobile phones; this is not far below the 95 percent found in the towns.[19]

NOTES

1. In 2011 real GDP growth was 8.5 percent, which is higher than the Economist Intelligence Unit (EIU) estimates for all other European and CIS countries, with the exception of Turkmenistan.
2. Turkish Statistical Institute (Turkstat) (2012), Eurostat (2012).
3. Turkstat (2012).
4. EIU (2012).
5. Turkstat (2012).
6. Pyramid Research (second quarter 2012).
7. ComScore (2012).
8. Interactive Advertising Bureau (IAB) (2012).
9. Trendstream Global Web Index (2011).
10. Turkstat (2012).
11. Turkstat (2011).
12. Turkstat (2010).
13. Ibid.
14. Relates to having used the Internet over the previous three-month period (Turkstat, 2012).
15. Wikipedia (2012).
16. TurkStat (2012), Eurostat (2012).
17. Turkstat (2012).
18. EIU (2012). Refers to 16 Western European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K.
19. TurkStat (2012).

THE INTERNET'S RIPPLES

GDP AND BEYOND

LIKE OTHER GENERAL-PURPOSE TECHNOLOGIES before it—steam, electricity, the internal combustion engine—the Internet has affected every economy it has touched in a huge number of ways, some of them obvious, some subtle and difficult to measure. Turkey's is no exception.

We have broken down the Internet's economic impact on Turkey into four key parts. The first part, measurable transactions (our "inner circle"), includes private consumption, private investment, government spending, and net exports. (See Exhibit 1.) Private consumption includes both digital transactions, such as buying an e-book from online bookseller Idefix, and transactions that begin on the Internet but that are delivered in the traditional bricks-and-mortar world, like buying a camera from e-retailer Hepsiburada. Consumer online spending plus spending on Internet access and devices make up about 70 percent of the inner circle.

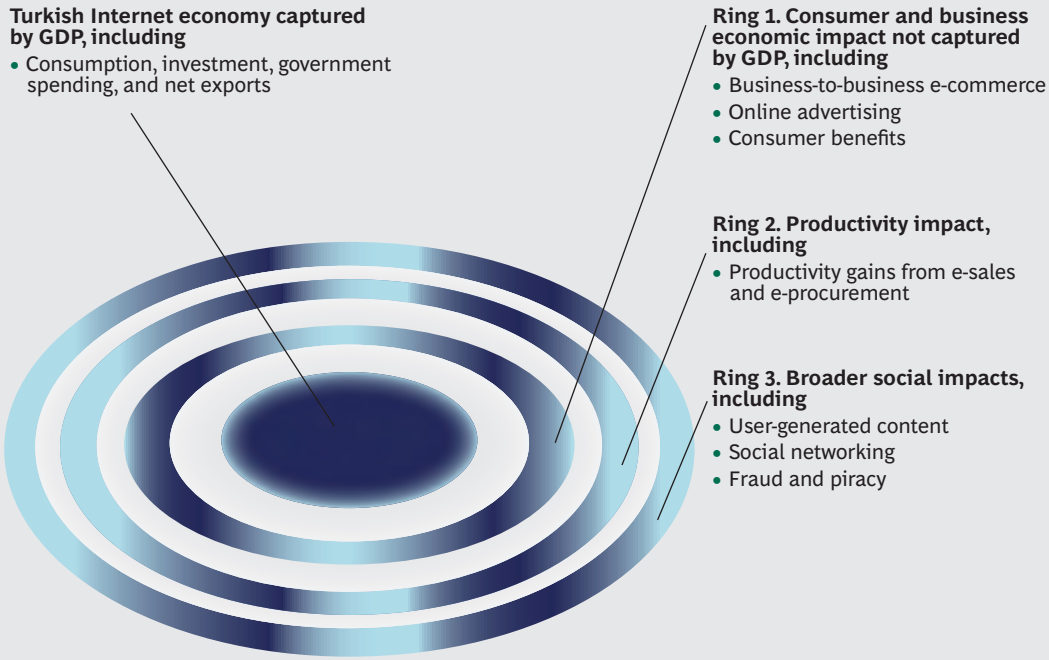
Internet ripple effects are not included—or are reflected only indirectly—in calculations of GDP. For instance, the Internet allows consumers to undertake comparison shopping more easily. It has enabled the launch of new types of businesses and brought down the costs of many transactions. We have divided these "beyond GDP" effects into three areas, which are shown in the three outer rings in Exhibit 1 and constitute the remaining key parts of the Internet's economic impact on Turkey. Ring 1 represents the economic effects of business-to-business (B2B) e-commerce, online advertising, and various consumer benefits. Ring 2 represents the impact of the Internet on productivity across the manufacturing and service sectors. For example, the Migros Türk retail chain claims to have made significant productivity gains by switching to e-procurement. Ring 3 represents broader social effects of the Internet that are difficult to value, such as sharing user-generated content, using social networking sites such as Facebook, and staying connected with distant friends and family through video chats.

Internet GDP Calculated

BCG estimates that in 2011 the Internet contributed about TL 22 billion to the Turkish economy, or approximately 1.7 percent of GDP.[1] (See Exhibit 2.) Although still smaller than most traditional sectors, the Internet has already caught up with important sectors such as health, social work, and mining (each at 1.5 percent of GDP in 2011). Such cross-sector comparisons are imprecise, but they give a sense of the relative importance of the Turkish Internet economy. (See the sidebar "Three Ways to Skin an Economy.")

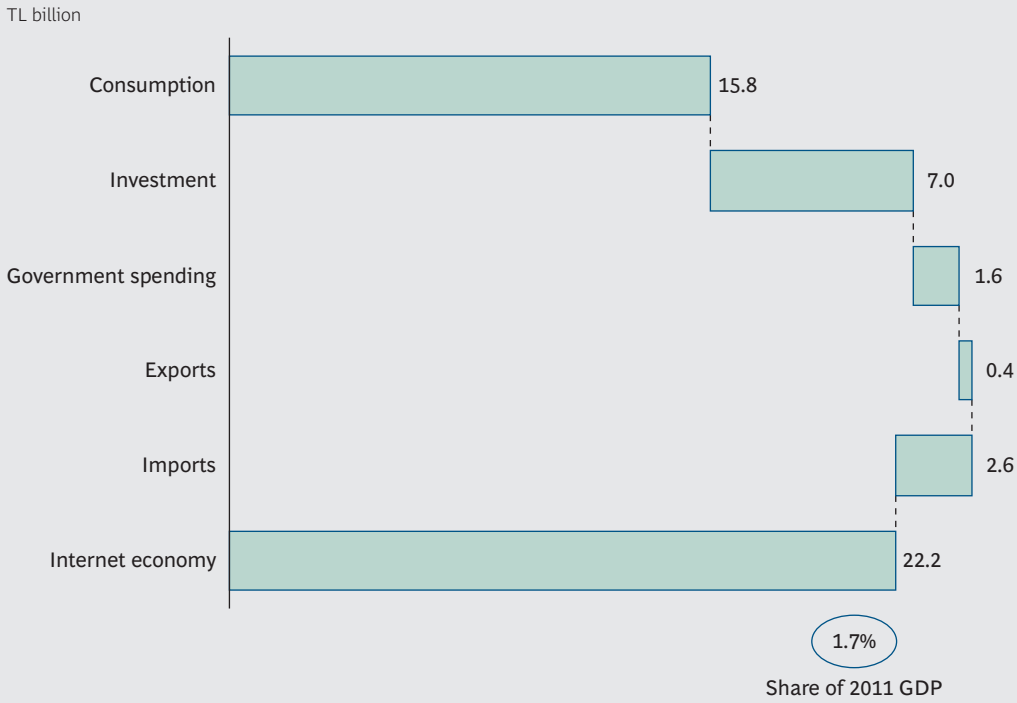
Consumption is the largest contributor to the Turkish Internet economy, making up about

Exhibit 1 | Only some of the Internet's impact on the Turkish economy is captured by GDP



Source: BCG analysis.

Exhibit 2 | Consumption accounts for around 70 percent of the Turkish Internet economy



Sources: Annual reports (various); Consumer Commerce Barometer (CCB); Economist Intelligence Unit (EIU); Gartner; Organization for Economic Co-operation and Development (OECD); Turkish Statistical Institute; Undersecretariat of Foreign Trade; BCG analysis.
Note: Because of rounding, the components of the Internet economy do not add up.

THREE WAYS TO SKIN AN ECONOMY

There are three methods of calculating GDP, and none of them was designed with the Internet in mind. The *output* or *production method* measures the value created through the production of goods and services. The *income method* measures total income earned by individuals and companies. The *expenditure method* measures total spending on finished goods and services.

The output method is theoretically the best way to measure the Internet's contribution. It is how the contributions of most traditional sectors in the economy are calculated. Using this method, however, would require looking at every transaction of every good or service produced in the Turkish economy and deciding whether it was "online" or "offline"—which is not practical with current data.

The income method has its own Achilles' heel in the many assumptions that would have to be made about the share of the income of traditional companies to be allocated to the Internet and the share of the income of multinational companies to be allocated to Turkey. Those assumptions would call into question the accuracy of the final calculation.

Although the expenditure method is also imperfect, we chose to use this approach because it reveals the contributions of consumers, businesses, and governments to the Internet economy and approximates the sum of the online components of all the other sectors. The expenditure method is built on four pillars.

- *Consumption:* goods and services bought by households in Turkey over the Internet and consumer spending on accessing the Internet (both payments to Internet service providers, or ISPs, and the cost of the relevant portions of devices)
- *Private investment:* private companies' capital investments (such as those by telecommunications companies) related to the Internet, as well as their investments in information and communications technology (ICT) goods and services
- *Government spending:* public ICT spending
- *Net exports:* online goods and services and ICT equipment exported, minus comparable imports

It is important to be clear about the assumptions that underlie the Internet's TL 22 billion contribution to the Turkish economy. Most notably, the full value of goods sold online is counted because it gives a sense of the importance of the Internet as a retail channel. Most online transactions, of course, terminate in the physical world, so they are not pure online transactions, but many of them might not have taken place without the Internet as a catalyst. Data on the "online" value generated at each link in the value chain are unavailable, and estimating them would imply a false level of accuracy. (See the Appendix for more detail about the underlying assumptions.)

70 percent of total Internet GDP. Consumption consists of two parts: (1) what consumers spend on e-commerce and (2) what they spend on Internet service providers (ISPs) and devices to access the Internet. The first of these accounts for TL 4.5 billion, with travel and consumer electronics being among the categories with the highest spending. So far, total online consumer spending represents only 0.8 percent of overall retail expenditure by Turkish consumers. The second part—spending on ISPs and devices to access the Internet—constitutes an additional TL 11.4 billion. The low ratio of e-commerce to money spent on Internet access indicates that Turkey's Internet economy is still in the early stages of development. In more advanced Internet economies—for example, the U.K.'s or

those of the Nordic countries—consumer online spending outstrips spending on access by a factor of between five and nine.

The Internet economy is more than just an e-commerce economy; private investment represents the second major element in the Turkish Internet economy, contributing about TL 7 billion to Internet GDP. Turkey is augmenting its Internet infrastructure. Most private capital comes from telecommunications companies (TL 4 billion in 2011) that are extending fixed infrastructure and making investments in 3G. Other private-company investments are relatively small (around TL 2.9 billion), as the Internet is not yet deeply integrated into many enterprises in Turkey.

At TL 1.6 billion, Internet-related government spending is very low in Turkey and constitutes just 7 percent of the Internet economy. Although the Turkish government has started to invest in Internet-related information and communications technology (ICT) and e-government programs, the share of its budget related to the Internet still lags behind that of more developed European economies: it is less than 1 percent as opposed to 3 percent in the leading Internet economies.

Turkey is a net importer of ICT, as much of the hardware and software and many of the ICT-related services required to power the Internet economy are purchased abroad. Turkey is also a net importer of e-commerce. Total net imports of all Internet-related goods and services amount to about TL 2.2 billion, reducing the size of the Turkish Internet economy by approximately 9 percent. As more Turkish retailers move toward use of the online channel, opportunities to increase e-commerce exports will arise, especially given the large size of the Turkish diaspora.

Beyond GDP: Consumer and Business Economic Impacts

Consumers. Many benefits generated by the Internet are excluded from GDP calculations for methodological reasons. These include the value of goods researched online but purchased offline (ROPO), the money that is saved when buying online, and the surplus that stems more or less directly from the possibility of accessing free content on the Web.

The value of goods bought using ROPO amounted to an impressive TL 63 billion in 2011,[2] around 14 times the value of e-commerce. When considered in light of more developed Internet economies where e-commerce is generally around one to two times the value, this figure indicates the extent to which e-commerce could develop. ROPO is particularly important in Turkey because of consumers' mistrust of online purchases. For instance, 80 percent of transactions beginning on the Tatil Sepeti travel website were finalized through call centers in 2012. The frequency with which consumers engage in ROPO differs by product and service category. In the automobile sector 30 percent of online users research online before purchasing offline, whereas for electronics the figure is around 15 percent. Cars alone account for more than 17 percent of the total value of goods that are researched online but purchased offline.

Private investment contributes about TL 7 billion to Turkish Internet GDP.

Turkish consumers achieve considerable savings when they use the Web to purchase goods and services. Savings differ by expenditure category. Clothing, for instance, can be discounted as much as 90 percent. For electronics, consumers often benefit from "Web-only" discounts of 10 to 20 percent offered by multichannel retailers for a limited time. This spending category generates the largest amount of total savings for consumers.

B2B e-commerce. B2B purchases over the Internet are not included in the GDP calculation because they represent intermediate transactions rather than final sales of goods or services. However, they are an important part of the story of Turkey's Internet economy. B2B e-commerce can take a number of forms. For example, businesses can not only purchase goods using various

online tools but also buy services and even outsource business functions through cloud computing platforms.[3] B2B e-commerce brings multiple benefits, including improved speed, efficiency, and transparency.

A number of Turkish companies are using B2B e-commerce to benefit from the Internet. For example, Migros, one of the leading food retail companies in Turkey, manages 2,200 suppliers through its online B2B network, and e-retailer Hepsiburada conducts approximately 30 percent of its total procurement online, 50 percent of which is for consumer electronics.

Online advertising. Revenue generated by online advertising is not included in the GDP calculation because it does not represent a final sale, but it is especially important in helping SMEs go up against larger competitors and increase their target market.

Of total annual Turkish advertising spending, 13.8 percent is now online.

In 2011, online advertising—including banners, sponsored text links, and classified online ads—achieved business turnover of approximately TL 830 million.[4] That represents 13.8 percent of the total Turkish advertising market, a significant increase from 4.2 percent in 2007 and roughly the same percentage as in Switzerland, whereas in the U.K. online ads account for 36 percent of total advertising.[5] Despite the global economic crisis, Turkish online advertising grew at a 49 percent compound annual growth rate (CAGR) between 2008 and 2011.[6] The impact that online advertising has is linked not only to e-commerce but also to indirect effects like ROPO.

Beyond GDP: Productivity

The Internet could increase productivity in the Turkish economy in a number of ways, such as lowering transaction costs, extending business links, and generating greater efficiencies in business processes. The Internet also significantly reduces communication costs for firms that do business internationally. Furthermore, it can improve productivity indirectly by enhancing the knowledge and skills of workers. For example, in 2009 the World Bank estimated that in low- and middle-income countries like Turkey a 10 percent increase in broadband penetration would lead to an average per capita increase in GDP of 1.38 percentage points.

A BCG survey of 500 SMEs in Turkey shows that businesses using the Internet more actively have achieved higher sales growth in the previous three years and have higher expected sales growth. SMEs categorized as being "high-Web" (taking advantage of a wide range of Internet tools to interact with customers across many geographic areas as well as suppliers and employees) reported improvements in sales noticeably higher than SMEs that were "medium-Web" (having a website or social network presence and e-marketing or sales outside their geographic areas), "low-Web" (utilizing the Internet for a small range of activities), or "no-Web" (having no online-presence or activity). Reasons for the improvements included better reach in different geographic markets, more cost-effective and targeted marketing, ease of addressing customer needs, and receiving feedback as well as simplifying processes. (See the section "Big Online Opportunities for Small and Medium Enterprises.")

Beyond GDP: Broader Social Benefits . . . and a Few Concerns

Internet users are able to tap a range of services widely available for free on the Web for many different functions, like information, communication, and entertainment. Consumers value the Internet for these free services as well as for the opportunities it offers for e-commerce. The value consumers place on the Internet above and beyond what it costs them is called the *consumer surplus*. We estimate that this consumer surplus is TL 600 per person per year in Turkey and approximately TL 2,600 on average across G-20 countries. This totals to around TL 18 billion for the country, or 1.4 percent of GDP. Consumers place the highest value on e-mail, general searches, and banking and investing.[7]

One example of the consumer surplus is the drastic improvement in speed, quality, and cost of communication through the use of e-mail, VoIP,[8] instant messaging, and social networking. Another example is crowdsourcing. This is a business model featuring a website and based on the development of an idea by several people simultaneously. It has provided a wealth of free information on an extremely wide range of topics, from current economic and political affairs to bar and restaurant reviews. Wikipedia is a prime example of user-generated content that has transformed the information available gratis on the Internet. By July 2012 more than 193,000 Wikipedia pages were available in Turkish, representing an annual growth rate of 18 percent over the last five years. This is lower, however, than the 24 percent growth in the total number of Wikipedia pages in all languages.

But the Internet—in particular, e-commerce, social networking, and user-generated content sites—has also brought fears and mistrust with it. According to TurkStat, 27 percent of Internet users who do not shop online cite security reasons and 17 percent cite privacy concerns to explain their aversion. Thirty-two percent of Turkish Internet users have experienced security issues (for example, spam, viruses, breach of privacy, and fraud) online. Nevertheless, these problems have not deterred many Turks from actually using the Internet. Of those who would like to use the Internet more, only 1 percent cite security or privacy concerns as a deterrent. The cost of desktop computers and laptops and a lack of interest in online content appear to be much more dominant factors.[9]

Notes

1. Unless otherwise stated, all figures in this section relate to 2011 estimates.
2. Estimated using Euromonitor 2011 trade data and IAB/Google Consumer Barometer 2010.
3. Cloud computing platforms allow companies to rent hardware and software from a third party. Cloud computing enables companies to access data storage or software applications without owning, developing, or running any additional infrastructure to support these services.
4. IAB (2011).
5. Ibid.
6. Ibid.
7. BCG survey of Internet users in Turkey, December 2011.
8. Voice over Internet Protocol.
9. Turkstat (2012).

INTERNET INTENSITY

Although the Internet is a global phenomenon, the extent to which it has been adopted varies greatly from country to country, and even from region to region within a single nation. Some countries, such as South Korea, have built advanced broadband infrastructures. Others, such as the Nordic countries, have excelled at bringing businesses, government, and consumers online. But many nations are still far behind the average rate of Internet adoption for the developed world.

On the Global Stage

How well do countries fare when compared with one another? The BCG e-Intensity Index sets out to measure both the depth and reach of the Internet's influence on commerce and society across 85 nations, including the G-20, OECD members, the EU27, the BRICI countries, 14 African nations, and other noteworthy economies such as Hong Kong and Singapore.

The index[1] measures Internet activity along three dimensions:

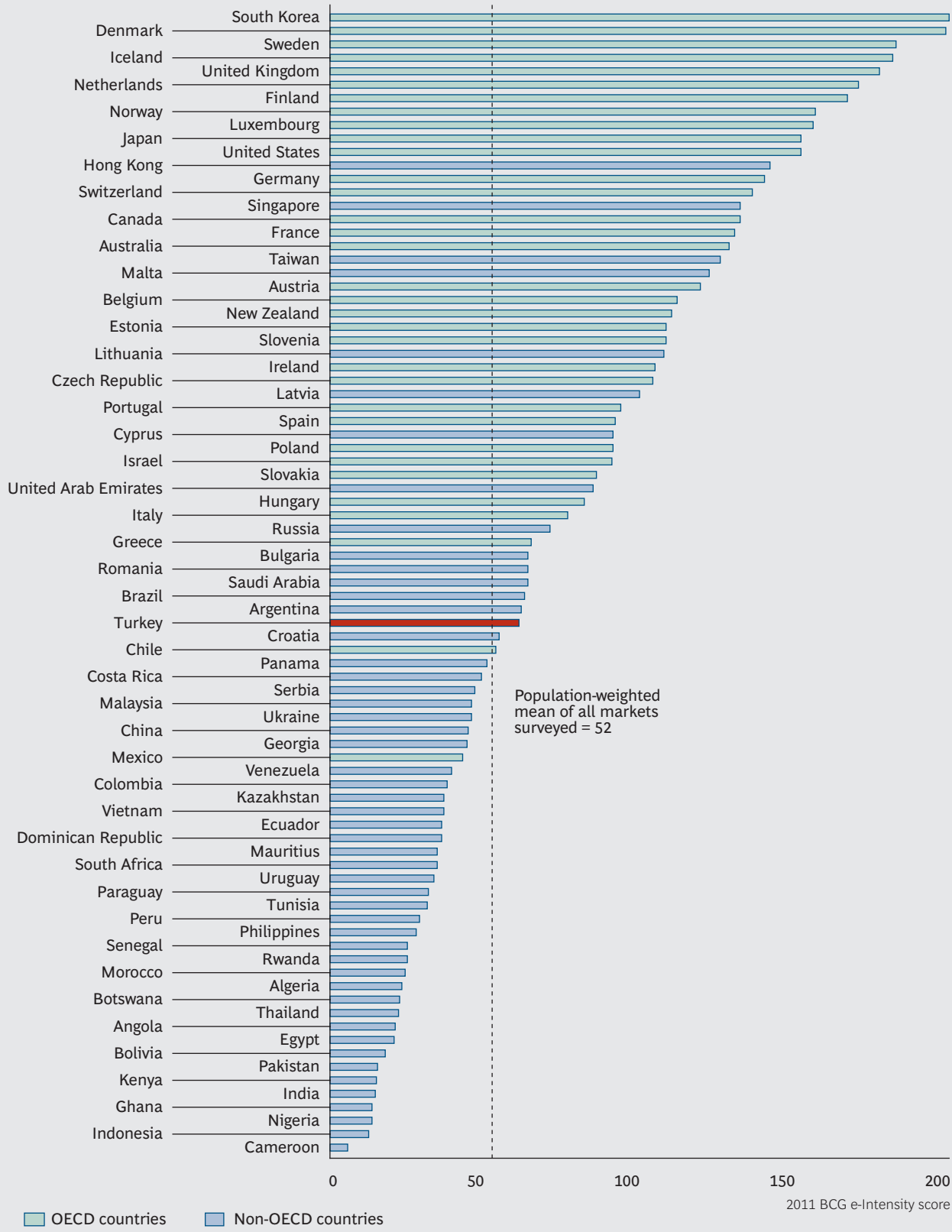
- *Enablement:* How well built is the infrastructure, and how available is access?
- *Expenditure:* How much money are consumers spending on retail online, and how much is spent on online advertising?
- *Engagement:* How actively are businesses, governments, and consumers embracing the Internet?

The index balances enablement, which has a 50 percent weighting, against expenditure and engagement, which are measures of usage and have a 25 percent weighting each. Despite its assumptions and the inherent margin of error, the index is able to show not only how one country compares against others but also where a country's strengths and weaknesses lie at the subindex level.

Turkey's rank on the BCG e-Intensity Index is still lower than that of more developed economies, but Turkey performs on par with other developing markets and countries in neighboring regions. (See Exhibit 3.) When compared with the BRICI nations, Turkey is behind Russia, close to Brazil, and better than China, India, and Indonesia. When compared with other countries in the Middle East and North Africa (MENA) region, Turkey scores higher than Tunisia, Morocco, Algeria, and Egypt but lower than the United Arab Emirates. It is distant from the top-performing G-20 countries but does not rank too far behind some of the weakly performing southern European nations like Italy or Greece.

Turkey falls behind the EU27 and OECD averages in every subindex.[2] When compared against the BRICI countries, nations in the

Exhibit 3 | Turkey's e-Intensity score above average but behind most OECD countries



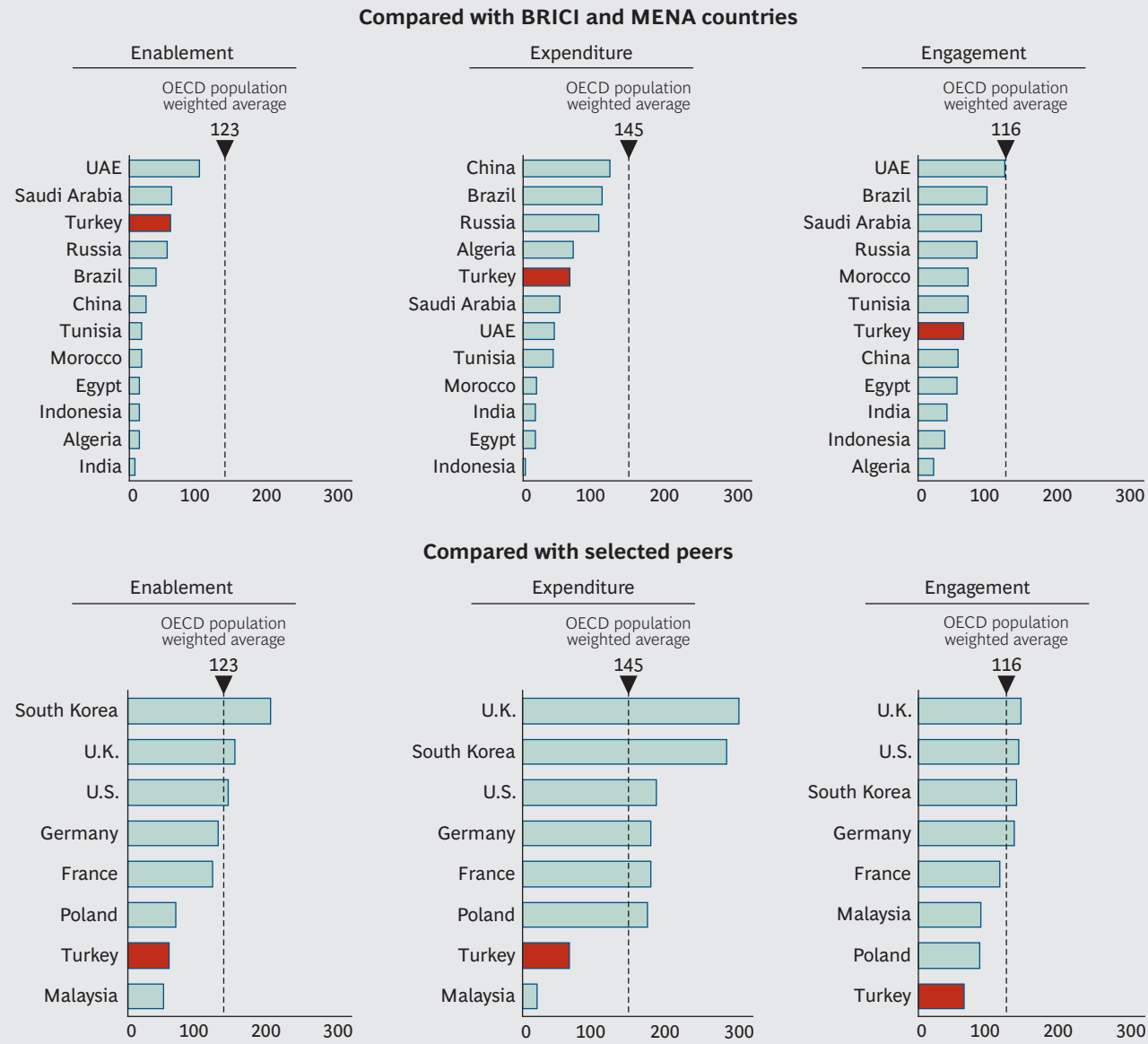
Sources: ComScore; EIU; Euromonitor; Gartner; International Telecommunication Union; Magnaglobal; Ovum; Pyramid Research; Speedtest.net; United Nations; World Bank; World Economic Forum; BCG analysis.
Note: The index is scaled so that the geometric mean is 100 for 34 OECD countries in 2010.

MENA region, and selected peers,[3] Turkey's strongest performance is on the enablement subindex. (See Exhibit 4.) (The selected peers are South Korea, the U.K., and the U.S, which are strong e-intensity performers; Germany and France, which are strong European performers; and Poland, Russia, and Malaysia, which are developing Internet markets.)

Enablement. Turkey ranks forty-third on the enablement subindex, which measures consumer and business broadband penetration, mobile broadband penetration, Internet speed, smartphone sales as a percentage of total mobile sales, Internet bandwidth, and secure Internet servers per million inhabitants. Turkey's score is just 40 percent of the EU27 average, but the nation outperforms all the BRICI countries on this index and ranks just below Saudi Arabia. The score for the United Arab Emirates is significantly higher.

Turkey's strongest relative performance is in mobile broadband penetration: it scores 65

EXHIBIT 4 | Turkey's performance against selected peers is strongest on the enablement subindex



Sources: ComScore; EIU; Euromonitor; Gartner; International Telecommunication Union; Magnaglobal; Ovum; Pyramid Research; Speedtest.net; United Nations; World Bank; World Economic Forum; BCG analysis.
Note: UAE = United Arab Emirates. The indexes are scaled so that the geometric mean is 100 for 34 OECD members. The scores of several countries are estimates based on incomplete data.

percent of the OECD average and 69 percent of the EU27 average. Turkey's penetration is similar to that of Russia and Poland and is just behind that of Germany, France, and Malaysia.

Meanwhile Turkey has a higher household-broadband penetration than the BRICIs, but with only 43 percent of households accessing broadband as opposed to the OECD average of 59 percent, considerable improvements could be made. Turkey's performance on business broadband penetration is stronger, though, ranking it higher than Portugal, Hungary, Malaysia, and Poland.

Expenditure. Turkey ranks in the middle (fortieth) on the expenditure subindex, which measures consumer online-retail spending as well as online advertising in relative terms. Turkey's score is only around 40 percent of the OECD average and also lower than Brazil, China, or Russia's. However, Turkey scores higher than Saudi Arabia, Malaysia, Morocco, Tunisia, Italy, and Greece.

On this index Turkey performs relatively well on the online advertising metric, scoring around 80 percent of the OECD and EU27 averages. Its attainment on the online retail metric is relatively poor, however, because Turkish consumers do less than 1 percent of their retail spending online, whereas the average for both the EU27 and OECD is 3.8 percent. This is an area where Turkey is likely to improve significantly: as more Turkish consumers gain access to the Internet, the potential for online retail should increase, provided that security concerns are addressed.

Engagement. Turkish consumers are enthusiastically embracing the Internet. Turkey scores higher than most of the BRICI and MENA countries on consumer engagement, although it still ranks below Poland, Malaysia, and the EU27 and OECD averages. A higher proportion of the population in Turkey (42 percent) uses the Internet than in China, India, and Indonesia, although this is still below use in Russia and Brazil. A relatively high proportion of Turkish Internet users employ the Internet for online gaming. A 2011 report by yStats found that in the second quarter of 2011, Turkey had the fourth-highest number of online gamers worldwide.[4] Furthermore, a higher proportion of Turkish users turn to the Internet for directories and resources than in all the BRICI countries, and Brazil is the only BRICI nation with a higher proportion using community sites and sites for entertainment, news, and information.

Although ranking behind Brazil, the United Arab Emirates, and the OECD average for business engagement, Turkey outperforms Saudi Arabia, Russia, India, China, and Indonesia on this measure. A Turkstat survey of Turkish companies with ten employees or more found that 55 percent have a website.[5] Furthermore, an encouraging 92 percent of Turkish businesses with ten employees or more now use the Internet in some capacity, in line with the U.K.

Turkey scores higher than most of the BRICI and MENA countries on consumer engagement.

The Turkish government's engagement is lower than that of consumers and businesses, and its average on this index is worse than the EU27 and OECD averages. Overall, this dimension is where Turkey performs most weakly on the e-Intensity Index. The United Nations (UN) e-Government Survey 2012 scores Turkey high on the provision of more basic e-government services (the "emerging" dimension, which includes links to ministries and archived information, and the "enhanced" dimension, which includes simple two-way conversation) but lower for advanced capabilities such as electronic identity authentication and other interactive tools.[6] Several Eastern European nations have realized the value of e-government. Estonia, which the UN ranks twentieth out of 190 countries on the index, allows free access to government services through WiFi implemented by public agencies. Estonia's government has also declared Internet access to be a fundamental right of all citizens. About a decade ago, Denmark, which ranks fourth on

the e-government index, issued the first of four consecutive strategies setting aggressive timetables for the digitalization of public services. The Danish government mandated that businesses conduct "all relevant communications" in digital form by the end of 2012 and, by 2015, that all citizens use digital means of written communication with government offices. This will be possible because by 2014 each citizen will have a "digital letterbox" for corresponding with the government.

Regional Differences in Internet Intensity

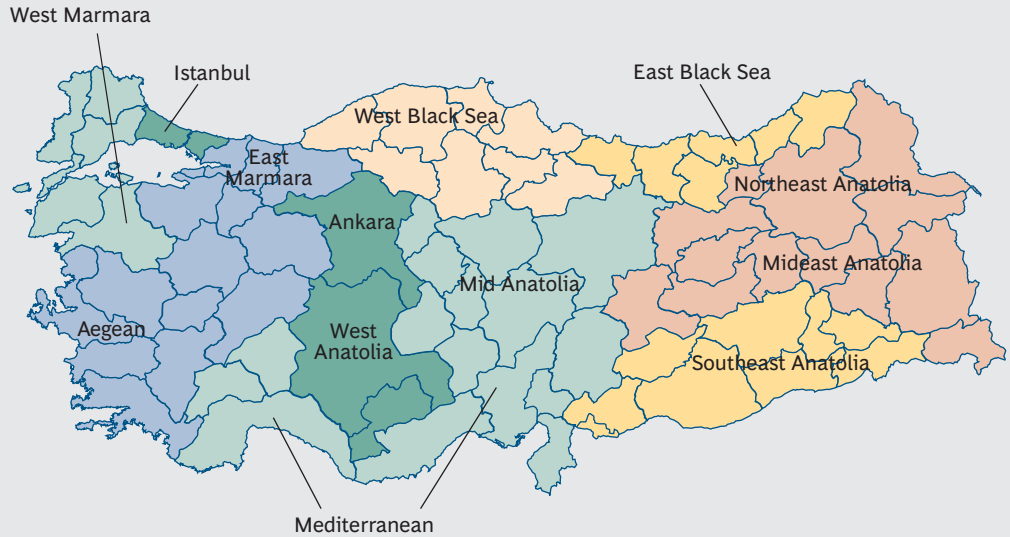
BCG has also developed a regional e-Intensity Index for Turkey, which follows the same methodology as the global BCG e-Intensity Index but uses different indicators according to local data availability. The regional e-Intensity Index shows substantial regional differences in Turkey, with large gaps between the high-intensity west and the east. (See Exhibit 5.) As expected, the regions containing the major cities, Istanbul and Ankara (in west Anatolia), score significantly higher than the others.

Household broadband-penetration rates vary significantly across regions, from 59 percent in Istanbul to just 21 percent in southeastern Anatolia.[7] Internet speeds also vary greatly among cities, with some, such as Urfa, having a download speed of around 4.7 Mbps instead of over 7.2 Mbps in Istanbul and 9.5 Mbps in Usak.[8]

Significant differences can also be found in the expenditure subindex. For example, according to our SME survey, the percentage of businesses engaging in search engine advertising in the two Black Sea and northeast and mideast Anatolia regions is only around two-thirds the level in the top three regions.

Regional differences also exist in the levels of business and government engagement, but they are less pronounced than for enable-

EXHIBIT 5 | Large regional e-intensity divide, with Istanbul and Ankara scoring significantly higher



Istanbul	122	Mediterranean	92	East Black Sea	75
West Anatolia	111	West Marmara	92	West Black Sea	68
Aegean	102	Mid-Anatolia	90	Northeast Anatolia	57
East Marmara	100	Southeast Anatolia	76	Mideast Anatolia	53

Sources: Banks Association of Turkey; city municipality websites; Interbank Card Center; Ipsos KMG; speedtest.net; TNS Digital Life; TurkStat; BCG SME survey; BCG analysis.
Note: The index is scaled so that the mean for Turkey is 100.

ment and expenditure. For example, although 52 percent of all Turkish businesses with an online connection have websites, this proportion is considerably lower in the West and East Black Sea regions. Northeastern and mideastern regions perform worst in government engagement: as of 2012, only about 20 percent of the city municipalities in these regions allow their citizens to check their debt to the municipality online, as opposed to an average of 67 percent in Turkey overall.

There is less regional variation in the consumer subindex. Internet users in most regions spend similar amounts of time online. The exception is in mideast Anatolia, where time online is only around 70 percent of the national average. Istanbul leads the way in active online-banking accounts, and the eastern Anatolian regions are trailing.

NOTES

1. The methodology of the BCG e-Intensity Index and the assumptions behind it are described more fully in the Appendix.
2. In this section, *average* refers to the population-weighted average for the country.
3. In this report, references to the MENA region include markets represented in the e-Intensity Index: United Arab Emirates, Saudi Arabia, Turkey, Tunisia, Morocco, Egypt, and Algeria.
4. The Global Online Gaming Report 2012, www.ystats.com.
5. Figures refer to 2011 data from Turkstat.
6. UN e-Government Survey 2012: E-Government for the People, www.un.org.
7. TurkStat (2012), www.tuik.gov.tr/PreHaberBultenleri.do?id=10880 (Table 7).
8. NetIndex, www.netindex.com/download/2,42/Turkey/.

THE EMERGING TRANSFORMATION

NOT LONG AGO, IT made some sense to speak of an "old economy" of large smokestack businesses and a "new economy" of small, entrepreneurial IT companies. Now in Turkey, as in much of the rest of the world, that distinction is not only quaint but meaningless. The Internet has become an integral part of the whole economy, entwined in the operations of most major companies and many SMEs.

Most of the Internet's TL 22 billion contribution to Turkey's GDP in 2011 came not from pure Internet companies but from a wide range of businesses, large and small, across different industries. (For more on the type of companies that are powering the Internet, see the sidebar "The Engines of the Internet Economy.")

The Internet has altered every industry it has touched, with companies using five fundamental transformational levers:

- Geographic expansion of sales and exports without the need for bricks-and-mortar presence in new markets
- Profitable sales of "long-tail" products to small subsets of consumers
- Increased efficiency and productivity as automation and information exchange improve across supply chains
- Greater collaboration with and among customers, suppliers, and partners
- Increased transparency and a reduction in the ability of parties such as middlemen and brokers to take advantage of information asymmetries

Because retail is one of the key sectors in which the Internet's impact is clearly visible, we chose to analyze it in detail. However, this is not to suggest that other industries have not been, or have the potential to be, significantly affected by the Internet. The following industries, for example, have seen or are likely to see significant impact:

- *Health and pharmaceutical companies.* Profitability in the Turkish pharmaceutical sector has only recently started to decline, so interest in the online channel as a way to reduce costs is quite new and has high potential. In 2011 Turkey's consumers spent $20 billion for health care, and the pharmaceutical industry employed approximately 25,000 sales reps. (The U.S. figures for the same year were $2,200 billion in health care spending and 75,000 reps.)
- *Insurance.* Internet penetration in this industry is negligible in Turkey, whereas 40 percent and 6 percent, respectively, of all insurance sales in the U.K. and in

Italy's motor-insurance markets are transacted online. However, BCG estimates that up to 5 percent of the total insurance-market premiums in Turkey will originate from online sales by 2020.

- *Banking.* Turkey has experienced extreme growth in the number of active Internet banking users, which rose from 3 million in 2006 to 8 million in 2011. It is estimated that, in the same period, the share of transactions carried out online increased from 10 percent to 25 percent. This has resulted in huge cost savings, as the average cost of a traditional transaction in a branch is 15 times that of an online transaction.

- *Travel and tourism.* The Turkish travel-retail market—which covers accommodation, transportation, and package holidays sales—has been growing at a steady 3.6 percent annual rate between 2006 and 2011, and travelers now extensively research and book online. Online sales have grown at 15 percent annually over the same period. According to Euromonitor, the share of online sales as a percentage of all sales reached 28 percent in 2011 and is expected to rise to 42 percent by 2016; however, Turkey still has some work to do. German tourists account for 30 percent of international hotel stays in Turkey and the British for 15 percent. According to the latest Euromonitor research, Thomas Cook, one of the world's leading tour operators and active mainly in Germany and the U.K., finalizes only 15 percent of its Turkey-bound sales through online channels. The same figure is even smaller for Turkish tour operators: only 5 percent of Tez Tour's sales are finalized online.

Next we examine a case study of the retail sector that shows how the Internet has transformed both the processes used by companies and the services they offer.

Reshaping Industry: Retail

Estimated at around TL 577 billion in 2011,[1] the retail industry is a major growing sector of the Turkish economy. By European standards, Turkish retail is still at an early stage, with over half the sector comprising small independent companies and online retail accounting for less than 1 percent of total retail.

This percentage, however, is likely to rise significantly over the next few years. Especially in Turkey's cities, demand is pushed by the growing population of young people, who are more and more engaged with the Internet: in one three-month period in 2012, 68 percent of 16- to 24-year-olds used the Web, whereas only 50 percent did in a similar period in 2007.[2] Although online presence was driven mostly by "pure online" businesses, the landscape is starting to change as bricks-and-mortar companies look at the online space strategically. Growth is being supplied by the recent entry of larger retailers and shopping centers, as well as by increasing attention from foreign investors. That growth is likely to produce greater competition and lead to an improved consumer-shopping experience.

In banking, the average cost of an online transaction is 15 times lower than in-branch.

Turkey already has a number of significant domestic online retailers, including online marketplace Sahibinden.com; Gittigidiyor.com, an online auction site with around 60 percent new goods in 2010[3]; and multisector retailer Hepsiburada, where electronics and television make up one of the most popular categories. In addition, foreign investors are increasingly turning their attention to Turkey's retailing sector, sometimes in the form of joint ventures or acquisitions. For example, eBay acquired a stake in GittiGidiyor in 2006, Ticketmaster acquired Biletix in 2007, Groupon bought SehirFirsati in 2010 as part of their City Deal acquisition, and Perform Group acquired a 51 percent stake in Mackolik—the market leader in digital sports media in Turkey—in 2012.

Opportunities exist in an array of online retail categories, but clothing, sporting goods, and electronics are the largest areas. A num-

THE ENGINES OF THE INTERNET ECONOMY

The Turkish Internet economy is enabled by a group of companies that allow traditional companies to conduct business online. These newer entities are the engines of Turkey's Internet economy, which could not function without them. They have annual revenues of around TL 15 billion. Because many of them sell to other businesses, their revenues are not equal to the GDP calculation, which measures only final sales to consumers.

These companies are best described as a "stack." In IT, a stack is a set of layered software and hardware. Each layer can be swapped out and can communicate with the layers above and below it. At the bottom level is the physical infrastructure. Each higher layer contains a related horizontal set of activities. This structure has five distinct layers:

- *Telecommunications and infrastructure.* Companies that build and manage infrastructure and optimize content delivery make up the largest layer. They are responsible for roughly 40 percent of total stack revenues, with over half of that coming from capital investment by telecommunications companies in the network. This percentage also includes maintenance done on the network as well as smaller but vital parts of the infrastructure layer, including Web hosting, mirror and content management, and domain name services.

- *Access.* Companies offering devices and services to access the Internet are the second-largest layer, with just under 40 percent of stack revenues. This percentage includes hardware and software related to the Internet as well as ISPs and IT consulting revenues. Computer hardware and ISPs make up over 70 percent of this layer, whereas IT consultancy and software and operating systems make up a relatively small part.

- *Enablement platforms.* Companies providing essential services that facilitate trust, commerce, and traffic constitute a thin but critical layer in the stack. This layer includes services such as verification and encryption, analytics and metrics, advertising networks, and billing and payments. Even though it amounts only to around TL 200 million, or less than 2 percent of the stack, without these services online shopping would grind to a halt.

- *Services and content platforms.* This layer contains online retail sites, portals and aggregators, and other companies serving the public or facilitating those services. Services and content platforms make up around 20 percent of the stack, with the largest block coming from pure online retailers. This layer includes services that, although minimal in Turkey, are likely to increase significantly as the country's Internet economy matures, and it incorporates cloud computing, aggregator sites, and advertising agencies.

- *Communities.* The final layer consists of consumers who both produce and utilize content and services in blogs, social networking sites, and video aggregation services such as YouTube.

ber of multichannel retailers have joined the pure online retailers in these markets.

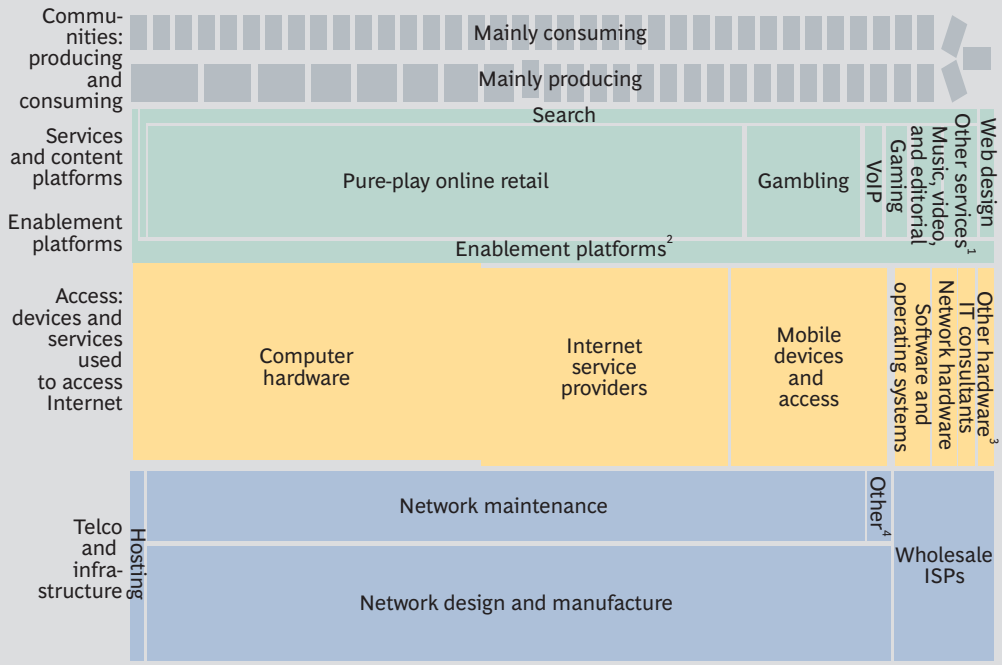
Online retailing is transforming the way consumers and retailers interact and is also generating opportunities for new business models. Here we investigate the implications of this for competitive pricing, attracting consumers, and increasing efficiencies in the value chain.

Competitive pricing. Although convenience is the most important reason people shop online, lower online prices are a key draw for Turkish consumers. Today's online space is the scene of extreme price competition.

Stacks are interoperable, modular, and open. These characteristics encourage the innovation and competition at the heart of the Internet's development.[1] Interoperability and openness lower barriers to entry and encourage participants in the stack to build on the creative efforts of others. Modularity encourages competition among players within a layer. Were the Internet vertically integrated, it would be hard to imagine a comparable level of innovation or growth. In the exhibit shown here, the size of the blocks corresponds to the amount of revenue produced by the companies within them.

NOTE
1. The Internet stack is the subject of a forthcoming book by Philip Evans, a BCG senior partner and coauthor of *Blown to Bits: How the New Economics of Information Transforms Strategy* (Boston: Harvard Business School Press, to be published in 2013).

Total revenues of about TL 15 billion in the Turkish Internet stack



Sources: Annual reports; Gartner; Euromonitor; IAB; IDC; MÜYAP; National Telecommunications Authority; Ovum; Turk Telecom; WebHosting. Info; BCG analysis.
Note: Size of boxes is proportional to estimated revenues of companies in that part of the stack.
[1]e-Learning, social networking, advertising agencies, dating, aggregators, and cloud computing.
[2]Billing and payments, advertising networks and servers, analytics and metrics, verification and encryption.
[3]Games consoles and other Internet-enabled devices.
[4]Domain name registration and trading, mirroring, and content management.

Multichannel retailers are able to offer lower prices online because of the cost efficiencies the Internet generates, such as better inventory management and the need for fewer bricks-and-mortar stores. Multichannel retailers also offer regular discounts online to compete with pure online retailers. For example, in consumer electronics—the second-largest retail category—pure online retailers and multichannel players compete by discounting products online. Multichannel retailers such as Teknosa, the electronics leader with a 43 percent share of the market in 2011, are increasingly seeing the advantages of selling online as well as in stores. In 2012, Teknosa introduced a

subsidiary discount-electronics website, kliksa.com, with the aim of becoming the market leader in online sales as well. E-bebek and Istanbul Bilisim are examples of retailers that started their business as online ventures but that have since established physical outlets to widen their customer reach.

Private-shopping and collective-shopping business models also bring about opportunities for competitive pricing. Private shopping is the fastest-growing online-retail segment and has driven the Turkish e-commerce sector for the last two years, with recent year-on-year growth rates reported by some sources as well over 200 percent.[4] The largest U.S. private-shopping site, Gilt Groupe, gets fewer than one-third of the unique visits that Markafoni and Trendyol receive, according to Comscore's 2012 data.

Private-shopping sites have driven the growth of Turkish e-commerce for the last two years.

In the private-shopping model, an online retailer offers sales in many different retail sectors (and in others, such as financial services), the sales being time limited and available only to members. Savings can be large. For example, Limango and Markafoni both offer discounts of up to 80 percent on fashion products. Consumers can be invited to join by current members or can apply online.

The market leader in this space is Markafoni, a Turkish company established in 2008 that now has over 6 million members[5] and works with more than 1,200 brands.[6] Responding to this success, global media giant Naspers bought a majority stake at Markafoni in 2011. The German retailer Otto Group founded Limango in 2009, and a third competitor, Trendyol, launched its site in 2010 and received investment funding from Kleiner, Perkins, Caufield, & Byers (KPCB). Now other European investors may be turning to this fast-growing market in Turkey: in January 2012, Russia's ru-Net invested $3 million in Lidyana.com, a Turkish website that sells jewelry and accessories.

Collective shopping started in Turkey in 2010 with Kipru.com, a website that provided discounts to buyers when enough of them purchased a given product or service. Also in 2010, Groupon's SehirFirsati.com entered the Turkish market, and Markafoni launched its daily deal site, Grupfoni.com. The collective-shopping segment has declined in the past year, however, echoing a global trend of consumers stepping back from a service as its novelty wears off: in 2011 collective-shopping sites had 3.4 million Turkish users, but only 2.3 million in 2012.[7]

Attracting consumers through the Internet. Retailers in Turkey have started to create online communities through social networks to attract new customers and keep established customers interested. As Turkish retailers are already discovering, the large number of Facebook users in Turkey lends this approach the potential to reach a substantial percentage of Internet users. Trendyol and Markafoni each had more than 1 million Facebook fans by November 2012. Both are growing in popularity daily.[8] These companies have also gone further than just creating online communities. For example, Markafoni has developed Facebook applications to keep e-shoppers informed of the latest deals. For 2012 Fashion's Night Out activities, Trendyol created a prize draw, details of which were accessible only on Twitter.

Companies have also tried to attract Internet users to online shopping by offering more convenient services made possible only by Web use. In the food sector, Migros Türk, the largest supermarket chain in Turkey, founded Sanal Market in 1997. Sanal Market is an online food market that allows consumers to order over the Internet and pay at their doors on delivery. Migros also uses other innovative approaches, such as phone apps that enable smartphones to scan bar codes and add products to an online shopping basket. Another such company, YemekSepeti, allows consumers to order meals online and have them delivered from over 6,500 member restaurants. Yemeksepeti.com receives more than 50,000

orders daily. The company launched a second website in 2006, elit.yemeksepeti.com, which lets customers reserve tables and get information on premium restaurants in Turkey's top cities. This website was relaunched in December 2012 as Papyon.com. As of October 2012, Yemeksepeti.com had 1.6 million subscribers—a 99 percent share of this market.[9]

An interesting trend is online companies' recent move to utilize offline tactics to attract consumers. Private-shopping sites, in particular, are appearing on television and on prime-location billboards in addition to using online marketing.

Increased efficiency. The Internet has also changed some of the less visible steps in the retail industry's value chain. E-procurement, for instance, has increased information and efficiency for retailers. Migros Türk uses an online procurement system that lets suppliers monitor inventory by making product movement from the warehouse to the store visible, enabling more efficient tracking of shelf availability and automatic replenishment. Other large bricks-and-mortar retailers in Turkey, such as Coca-Cola İçecek and Electro World, are also realizing gains from e-procurement systems.

NOTES

1. EIU (2011) total retail sales, combined with BCG estimates on relevant financial services, insurance, and travel spending data from Euromonitor (2011).
2. TurkStat (2012).
3. Economic Review (Hürriyet, 2011).
4. Radikal (2012).
5. Statement by Markafoni (2012).
6. Ibid.
7. ComScore data via Webrazzi article (2012).
8. Facebook, accessed September 2012.
9. BCG interview (2012).

BIG ONLINE OPPORTUNITIES FOR SMALL AND MEDIUM ENTERPRISES

We often hear of large companies using the Internet successfully. Less frequently discussed, however, are the SMEs at the heart of the Turkish economy that account for around 78 percent of total employment.[1] The Internet has allowed SMEs to advertise and sell online, expand geographically, and collaborate with customers just as larger companies do.

The Internet has helped Turkish SMEs enlarge their customer base at home and overseas. For example, Hizmet Merkezim, a small-house-repairs and locksmith-services workshop in Kadıköy in Istanbul, developed a website to attract customers in other parts of the city. The shop used online marketing to increase its customer base and, as a result, was able to expand to six working teams in Istanbul and 21 franchises throughout the country in just two years. Portatif Bez Dolap has tripled the number of its suppliers after experiencing exponential growth online, and Eros Pırlanta opened a physical store following the success of its e-commerce channel.

Other firms have used the Internet to expand their customer base even further afield. For instance, Litum, a provider of radio frequency identification solutions, now exports to 26 countries in Europe, Asia, and the Middle East. Litum's website helped the company export to more countries and become one of Turkey's top 500 IT companies.

Other growing Turkish SMEs began as online retailers. For example, e-bebek was founded in 2001 as the first online mother-and-baby-care business in Turkey. Although initially slow, it grew rapidly after the 2002 introduction of a Web page with information for new mothers. By 2010, revenues totaled TL 30 million. E-bebek has now added an offline sales channel, but 21 percent of total sales still come from online purchases. The company states that 73 percent of customers reach its website through a Google search. Another successful online business is ÇiçekSepeti, one of the first enterprises to enter the online retail-flower-delivery market. ÇiçekSepeti served around 850,000 customers online in 2012, fulfilling 100,000 orders every month.

To better understand the extent to which SMEs use the Internet and how they use it, BCG conducted a survey of 500 Turkish SMEs with 250 or fewer employees. (For a cross-section of the SMEs that are leading the way in Internet use, see the "Faces of the Internet" sidebars.) We divided the survey into four groups according to the intensity of their engagement with the Internet: (1) high-Web companies with Internet use across all categories of website ownership, interacting with customers on social network sites, e-marketing, expanding geographically through online sales, using e-procurement, and enabling employees' access to the Internet (19 percent of survey respondents); (2) medium-Web companies with a website or social-net-

Faces of the Internet

Best Dog Club

This dog-care-and-training business located just outside of Istanbul was founded by Gamze Göksoy when she noticed a lack of companies offering services in this area. The idea has been developed into a niche business and has grown its customer base by 60 percent a year for the first four years and 20 percent a year for the last two years, thanks to online marketing. Gamze attributes this success to "being one of the few female business owners" in addition to effectively utilizing other analytics tools.

Founder: Gamze Göksoy
Year Founded: 2006

Hizmet Merkezim

Ahmet Uzunpınar started out with a single locksmith store in Ataşehir, Istanbul in 2000. On witnessing the increasing importance of the Internet to businesses, he started Anahtarcim34.com as a new advertising channel. The website has helped double the business volume, increasing its coverage to all districts of Istanbul. Fast forward ten years: a brand new website, Hizmetmerkezim.com, offering a whole range of house repair and renovation services was founded by Ahmet's son E. Faruk Uzunpınar. Utilizing online marketing has increased the business from two to six teams in Istanbul, with 21 franchises throughout the country. E. Faruk Uzunpınar plans to widen his franchise network to cover all of Turkey's cities.

Founder: Emir Faruk Uzunpınar
Year Founded: 2010

Litum

Litum provides radio frequency identification (RFID) products and turnkey RFID solutions to a wide range of businesses, including logistics, retail and apparel, health care, and automotive, among other industries. Founded in 2004, Litum has used the Internet to develop its business abroad through its website, significantly expanding its customer reach. The business now exports to 26 countries across Europe and the Middle East and counts many top brands among its clients. In 2008 Litum was listed among Turkey's top 500 IT companies for the first time, and it climbed up to three-hundred-fiftieth place by 2011.

Year founded: 2004

Portatif Bez Dolap

Portatif Bez Dolap ("portable wardrobe") has been leveraging the Internet since its inception: even the domain name was selected on the basis of the most frequently searched key words for their core product. Founder Erhan Atay started the website in 2011, working with only one manufacturer at the time. The sheer increase in orders has forced him to get two more manufacturers on board. Atay says that e-commerce allows him to minimize the costs and thereby focus on high-quality products instead of lower prices. His goal for 2013: start exporting to nearby countries.

Founder: Erhan Atay
Year founded: 2011

Eros Pirlanta

Founded in 2011, Eros Pırlanta is an early mover into the online diamond space. In just one year, it has increased its sales by 190 percent. Because of the site's popularity, the start-up opened a physical outlet in the Grand Bazaar in 2012. Founder Ahmet Durmuşoğlu believes that the key to his success was the company's focus on building consumer confidence rather than remaining as an online catalogue at best. This is not to suggest that he takes visuals lightly—Eros has been the first company in Turkey to upload high-definition videos of its products. Durmuşoğlu relies on Web analytics and consumer feedback to update the site design and interface on a regular basis.

Founder: Ahmet Durmuşoğlu
Year founded: 2011

work-site presence, active in either e-marketing or online sales outside their geographic area (37 percent); (3) low-Web companies, active in at least one of the six categories listed (6 percent); and (4) no-Web companies, which have no online presence or activity and make up the remaining 38 percent of SMEs.

The survey was conducted in late 2011, almost a year after the new Turkish Commercial Code 6102 was passed. That law required all equity-capital companies to make legally mandated financial and audit data publicly available on websites. In anticipation of the law, some of the survey respondents set up websites before the legislation came into effect in 2012. However, in 2012 the law was heavily amended as a result of pressure from businesses that were not well informed about its real purpose, which was to provide greater transparency and accountability for a healthier commercial environment. Additionally, not all businesses had the right infrastructure in place. In its current form, it applies only to businesses that are publicly traded or are required to undergo independent financial review for other reasons.

Although the survey reveals considerable variation in the use of the Internet among Turkish SMEs, those that are online say they have enjoyed significant benefits. For example, high-Web SMEs reported an average sales increase of 17 percent over the last three years and an increase of 24 percent in their number of employees, thanks to the Internet. Meanwhile, low-Web SMEs reported an average sales growth of 11 percent. Fifty-nine percent of SMEs with online activity found that the Internet helped them reach other regions of Turkey without having to establish a physical presence, whereas the percentage among no-Web SMEs was only 35 percent.

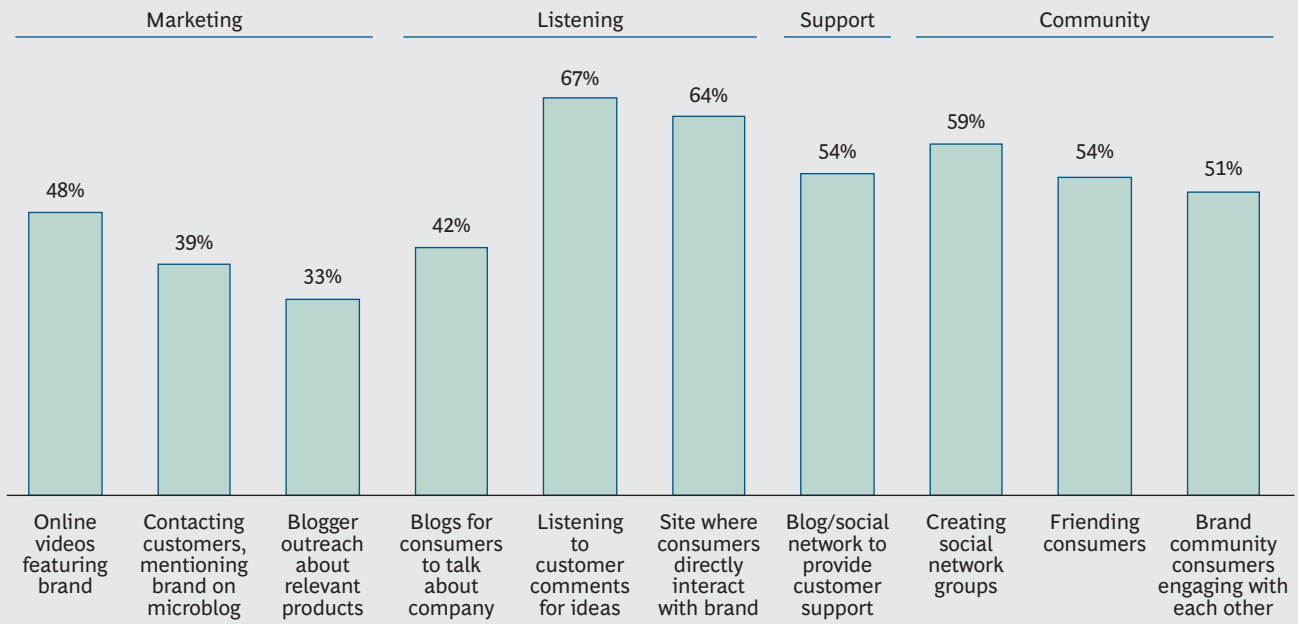
For Turkish SMEs, online advertising is more common than website ownership: 58 percent advertise online and 52 percent maintain a website. E-commerce activity is at 46 percent, a relatively high number given the low percentage of website ownership. E-procurement is the least common activity at all levels of Internet use; only 12 percent of SMEs employ it. Paying suppliers online is next, done by only 20 percent of SMEs. Within the high-Web category, companies benefit in different ways from the Internet because they use it differently. For example, 100 percent use search engine advertising and 76 percent search engine optimization, but only 42 percent adopt e-procurement. Not all high-Web SMEs use all tools at their disposal; less than 60 percent have started a social network group. (See Exhibit 6.) Fifty-seven percent of high-Web companies have a blog, but only 39 percent contact customers that mention the brand on their microblog, and just 33 percent reach out to bloggers to promote the company.

The survey also revealed some trends concerning which SMEs are likely to use the Internet most actively. First, medium-size businesses (50 to 250 employees) are more active than smaller ones; 34 percent of medium-size SMEs are high-Web, as opposed to 29 percent of small businesses (10 to 49 employees) and less than 20 percent of microbusinesses (1 to 9 employees). Second, online activity varies across industries. Particularly, SMEs active in professional services, technology, consumer goods manufacturing, and media industries make highest use of the Internet: between 35 and 48 percent are high-Web users.

Given the opportunities offered, it may be surprising that some Turkish SMEs do not use the Internet more. Our survey shows that SMEs believe they lack the people resources (41 percent) and the industry support (47 percent) to take advantage of the Internet and reap its potential benefits. The next most commonly perceived barriers are the culture of doing business and the government regulations in Turkey; 38 percent of SMEs cite each of these as a reason. Twenty-nine percent believe the Internet is not a secure sales channel. (See Exhibit 7.) Another 29 percent are not sure the Internet would help their business, and an additional 29 percent definitely do not believe it can help. Targeted efforts to increase awareness, training in the use of simple online tools, and more convenient government regulations could propel less actively engaged SMEs toward more Internet use.

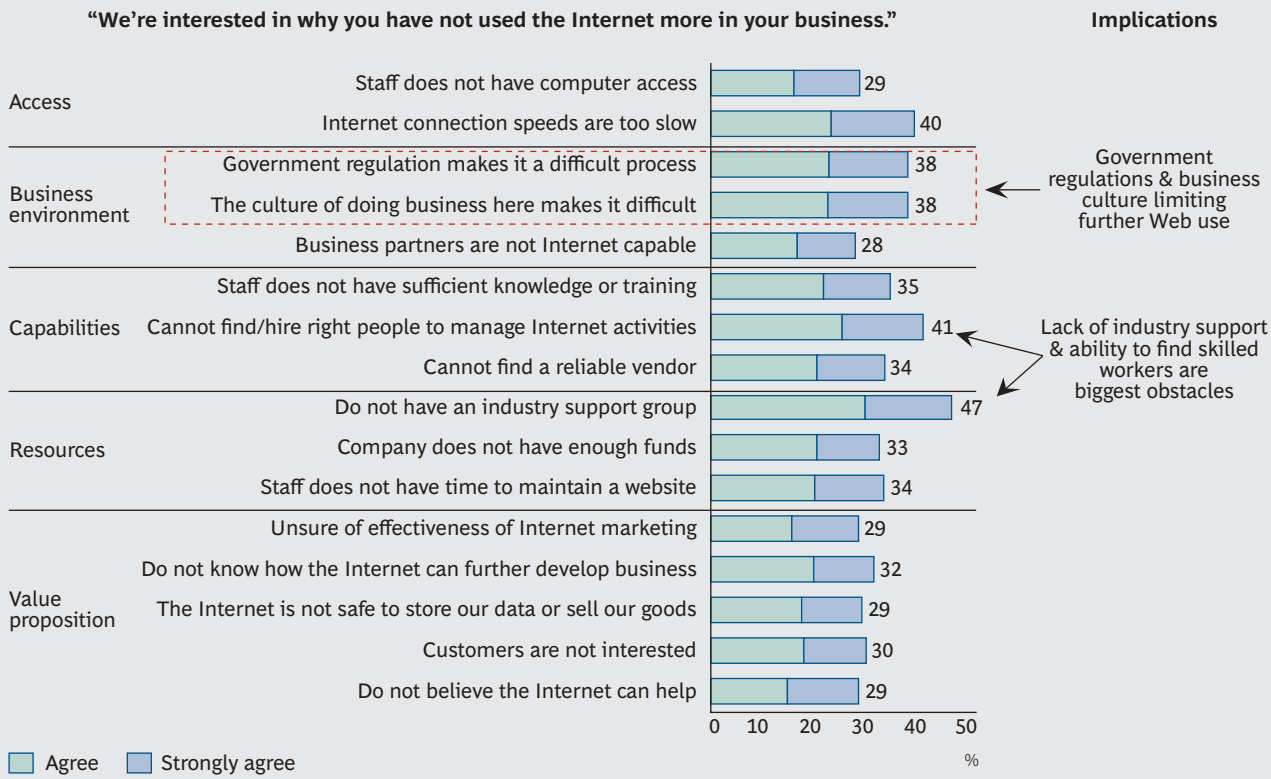
NOTE
1. Dünya (2011).

Exhibit 6 | Not all high-Web SMEs use most tools at their disposal



Sources: BCG SME survey; BCG analysis.
Note: n = 500.

Exhibit 7 | Turkish SMEs lack support and skills to fully utilize Internet



Sources: BCG SME survey; BCG analysis.
Note: n = 500.

LOOKING FORWARD

With a real GDP growth of 8.5 percent and a population of 75 million in 2011, Turkey boasts the fastest-growing economy and the second-largest population in Europe. With projected growth rates that make most OECD countries green with envy, and one of the youngest populations in Europe, Turkey has tremendous potential for the Internet economy to develop further. It is, after all, only recently that businesses there have started to integrate the Internet into their processes, lowering costs and increasing productivity. They are still well behind businesses in Europe and North America in this regard.

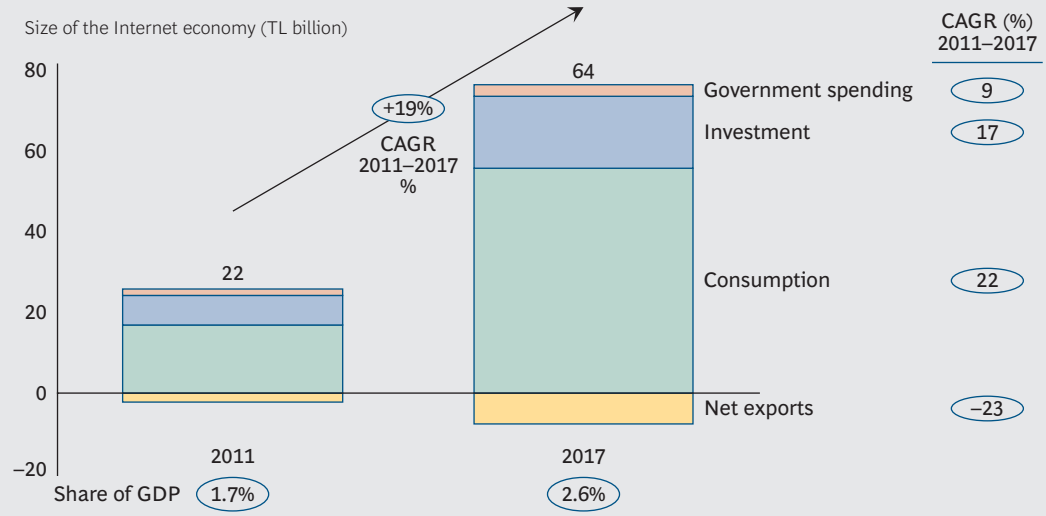
Realizing the ambitious targets Turkey has set for its centennial in 2023—such as becoming one of the top ten economies in the world—will require further effort on everyone's part. For example, many Turks do not use the Internet at all yet, and those who do buy little online. On the other hand, Turkey's growing current-account deficit requires that it switch from import-based consumption to R&D-driven exports. This can be accomplished only by increasing R&D investment and actively transforming the country into a knowledge society. Tipping the balance in favor of higher production and exports will come with the added benefits of job creation and sustainable development in the long run. In other words, the potential for Internet growth in Turkey is enormous.

Because the Turkish Internet economy is still relatively new, forecasting its growth precisely is challenging. Fixed and mobile Internet penetration, the proportion of retail business conducted online, and the level of investment by industry leaders are the crucial variables. However, several underlying factors—and the response to them by individuals, businesses, and government—could have strong and difficult-to-predict effects on the future of Turkey's Internet economy.

BCG estimates that Turkey's Internet economy will grow by 19 percent annually between 2011 and 2017, considerably outstripping overall nominal GDP growth by 12 percent a year and implying that the Turkish Internet economy could make up 2.6 percent of GDP, or TL 64.3 billion, by 2017. (See Exhibit 8.) Consumption is expected to be the largest driver of growth, primarily through an increase in e-commerce following a rise in broadband and Internet user penetration. (See the sidebar "Assumptions of Future Growth.")

In a more optimistic scenario, where broadband penetration and online and smartphone retailing grow at the upper end of expectations, BCG estimates the Turkish Internet economy could reach TL 76.4 billion, or 3.0 percent of GDP, by 2017, similar to the levels in countries like Germany and France today. (See Exhibit 9.)

Exhibit 8 | Consumption will drive future Internet growth



Sources: Annual reports (various); CCB; EIU; Gartner; OECD; Turkish Statistical Institute; Undersecretariat of Foreign Trade; BCG analysis.
Note: Growth rates are shown in nominal terms.

Shaping the Future

What will it take for the Internet economy to grow to 2.6 percent or even 3.0 percent of GDP by 2017? Multiple factors will be at work, several of them critical.

Closing the digital divide. Internet connectivity differs greatly from region to region in Turkey. Continued investment in fixed and mobile infrastructure is needed to bring more Turkish households to the Internet. Turks vary greatly in their use of, and engagement with, the Internet. Deepening users' engagement will be vital to unleashing the potential of the Internet economy. This will require bringing the levels of Internet use in eastern regions closer to levels in western regions, closing the gender gap, and increasing Internet penetration among Turks over 30 years old. Because of high mobile-phone penetration across Turkey and the growing popularity of smartphones and tablets, the mobile Internet will be an important driver of the Internet economy in closing the digital divide.

Increasing digital literacy. Although Turkish consumers in general show relatively strong engagement with the Internet, the primary reason many Turks have not become Internet users is that they simply are not aware of how the Internet works and what benefits it offers them. In a 2012 Turkstat survey of households with no Internet access, 28 percent of respondents said no one in the house "needs the Internet," and 19 percent admitted to not knowing how to use it. An astonishing 22 percent said they do not know what the Internet is. Digital literacy could be improved through (1) school programs, (2) partnerships between the public and private sectors that focus on providing affordable access and training, and (3) multidimensional initiatives aimed at increasing consumer confidence.

(1) E-education. One way to significantly boost Internet adoption would be to bridge this gap in basic digital literacy and awareness by, for example, initiatives like the FATIH project (Researching Opportunities and Improving Technology Movement), which was launched by the government in late 2011. This project aims to bring digital experience to all classrooms and to fully integrate information technologies into the education system. New models for content and tool development will foster innovation by empowering teachers and students to take charge of their own learning process.

(2) Public-private partnerships. These partnerships could be formed to support digital literacy programs for adults as part of a mutual interest in expanding both Internet and PC literacy. If subsidized by the government, in-

ASSUMPTIONS OF FUTURE GROWTH

BCG's estimate that the Turkish Internet economy will grow 19 percent annually up to 2017 is based on the following assumptions.

Consumption. Consumption is likely to grow by around 22 percent annually to contribute TL 51 billion to the Turkish Internet economy by 2017. Online retail in particular will be the largest impetus of this growth. Because Turkish e-commerce is still relatively undeveloped, growth in online retail is expected to be spurred primarily by an increase in the number of people using the Internet. Additionally, the proportion of total retail business conducted online is likely to move from 0.8 percent in 2011 to around 1.7 percent in 2017, as household broadband penetration reaches 68 percent. We anticipate that at this stage online spending per Internet-connected household will go up only slightly.

With the rise in fixed and mobile broadband penetration, part of the increase in consumption will come from greater spending on Internet access and devices, which we expect to grow by more than 20 percent annually.

In the upside scenario—in which household broadband penetration rises to 74 percent, the share of online spending as part of total retail spending increases from about 1.7 percent in the base 2017 scenario to 2.7 percent in the upside 2017 scenario, and smartphone users make more purchases over their mobile devices—consumption could grow to TL 64 billion. In this scenario, the Internet economy would constitute 3 percent of GDP in 2017.

Investment. We forecast that telecommunications companies will continue to invest in fixed and mobile infrastructure between now and 2017. Although in 2010 investment was lower than in 2009—primarily because of large one-off 3G license fees paid in 2009—we expect investment by telecommunications companies to grow at the historical rate of around 20 percent annually starting in 2013. Private companies will also continue to integrate the Internet into their operations, with private investment by nontelecommunications companies growing at roughly 10 percent annually.

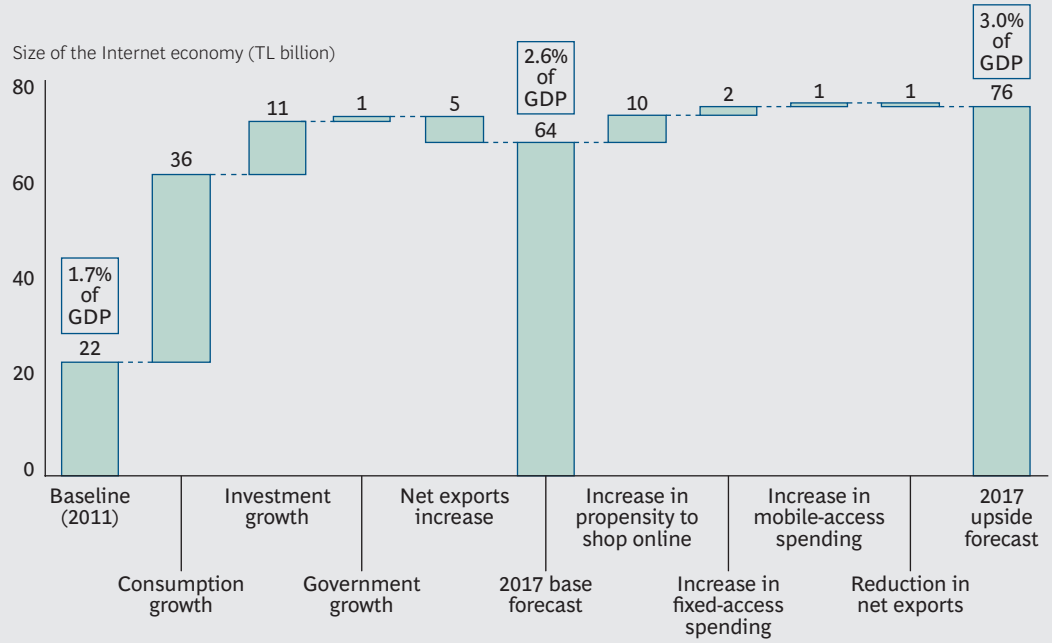
Government. With multiple e-initiatives under way and with Turkey focusing on information as part of its preparations for EU admission, we expect the growth in Internet-related government spending to continue. Our estimate is that government spending will increase at 9 percent annually, in line with nominal GDP.

Net exports. Turkey is expected to remain a net importer of Internet-related ICT goods and e-commerce, with net imports growing at 23 percent annually to 2017. Imports of ICT goods and services are projected to grow mostly in line with domestic demand from consumers, government, and businesses; exports are expected to remain steady in proportion to imports. Imports and exports of e-commerce are projected to remain as a very stable fraction of domestic online retail.

dustry leaders along with nongovernmental organizations (NGOs), for instance, might want to participate in order to encourage and promote widespread wireless access to the Internet. This might, in turn, help bring in the approximately 20 percent of unconnected households that cited the cost of Internet subscription as a reason for not having access to the Web in the first place.

(3) Increasing consumer confidence. If access and literacy are the first two steps, consumer confidence is the third in achieving a full-fledged Internet economy. Roughly 35 percent of users who do not buy online report that worrying about privacy or security is what prevents them. Building consumer confidence in the security of online payment methods is essential for e-commerce to flourish.

EXHIBIT 9 | Assumptions about propensity to shop online and spend on access can make a difference



Sources: Annual reports (various); CCB; EIU; Gartner; Ovum; Turkstat; Undersecretariat of Foreign Trade; BCG analysis.

New business models. Turkish businesses need to embrace Internet business models. Getting more businesses to adopt online sales and marketing will drive a deeper and more attractive online offering for consumers. Businesses, particularly SMEs, can increase efficiency significantly by incorporating the Internet more into their core processes—for example, e-procurement, electronic stock management, and cloud adoption. Our SME survey shows that high-Web SMEs experienced a 17 percent revenue growth, whereas the figure for low-Web SMEs was 11 percent. Because SMEs account for 78 percent of all employment, it is essential that they fully utilize e-commerce to pursue opportunities in Turkey and abroad. Over time, this will help increase the visibility and market share of Turkish enterprises worldwide.

Innovation and entrepreneurialism. Although local NGOs such as TUBISAD (the Informatics Industry Association) have been pushing since the 1980s to intensify focus on innovation, and global NGOs such as Endeavor have established a Turkish chapter as early as 2006, entrepreneurialism in Turkey has only recently started to catch up with that of developed nations. Yet Turkey is considered a hot market for online start-ups, as affirmed by the country's premier start-up accelerator, E-Tohum. Most online-only businesses are still in a nascent stage, and 2011 was the first year that sizable M&A activity was recorded in the field of e-commerce—a sign of healthy and sustainable development in the market. Retail giants GittiGidiyor and Markafoni, florist CicekSepeti, gaming platform Peak Games, and collective-buying sites Grupanya and Grupfoni were the big-ticket deals that attracted interest from international buyers. Newcomers such as on-demand-radio site Fizy.com, price-comparison site Cimri.com, and mother-baby-merchandise site Unnado.com received additional funding for growth.

Technoparks can play an important role in supporting innovation by creating clusters of entrepreneurialism. For example, the Skolkovo Innovation Center in Russia is planned to house not only engineers and 40 corporate R&D centers but also a university of 1,800 students, as well as 1,000 start-up residents who will benefit not just from tax advantages but also from international networking events and open lectures. Turkey could amplify the impact of its existing resources in a

similar manner: the number of technoparks in Turkey has risen from two in 2001 to 41 in 2011, with more than 300 patents produced in a mere ten years. Infodif, an image processing company of international renown in both military and civil applications, is a great example of what technoparks are capable of producing. Infodif founders have a degree from Middle East Technical University in Ankara, which houses the oldest technopark in Turkey, and currently operate in Hacettepe University's technopolis, also in Ankara. The government can greatly facilitate innovation by offering modest financial incentives and setting up the appropriate legal framework to support it.

Strengthening e-government services. To some extent, the success of the Turkish Internet economy will also depend on the success of government initiatives to strengthen e-government and e-public services. In a 2012 Turkstat survey of Internet users, 55 percent said they do not use the Internet to interact with the government. Of those using e-government services, only 17 percent engage in activities that would constitute active usage, such as filling out forms and submitting documents online. The rest engage in passive activities, such as searching for information or downloading documents for offline submission. Further focus on this area is sure to boost Turkey's ranking on the global e-Intensity Index, as this is the area where Turkey has the weakest relative performance.

The Internet can play a central role in Turkey's evolution.

A number of important projects, such as e-Gateway Portal, a one-stop portal for government services and information, have already been carried out as part of the e-Transformation Program, and a second wave of projects—such as e-health, e-education, and e-procurement—is ongoing. Ensuring that these projects are completed and fully rolled out across the country will greatly augment consumers' and businesses' interactions with the government online. This would not only present an efficiency gain for the government and a boost to the Internet economy through public spending but might also help build public trust and confidence in using the Internet.

Building public consensus on business regulations. The Internet affects all aspects of life. As governments consider and implement new laws, they should strive to get public input in order to build consensus among all stakeholders—that is, related government departments, industry leaders, academic circles, and NGOs. This is especially important for purely online businesses and Internet start-ups.

Conclusion

The Internet can play a central role in Turkey's evolution. But as the nation prepares to leap into the club of developed nations, a shift in its collective mentality is required in order to create the foundations for success. Policymakers, private-sector players, and NGOs need to initiate a virtuous cycle of growth by working together to establish a legal and regulatory framework conducive to encouraging investments in infrastructure and human capital, to developing a culture of innovation and entrepreneurialism, and to closing the digital divide. Affordable Internet access and incentives for Internet start-ups are required. Investments in higher education, R&D, and digital literacy for all age groups are key. Better access to educational and scientific articles, as well as uncensored access to all online content, can catalyze this process greatly. Individuals who relentlessly question, critique, and improve what they see should be encouraged and supported.

Only then can Turkey embark on a journey of sustainable growth, including a reduction in its current account deficit. The Internet has played an enormous role in the social and economic development of countries as diverse as India, the U.K., South Korea, and Denmark. It can contribute to Turkey's success too.

APPENDIX

METHODOLOGY

THE ASSUMPTIONS AND ANALYSES that form the basis for this report are outlined in this Appendix.

GDP

The *expenditure method* of calculating GDP measures total spending on finished goods and services. Assumptions outlined in the main report are not repeated here.

Consumption. Online spending includes spending on most goods and services. We checked our estimates against data from the Interactive Advertising Bureau (IAB) Europe, TNS Global, the Google Consumer Commerce Barometer survey, and household expenditure figures. Our estimates are based on research reports and data from the Turkish Statistical Institute, Euromonitor, annual reports and investment presentations (Turkish Airlines, Pegasus, Istanbul Fast Ferries Company, and Garanti Bankası), Dünya, and interviews with Hepsiburada, Tatil Sepeti, and Kamil Koç.

Spending on access includes consumers' payments to fixed and mobile Internet-service providers, a relevant proportion (based on time spent online) of consumer spending on interface devices (such as computers or mobile phones), and consumer spending on infrastructure devices (such as wireless routers). These estimates are based on reports from the Turkish Information and Communication Technologies Authority, annual reports (Turk Telekom and Turkcell), Gartner, and BCG project experience.

Private Investment. We included a relevant proportion of fixed and mobile telecommunications investments, where the spending is related to building, maintaining, and facilitating broadband services. We also included a portion of private investments in hardware, software, telecommunications equipment, and installation and development services by looking at the proportion of corporate-owned computers that have an Internet connection and the proportion of employees using one, as well as on the basis of expert interviews. Finally, we included all private investments in telecommunications equipment. Estimates are based on research and reports from the Turkish Information and Communication Technologies Authority, Gartner, Turk Telekom, and Turkcell annual reports.

We did not include an estimate for internally developed software, even though it probably represents a significant element of Internet-related capital expenditure, as too many assumptions would have been necessary.

Government Spending. We used research by Gartner to estimate public spending on ICT, including hardware, software, telecommunications, and support services.

Net Exports. We estimated net exports of e-commerce on the basis of data from the Interbank Card Center (BKM). We estimated imports and exports of Internet-related ICT goods and services using data from the Undersecretariat of Foreign Trade, TESID Almanac (Turkish Electronics Manufacturers Association), and the OECD.

GDP Growth

We estimated the growth of consumption by projecting online consumer spending and spending on access. The consumer spending estimate is based on projections of the percentage of Internet shoppers, the total retail spending per person, and the percentage spent online. The access spending estimate is based on projections of the number of broadband subscriptions and the cost of each.

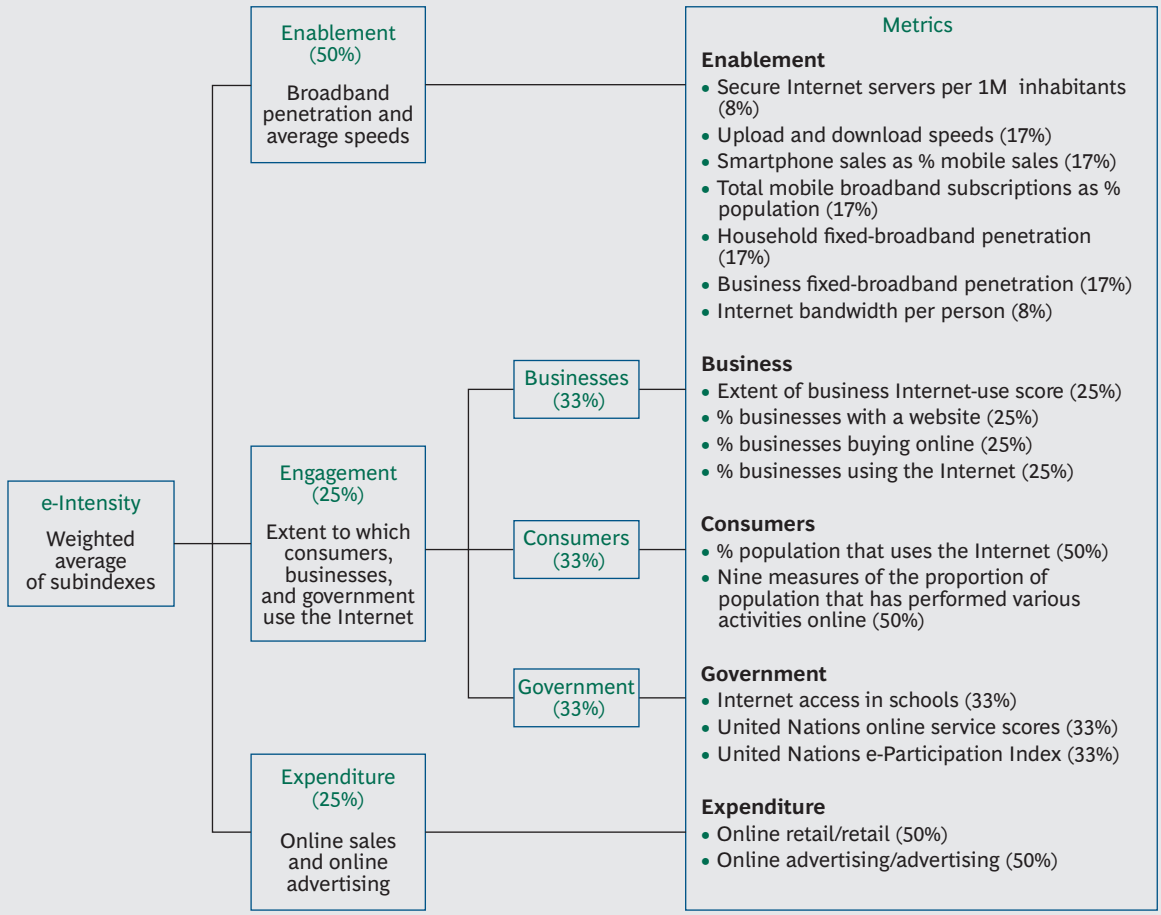
Estimates of growth in investment are based on forecasts by the sources used to build the baseline estimate.

e-Intensity

The overall international and regional indexes are formed as a weighted mean of three subindexes: enablement, engagement, and expenditure. The engagement subindex is formed as an equally weighted mean of three further subindexes: businesses, consumers, and government. All the subindexes are then formed as weighted means of several underlying metrics. (See the exhibit "BCG e-Intensity Index.")

Data are not available from the same source for every single metric and country for the international index. Where this is the case, we

BCG e-Intensity Index



Source: BCG analysis.

impute the missing data through regression, using metrics that are strongly correlated.

We transformed the data so that the indexes would measure proportional differences in them. To ensure intuitive interpretation, we then transformed the indexes and scaled them so that a reference value—the geometric mean of the 34 OECD countries—was set to 100 for each index and subindex of the international e-intensity in 2010. As a result, if country A is awarded 110, then the metrics for country A are, on average, 10 percent higher than the average value.

NOTE TO THE READER

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David Dean is a senior partner and managing director in the Munich office of The Boston Consulting Group. **Birce Sultan Karabey** is a consultant in the firm's Istanbul office. **Amy Stevens** is a consultant in BCG's London office. **Burak Tansan** is a partner and managing director in the firm's Istanbul office. **Alper Sinan Tonguc** is a consultant in BCG's Istanbul office. **Marc Vos** is a partner and managing director in the firm's Milan office.

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We are especially grateful to our colleague Paul Zwillenberg, who has contributed to or edited all BCG Internet impact reports since 2010. We are also grateful to Mauro Tardito for his invaluable contributions to this report, and additionally would like to thank our many colleagues who helped make this possible, including, but not limited to, Nicola Blackford, Alla Dubrovina, Onur Elgun, Mimi Gehl, Sarah Gibson, Yuri Romanenkov, Cenk Sezginsoy, and Deran Taskiran for her support. Finally, we would like to thank Katherine Andrews, Gary Callahan, Kim Friedman, Sara Strassenreiter, and Carrie Vaccaro Nelkin.

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