

Executive summary

With more than half a billion internet subscribers, India is one of the largest and fastest-growing markets for digital consumers, and the rapid growth has been propelled by public and private sector alike. India's lower-income states are bridging the digital divide, and the country has the potential to be a truly connected nation by 2025. Much more growth is possible. As India's digital transformation unfolds, it could create significant economic value for consumers, businesses, microenterprises, farmers, government, workers, and other stakeholders.

Digital adoption by India's businesses has so far been uneven, but new digital business models could proliferate across most sectors. We find that core digital sectors such as IT and business process management (IT-BPM), digital communication services, and electronics manufacturing could double their GDP level to \$355 billion to \$435 billion by 2025, while newly digitising sectors (including agriculture, education, energy, financial services, healthcare, logistics, and retail) as well as digital applications in government services and labour markets could each create \$10 billion to \$150 billion of incremental economic value in the same period. Some 60 million to 65 million jobs could be created by the productivity surge by 2025, although redeployment will be essential to help the 40 million to 45 million workers whose jobs will likely be displaced or transformed by digital technologies, based on our estimates.

In India's new and emerging digital ecosystems of the future—already visible in areas such as precision agriculture, digital logistics management, and digital healthcare consultations—business will have to find a new way to engage with customers. All Indian stakeholders will need to gear up to capture the opportunities and manage the challenges of being a connected nation.

India's digital leap is well under way, propelled by both public- and private-sector actions

By many measures, India is on its way to becoming a digitally advanced nation.¹ Just over 40 percent of the populace has an internet subscription, but India is already home to one of the world's largest and most rapidly growing bases of digital consumers. It is digitising activities at a faster pace than many mature and emerging economies.

India's internet user base has grown rapidly in recent years, propelled by the decreasing cost and increasing availability of smartphones and high-speed connectivity, and is now one of the largest in the world (Exhibit E1). The country had 560 million subscribers in September 2018, second in the world only to China.² Digital services are growing in parallel. Indians now download more apps—12.3 billion in 2018—than residents of any other country except China.³ The average Indian social media user spends 17 hours on the platforms each week, more than social media users in China and the United States.⁴ The share of Indian adults with at least one digital financial account has more than doubled since 2011, to 80 percent, thanks in large part to the more than 332 million people who opened mobile phone–based accounts under the government's Jan-Dhan Yojana mass financial-inclusion programme.⁵

¹ In February 2019, the Indian government released a report highlighting the considerable economic opportunities from digital technologies and a detailed action plan for realizing them. *India's Trillion Dollar Digital Opportunity*, Ministry of Electronics and Information Technology, Government of India, February 2019.

² *Indian telecom services performance indicator report, June–September 2018*, Telecom Regulatory Authority of India.

³ Priori Data, January 2019.

⁴ We Are Social, *Digital in 2018: Southern Asia*, January 2018.

⁵ Pradhan Mantri Jan-Dhan Yojana, November 20, 2018, pmjdy.gov.in/account; Asli Demirgüç-Kunt et al., *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*, World Bank, April 2018.

India is among the top two countries globally on many key dimensions of digital adoption.

India no. 1
globally

1.2b

people enrolled in the world's largest unique digital identity program

India no. 2
globally,
behind China



12.3b

app downloads
in 2018



1.17b

wireless phone
subscribers



560m

internet
subscribers



354m

smartphone
devices



294m

users engaged in
social media

SOURCE: Priori Data, January 2019; Strategy Analytics, 2018; TRAI, September 30, 2018; UIDAI, April 2018; We Are Social, January 2019; McKinsey Global Institute analysis

Our analysis of 17 mature and emerging economies across 30 dimensions of digital adoption since 2014 finds that India is digitising faster than all but one other country in the study, Indonesia. Our Country Digital Adoption Index covers three elements: digital foundation, or the cost, speed, and reliability of internet connections; digital reach, or the number of mobile devices, app downloads, and data consumption; and digital value, the extent to which consumers engage online by chatting, tweeting, shopping, or streaming. India's score rose by 90 percent between 2014 and 2017, second only to Indonesia's improvement, at 99 percent, over the same period (Exhibit E2). In absolute terms, India's score is low, at 32 out of a maximum 100, comparable to Indonesia's at 40, but significantly lagging behind the four most-digitised economies of the 17: South Korea, Sweden, Singapore, and the United Kingdom.

The public sector has been one strong catalyst for India's rapid digitisation. The government's effort to ramp up Aadhaar, the national biometric digital identity programme, has played a major role (see Box E1, "Aadhaar, the world's largest digital ID programme, has enabled many services"). The Goods and Services Tax Network, established in 2013, brings all transactions involving about 10.3 million indirect taxpaying businesses onto one digital platform, creating a powerful incentive for businesses to digitise their operations.

At the same time, private-sector innovation has helped bring internet-enabled services to millions of consumers and made online usage more accessible. For example, Reliance Jio's strategy of bundling virtually free smartphones with subscriptions to its mobile service has spurred innovation and competitive pricing across the sector. Overall, data costs have dropped by more than 95 percent since 2013: the cost of one gigabyte fell from 9.8 percent of per capita monthly GDP in 2013 (roughly \$12.45) to 0.37 percent in 2017 (the equivalent of a few cents).⁶ Average fixed-line download speed quadrupled between 2014 and 2017.⁷ As a result, monthly mobile data consumption per user is growing at 152 percent annually—more than twice the rates in the United States and China (Exhibit E3).

95%

Decline in data costs
since 2013

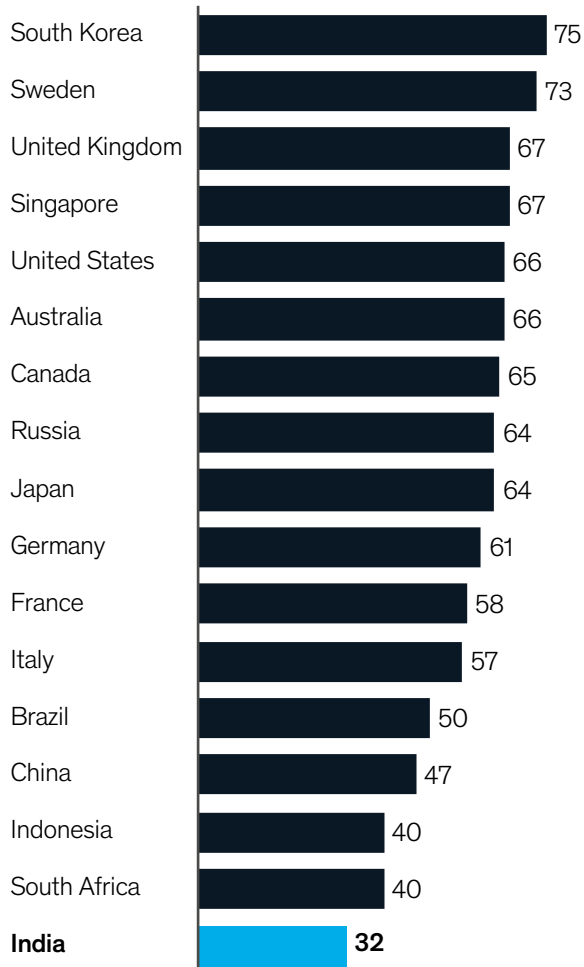
⁶ Analysys Mason, January 9, 2019; World Bank, October 27, 2018.

⁷ Akamai's state of the internet: Q1 2014 report, Akamai Technologies, May 2014; and Akamai's state of the internet: Q1 2017 report, Akamai Technologies, March 2017.

India, coming off a low base, is the second-fastest digital adopter among 17 major digital economies.

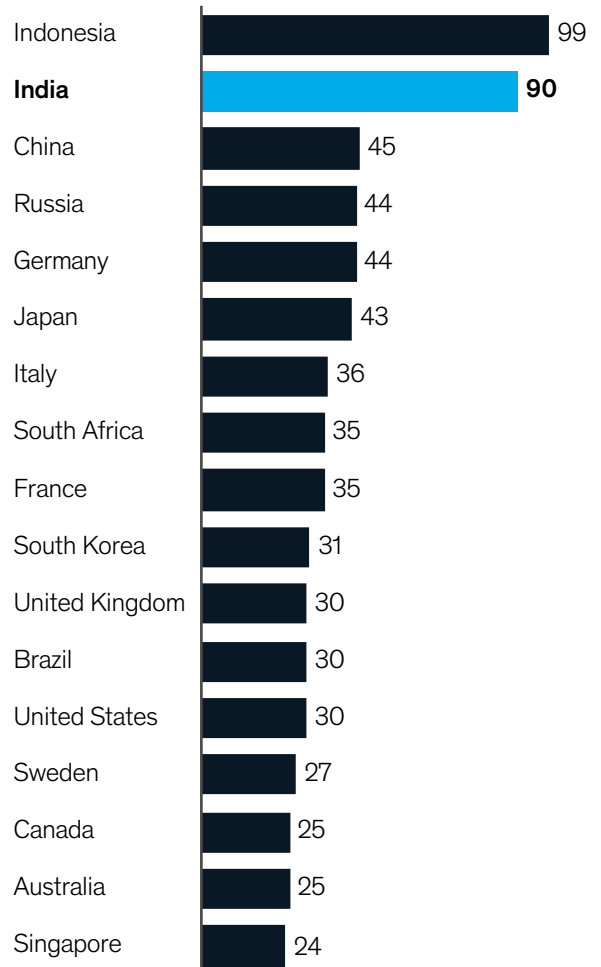
Country Digital Adoption Index¹

Score (0-100), 2017



Growth in Country Digital Adoption Index

% growth, 2014–17



¹ MGI's Country Digital Adoption Index represents the level of adoption of digital applications by individuals, businesses, and governments across 17 major digital economies. The holistic framework is estimated based on 30 metrics divided between three pillars: digital foundation (eg, spectrum availability, download speed), digital reach (eg, size of mobile and internet user bases, data consumption per user), and digital value (eg, utilisation levels of use cases in digital payments or e-commerce). Principal component analysis was conducted to estimate the relative importance of the three pillars: 0.37 for digital foundation, 0.33 for digital reach and 0.30 for digital value. Within each pillar, each element is assigned equal value, with indicators normalised into a standard scale of 0–100 (0 indicating lowest possible value). A simple average of the normalised values was then used to calculate the index.

SOURCE: Akamai's state of the internet: Q1 2014 report; Akamai's state of the internet: Q1 2017 report; Analysys Mason; Euromonitor International consumer finance and retailing overviews, 2017 editions; International Telecommunication Union; UN e-Government Survey; Strategy Analytics; Open Signal; Ovum; We Are Social; Digital Adoption Index, World Bank; McKinsey Global Institute analysis

Box E1.

Aadhaar, the world's largest digital ID programme, has enabled many services

Before the Aadhaar programme rolled out in 2009, most Indians relied on rudimentary physical documents, such as the “ration card” issued for food subsidies, as their primary source of identification; estimates suggest that more than 85 percent of the population had ration cards in 2011–12. Not only did 15 percent of the population not have any form of legally verifiable ID, but there was also no way to authenticate and verify the identity of ration card holders in real time at no cost. Today that has changed dramatically: more than 1.2 billion Indians have Aadhaar digital identification, up from 510 million in 2013.¹ Aadhaar has become the largest single digital ID programme in the world—and a powerful catalyst of digital adoption more broadly in India.

Aadhaar is a 12-digit number that the Unique Identification Authority of India issues to Indian residents based on their biometric and demographic information. To obtain an Aadhaar ID, applicants permit the authority to record their fingerprints, scan their irises, take their photograph, and record their name, date of birth or age, gender, and address.²

The IDs were created to provide all residents of India with high-assurance, unique, digitally verifiable means to prove who they are. An important beneficial impact has been the potential to reduce loss, fraud, and theft in government benefits programs by enabling the direct transfer of benefits to bank accounts. This use has helped spur consumer adoption of digital services. Almost 870 million bank accounts were linked to Aadhaar by February 2018, compared with 399 million in April 2017 and 56 million in January 2014.³ A recent survey shows that 85 percent of people who opened a bank account between 2014 and

2017 used Aadhaar as their identification. In all, 82 percent of public benefits disbursement accounts are now linked to Aadhaar, which has reduced fraud and leakage.⁴

A suite of open application program interfaces (APIs) is linked to Aadhaar. For example, the Unified Payments Interface platform integrates other payment platforms in a single mobile app that enables quick, easy, and inexpensive payments among individuals, businesses, and government agencies. DigiLocker permits users to issue and verify digital documents, obviating the need for paper.

Digital ID systems globally are not without controversy: some worry about their ability to track personal information that could be misused in the hands of malicious entities, and the risk of systematic exclusion is also a concern.⁵ Aadhaar's design follows a data minimisation policy that allows collection and storage of basic demographic data only. Thereafter, whenever any ID-requesting party asks for verification, the Aadhaar system issues only a yes or no based on the biometric match. It does not store or share the reason for the verification or details of any transaction. The risk arises when other databases not belonging to Aadhaar are seeded with Aadhaar numbers. For example, an individual's bank account details can be pieced together, and the availability of that information can give rise to fraudulent practices.

India's Supreme Court ruled in September 2018 that Aadhaar does not violate the right to privacy and may legally be required to obtain government services.⁶ However, in its 1,400-page ruling, the court also struck down a section of the Aadhaar law stipulating that private companies could require potential customers to provide an Aadhaar ID for services such as opening a bank account, obtaining mobile phone SIM cards, or enrolling children in school.⁷ To make such uses permissible on a voluntary basis, the government would need to amend the relevant laws or modify authentication processes.

¹ Unique Identification Authority of India, April 2018.

² *About Aadhaar*, Unique Identification Authority of India, uidai.gov.in.

³ UIDAI; IDinsight.

⁴ Ronald Abraham et al., *State of Aadhaar report 2017–18*, IDinsight, May 2018.

⁵ For a discussion of the potential economic impact, along with challenges and risks, of digital ID globally, see *Digital identification: A key to inclusive growth*, McKinsey Global Institute, January 2019.

⁶ *What is Aadhaar? India's controversial billion-strong biometric database*, SBS News, September 27, 2018.

⁷ Manveena Suri, “Aadhaar: India Supreme Court upholds controversial biometric database”, CNN.com, September 26, 2018.

Global and local digital businesses are creating services tailored to India's consumers and unique operating conditions. For example, Alibaba-backed Paytm, India's largest mobile payments and commerce platform, has more than 300 million registered mobile wallet users and six million merchants.⁸

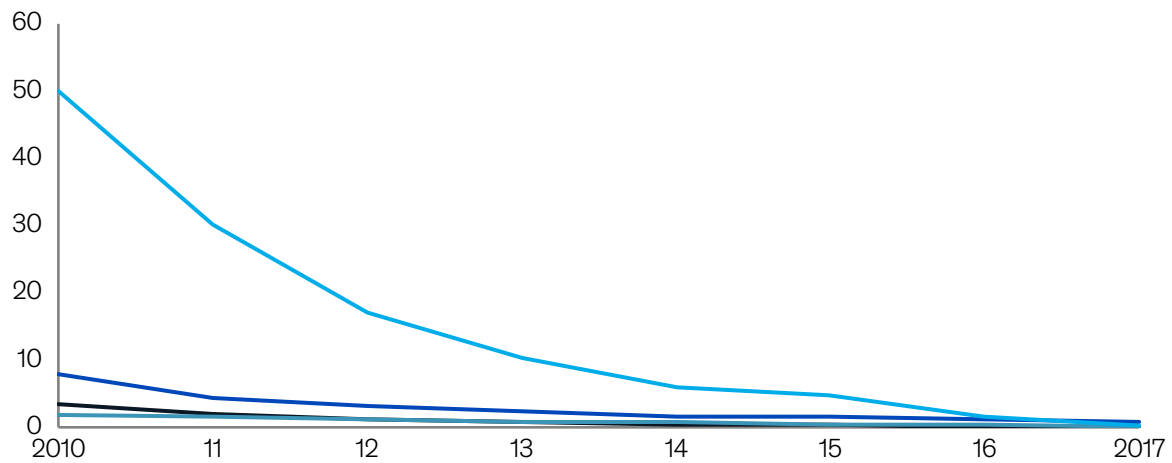
⁸ Harichandan Arakali, “Paytm reloaded: It's no longer just a mobile wallet”, *Forbes*, March 15, 2018.

India's data usage quadrupled in one year as prices fell.

United States Brazil China India¹

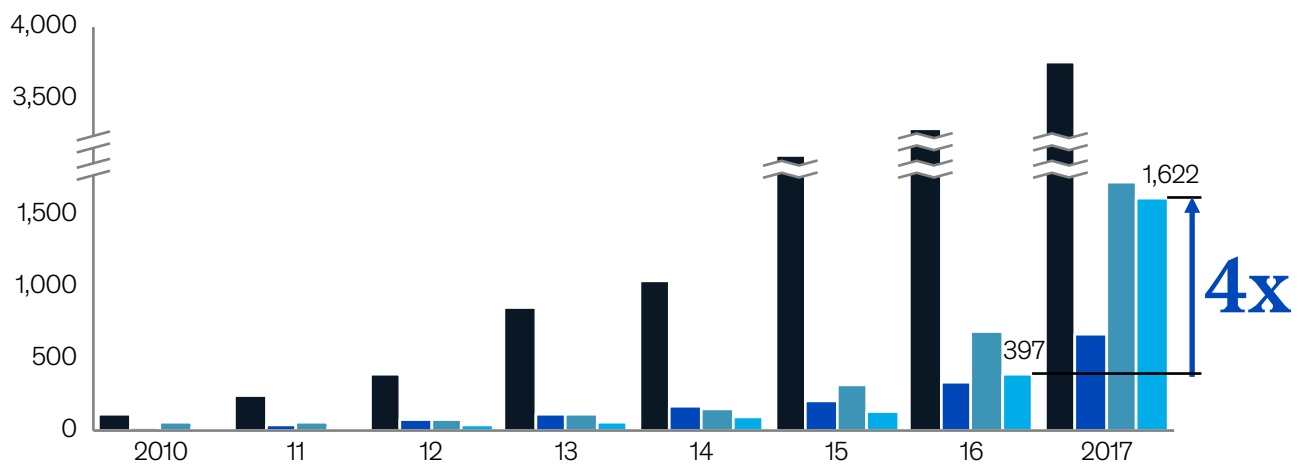
Data price

Per GB of data (% of monthly GDP per capita)



Data consumption

Per connection, per month (MB)



¹ In data published by the Telecom Regulatory Authority of India for September 2018, consumption per unique subscriber is shown to have increased to 8,320 MB, putting India on pace to more than quadruple its average consumption again from 2017 to 2018.

SOURCE: Analysys Mason, January 9, 2019; UN Database; McKinsey Global Institute analysis

India's digital divide is narrowing, and all states have much room to grow

With both private- and public-sector action promoting digital usage, India's states have started bridging the digital divide. Lower-income states are showing the fastest growth in internet infrastructure, such as base tower stations and the penetration of internet services to new customers. While low- and moderate-income states as a group accounted for 43 percent of all base tower stations in India in 2013, they accounted for 52 percent of the incremental towers installed between 2013 and 2017.⁹ Low-income states like Uttar Pradesh, Madhya Pradesh, and Jharkhand were among the five fastest-growing states in internet penetration between 2014 and 2018; Uttar Pradesh alone added more than 36 million internet subscribers in that period. Ordinary Indians in many parts of the country—including small towns and rural areas—can read the news online, order food delivery via a phone app, video chat with a friend (Indians log 50 million video-calling minutes a day on WhatsApp), shop at a virtual retailer, send money to a family member through their phone, or watch a movie streamed to a handheld device.

Even after these advances, India still has plenty of room to grow in digital terms. Just over 40 percent of the populace has an internet subscription.¹⁰ Despite the growth of digital financial services, close to 90 percent of all retail transactions, by number, are still in cash.¹¹ Only 5 percent of trade is transacted online, compared with 15 percent in China in 2015.¹² Looking ahead, India's digital consumers are poised for robust growth. By our estimates, India could add as many as 350 million smartphones by 2023.

Indian businesses are digitising rapidly but not evenly

Against this backdrop of rapid consumer internet adoption, India's businesses have a relatively uneven pattern of digitisation. We surveyed more than 600 firms to determine the level of digitisation as well as the underlying traits, activities, and mind-sets that drive digitisation at the firm level. We used each company's answers to score its level of digitisation on a scale of 0 to 100 and created the MGI India Firm Digitisation Index. Companies in the top quartile, which we characterise as digital leaders, had an average score of 58.2, while those in the bottom quartile, the digital laggards, averaged 33.2. The median score was 46.2.

A higher score indicates a company uses digital more extensively in day-to-day operations (such as implementing customer relationship management systems or accepting digital payments) and in a more organised manner (for example, by having a separate analytics team or centralised digital organisation) than companies with lower scores. Our survey found that, on average, digital leader firms outscored other firms by 70 percent on strategy dimensions (for example, responsiveness to disruption and investment in digital technologies), by 40 percent on organisation dimensions (such as level of executive support and use of key performance indicators), and by 31 percent on capability dimensions (including use of technologies such as CRM and enterprise resource planning solutions, and adoption of digital payments).

Differences in digital adoption within sectors are greater than those across sectors. While some sectors have more digitally sophisticated companies than others, top-quartile companies can be found in all sectors—even those sometimes considered resistant to technology, such as transportation and construction. Conversely, sectors such as information and communications technology (ICT), professional services, and education and healthcare, which have more digitised firms on average, are represented in the bottom quartile of adoption (Exhibit E4).

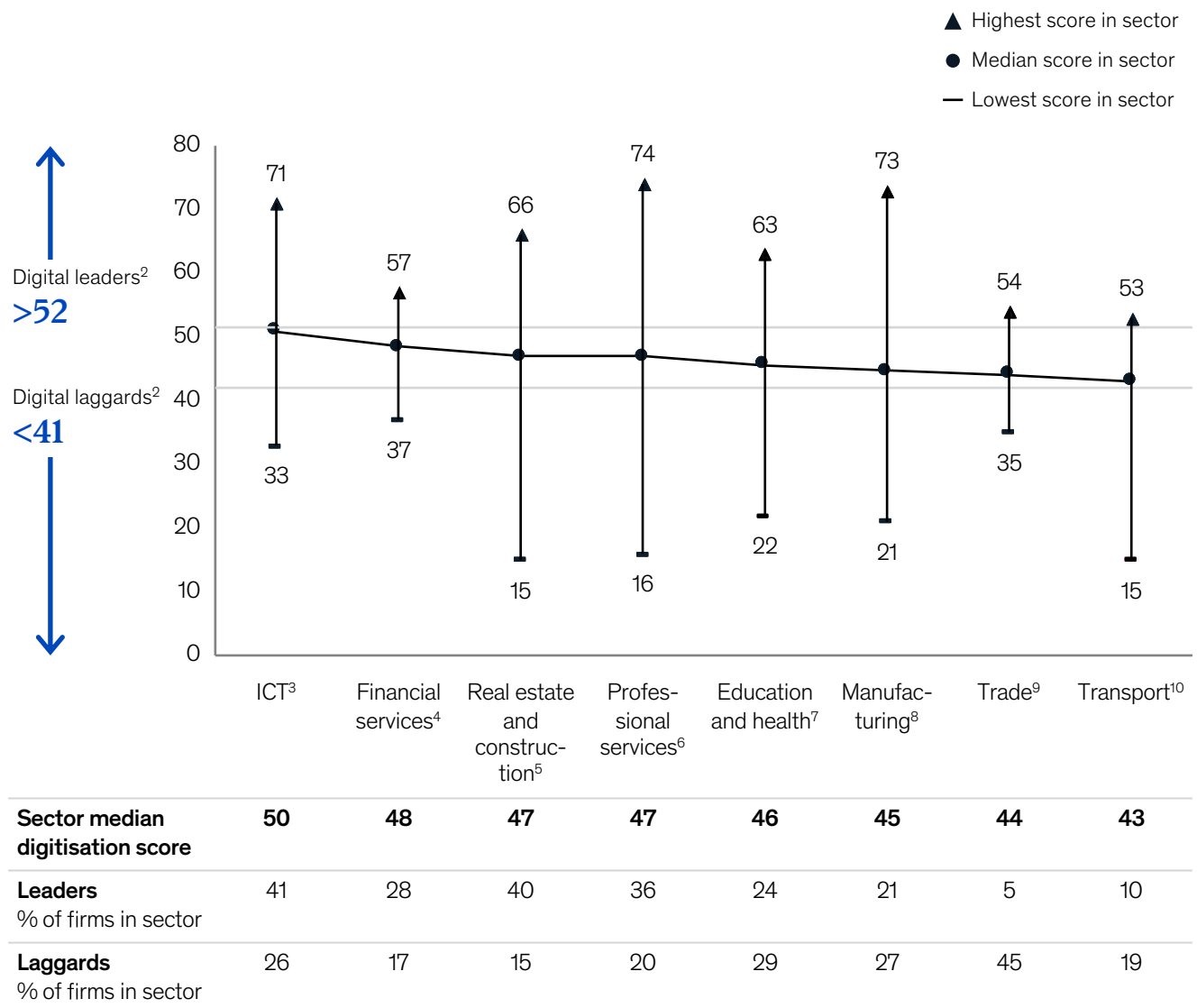
⁹ States are categorised based on their per capita GDP relative to the country's: "very high income" states have per capita GDP more than twice India's average; "high income", 1.2 to 2 times; "moderate income", 0.7 to 1.2 times; and "low income", less than 0.7 times.

¹⁰ *Indian telecom services performance indicator report*, June–September 2018, Telecom Regulatory Authority of India.

¹¹ "Digital payments in India to reach \$1 trillion by 2023: Credit Suisse", *Economic Times*, February 15, 2018.

¹² Euromonitor International Retailing Edition 2019.

Digitisation levels vary more within sectors than across sectors among large Indian firms.

India Firm Digitisation Index¹

¹ Based on 50-question survey of 220 large companies (5 billion rupees or \$70 million annual revenue). The survey seeks to determine level of digitisation as well as the underlying traits, activities, and mindsets that drive it. Firms are scored based on their responses on dimensions related to digital strategy (eg, responsiveness to disruption, investment in digital technologies); digital organisation (eg, level of executive support, use of key performance indicators); and digital capabilities (eg, use of technologies like CRM and ERP, or adoption of digital payments).

² Leaders are top quartile firms in terms of firm digitisation index, while laggards are in the bottom quartile.

³ ICT comprises telecom services providers, media and information technology companies.

⁴ Financial services comprises banks, finance, and insurance companies.

⁵ Real estate and construction comprises construction companies, real estate developers, and real estate brokerage firms.

⁶ Professional services comprises companies in the fields of consulting, architecture, and stock trading, among others.

⁷ Education and health comprises firms in the fields of health services, pharmaceuticals, and education services.

⁸ Manufacturing comprises firms in manufacturing of textiles, food processing, metal and metal products, petroleum and related products, and others.

⁹ Trade comprises companies trading, both wholesale and retail, commodities (eg, automobiles, sanitary wares).

¹⁰ Transport comprises firms in logistics and passenger transport.

SOURCE: McKinsey India firm digitisation survey, May 2017; McKinsey Global Institute analysis

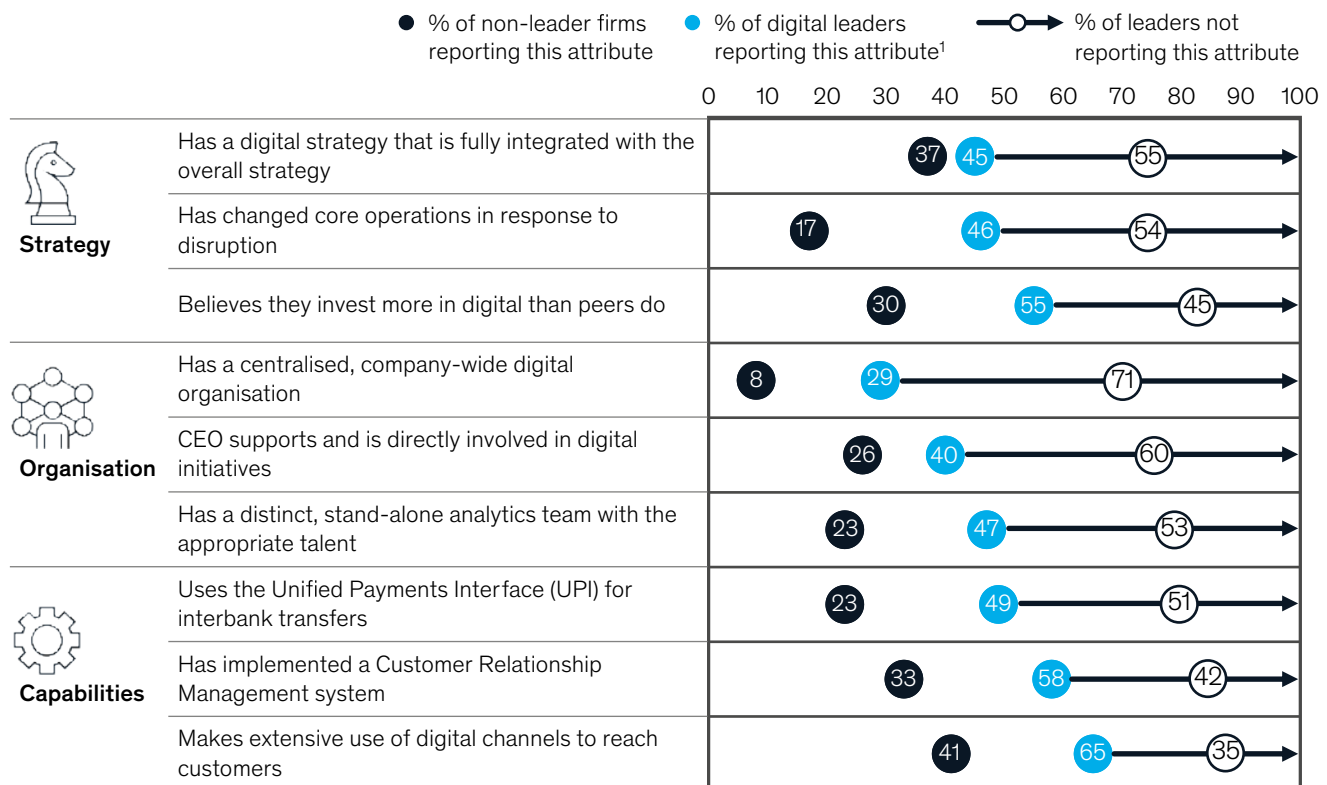
Digital leaders share common traits that digital laggards can emulate

India's digital leaders share common traits in digital strategy, organisation, and capabilities, but they still have room to improve across all three areas, from CEO support for digital initiatives to use of customer relationship management systems and other digital capabilities (Exhibit E5).

Exhibit E5

India's digital leaders still have ample room for improvement in many areas.

% of firms responding



¹ "Leaders" are firms scoring within the top quartile of MGI's India Firm Digitisation Index.

² Results of a survey conducted across 220 large firms in India with revenue of 5 billion rupees, or \$70 million.

SOURCE: McKinsey India firm digitisation survey, May 2017; McKinsey Global Institute analysis

- **Digital strategy:** Leading digital companies in India adopt strategies that make them stand out from their peers in several ways. They centre their strategies on digital, let digital technologies shape how they engage with customers, and invest more heavily in digital than their peers. These firms are 30 percent more likely than bottom-quartile firms to say they fully integrate their digital and overall strategies, and 2.3 times more likely to sell their products through e-commerce platforms. Top-quartile firms are 3.5 times more likely than bottom-quartile firms to say that digital disruptions led them to change their core operations. Digital leaders also make digital investment a priority. Top-quartile firms are 5.5 times more likely than bottom-quartile firms to outspend their peers on digital initiatives and 40 percent more likely to consider digital a top priority for investment.

- **Digital organisation:** Many more digital leaders than laggards have a single business unit that manages and coordinates digital initiatives for the entire company. Top-quartile firms are 14.5 times more likely than bottom-quartile firms to centralise digital management, and five times more likely to have a stand-alone, properly staffed analytics team. Top-quartile firms are also 70 percent more likely than bottom-quartile firms to say their CEO is “supportive and directly engaged” in digital initiatives.
- **Digital capabilities:** Top-quartile firms are 2.6 times more likely than bottom-quartile firms to use customer relationship management software, for example, and 2.5 times more likely to coordinate the management of their core business operations by using an enterprise resource planning system. Digital leaders also optimise their digital marketing. Our survey shows that top-quartile companies are 2.3 times more likely than bottom-quartile firms to use search engine optimisation, and 2.7 times more likely to use social media for marketing.

The gap between digital leaders and other firms is not insurmountable. In some cases, even when the difference is large, companies may be able to begin closing it by digitising in small, relatively simple ways. Social media marketing is a good example. Bottom-quartile firms are 70 percent less likely than top-quartile businesses to use social media to attract and serve new customers, and less than half as likely to use e-commerce or listing platforms. However, these sales channels are cheap and easily accessible, and a business owner with a smartphone and a high-speed internet connection will encounter few barriers to taking advantage of them.

94%

Percentage of small businesses that accept debit or credit card payments

Small businesses are closing the digital gap with larger firms and are ahead of them in accepting digital payments

Large companies (defined in our survey as having revenue greater than 5 billion rupees, or about \$70 million) have the financial resources and expertise to invest in some advanced technologies, such as artificial intelligence and the Internet of Things, but growing high-speed internet connectivity and shrinking data costs are opening digital opportunities for many small-business owners and sole proprietors.

Indeed, our survey found that small businesses are ahead of large companies in accepting digital payments. Among small firms, 94 percent said they accept payment by debit or credit card, compared with only 79 percent of big firms; for digital wallets, the figures were 78 percent versus 49 percent. Small companies also are more willing to use digital technologies such as video conferencing and chat to support their customers.

Our survey found that 70 percent of small firms have built their own websites to reach clients, compared with 82 percent of large firms, and are just about as likely as those big companies to have optimised their websites for mobile devices. Small firms are less likely than big firms to buy display ads on the web (37 percent versus 66 percent), but they are ahead of big companies in connecting with customers via social media and are more likely to use search engine optimisation. More than 60 percent of the small firms surveyed use LinkedIn to hire talent, and about half say most of their employees need to have basic digital skills. While only 51 percent of smaller firms said they “extensively” sell goods and services via their websites (compared with 73 percent of big businesses), small businesses use e-commerce platforms and other digital sales channels just as much as large firms and are equally likely to receive orders through digital channels such as WhatsApp.

700m

Estimated number of smartphones in India by 2023

Digital applications have potential to create significant economic value for India but will require new skills and labour redeployment

Firms in India that innovate and digitise rapidly will be better placed to tap into a large connected market of up to 700 million smartphones and about 800 million internet users by 2023. In the context of rapidly improving technology capabilities and declining data costs, technology-enabled business models could become omnipresent across sectors and activities in India over the next decade. That will likely create significant economic value in each of these sectors. At the same time, the nature of work will change and require new skills.

Core digital sectors could more than double in size by 2025, and each of several newly digitising sectors could contribute \$10 billion to \$150 billion of economic value

We consider economic impact across three types of sectors. First are core digital sectors, such as IT-BPM; digital communication services, including telecom services; and electronics manufacturing. Second are newly digitising sectors that are not traditionally considered part of India's digital economy but have the potential to innovate and adopt digital rapidly, such as financial services, agriculture, healthcare, logistics, and retailing. Third are activities related to government services and labour markets, which can be intermediated using digital technologies in new ways.

India's core digital sectors accounted for about \$170 billion—or 7 percent—of GDP in 2017–18.¹³ This comprises value added from sectors that already provide digital products and services at scale, such as IT-BPM (\$115 billion), digital communication services (\$45 billion), and electronics manufacturing (\$10 billion). We estimate that these sectors could grow significantly faster than GDP, and their value-added contribution could range from \$205 billion to \$250 billion for IT-BPM, \$100 billion to \$130 billion for electronics manufacturing, and \$50 billion to \$55 billion for digital communication services, totalling between \$355 billion and \$435 billion and accounting for 8 to 10 percent of India's GDP in 2025.

Alongside these already digitised sectors and activities, India stands to create more value if it succeeds in nurturing new and emerging digital ecosystems in sectors such as agriculture, education, energy, financial services, healthcare, and logistics. The benefits of digital applications to productivity and efficiency in each of these newly digitising sectors are already visible. For example, in logistics, tracking vehicles in real time has enabled shippers to reduce fleet turnaround time by 50 to 70 percent.¹⁴ Similarly, digitising supply chains allows companies to reduce their inventory by up to 20 percent. Farmers can cut the cost of growing rice by 15 to 20 percent using data on soil conditions that enables them to minimise the use of fertilisers and other inputs.¹⁵

In cross-cutting areas such as government services and the markets for jobs and skills, digital technologies can also create significant value. For example, shifting government transactions, including subsidy transfers and procurement, online can enhance public-sector efficiency and productivity, and creating online marketplaces that bring together workers and employers could considerably improve the performance of India's fragmented and largely informal job market.

Unlocking this value will require widespread adoption and implementation. The economic value will be proportionate to the extent that digital processes permeate organisations and their marketing and service delivery channels, shop floors, and supply chains. Our estimates of potential economic value for each sector vary depending on adoption rates by 2025; for example, in areas where the readiness of India's firms and government agencies is low and considerable effort will be required to catalyse broad digitisation, adoption may be as low as 20 percent. Where private-sector readiness is relatively high and government policy is already supportive of large-scale digitisation, adoption could be as high as 80 percent.

¹³ Estimates based on industry revenue and cost structures and growth trends.

¹⁴ *Who we are*, Rivigo, rivigo.com.

¹⁵ Pinaki Mondal and Manisha Basu, "Adoption of precision agriculture technologies in India and in some developing countries: Scope, present status and strategies", *Progress in Natural Science: Materials International*, June 2009, Volume 19, Issue 6.

In all, we estimate that India has the potential to create considerable economic value by 2025: \$130 billion to \$170 billion in financial services (including digital payments); \$50 billion to \$65 billion in agriculture; \$25 billion to \$35 billion in retail and e-commerce (including supply chain); \$25 billion to \$30 billion in logistics and transportation; and roughly \$10 billion in areas such as energy and healthcare (Exhibit E6). Greater digitisation of government services and benefits transfers could yield economic value of \$20 billion to \$40 billion combined and up to \$70 billion from more efficient skill training and job market matching using digital platforms. The economic value is estimated as a range (see Box E2, “Our methodology for sizing economic value”). While these estimates underscore large potential value, realisation of this value is not guaranteed: losing momentum on the government policies that enable the digital economy would mean India could realise less than half of the potential value by 2025.

Box E2.

Our methodology for sizing economic value

Our research seeks to analyse and quantify the potential economic impact of digital technology and applications in India over the coming years.

The core digital sectors we describe (IT-BPM, digital communication services, and electronics manufacturing) are already considered part of India’s digital economy, and their GDP contribution is measured based on conventional revenue, expense, and value-added metrics.

Economic data are not available for technology-based business models and applications in newly digitising sectors—such as agriculture, education, energy, financial services, manufacturing, healthcare, logistics, and retail—because national income accounts do not yet track them separately. For these areas, we create broad estimates of potential economic value in the future. We use a value-impact approach to understand and estimate the potential effect of digital adoption on productivity based on micro evidence from sectors and firms. We identify discrete use cases and estimate their potential impact by quantifying the productivity gains possible if they were to scale up and achieve moderate to high levels of adoption. Productivity gains are estimated by measures such as greater output using the same resources, cost savings, time savings, and new sources of capital and labour that could become available with the implementation of digital technologies.

We do not estimate potential GDP impact because the accounting and marketisation of productivity gains remain uncertain and hard to predict. For example, it is unclear whether time saved will convert into productive and paying jobs, and whether new digital services will generate consumer surplus accruing to users of technologies or paid products that yield revenue to producers. Nevertheless, we believe these estimates provide a sense of the order of magnitude of the impact that digitisation represents for an economy of the scale and breadth of India’s.

All our estimates are in nominal dollars in 2025 and represent scope for economic value creation in that year. They do not represent market revenue or profit pools for individual players; rather, they are estimates of end-to-end value to the whole system.

Our estimates of economic value in 2025 represent potential; they are not a prediction. The pace of India’s progress will depend on government policies and private-sector action. Realising the economic value estimated would necessitate investment in digital infrastructure and ecosystems, complementary investment in physical infrastructure and productive capacities, and education and training of the workforce.