

THE BOSTON CONSULTING GROUP





The \$250 Billion Digital Volcano: Dormant No More

By 2020, India's internet industry is expected to double from today's \$125 Billion, growing to 7.5% of the GDP

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EXECUTIVE SUMMARY

Digital adoption in India has been growing rapidly

While in the last 3 years Smartphone users in India have gone up ~4 times, mobile internet users have grown to ~391 Mn – making India the second¹ highest country. However, high speed internet users have been limited to only ~56%. As a result, average data consumption per user continues to be low standing at less than 1 GB data per month, vis-a-vis developing economies like Indonesia and Brazil at 2–3 GB/ month and developed economies like Japan and US at 9–11 GB/month.

Three key forces are coming together to unlock the latent digital demand

By 2020, 4G enabled devices are expected to grow 6 times to ~550 Mn devices, constituting ~70% devices in use. At the same time, reliable high speed data is becoming both ubiquitous (4G availability already ~72%, ahead of more developed economies like Germany and UK) as well as mass affordable (data rates have reduced to less than one-third in just 4–5 months). Moreover, digital content is proliferating as well as improving in quality, thus driving consumption. Mobile internet users are expected to nearly double from 391 Mn today to 650 Mn by 2020 while data consumption per user is estimated to grow 10–14 times to reach 7–10 GBs/month.

India's internet economy expected to double to become ~USD 250 Bn by 2020

The internet economy is becoming a major contributor to GDP, and is expected to grow to ~7.5% of the country's GDP by 2020 vis-à-vis the current ~5%. E-commerce and financial services are projected to lead the growth. For instance, share of digital payment transactions could more than double to go up to 30–40% by 2020.

Digital economy will have a much broader influence beyond the direct economic impact

Digital adoption will deliver several citizen-centric social benefits like enhancing ease of doing business, improving access to services and products and transforming governance. Adapting to change, for instance the impact on jobs, will be critical to the digital transformation.

1. As of Jun 2016.

Note: Reported internet users in India was 329 Mn in Jun 2016, 345 Mn in Sept 2016 and 391 Mn in Dec 2016.



ON THE EDGE OF THE CRATER

Digital India story set to come alive



High speed mobile internet adoption expected to surge from today's ~56% to ~85% of total mobile internet user base by 2020

Over the last few years, India has experienced phenomenal digital adoption

he last decade has seen India embracing technology, with digital making inroads into all walks of life and reaching more and more Indians each year. India's digital narrative has been largely small screen led, with the mobile becoming the first source of accessing internet in India, surpassing computers and laptops. Mobile penetration has increased by leaps and bounds percolating to the grassroots, with almost 700 Mn mobile phones in operation today in India. At present, ~65% of these are feature phones, with an average price tag of ~INR 1,000. The ~250 Mn Smartphones form the premium end of the market with an average price of ~INR 8,000.

Empowered with devices, Indians are increasingly doing more than just calling on their handsets. One in every four Indians today accesses internet on the mobile phone, summing to almost 391 Mn mobile internet users – which for perspective is bigger than the population of the US today. However only half of these (~218 Mn) are able to access high speed internet, while the remaining 173 Mn users online on feature phones are constrained by the device capability and internet speed.

The digital wave so far has started whetting the data appetite of the upper fraction of the Indian economic pyramid. What started with the early adopters like the youth who are more familiar with technology, has now proliferated to their parents and even grandparents. Social networking and messaging have been the biggest application enablers to inducing and more importantly sustaining adoption. Online media and entertainment is also beginning to gain traction with users listening to music, watching movies, trying out gaming etc. While the trajectory is nothing short of phenomenal, mass adoption and innovation at scale will be the next and critical step in achieving the digital India ambition.

Note: Smartphone users and data consumption figures are as on Dec 2013 and Sept 2016. Mobile Internet users and mobile broadband users are as on Dec 2013 and Dec 2016. Source: IDC, TRAI, BCG Analysis.

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ANNE:

India has already become the second largest country by mobile internet users globally

earing testimony to India's digital emergence is the fact that India today ranks 2nd globally in the number of internet users, behind only China. As of late 2016, WhatsApp had ~160 Mn monthly active users in India, making India its biggest market globally. Facebook had ~155 Mn monthly active users in India as of mid 2016, second only to the US. Professional networking platform LinkedIn had ~37 Mn users, making India its second biggest market after the US.



Note: For India, the figures are as reported by TRAI; For other countries, internet users as reported by ITU. *Number of mobile internet users in India increased to 345 Mn in Sept 2016 and 391 Mn in Dec 2016.

Source: Internet World Stats, ITU, TRAI.

Mobile internet users (June 2016) – Top 5 countries globally (Mn)

However, internet consumption continues to be low when compared with global peers

hough the number of internet users has proliferated, usage still remains low when compared to global peers. Low fixed line broadband coverage, high proportion of feature phones amongst the mobile handsets in use (unable to support high speed data access) and high data prices have been some of the key contributing factors. As an outcome, most online consumption today is restricted to basic applications like communication, search and shopping which are non-data intensive

9-11 8 - 100.5-1 USA China Brazil

Mobile (cellular + WiFi) data consumption per user – 2016 (GBs/month)

Source: Ovum, Internet World Stats, ITU, TRAI, PQ Media, "China Internet: There's time enough but none to spare", Bernstein, BCG Analysis.

Three forces are now opportunely synergizing to unlock internet consumption in India

hile the latent digital demand has been building up for a while, a combination of multiple factors is coming together opportunely to unleash it. The device landscape is maturing guickly, with better and more affordable devices inundating the market. At the same time, high speed internet has become widely and reliably available, as well as mass affordable Recent events are driving digital payments, bolstering digital adoption across the country. Simultaneously, digital content is proliferating with more players entering the space producing



The Indian internet economy is set to transform with 550 Mn high speed internet users – \sim 85% total mobile internet user base by 2020

ecent disruptions in the telecom space have provided a strong impetus to digital adoption in India, accelerating the rate by at least a few years. While the total number of mobile internet users is expected to grow in line with previous estimates to almost 650 Mn by 2020, high speed internet access hitherto constrained is expected to proliferate with ~550 Mn mobile broadband users by 2020. This can prove to be a huge boost for the internet economy. Data consumption is set to dramatically expand to ~7–10 GB per month per user from the current ~700 MB per month per user, ~12 times the current consumption in just 4





Note: Mobile internet users and high speed mobile internet users figures are as on Dec 2013 and Dec 2016. **Source:** TRAI, BCG proprietary data, BCG Analysis.

Consumption of these high speed internet users by 2020 could exponentially increase from ~0.7 GB per month to 7–10 GB per month

The amount of data consumed online is driven primarily by three factors. Time spent online directly translates into quantum of online activity, and therefore has a direct bearing on data consumption. Since video consumption (in any form) is the most data intensive activity, the mix of online activities, or put simply the share of video-heavy activities the user engages in is another key factor. Lastly, the resolution or form factor of media consumed online impacts the data consumption.

With increasing adoption Indian users are spending more time online, engaging in more data heavy use cases like online media and entertainment. Even social networking which has hitherto seen the highest adoption amongst Indian consumers is becoming more data intensive thanks to increased video usage – e.g. Facebook's video auto-play feature on the timeline. Furthermore, as network speeds improve, both content providers and consumers become more conscious of video quality and resolution. For instance, Google has recently rolled out a new update for its YouTube app for iOS, bumping up the maximum video resolution from 720p to 1440p.

These trends are in line with those observed in advanced economies like the US. Data consumption in India has the potential to increase almost 10–14 times from 0.7 GB currently to 7–10 GB per user per month by 2020. Time spent

Mix of online activities (share of video)



Resolution/ form factor



Explosion in digital consumption driven by shift in supply paradigm and new demand use cases



All figures per user

Note: Mobile data consumption considered.

0.7 GB/user/month consumption reported for Sept 2016; ~0.5 GB/user/month in Jun 2016. **Source:** BCG proprietary data, PQ Media, TRAI, BCG Analysis.

High speed internet consumption at scale can enable mass adoption of numerous use cases for the first time

or long now, numerous applications of the internet have been touted to take off, but mass usage has been largely limited to basic search, networking and messaging. One of the biggest impacts of the pervasiveness of high speed internet would be the digital evolution of industries creating new use cases hitherto deemed futuristic.

Health, e-commerce, education, travel & hospitality and media & entertainment are some of the key sectors to be impacted by the digital evolution. Apart from revolutionising the way we access services in each of these, for instance virtually consulting your doctor via video sitting at home, this will have far reaching impact like bringing quality primary healthcare to Indian hinterlands through remote assistance, creating and accessing health records of the poorest, etc. Similarly, e-education could bring teaching to villages struggling with basic physical infrastructure, or at the very least augment it to ensure its effectiveness. Scale and convenience would be some of the key mantras of the internet economy.

> XX - Present use case XX - Future use case

e-HEALTH

INFORMATION Prevention, cure and symptoms

DISCOVERY Searching local medical service providers

CONSULTATION Remote assistance through telecare

CYBER MEDICINE Remote treatment via video calling

ELECTRONIC HEALTH RECORDS Cloud based medical history



e-COMMERCE

SEARCH AND DISCOVERY Information and purchase selection

LOW TICKET TRANSACTIONS Low to mid ticket online purchases

3D TRIALS Pre-purchase virtual products trail

HIGH TICKET TRANSACTIONS High ticket frequent online purchases



e-EDUCATION

BOOKS Online book purchase/reading

MOOCS¹ Distance education courses delivered online

TESTING Mocks, question papers and quizzes VIRTUAL CLASSROOMS

Live interactive lectures conducted virtually

ON-DEMAND ASSISTANCE Doubt clarification anytime anywhere

MEDIA & ENTERTAINMENT

DOWNLOADED CONTENT

Stored for uninterrupted viewing

ONLINE STREAMING Live and pre-recorded content

ONE POINT Media delivered solely through the internet; dish/cable not required

UBIQUITOUS CONNECTIVITY Watch a movie anywhere – even in a car or a train

VIRTUAL EXPERIENCES Live event experiences through virtual reality

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INSIDE THE MAGMA CHAMBER

Decoding the burgeoning demand for internet



Disruptions in the device ecosystem (4G Smartphones to grow ~6 times by 2020), internet connectivity (4G 3-4 times faster than 3G) and online content spaces are converging to drive digital adoption

Recap: Understanding the three forces driving internet adoption in India today



India's device ecosystem is leapfrogging by 2–3 years with 4G phones becoming synonymous with Smartphones

martphones, especially high speed internet compatible Smartphones have largely been unaffordable, with feature phones still forming the majority of handsets in use. However devices are set to leapfrog a few years by phasing out 3G phones ahead of earlier estimates and becoming completely 4G enabled by 2018. With the emergence of 4G enabled feature phones, high speed internet access could go up even further becoming almost completely ubiquitous for all mobile phone users. Hyper competition in the devices space is continually driving the handset prices down, with each new slew of models offering more for same or less

3G Smartphones projected to phase out by 2018 – replaced by 4G Smartphones inundating the market Installed base (Mn)



Source: IDC, Expert interviews, BCG Analysis.

High speed internet is becoming ubiquitous with 4G access across the country like never before



Source: Opensignal, Expert interviews, BCG Analysis.

"Mass affordability" of high speed data is becoming the game changing catalyst driving adoption at scale

ntil recently, internet access and use was restricted to only the more privileged segments of the Indian society. Price of data when measured with respect to incomes (indicator of affordability) was significantly higher than global peers. However, recent events and a fiercely competitive telecom market have brought down data rates to less than one-third in a short span of just 4–5 months. This is fundamentally transforming high-speed data usage from a privileged benefit to a mass commodity – accessible by all.

Data tariffs in India compared to other markets

Annualized realized tariffs per GB of data as a % of GNI per capita (2015)



Source: Analysys Mason, BCG Analysis.

Case study: 100 Million Indian users consumed ~10 GB data per month per user exhibiting high latent demand

n September 2016, the Indian telecom industry saw the entry of a new challenger telco which for the first time offered free high speed data to customers. This saw widespread adoption, not only adding ~100 Mn internet users in under 120 days, but also exploding the amount of data consumed to unprecedented levels. New and existing mobile internet users alike for the first time had access to unconstrained data, and made the most of it as seen by the total data usage. This pilot among its many firsts gave us a glimpse of the enormous latent demand for data in the Indian consumer market, inducing online trial and adoption amongst users. Some of the most popular online use cases for new adopters were watching and downloading videos primarily driven by media and entertainment, and making video calls. This is in line with the trend observed in developed markets, where video consumption is one of the most salient online use cases.



High speed free data offered to customers for a period of **7 months** along with free content applications like media and entertainment, news etc.

Over a very large sample set of ~100 Mn users, it was observed that an Indian cousumer can use on an average 10 GB data per month when offered at affordable rates.

Observations from the recent development in the telecom industry

Source: Press releases.

Exponential increase in data usage

Average data consumption per user¹



1. For ~100 Mn consumers on new entrant's network.

As availability of digital content is surging...



... a commensurate increase is being observed in digital adoption

Content partnerships on the rise as players look to leverage synergies

Amazon India has inked deals with Dharma Productions and Vishesh Films to stream their movies on Amazon Prime

Viacom18's Voot has patnered with **Turner** to become the largest online destination for kid's content in India

Digital entertainment company **Hungama** has partnered with British company **ITV Studios,** which produces content for channels like BBC, Channel 4 and Sky Netflix has entered into a 3 year deal with Shah Rukh Khan's production house Red Chillies Entertainment to stream both upcoming as well as past films

Star India's **Hotstar** has partnered with **Disney India** to showcase the studio's greatest hits exclusively on Hotstar



Source: Press releases; Think with Google.

Case study: Niche content player that made it big

CHUCHU TV is a children's YouTube channel serving as an entertainment portal as well as learning resource for kids







Chuchu TV is India's **3rd most subscribed** YouTube channel with more than **8.5 Mn subscribers.** It is **ranked 251** globally in terms of YouTube subscribers



The YouTube channel has amassed **~8 Bn views** with just 148 video uploads and is **ranked 42 globally** in terms of viewership – more than star channels like David Guetta and Enrique Iglesias



USPs: Fresh content and unique characters, music and visuals

Source: Think with Google, Vidooly, YouTube.

What does data abundance mean for a consumer?



Note: Illustrative - data consumption not additive above.

However there will continue to be significant variance in data consumption amongst different consumer segments

University

Students

ven in a data abundant future where affordability and access are no longer constraints, while the average data consumption per user would be significantly higher than today, we expect to see a wide variation in data consumption across different consumer segments. This is driven by two factors – amount of disposable time and online consumption preferences. For instance, young professionals who lead more fast paced lives would watch significantly lesser movies and TV series than students or middle-aged homemakers who are likely to have much more disposable time at hand. Likewise, consumption preferences would also be vastly different for each

Profile O Profile : 19 - 25 years : 26 – 35 years Age Age Internet : Grew up with Internet : Early adopters with Familiarity internet Familiarity usage across wide applications : Maintain social : Make personal and Kev Key professional lives Objective connections, Objective fun and study easier **Primary online activities O**Primary online activities **Emails** Social networking Instant messaging Browsing/search Movies, sports and TV series Instant messaging

Youna

Professionals

Source: BCG proprietary data, BCG Analysis.





THE EXPLODING LAVA

Re-imagining the Indian economy



India's internet economy expected to double to become ~USD 250 Billion by 2020 – ~7.5% of the country's GDP

Digital is quickly becoming a core part of most businesses...

raditionally, the use of internet was largely limited to information dissemination and effective communication. Over time however, this has significantly evolved even consume products and services online. For instance, search engines like Google and Bing allow users to discover information on the web. E-commerce platforms like Amazon. Flipkart and Snapdeal allow users to find as well as buy products physically delivered to the doorstep, while other platforms like Uber, Ola and Urbanclap serve as service discovery and offline delivery portals. OTT players on the other hand, like Hotstar, Netflix and Voot, not only offer online discovery but also consumption in the form of digital content. As a consequence of this digital pervasiveness, businesses in almost all industries are going



A consumer on the internet can...

... and a key contributor to India's GDP



Source: Economist Intelligence Unit; Organisation for Economic Co-Operation and Development (OECD); Country stastical agencies; BCG Analysis.

India's internet economy is expected to double to become ~USD 250 Billion by 2020



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Source: Industry reports (NASSCOM, CII, Gartner, IDC, PQ Media), secondary research, BCG proprietary data, BCG Analysis.

Select deep-dive: With the dual impact of demonetization and digital adoption, India could have up to 30–40% digital transactions by 2020

ndia has hitherto been a cash heavy economy, with almost 80% transactions being carried out in cash. This is not only way behind mature economies like UK. Australia, US and Germany where cashless transactions account for 70–90% transactions, but also other emerging economies like China and Brazil where over 50% transactions are cashless today. The recent demonetisation however has tremendously boosted digital payments, creating traceability and leapfrogging adoption by almost 2 years. For instance, in November 2016 Paytm recorded 7 Mn transactions in a single day, more than the average number of transactions on credit and debit cards combined in a day at the time in India.



% digital transactions

Base Scenario - based on earlier projections **Disruptive Scenario** - incorporating the impact of demonetization

Source: BCG-Google Digital Payments 2020.

Demonetization doubled monthly POS transactions, leapfrogging growth by ~24 months Average number of POS transactions per day (Mn)



^{1.} Includes POS transactions through both credit and debit cards. **Source:** RBI data on bank credit and deposits of scheduled commercial banks, 2016, BCG Analysis.

Select deep-dive: Digital is making in-roads in the education space helping address multiple challenges

Delivery Content

Information ,

Platform



Managing students in class

Lack of personal attention in school and after school due to large class size and insufficient teacher bandwidth

Limited teaching time/ time management

High academic and non-academic workload makes it challenging to spend necessary time on teaching content

Inadequate teacher quality

Inability to attract/retain good quality teachers coupled with low motivation of teachers/poor qualifications



Low access to opportunities/ information

Lack of focus on non academic activities, counselling and low awareness of career options among students

Lack of platforms to identify development areas, predict performance and design development plan

Smartclass (smart boards, digital content, lesson delivery platforms etc.)

Online tutoring and test prep (supplemental learning and virtual tuitions)

Adaptive learning

Education tablets

Professional development (training)

Games based learning

School rating, aptitude testing and career counseling

Platform for parent-teacher communication and collaboration

Learning management systems

Education marketplace



	Key Players
Smart class offerings in India offer passive delivery through the use of smart boards, projection device and digital content. Currently, there are 6 main service providers in India catering to 33,000 schools.	Educomp, Tata, Pearson
Constitutes 3 sub-plays: Online tuitions (where students choose the tutor), digital content (curriculum linked videos, interactive modules), and assessments (adaptive tests). Currently, freemium model is gaining traction among students.	Byju's, Extramarks, Meritnation
Can be applied in K-12, tutoring and test prep segments and aims to create personalized learning paths adapting content to students' knowledge level. Current product offerings in K-12 are largely for Reading and Maths skills.	Mindspark, Khan Academy, Snapwiz
2 major sub-plays: 'edutainment' tablets and 'educational' tablets. Edutainment tablets are designed for 2–10 years old and offer both educational and entertainment value, while education tablets are focused only on educational content.	Classpad, Eddy, Mobule
Entails training teachers on content, skills and pedagogy. Technology based offerings include online resource library for knowledge updation and pedagogical techniques, platform for collaboration, self learning courses etc.	Gurug, Firki, Centa
Indian players have developed curriculum-based games and employ both B2B and B2C models. Consists of two segments: motion sensor based gaming and Interaction between tablet and physical play.	TinyApps, Nayi Disha, Convegenius
Information platforms currently provide rankings/reviews for institutions along aptitude matching. Players usually offer both school rating and aptitude testing options, but are focused mainly on one of the sub-plays.	Careers360, Shiksha, Mapmytalent
Communication platforms currently provide a channel to communicate with various stakeholders, e.g. broadcast option for messages, alerts (e.g. attendance tracking), interaction between students, parents and teachers, etc.	Flinnt, Edsys, Uolo
Learning Management Solution (LMS) digitizes the entire education delivery and management process. Sub-plays include pure platform software, customizing and hosting, deployment and training.	Smartschool, Classteacher, Moodle
Offerings include: Offline product/ service listings (e.g. Tripadvisor), doubt clarification platforms (e.g. Quora), communities for interaction (e.g. Facebook), product price comparison across providers (e.g. savings.com).	Edukart, eschoolbuddy, Schoolkart

Beyond economic impact, digital has several citizencentric social benefits

<mark>_ ○ Livelihood</mark>

Enhanced ease of doing business

For long, Indian businesses have faced three challenges in setup and scaling: Information asymmetry and prevalence of middlemen, Need for local infrastructure to scale and primarily cash based business transactions. Technology led solutions are now allowing businesses to break these barriers.

Seamless financial transaction support through secure and standardized digital payments infrastructure

Greater and faster scale with minimum financial investments

Going online allows wider reach in minimum time and cost.

Rural empowerment and fair play

Online price discovery eliminates the need for middlemen preventing exploitation of the poor. Farmers can access real-time information (e.g. weather, crop quality) and market their produce.

-O Consumption

Greater access to services and products

Low resource per capita and economic constraints have limited the availability and quality of services like healthcare and education beyond large cities. Digital disruption is fundamentally transforming the cost and process of service delivery enabling reach.

E-commerce

Online retail has brought a wide variety of products and services to the average Indian consumer across town-tiers and eliminated price inefficiencies in the system.

Banking penetration

Mobile banking can potentially drive financial inclusion.

Healthcare

E-health can help deliver primary healthcare at affordable prices.

Education

Digital platforms can help deliver affordable quality education especially in rural India where physical education infrastructure is either non-existent or inadequate.

O Citizen services

Technology led reforms

Reforms aim to enhance citizens' lives by targeting three key aspects - lower cost of services, reduced bureaucracy and curtailed corruption. Reforms also involve broadening the bouquet and quality of services while keeping the cost to the exchequer at a minimum. The transformative power of reforms has been greatly enhanced in recent times thanks to modern tools. Reforms through the effective use of technology have the potential to break the 'iron triangle' of Affordability, Access and Quality for the first time. The Jan Dhan Yojana has brought the marginalised members of the population into the banking system while Aadhaar has given billions of Indians a digital identity. The telecom revolution places India among leading internet nations providing ubiquitous high speed connectivity. With a strong technology foundation, India can now target citizen-centric reforms in critical areas.

Government-citizen interface

• Easy access to public services, e.g. passport application, cash transfers etc.

- Increase in government responsiveness and transparency, e.g. access to public information
- Inclusive governance inviting public opinion

Public distribution system

- Online direct-to-account disbursement of entitlements plugging systemic leakages and minimizing corruption
- Robust authentication of consumers to ensure fraud detection and identifying "ghost beneficiaries"

Individual autonomy

- Internet lends a convenient channel for free expression
- Pillar of democracy as divergent opinions get to be heard

Enhanced security for citizens

- Central database of crimes, missing persons etc. can aid inter-state cooperation
- Escalation and emergency response can be expedited by a connected law enforcement workforce
- Enhanced surveillance can help pick up early signals and mitigate crime e.g. cyber security



Adapting to change – for instance, the impact on jobs – will be critical to digital transformation

Increased automation

Rapid technological advancement in processing power, AI, advanced robotics, autonomous control systems and other technologies minimizing manual labour and repetitive roles

New ways of working

Increased flexibility in terms of work timings and location mobility enabled by technology to unlock higher productivity – allowing people to optimize work life, diversify income streams and be more effective



For example

Machine compliance managers, automated systems experts, virtual reality designers etc. and other cognitive roles will emerge from increased automation. Demand for routine tasks such as information processing, vehicle operations, handling and moving objects etc., is expected to diminish.

For example

Under Uber's model, drivers can optimize their income by only working during peak hours, allowing them to make the same salary as other taxi drivers even while working less hours. On an average, UberX drivers in the US work 4 hours a day and make ~1.6x the hourly salary of a taxi driver.

Note: For Uber, average pay across 6 major US cities considered. **Source:** Uber Driver Partner Statistical Report, Press releases, BCG Analysis.

Emerging business models

New business models leveraging technology will create new job opportunities as well as give impetus to entrepreneurial activities by lowering entry barriers

For example

Through a platform business model, Airbnb is able to connect travelers to homeowners without itself owning any rooms. This has facilitated the company to scale at an incredibly fast rate at zero marginal cost. New technology may allow companies to reach scale with fewer employees and low infrastructure costs.

Leading to...







Creation of jobs

Brand new job categories with focus on cognitive skills, empathy and human-machine interface will emerge over the coming decades as technology change introduces new needs

Destruction of jobs

Jobs that predominantly involve routine and manual activities have the highest likelihood of being completely automated

Augmentation of jobs

Jobs with both routine and nonroutine tasks will be augmented – automating routine tasks will allow workers to multi-task and focus on non-routine aspects

Thoughts from key industry players

Price and convenience are the two biggest drivers for consumers to adopt online travel booking. While discounting induces trial, long term customer engagement can only be ensured through consistently great customer experience. As we scale up and make inroads into smaller towns, satisfactorily executing fulfillment and providing service assurance, e.g. for lesser known hotels, is the next big challenge for sustaining long term growth.

— Deep Kalra, Chairman & Group CEO, Makemytrip

Creating awareness and establishing user trust are currently the key challenges in the online education space. Once adoption is induced, we have found engagement rates to be phenomenal, with free users spending ~30 minutes per day v/s ~90 minutes per day for subscribers. The need for quality academic content is even more pronounced in the non-metros where alternate avenues are limited.

- Zishaan Hayath, Co-founder, Topplr

We expect digital adoption to have a disproportionate impact on B2B businesses, directly impacting the GDP. India is set to have globally the most seamless and frictionless financial system, which could potentially double the amount of lending in the near future.

- Alok Mittal, Co-founder & CEO, Indifi Technologies Pvt. Ltd.

A lot of collaboration will be required amongst players in the digital ecosystem in order to integrate solutions for different consumer needs. This becomes even more challenging in the financial space where different entities are governed by different regulatory bodies. Formalization of the small transaction economy would be the other big unlock for digital payments in the country.

- Shinjini Kumar, CEO, Paytm Payment Bank

"

GLOSSARY

2G, 3G, 4G: Wireless technologies – 'G' stands for generation of the mobile network. A higher number before the 'G' indicates more advanced technology, implying higher efficiency through the wireless network.

Adaptive learning: An educational method which uses computers as interactive teaching devices, and to orchestrate the allocation of human and mediated resources according to the unique needs of each learner.

Content on demand: Systems which allow users to select and watch/listen to video or audio content such as movies and TV shows when they choose to, rather than having to watch at a specific broadcast time.

Demonetization: Act of stripping a currency unit of its status as legal tender. The term has been used in this report with reference to the demonetization of INR 500 and INR 1,000 currency notes in India in November 2016.

E-commerce: Commercial transactions conducted electronically on the internet.

Gross Domestic Product (GDP):

Monetary value of all the finished goods and services produced within a country's borders in a specific time period.

Gross National Income (GNI): Total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP) plus factor incomes earned by foreign residents, minus income earned in the domestic economy by non-residents.

High speed internet (mobile broadband): Internet service with speed greater than 512 Kbps.

Internet economy: Cumulative spend on every layer of the digital stack, which comprises of private and government spending on internet related services, connectivity, devices and hardware, digital payments, and services (applications). **Over-the-top (OTT):** Delivery of film and TV content via the internet, without requiring users to subscribe to a traditional cable or satellite pay-TV service.

Smart board: Interactive whiteboard that uses touch detection for user input.

FOR FURTHER READING

The Boston Consulting Group publishes other reports and articles on related topics that may be of interest to senior executives. Recent examples include:

Decoding the Digital Opportunity in India

A report by The Boston Consulting Group in association with the Retailers Association of India (RAI), February 2017

Unleashing Technology, Media and Telecom with Digital Transformation

A report by The Boston Consulting Group, October 2016

Acting on the Digital Imperative

A report by The Boston Consulting Group, September 2016

How Telcos Can Become Video's Next Big Star

An article by The Boston Consulting Group, June 2016

The New News on Print Media Transformation

An article by The Boston Consulting Group, June 2016

Unlocking the Potential of Consumer Digital Payments

An article by The Boston Consulting Group, October 2015

The Growth of the Global Mobile Internet Economy

A report by The Boston Consulting Group, February 2015

India@Digital Bharat: Creating a \$200 Billion Internet Economy

A report by The Boston Consulting Group in association with Internet and Mobile Association of India (IAMAI), January 2015

The Mobile Revolution: How Mobile Technologies Drive a Trillion-Dollar Impact

A report by The Boston Consulting Group, January 2015

NOTE TO THE READER

ABOUT THE AUTHORS

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india internet day

India Internet Day is a leadership conference that looks at setting conversations around a long term vision for the industry. The idea of India Internet Day is to look at paradigm shifts in the internet industry globally and what that means for the internet business in India. While based in India, the event seeks to have a strong global connect. The forum also explores the shape of things to come while connecting with the established players, outliers and experimenters - making the forum as a point of reference. In this our fifth year, #iDay2017 goes beyond the predefined boundaries and explore issues of far more relevance and impact.

2016 was a reboot year for entrepreneurs. As money dried and investors kind of withdrew, a sense of maturity set in. A maturity that brought with it knowledge that investors are looking at sustainable businesses and investments are hard earned. Growth and funding come to innovators who create sustainable differentiators and also adequate barriers to entry.

As the year progressed, rules of the road ahead seemed to have changed dramatically. What appeared to be providence for a few also holds opportunities therein for many others. As the demonetisations turns 6 months and GST is set to bloom, as unique sustainable models backed by innovative disruptors become the ask of the day, #iDay 2017 promises to go beyond prosaic and unravels the gamut of opportunities this new path presents. #iDay shakes the fatigue of 2016, clears the air around multiple unknowns to explore issues of far more relevance and impact for entrepreneurs looking building their businesses.

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