Impact of Digitization on Society, Business and Accounting in Asia/India

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Institute of Chartered Accountants of India
INSURANCE !!

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• The slide deck should be understood in context of the speaker presentation
• E&OE
Institute of Chartered Accountants of India

www.icai.org
• Context
• Asia rising
• Digitization Impact
• Accounting and Assurance issues
• anywhere real time – accounting 2 assurance
• Security
• Personal
Disruptive technological innovations have historically started out cheap and simple, gradually improving until they challenged incumbents.

Today, new products are perfected with a few trial users and then embraced quickly by the market, wiping out incumbents @ speed of light.
“The world is changing very fast. Big will not beat small anymore. It will be the fast beating the slow.”

Rupert Murdoch
## Digital Trends

<table>
<thead>
<tr>
<th>INTELLIGENT AUTOMATION</th>
<th>LIQUID WORKFORCE</th>
<th>PLATFORM ECONOMY</th>
<th>PREDICTABLE DISRUPTION</th>
<th>DIGITAL TRUST</th>
</tr>
</thead>
</table>
Key opening comments

- Open Source culture of technology is key for success of IT
  - Digitisation will make Accountants (accounting bodies) also be more open

- Accountants should **NOT** learn technology
  - Accountants **SHOULD** master the skill of **USING** technology
  - Data/Info from AI is same to all; differentiator is how HUMAN uses it.
  - Debit/Credit, the double entry, the accrual system, the FS remain same

- Past - Structured data – historical
  - Future - ++ Semi structured and Unstructured data extracted from all over the web for decision making and opinion formation
  - Valuation based on future - provisioning for warranties, ECL, fair valuation based on DCF
Asia rising; India...
Asia Rising - Digital Driving

• Asia
  • fast becoming the center of digital innovation for the world.
  • accounts for half of the world’s total 2.8 billion Internet users, and it is already the largest regional e-commerce market.

• By 2025, today’s fast-changing technologies — including the mobile Internet, IoT, Cloud, 3-D printing and advanced robotics — expected to lead to over 30% GDP growth in Asia
Microsoft Asia Digital Transformation Study 2017

• Majority Business leaders aware of urgent need to transform digitally to address the changing business climate
  • 29% of business leaders have full digital transformation strategy
  • 49% are in progress with specific digital transformation initiatives
  • 22% have limited or no strategy in place

• Transformation in four key Pillars
  • Empowering Employees
  • Engaging Customers
  • Optimizing Operations
  • Transforming Products and Business Models
India NXT

Indian economy will be bigger than the next five!

That India will be one of the three biggest economies by 2050 is known, but that it will be bigger than the next five economies makes it a one giant economy in the making.

<table>
<thead>
<tr>
<th>NOMINAL GDP ($ BN)</th>
<th>MOVES UP RANKINGS</th>
<th>MOVES DOWN RANKINGS</th>
<th>REMAINS AT RANKINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>17,419</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHINA</td>
<td>10,335</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JAPAN</td>
<td>4,606</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GERMANY</td>
<td>3,865</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>2,951</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRANCE</td>
<td>2,835</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRAZIL</td>
<td>2,346</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITALY</td>
<td>2,149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDIA</td>
<td>2,055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUSSIA</td>
<td>1,861</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2014

2050

Source: The Economist Intelligence Unit
INDIA SECOND LARGEST INTERNET ECONOMY...

SOURCE: Internet Live Stats | All data are estimated
Indicators of Digitization in India

- Mobile subscriber base-
  2012- 860 mn
  2017- 1034 mn

- Smartphone sales in a year-
  2012- 19 mn
  2017- 109 mn

- Telecom Spend- increasing – NOFN, Jio etc

- % of cash transactions in total economy- 68%

- E-commerce volume growth-
  Now- $ 14 bn
  2020- $ 80bn
G 20 USER SCENARIO

EXHIBIT 1 | Evolution of the Internet

From developed to developing markets
Internet users in the G-20 countries (millions)

2005
- 238 Developments markets
- 508 Fixed connections
- 746 total

2015
- 1,390 Developments markets
- 2,062 Fixed connections
- 672 total

From fixed to mobile
Consumer broadband connections (millions)

2005
- 167 Fixed connections

2015
- 2,707 Fixed connections
- 2,134 Mobile connections
- 573 total

From basic content to a data explosion
Global Internet traffic (exabytes per year)

2005
- 30

2015
- 966

Sources: Economist Intelligence Unit; Cisco; Ovum; BCG analysis.
Notes: While the European Union is a member of the G-20, the figures include only the independent European members: France, Germany, Italy, and the U.K. The developing nations are Argentina, China, India, Indonesia, Mexico, Russia, Brazil, Saudi Arabia, South Africa, and Turkey. The developed nations are Australia, Canada, France, Germany, Italy, Japan, South Korea, U.K., and U.S.
EMERGING USER SCENARIO

EXHIBIT 2.1 | India is Becoming a Digital Country

People

#2 in the world

Mobile phone users

#2 in the world

Internet users

#2 in the world

Smart phone users

#2 in the world

2015

1,250 mn

1,000 mn

300 mn

240 mn

2020

1,350 mn

1,200 mn

650 mn

520 mn

Sources: eMarketer, Ericsson, UN estimates, BCG research.
SMARTPHONE USAGE - INDIA VERSUS THE WORLD
...AND THE FASTEST GROWING
INTERNET-ON-SMARTPHONE POPULATION

M P Vijay Kumar
Mobile = 41% of India E-Commerce... = More Mobilized vs. Most Other Countries*

Mobile as % of Total E-Commerce Sales, 2014

- India: 41%
- China: 30%
- UK: 25%
- France: 20%
- Brazil: 15%
- Australia: 10%
- USA: 5%
- Germany: 2%
- Russia: 2%
- Japan: 1%

*Mobile e-commerce penetration defined as % of total e-commerce sales made via mobile devices. Source: Morgan Stanley Research.
EMERGING MARKETS

Smartphones likely to become the primary banking channel by FY20

- Million users
  - Smartphone users
  - Non-smartphone users
  - Active bank accounts

<table>
<thead>
<tr>
<th></th>
<th>FY14</th>
<th>FY16 (P)</th>
<th>FY18 (P)</th>
<th>FY20 (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smartphone users</td>
<td>368</td>
<td>348</td>
<td>434</td>
<td>625</td>
</tr>
<tr>
<td>Non-smartphone users</td>
<td>201</td>
<td>467</td>
<td>525</td>
<td>625</td>
</tr>
<tr>
<td>Active bank accounts</td>
<td>196</td>
<td>8</td>
<td>8</td>
<td>22</td>
</tr>
</tbody>
</table>

To hasten digital drive, reducing cash, cheque transactions needed

- Proportion of total transactions through various channels (FY14)
  - Savings account
  - Current+CC/OD account

<table>
<thead>
<tr>
<th></th>
<th>Cash</th>
<th>Cheque</th>
<th>ATM/CDM</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings account</td>
<td>24</td>
<td>46</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Current+CC/OD account</td>
<td>24</td>
<td>8</td>
<td>8</td>
<td>22</td>
</tr>
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</table>

Digital includes transactions over PoS, mobile and ECS, NEFT and RTGS channels

- Cash transactions refer to counter cash transactions within branch
- ATM/CDM and mobile transactions included are financial transactions only

About 55% cash transactions in branches in savings accounts are deposit transactions

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<tr>
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<th>PSU (medium)</th>
<th>PSU (large)</th>
<th>Private (old)</th>
<th>Private (new)</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit</td>
<td>55</td>
<td>51</td>
<td>66</td>
<td>77</td>
<td>55</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>45</td>
<td>49</td>
<td>34</td>
<td>23</td>
<td>45</td>
</tr>
</tbody>
</table>

Cash deposit machines account for 4% of total cash deposits

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<th>Private (old)</th>
<th>Industry (new)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>2.7</td>
<td>9.7</td>
<td>17</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Source: Boston Consulting Group
Telecommunication services market to grow to $104 billion by 2020.

Data center services is expected to reach about $4.5 billion by 2018. *India is poised to become the second largest market in Asia Pacific region by 2020.*

Cloud Services to grow to $10 billion by 2020.
Free WiFi across 120 rail stations now.
250 by end of 2017. By Google

BSNL, Railtel and the Power Grid are being used to extend the connectivity.

Microsoft
Low cost broadband access to 500,000 villages in India by 2017. By Microsoft

Connects 2,50,000 Gram Panchayats in the country.

Costs $4bn to be completed by 2017.
# India in Last 18 Months

- **Biggest BCP on Earth** – 85% currency sucked overnight in a predominantly cash economy
- **UIDAI – Aadhar** – can be used by any vendor for authentication – world's largest KYC
- **Banking without smart phone**; moving to premises less banking
- **Direct Benefit Transfer** – 50bn dollars - 4bn transactions
- **Jan dhan bank account** – 170mn
- **Portable mobile numbers and bank account number**
- **UPI** - Unified payment interface – P2P payments
- **E locker/ E signs** - for all documents - property, health records, tax records
- **1bn smart phones, 1 bn bank accounts, 1 bn Aadhar** – volume of data and analytics and solutions / commerce on use of analytics/AI for the info
- **Cost per unit for this volume**
- **Top 10 Unicorn in India valued over $30bn**
- **Chrome books in schools** - sponsored by Google - make difference to people. Tech can only help scale
“You either invest in India or do business with India given the potential”

• indian Markets are waiting to explode.
• skilled Workers are ready
• the cost of money will come down
• inflation is beginning to moderate
• government is back at the wheel
• business-friendly laws being enacted

India will be fastest-growing economy for coming decade, Harvard Researchers Predict.
“And, when you want something, all the universe conspires in helping you to achieve it.”

— Paulo Coelho, The Alchemist
Digitization impact..
Digitization driving the world to a new order

• Virtual Digital Banks- There would be no banks, just digital platforms; API banking

• There would be no telecom, just digital marketing companies

  Telecommunication used to be point of sale business for voice then came the value added services, mobile payments and many such services.

  Voice is now free.

  Mr. Mukesh Ambani (Forbes, 33) said Voice is a democratic right, should be free and that data was the new Oxygen. Well in sometime probably data too would be free.

• All companies, across all industries are becoming software companies
Digitization driving the world to a new order

• Would there be airlines if Virtual Reality had its way?
• Retail used to be point of sale business it is now called Amazon or Ali Baba or Flipkart.
• Taxis are called UBER
• Consumers of power now generate power and offer it to the national grids. (Consumers are now Producers)
• It is interesting that the businesses are no longer the same and revenue models are in fact dynamic. Point of Sale is now Direct to Consumer.
Digitization driving the world to a new order

- **SOCIAL order change**
  - McDonalds - ordered on machine, pay by mobile phone and picked up the order delivered by machines.
  - Coffee vending at airport- not a person around
  - At airports there is self-checkins.

- **Algos are trading and show better results**

- Some say that in the next decade there would be more and more less employable people i.e their skills will not be relevant.
Digitization driving the world to a new order

- In India bills are to be uploaded for GST, very soon it will be electronic invoices - **accounting may be redundant.**
- Documents are more textual i.e meta data, how would one audit.
- With digital payments, receipts are redundant.
- APIs will change the way businesses communicates with business.
- Models of Investment will change - Amazon, Google, Tesla and SpaceX have shown – accounting and auditing have to follow suit.
Digitization driving the world to a new order

• BOTS will probably be better at deciding the accounting treatment as variables will be many...

• While Businesses have digitally evolved fast...there has been low investments in Accounting and Auditing.

• Education will now have to start from where it ended for us.
Accounting and Assurance issues
Bots and AI in Accounting and Assurance

- Reading legislations, case laws and sync with individual clientele
- Voluminous agreements - determination of accounting issues/embedded derivatives
- Inter firm and intra firm comparison
- Valuation / Impairment
- Client interaction through voice recognition apps
- More text written by machines than people

AI will leverage HUMAN capability
<table>
<thead>
<tr>
<th>Digital Economy – Examples For Professional Readiness with recent developments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accounting /Auditing (&amp; Valuation) of Aggregator companies like Uber, OLa, Flipkart</strong></td>
</tr>
<tr>
<td><strong>Use of AI /CT to develop tools, softwares to automate accounting work and generate customize reports. Shift to Analytics</strong></td>
</tr>
</tbody>
</table>
| **Future Industry are Tech Driven**
  - Robotics, AI, Big Data
  - Biotech, Nano tech,
  - Driverless Cars etc |
| **Case for Standard Setting for Cyber Currency (Bit coin) Australian ASB** |
| **CAG of India to use BIG DATA analytics for Audit. Setting –up Centre for Analytics** |
| **Reserve Bank of India adopts Block Chain tech to secure Bank transactions and Data** |
| **State Govt. using Block chain to protect Data.**
  - Established Center for Block chain to train man power - Asia’s first |
| **Fintech companies rapid growth** |
| **IT Companies investing resources in AI to develop software /tools to automate report generation for assurance** |
| **Challenges in standard Setting**
  - Valuation of data as an Asset
  - *Impairment* Issues
  - Fair Value etc
  - International Taxation aspects |
| **New IT enabled Business Models- E & M Commerce** |

M P Vijay Kumar

09-06-2017  
34
Accounting issues

• Valuations of intangible (Digital assets) on acquisition
  • Data as asset - ex. Uber, Whatsapp, valuation
  • Revaluation models
  • Impairment testing
  • Fair value for investing companies

• Embedded assets and liabilities

• Digital currency - Bitcoin
  • Financial instrument or Intangible or inventory
Assurance issues

- 100% audit over sampling
- Audit conclusions based on data analytics
- Increase dependence on Artificial Intelligence (AI)
- Audit in real time
- Audit from anywhere
Competency Building- new skill sets required

- Understanding the Digital trade: Data and Tools
- Reading, interpreting conclusions arising of AI – effective Audit conclusions
- Cross – function skills
- Emergence of Digital Quotient (DQ)
- Application and governance of emerging technologies
Anywhere real time ACCOUNTING

2

Anywhere real time ASSURANCE
Emerging Future for Profession

Accountancy will all be cloud based: Paradigm shift away from worrying about data storage, updating computer programs and logging in to the office network to access information. Updates are automatic, information can be accessed anywhere and anytime from a variety of devices by staff and clients, data is securely stored, capital outlays are minimised, fees are predictable, increasingly powerful tools at your fingertips.

Contd...
Emerging Future for Profession

Accountancy will harness the power of big data: Analysis of the vast amounts of data now being generated will allow accountants to model and benchmark information, generating insights that will improve executive decision-making and transform and streamline organisations. Predictive analytics will be used to assess investment risk and will aid the budgeting process. And these insights, once the exclusive domain of multinationals, will now be available to SMEs.

Contd...
Accountancy will integrate non-traditional financial options: The future of finance will be much less bank-centric. Increasingly, accountants will be interacting with non-bank financial organisations. Online payment providers, telecommunications companies and even crowd-funding platforms will all be part of the future financial canvas.

Contd...
Emerging Future for Profession

Accountancy will be more efficient: Most of the transaction and compliance work that took up accountants’ time in the past will be fully automated, as will report preparation and a myriad of other tasks. Accounting processes will also be more streamlined for the client, allowing them more time to develop their business. Tax returns, invoice payments and everyday transaction management will all be available online in real time.

Contd...
Accountants’ roles will change radically: With most of the financial “hack work” being done automatically, traditional revenue streams will dry up. The challenge for accountants will be finding new ways to add value for their clients. Accounting firms will become leaner and more efficient. The services that accountants provide will widen to include big data analysis, assisting their clients to move into cloud computing and business advice and consulting. Rather than becoming expendable, a good accountant’s expertise will be even more valuable to their clients in this time of rapid change.
Accountants will become increasingly mobile: Modern digital communication means that the virtual office is now a reality. Accountants with specialist skills, especially in the area of big data analysis, will be widely sought after. There is no reason why you couldn’t have clients from across the globe or take your business on the road with you.

Contd...
Emerging Future for Profession

Assurance services from any where Similar to Accounting hosted on cloud, processed from any part of the world, assurance services will be rendered from any part of the world; local regulatory requirements alone will determine extent of local involvement
Security is key concern
WannaCry infected hundreds of Companies globally

Zomato reports data of 17 million users stolen

Yahoo Hack – 1 billion accounts compromised

Tesco Bank has 20,000 customers money stolen

British Airways IT systems down

Wonga 2, 45,000 accounts data breached
the future is the beginning......
We could start seeing delivery drones finally start making deliveries in the next two years.

Machines could start thinking like humans as early as 2025.
Space trips designed to send people to Mars could start taking place in 2030.

A Hyperloop could take us in between cities in just six years.
Prosthetics could get so advanced in the next 10 years they could give people new skills.

Clothing could give people superhuman skills in the next 10 years.
Virtual reality could replace textbooks during the next decade.

People could also become Cyborgs by 2045
The smartphone will become obsolete by 2025.

We could rely entirely on renewable energy by the year 2050.
People could start using robots to do work around their house and provide companionship starting in 2030.

Self-driving vehicles could be ubiquitous in the next 10 years.
3D-printing could be used to construct more houses in 20 years.
We could live in a Matrix-like virtual world by 2045.
People could control their home settings using artificial intelligence by 2040 as well.

Super tall buildings could function like mini-cities in the next 25 years.