DIGITAL INDIA

IMPACT OF TECHNOLOGY & AI ON BUSINESS MODELS AND THE ECONOMY

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Chairman Vizag Profiles Pvt Ltd
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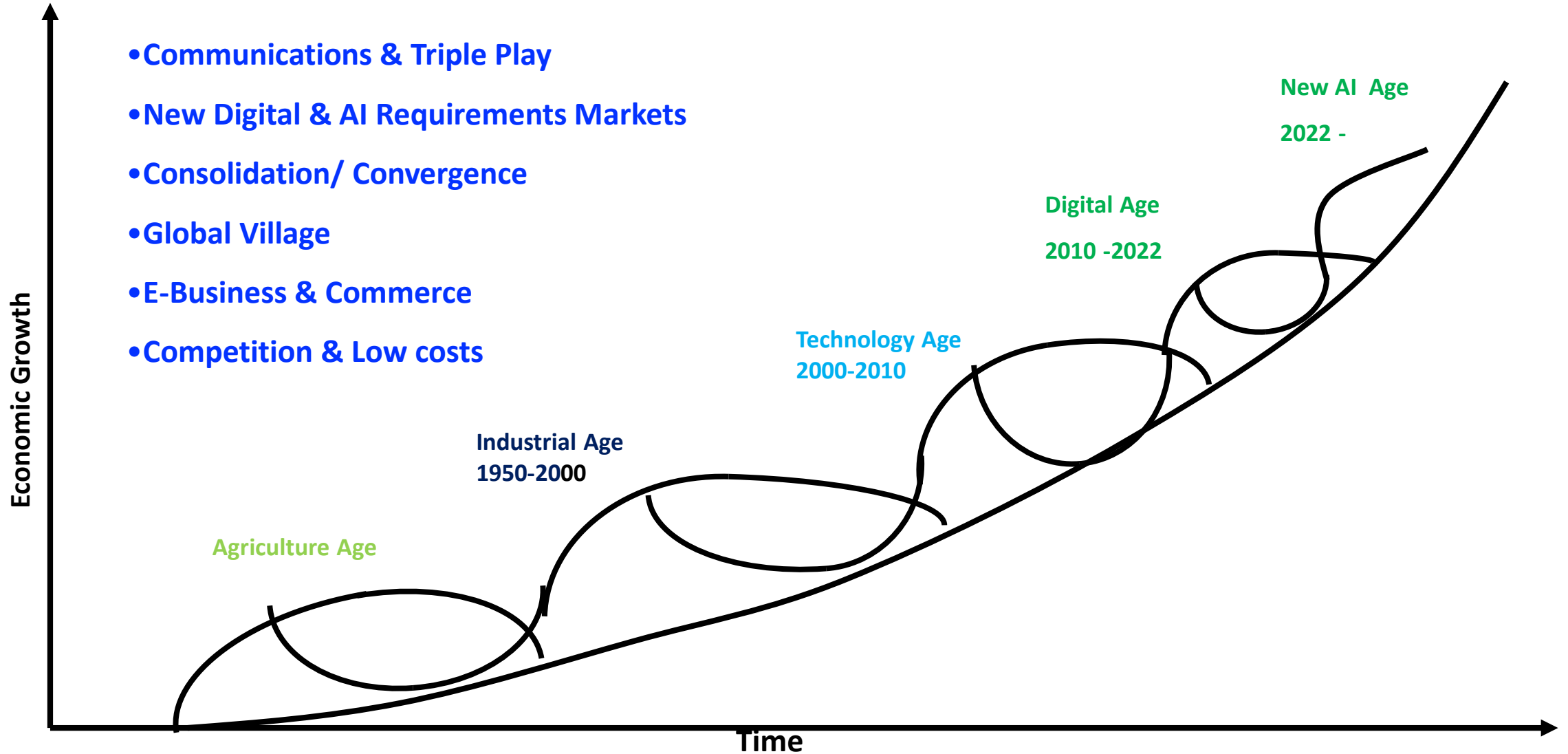
14th April, 2025

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Digital India Background

Indian Economy & Growth

Digital Leaders Vision

Digital Tech Stack

Digital Infrastructure Networks – UPI, GST and ONDC

Startups & Strategy and Case Studies

Challenges and Way Forward with New Skills

INDIA MARCHING TOWARDS DIGITAL AGE & NEW AI ECONOMY

- **Communications & Triple Play**
- **New Digital & AI Requirements Markets**
- **Consolidation/ Convergence**
- **Global Village**
- **E-Business & Commerce**
- **Competition & Low costs**

Economic Growth

New AI Age
2022 -

Digital Age
2010 -2022

Technology Age
2000-2010

Industrial Age
1950-2000

Agriculture Age

Time

Traditional Indian Story – Industry & Infrastructure
(Followed 60 years of 12 Five Year Economic Plans of India)

Core Manufacturing

Agriculture & Traditional

Infrastructure & Service

Core Manufacturing	Agriculture & Traditional	Infrastructure & Service
- Steel & Alloys	- Textiles	- Power Sector
- Petrochemical	- Sugar	- Road Sector
- Cement	- Paper	- Port Sector
- Capital Goods	- Fertilizer	- Telecom Sector
- Light & Heavy Engineering	- Food Processing	- Shipping & Airports
- Electrical Machines	- Chemical	- Hospitals
- Electronics	- Pharma	- Tourism & Hospitality

INDIA'S LEADERS ON DIGITAL INDIA

"Digital India is an enterprise for India's transformation on a scale that is perhaps unmatched in human history."

Shri Narendra Modi
Hon'ble Prime Minister of India

INDUSTRY LEADERS ON DIGITAL INDIA

"The new trifecta of a bank account, digital identity and smartphone for everyone will drive economic change."

Nandan Nilekani
Co-founder of Infosys &
First Chairman of UIDAI

"Everything that's happening in marketing is digitised. Everything that's happening in finance is digitised. So Pretty much every function in every industry, has a huge element that's driven by information technology. Its no longer discreet."

Satya Nadella
CEO, Microsoft

"We've learned that that when we solve for a place like India, we solve for everyone around the world. #DigitalUnlocked"

Sundar Pichai
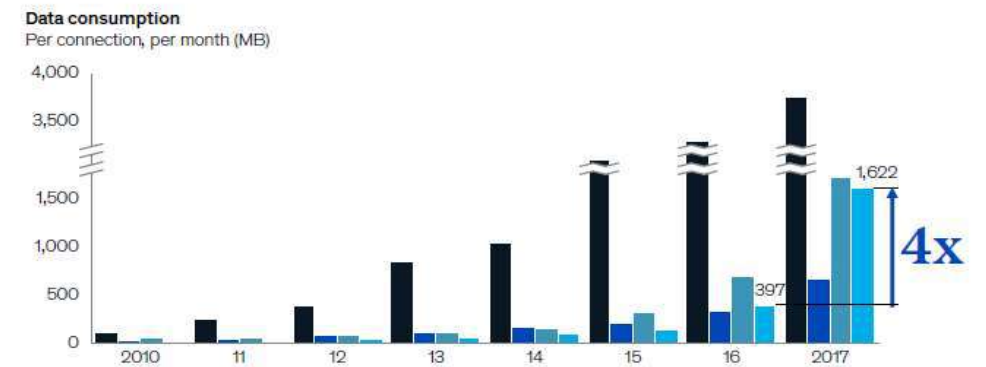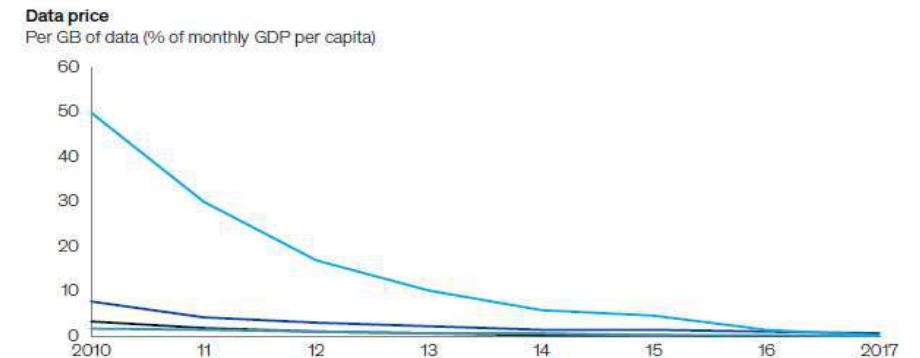*CEO, Google*

DIGITAL INDIA – LANDSCAPE AND POTENTIAL

Enablers

1150.8 million telecom subscribers (Teledensity 90.3%)

913 million Broadband Subscriber

1.38 billion digital identities registered (Aadhaar)

550 million beneficiaries of Jan Dhan Accounts

Worlds highest data user per smartphone (28 GB)

Source: TRAI

Govt. Initiative

Digital India

Digitation of Social Welfare Distribution

100% FDI with approval in Telecom, Digital Payments

Evolving Regulation for E-Commerce & Fintech

Economy & Demographic

World's fastest growing economy at 6.1%

Fast technological absorption

60% active working population & 50% below 30 yrs.

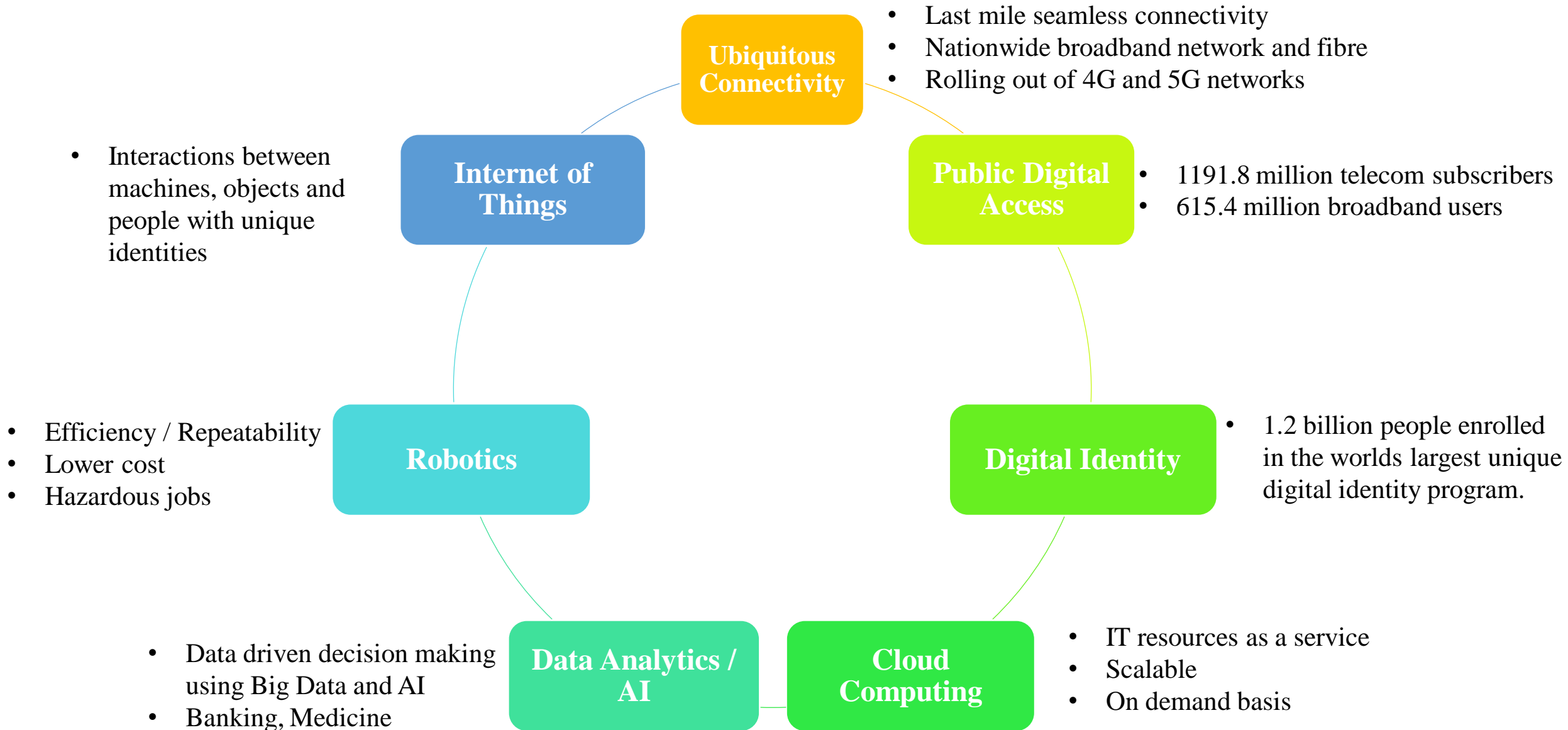Growing population of middle class families

14/04/25

India no. 1 globally
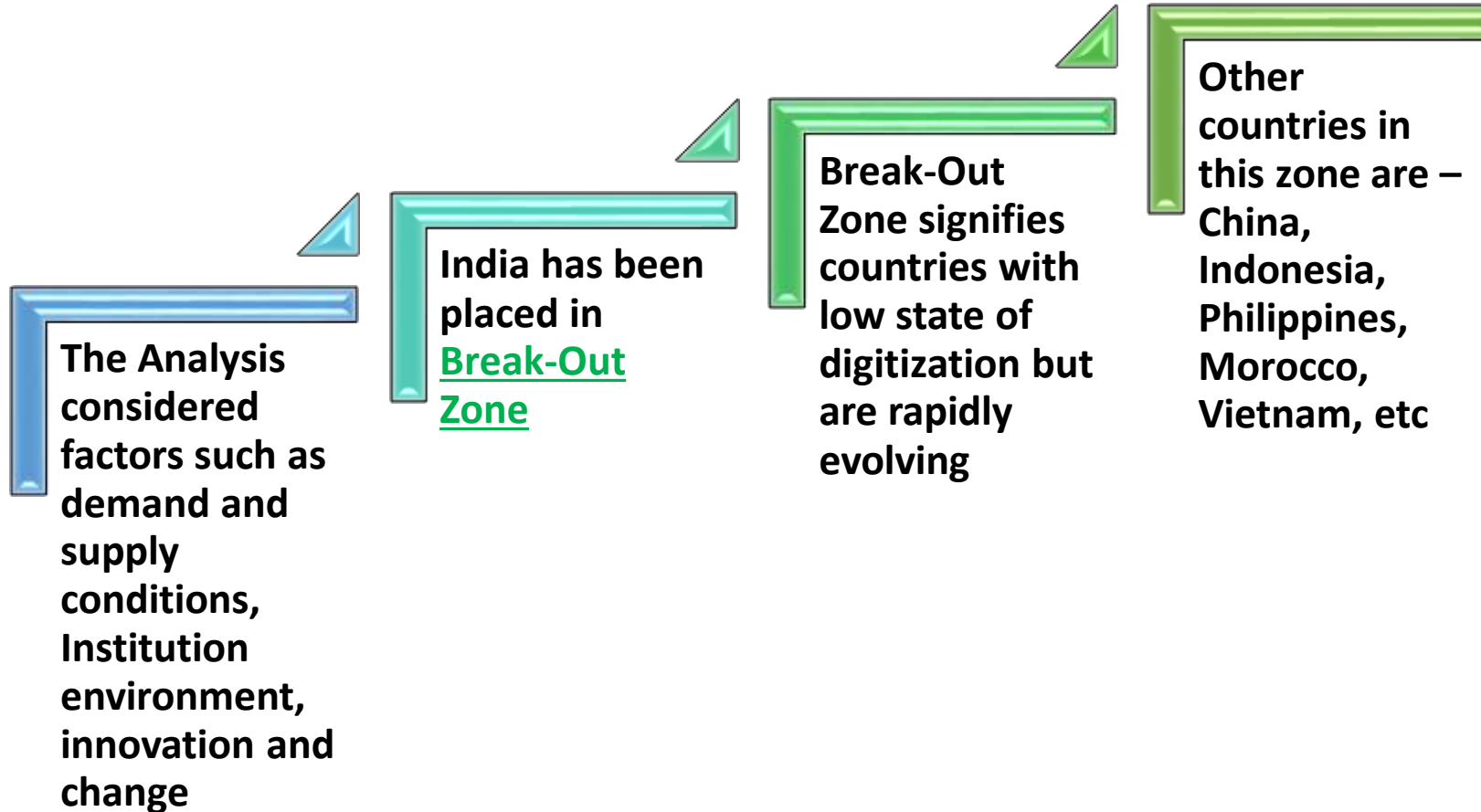
1.2b people enrolled in the world's largest unique digital identity program

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

United States — Brazil — China — India¹

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

Data consumption
Per connection, per month (MB)

1,622

397

4x

Source: Technology to transform a connected nation - McKinsey Global Institute

DIGITAL INFRASTRUCTURE ECO-SYSTEM

Ubiquitous Connectivity
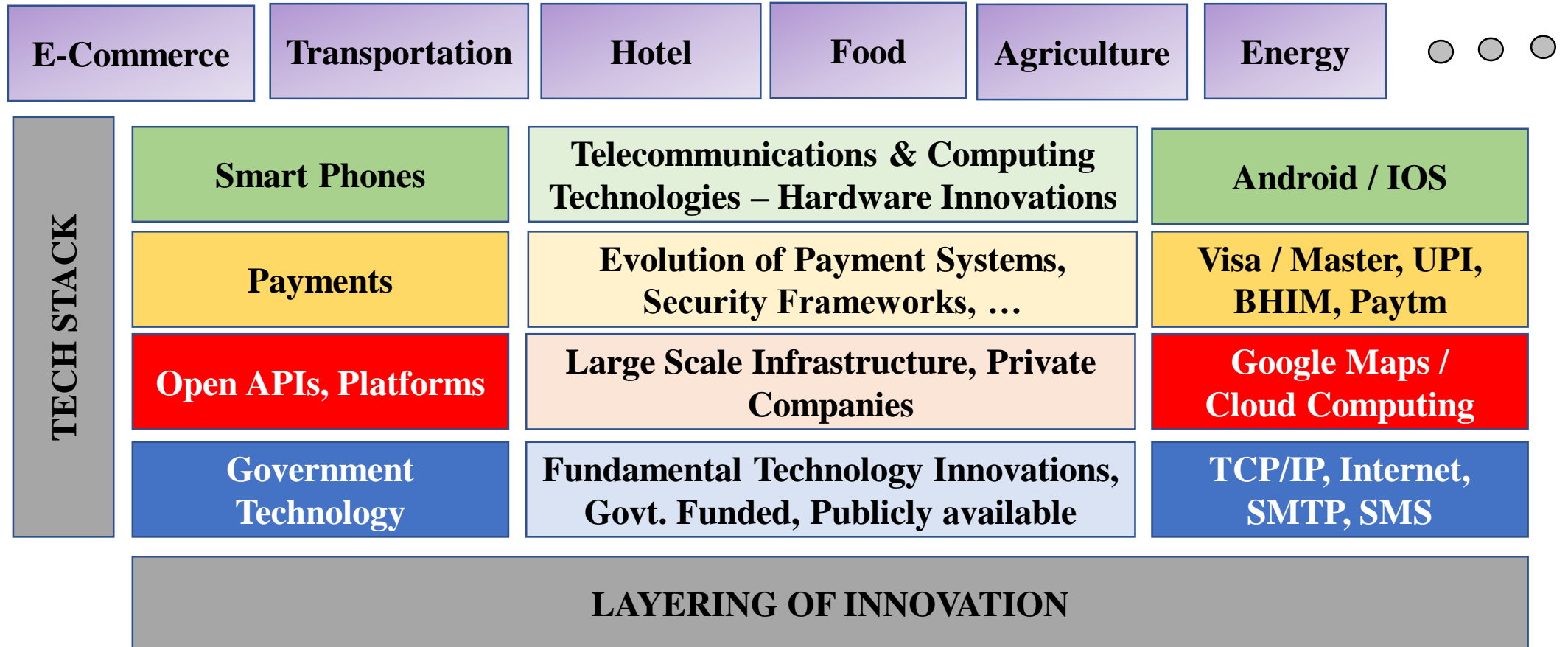
- Last mile seamless connectivity
- Nationwide broadband network and fibre
- Rolling out of 4G and 5G networks

Public Digital Access

- 1191.8 million telecom subscribers
- 615.4 million broadband users

Internet of Things

- Interactions between machines, objects and people with unique identities

Digital Identity

- 1.2 billion people enrolled in the worlds largest unique digital identity program.

Robotics

- Efficiency / Repeatability
- Lower cost
- Hazardous jobs

Cloud Computing

- IT resources as a service
- Scalable
- On demand basis

Data Analytics / AI

- Data driven decision making using Big Data and AI
- Banking, Medicine

DIGITAL EVOLUTION INDEX 2017 – HARVARD BUSINESS REVIEW

The Analysis considered factors such as demand and supply conditions, Institution environment, innovation and change

India has been placed in Break-Out Zone

Break-Out Zone signifies countries with low state of digitization but are rapidly evolving

Other countries in this zone are – China, Indonesia, Philippines, Morocco, Vietnam, etc

The Digital Evolution Index 2017

Break out

Stall out

Stand out

Watch out

The world recognises that India is at the cusp of digital revolution – the various demographic factors along with the macro-economic factors are favourable for growth in this direction.

TECH STACKS & DIGITAL BUSINESS MODELS

E-Commerce	Transportation	Hotel	Food	Agriculture	Energy	○ ○ ○

TECH STACK	Smart Phones	Telecommunications & Computing Technologies – Hardware Innovations	Android / IOS
	Payments	Evolution of Payment Systems, Security Frameworks, …	Visa / Master, UPI, BHIM, Paytm
	Open APIs, Platforms	Large Scale Infrastructure, Private Companies	Google Maps / Cloud Computing
	Government Technology	Fundamental Technology Innovations, Govt. Funded, Publicly available	TCP/IP, Internet, SMTP, SMS

LAYERING OF INNOVATION

Source: India towards presence-less, paperless and cashless service delivery, India Stack

DIGITAL REVOLUTION IN INDIA – WHAT'S NECESSARY?

Widely Diffused Digital Revolution

- Should be inclusive
- Should include remote regions in ICT advancement
- To bridge the digital divide between Bharat & India
- Improved Telecom Infrastructure – affordable smartphones, mobile services, cable TV & E-commerce

Enabling Regulations & Policies

- To reap digital dividend, policies & regulations should enable digital competition, experimentation and entrepreneurship
- To maintain balance between digital push and the existing incumbents in the sector – to plan out obsolescence of technology and incurred capex

Industry

Retail

Travel

Banking

Telecom

Social Media

Education

Health

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The architecture of the digital economy

Digitalization of the global economy

E-commerce
- Internet retailers
- Other e-commerce/travel

Digital content
- Media/entertainment
- Info/data providers

Internet platforms
- Search engines
- Social networks
- Other platforms/ sharing economy

Digital solutions
- Electronic/digital payments
- Other digital solutions/cloud

IT (hardware and software)

Telecom

Digital MNEs, performing activities based on or strictly linked to the internet

ICT MNEs, providing the enabling infrastructure supporting the internet

■ **Purely digital**　■ **Mixed**

Source: ©UNCTAD.

DIGITAL INDIA - GOVERNMENT INITIATIVES

- 1.2 bn. digital identity, largest in the world
- Enabler for big digital transformation and social empowerment

AADHAAR

- Online docs verification tool
- 31.46 mn. users with 3.5 bn docs
- Enabling paperless verification

DigiLocker

- Build on Unified payment interface
- 119 member banks
- Big enable for digital payment across service providers

BHIM-UPI

- Unified payment interface platform
- Seamless & secure digital payment
- Multiple Bank account through one App

UPI

- Biometric enabled digital life certificate for pensioners
- 26.3 mn. users submitted life certificate

Jeevan Praman

- Unified national market for agriculture products
- 585 Markets, 16 States, 2UTs and 1.64 crore farmers

E-NAM

- Promotion of start-ups
- Tax exemption and other benefits
- 24,227 no. of DPIIT recognised Start-up

Start-up India

- Largest IT network in the world for tax compliance
- Integrated IT interface with 100% paperless compliance

GST Network

UPI, GST and ONDC
Indian Public Digital Networks Infrastructure

Largest public digital network of payments, taxation and e-commerce in the world

Integrated IT interface for 100% paperless compliance

Enormous potential with application of Big Data Analytics and Artificial Intelligence

To change the Fintech based lending space to MSME and businesses

Digital initiative happening to automate the compliance will boost digital economy

THE OMNI PRESENT DIGITAL INDIA

Aadhar

Jan-Dhan

Cashless Transactions

Digital India

Internet & IOT

Facebook – Twitter - Whatsapp

M-Commerce

E-Commerce
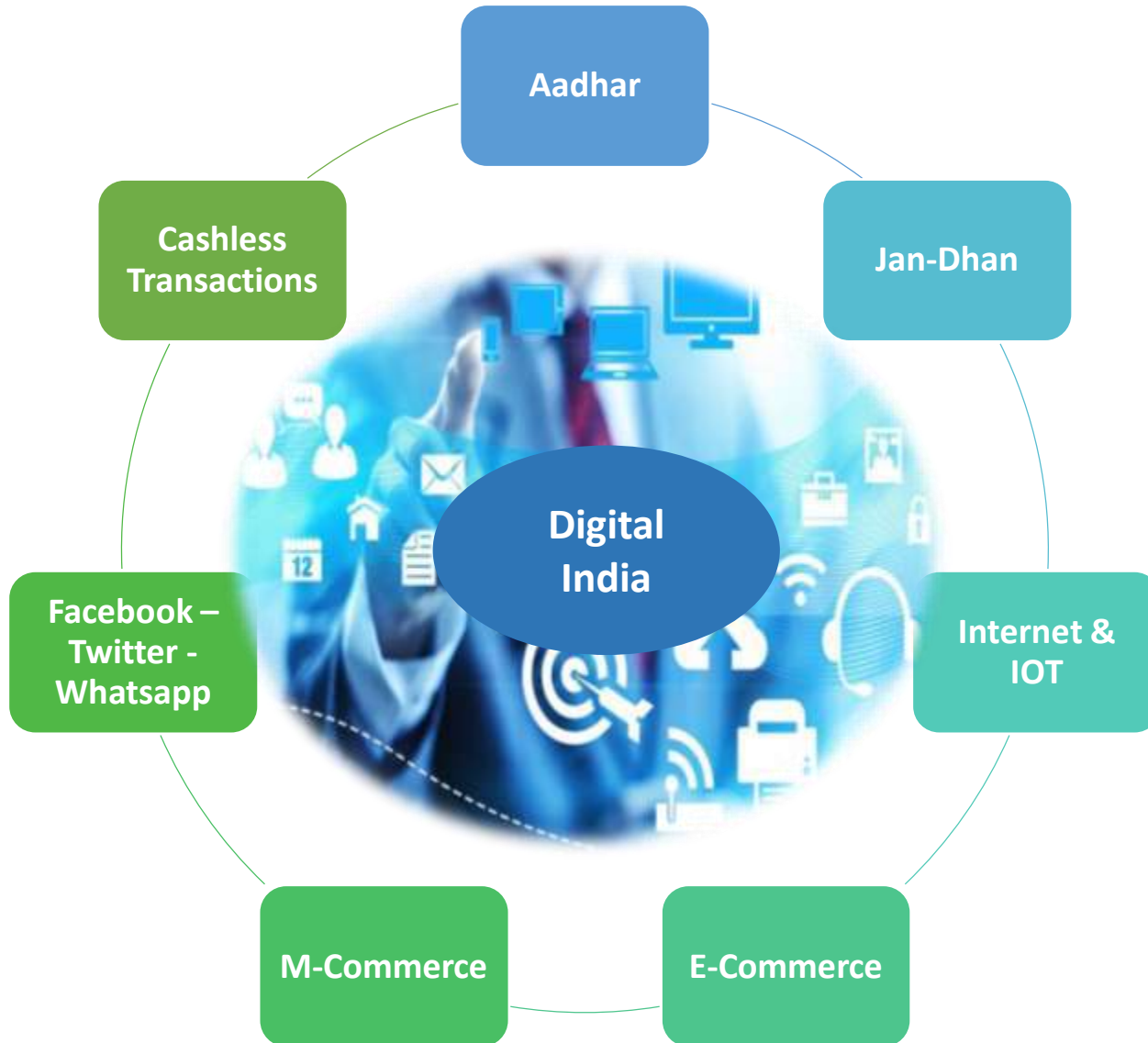
The beginning of the Digital Revolution in India was in 2010 with the launch of Aadhar – the biometric identification program of the Government of India.

At present there are about 1100 million mobile subscribers and 430 million users have internet access – this is expected to double by 2026.

Government is also encouraging cashless payments and incentivizing digital payments. Soon, Cash won't be king!

Digital Evolution brings with it Automation, Data Analytics, Artificial Intelligence, Internet of Things – impacting millions of jobs world over

TRANSFORMATION OF MARKET STRUCTURE - Physical to Digital
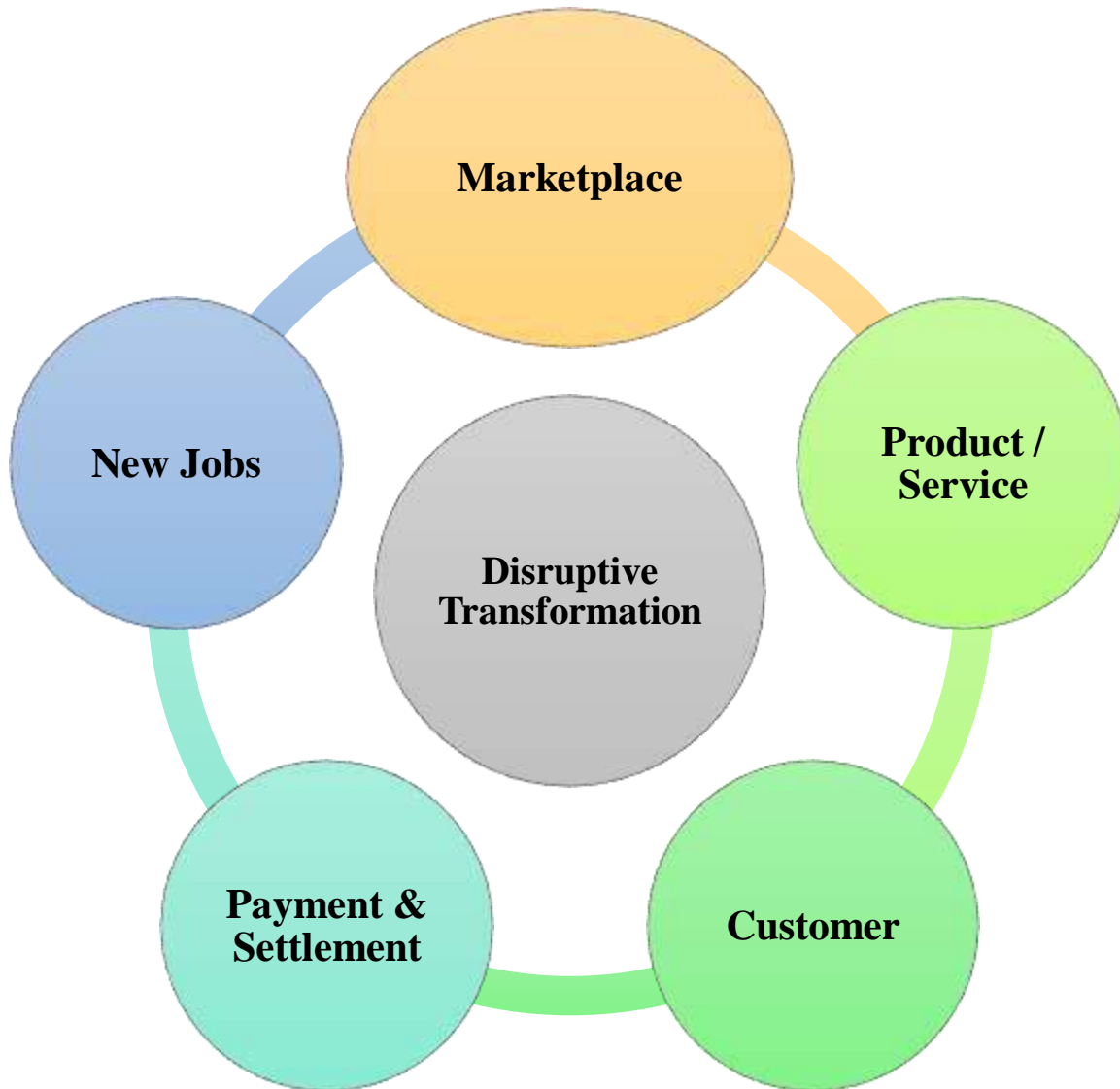
- ❑ **Marketplace** – Concept of physical marketplace moving towards a virtual marketplace. Truly global, competitive and information symmetric market (i.e. moving towards market perfection & Price Discovery).

  Complementing traditional 'Brick & Mortar' businesses.

- ❑ **Product** – More competitive, widely accepted with top notch performance. New product evolving with wide market and cost competitiveness.

- ❑ **Customer** – More informed than ever about product, pricing and substitutes.

- ❑ **Payment & Settlement** – Digital payment & settlement is a big enabler for digitalisation.

- ❑ **New Jobs** – Skilling of employees to operate in a digital economy, more interaction between man and system / system and system.

TECHNOLOGY - MIGRATION PATHS TO 3G & 4G To 5G
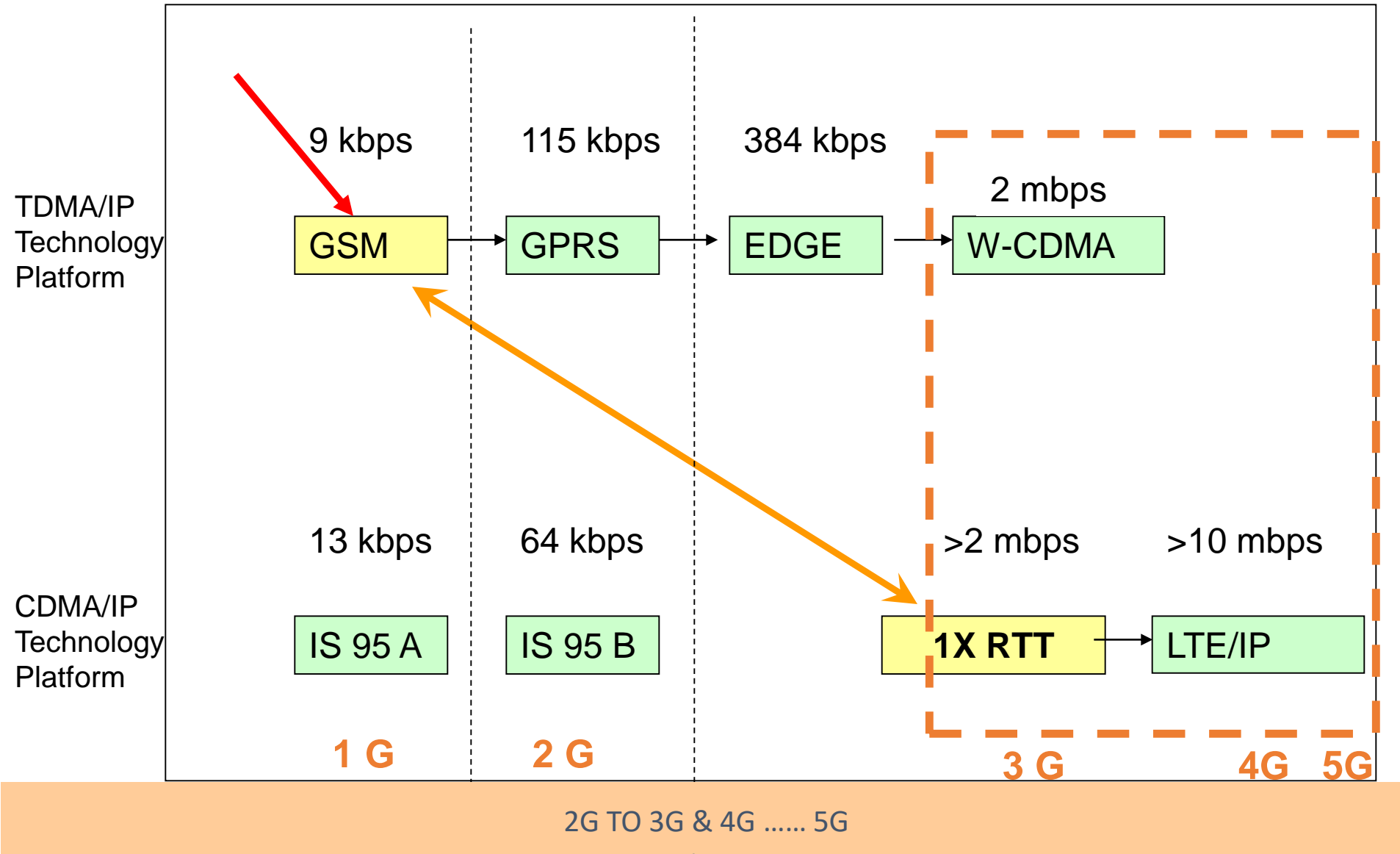
TDMA/IP Technology Platform

9 kbps	115 kbps	384 kbps	2 mbps
GSM	GPRS	EDGE	W-CDMA

CDMA/IP Technology Platform

13 kbps	64 kbps	>2 mbps	>10 mbps
IS 95 A	IS 95 B	1X RTT	LTE/IP

1 G   **2 G**   **3 G**   **4G**   **5G**

2G TO 3G & 4G …… 5G

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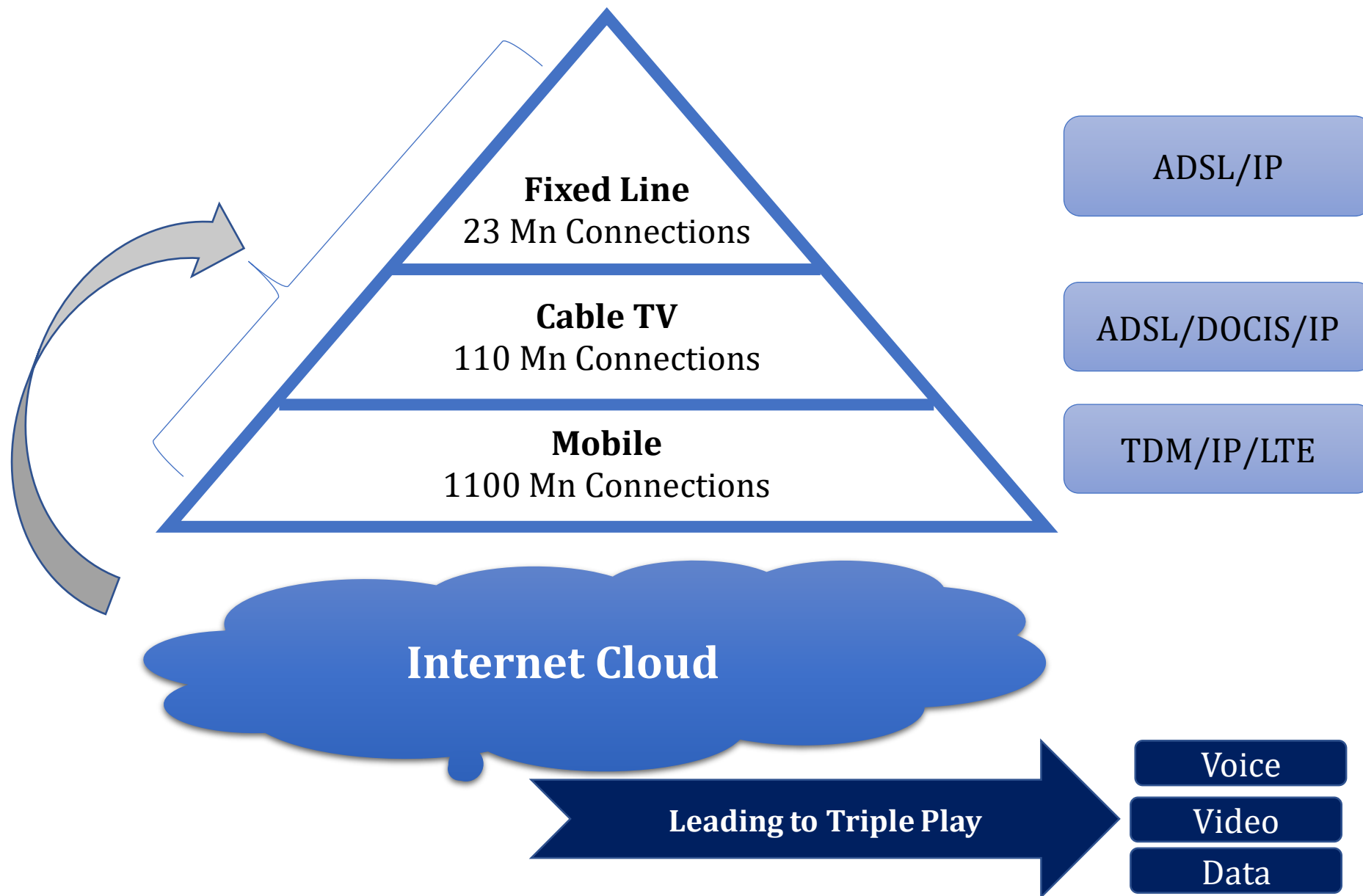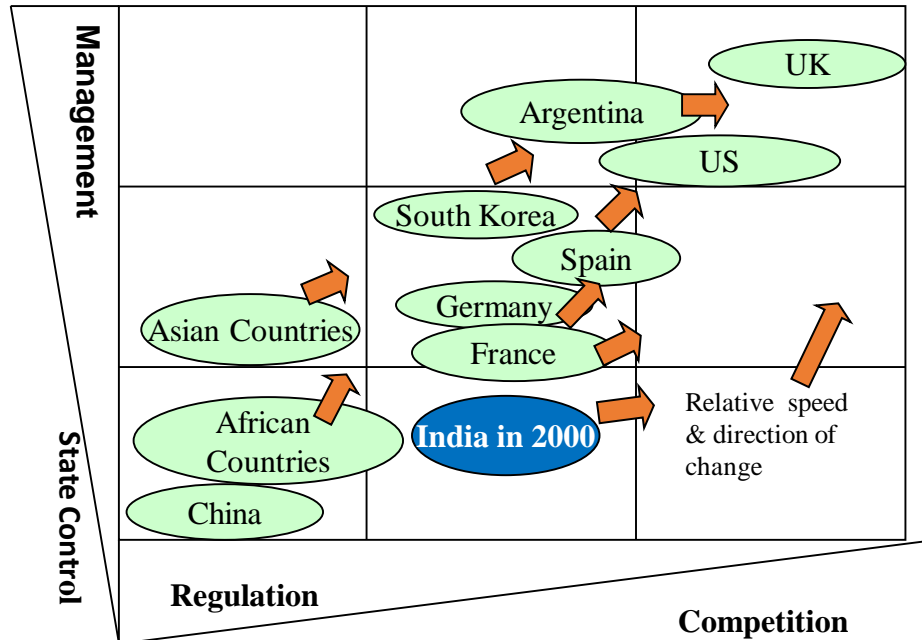
1994 – 2000 REFORMS
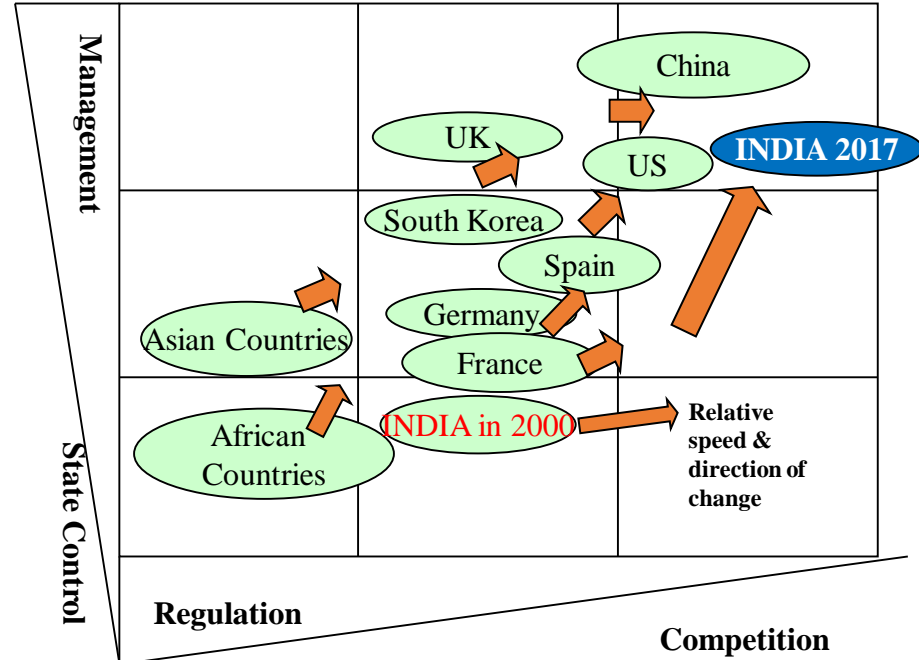
2000-2017 REFORMS
India Leading the Way in the Telecom Sector Reforms in the Globe

TELECOM SERVICES CONVERGENCE & NEW DIGITAL BUSINESSES

Voice & Data Infrastructure :
- Access Switching
- Transmission
- Telecom & IT Instruments

Media & Broadcasting Infrastructure :
- Digital Content (King)
- Last Mile Connection (Queen)
- IOT

E-COMMERCE

M-COMMERCE

Broadband Internet & Broadcasting

Wireline Voice & Data

Wireless Voice & Data

IOT/AI/ML
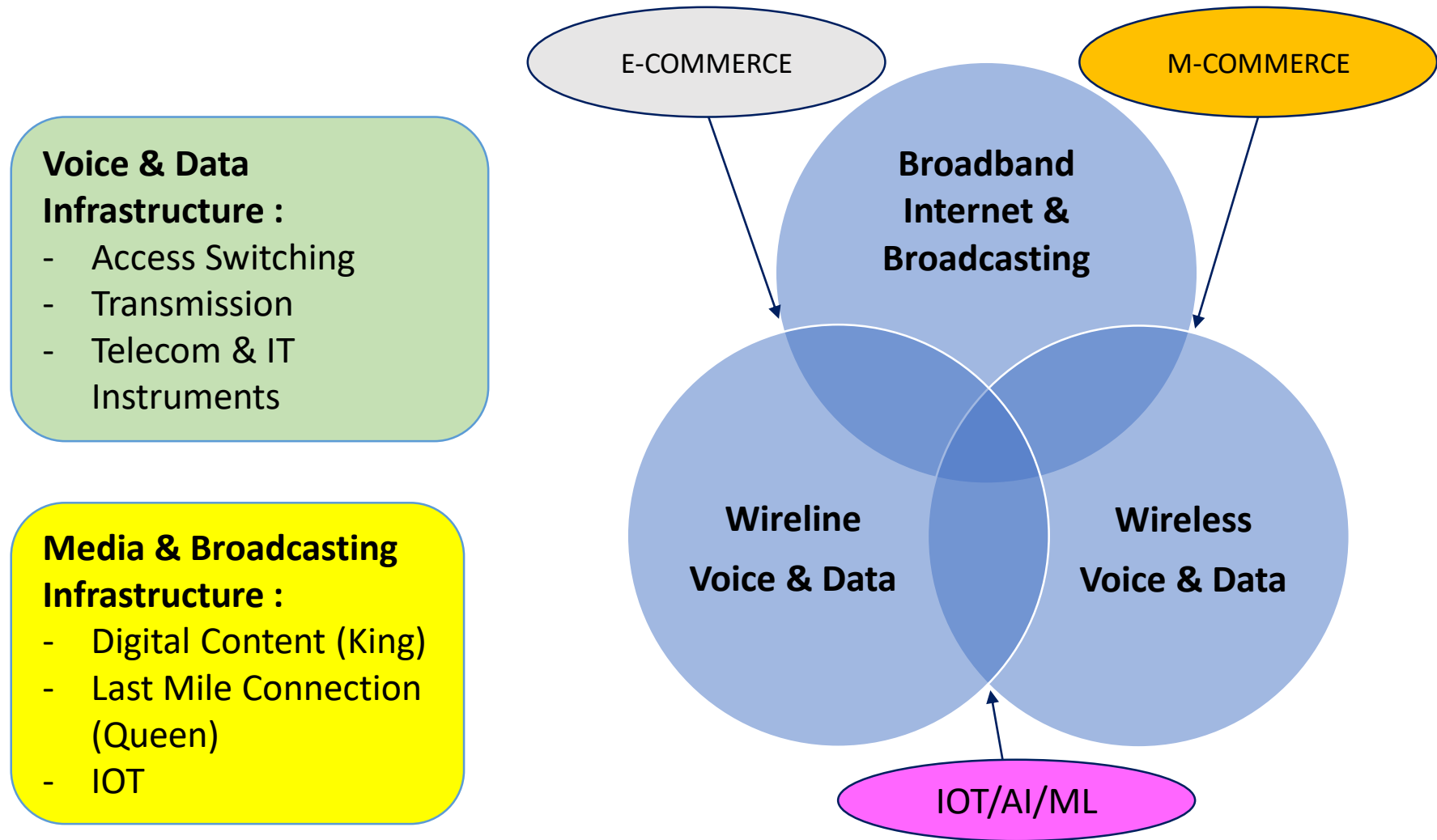
The Telecom will compliment businesses opportunities in e&m-Commerce, Media, Logistics, Banking and AI in a big way in the next 5 years in India

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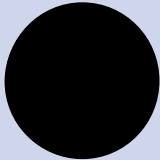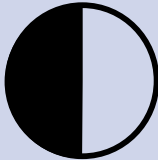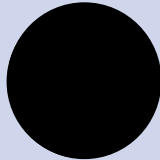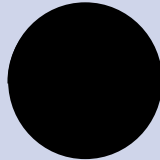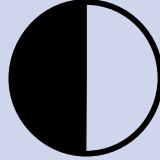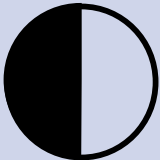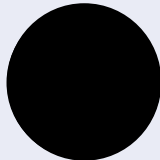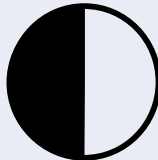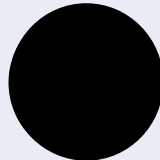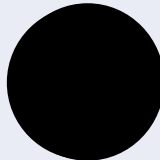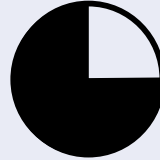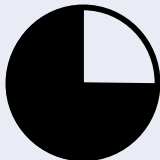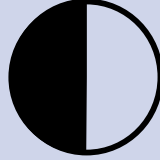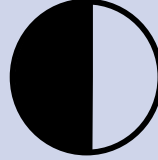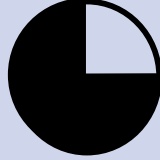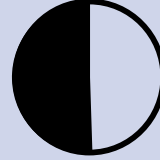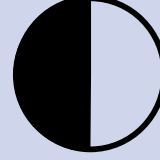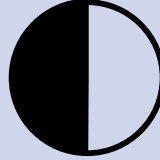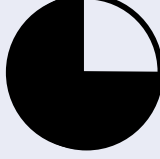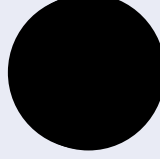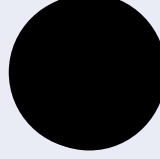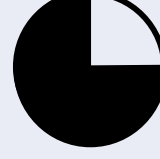
RELATED INDUSTRY CONVERGENCE

E&M Commerce
~$35 Bn

Telecom Services
Wire & Wireless
Sector ~$45 Bn

IT & Electronics
Sector
~$180Bn

Media &
Entertainment,
Cable TV/DTH
Sector
~$25 Bn
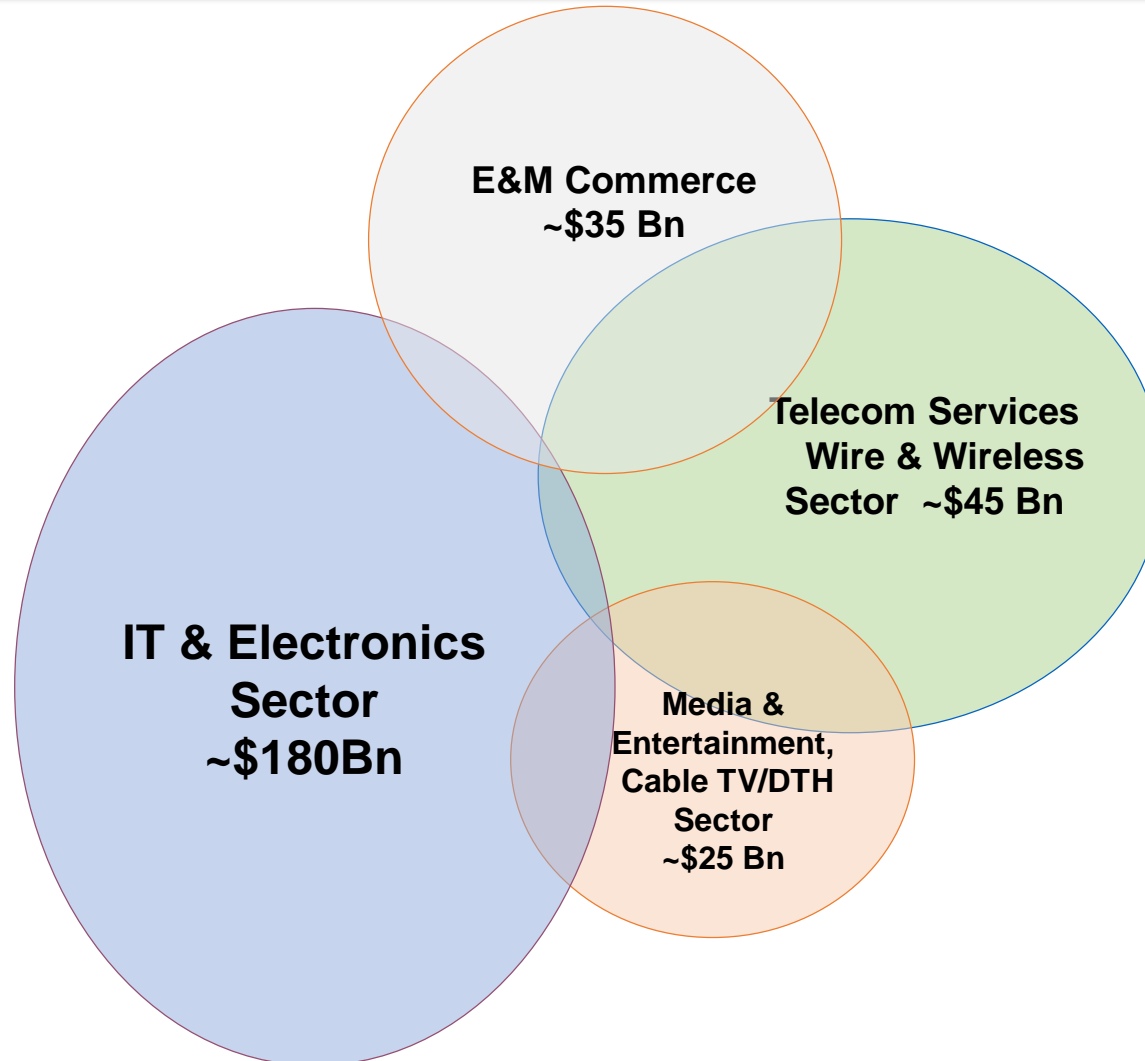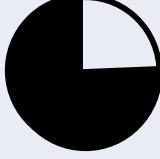
Convergence Leading the World to a Global Village

DIGITAL IMPACT ON BUSINESS MODELS

Parameters	Retail	Power	Telecom	Airlines	Logistics	Agriculture
Competition	●	◐	●	●	◐	◐
Private participation	●	◐	●	●	◕	◕
Policy & Regulation	◐	◐	◔	◐	◐	◐
Market outreach	◔	◔	●	●	◕	◕

Good Policy + Good Regulation = Good Governance & Progress

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ARTIFICIAL INTELLIGENCE

➢Science & Medicine: Prediction, Diagnosis

➢Manufacturing: Process modeling, FME & C analysis

➢Marketing & Sales: Market analysis, customer classification

➢Finance: Portfolio & Investments analysis

➢Banking & Insurance: Credit, Risk and Treasury

➢Elections: Predictions & Game Theory Simulations
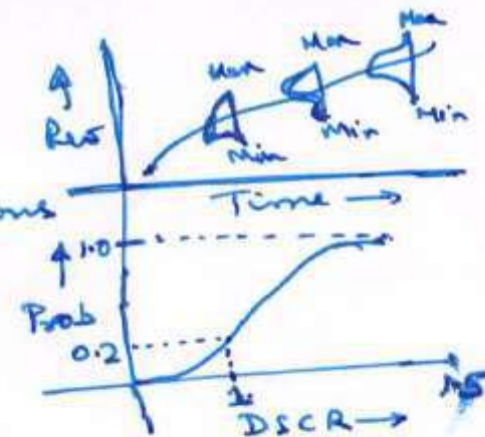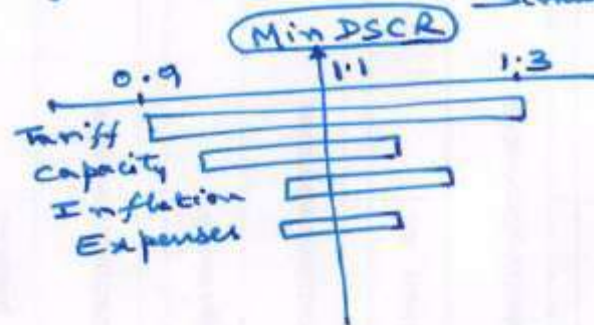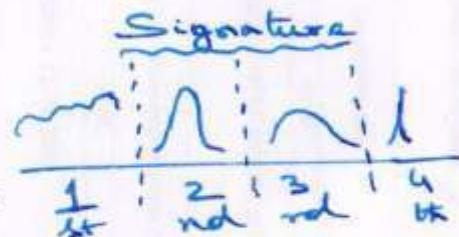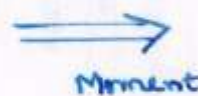
➢Power Sector Grid: LDC Computing Algorithm

| 1. DSS 2. ESS 3. ANN | → | USA / India | → | Auto / Instrumentation/ Project Finance |
| 4. Fuzzy | → | Japan | → | Washing Machine |
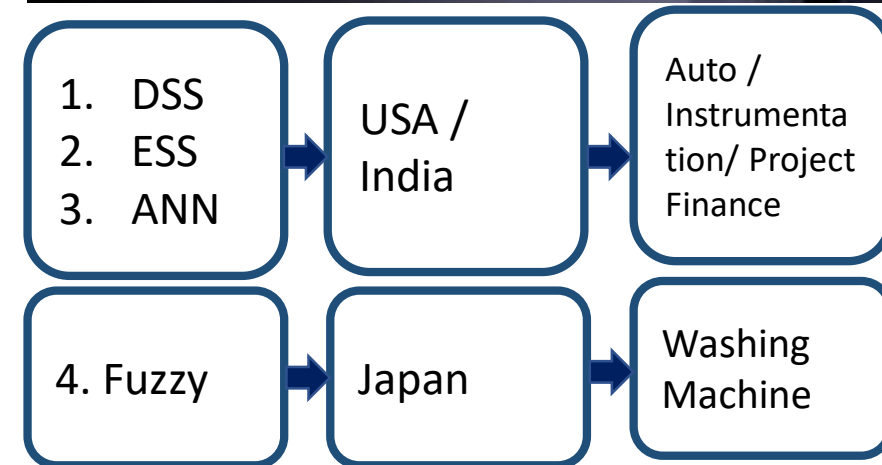
A I – Eco System
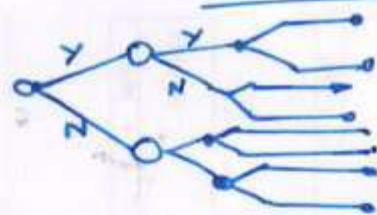
DSS ⟹ } Project finance : 2^n Simulations

Min DSCR

0.9   1:1   1:3

Tariff
Capacity
Inflation
Expenses

Max Max Max
Min Min Min
Min
Time →

1.0
Prob
0.2
DSCR →

ESS ⟹ Signature

Moment   1   2   3   4
    1st   nd   rd   th

⟹ FFT/DSP ⟶ $\approx \triangleright$ ⟶ ⊘ ~

Policy Store

ANN ⟹ Hyperbol | Gaussian | Sigmoid

⟹ I1
I2
I3
I4
I/P Nodes   Hidden Nodes   O/P Nodes

⟶ O1
⟶ O2

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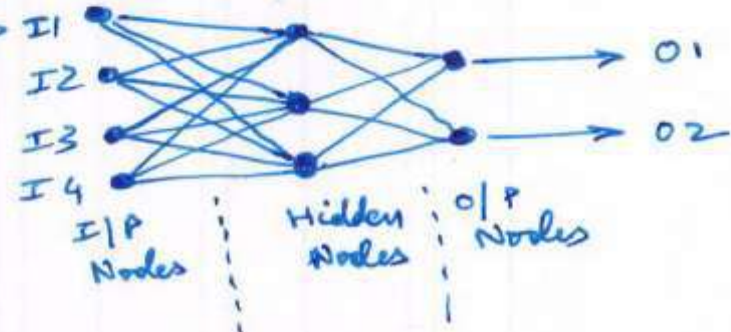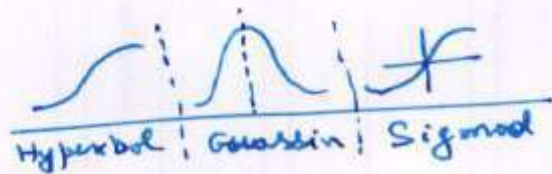
Stochastic Verses Deterministic for Accuracy of Decisions Making

Cumulative Probability (y-axis) vs QoS (x-axis); EV=4.55
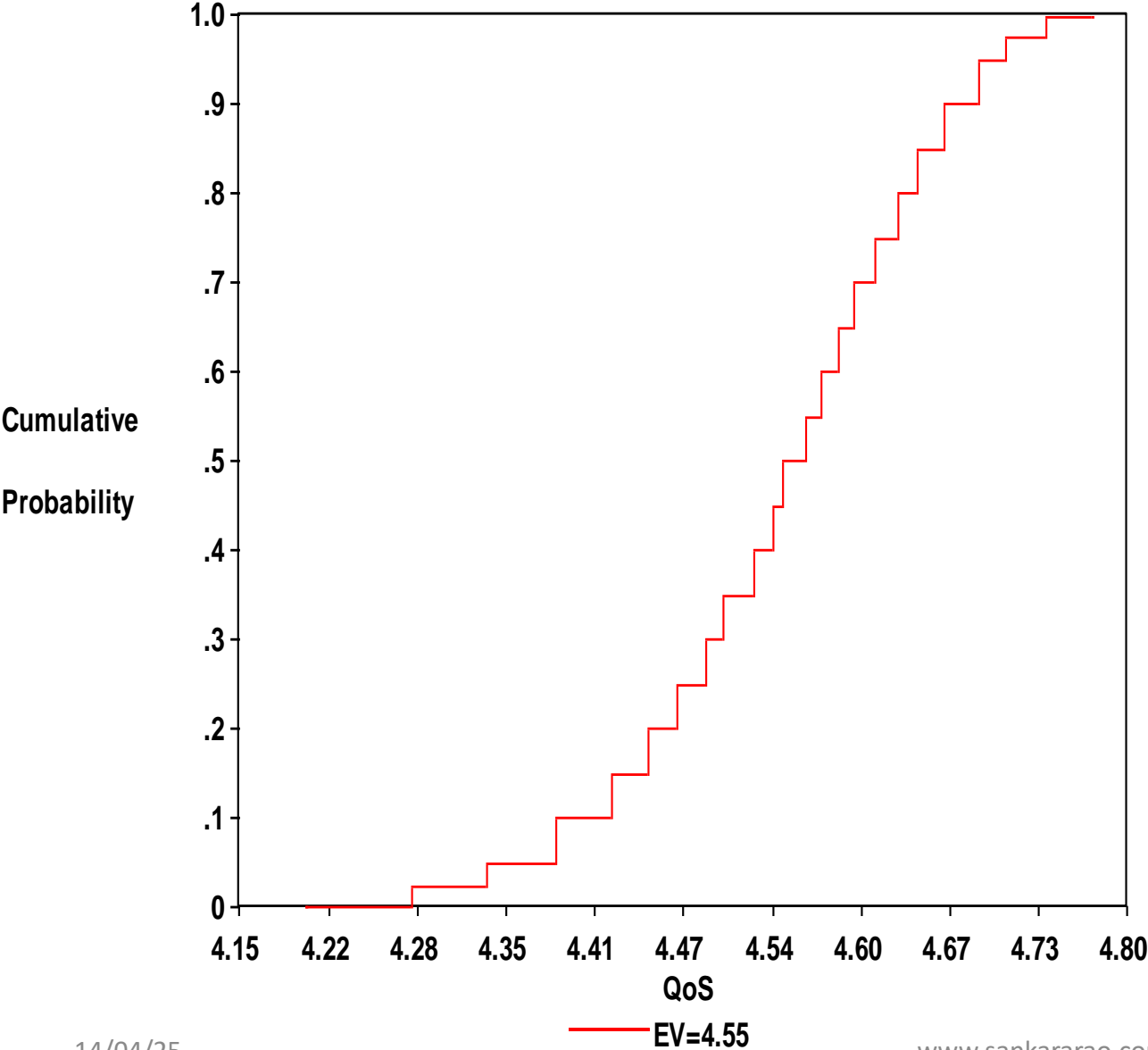
S.No.	Output Parameter	Units	Deterministic Method	Probabilistic Method
1	Traffic	Mn Minutes	835	840
2	Revenue	Rs. Crores	1461	1400
3	EBITDA	Rs. Crores	184	181
4	LCC	Rs. Crores	260	215
5	Capex	Rs. Crores	128	127
6	Opex	Rs.Crores	1276	1503
7	QoS	No.	4.55	4.55
8	NEI	No.	3.87	3.8
9	Availability	No.	.99950	.99945
10	Bandwidth E1s	No.	323	329

BUSINESS ECOSYSTEM & STRATEGY

INNOVATION

ARTIFICIAL INTELLIGENCE

STRATEGY

Optimisation of Productivity & Quality

Maximisation of Revenue & Profits

Minimisation of Costs & Losses

Zero Tolerance for Inefficiency & Negativity
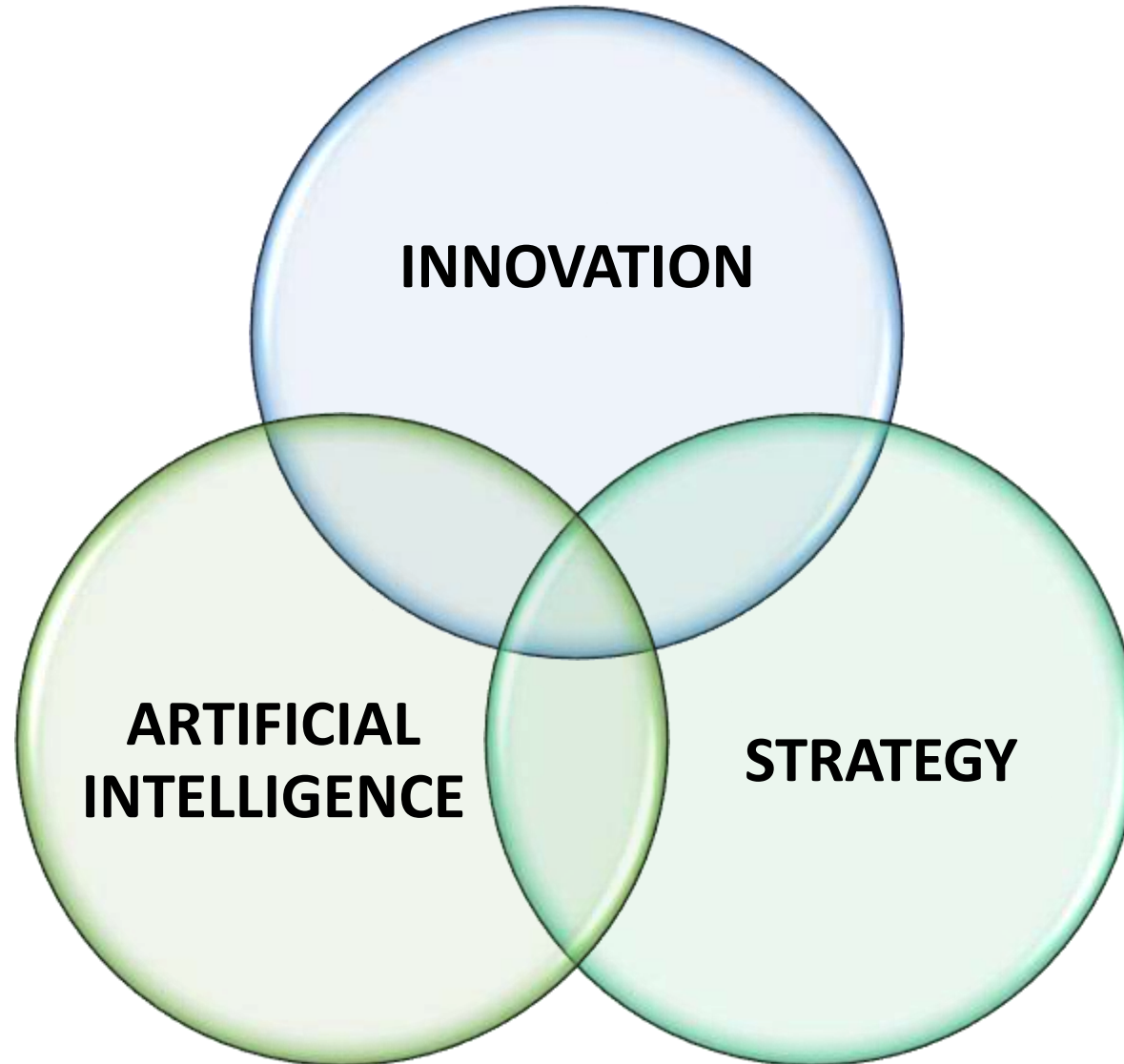
STRATEGY & INNOVATION – CRUCIAL COMPONENT OF LEADERSHIP MANAGEMENT

- Use of Ideas, Management , Scientific Tools & Techniques
- Effective Use of Technology
- Think Differently for Innovation
- Fusion of Old & New Best Methods
- Never stop learning
- Leadership is all about – lead with passion - by action & example

Do with Passion

Skill Set

Team Management

Innovation

Strategy Process

Technology
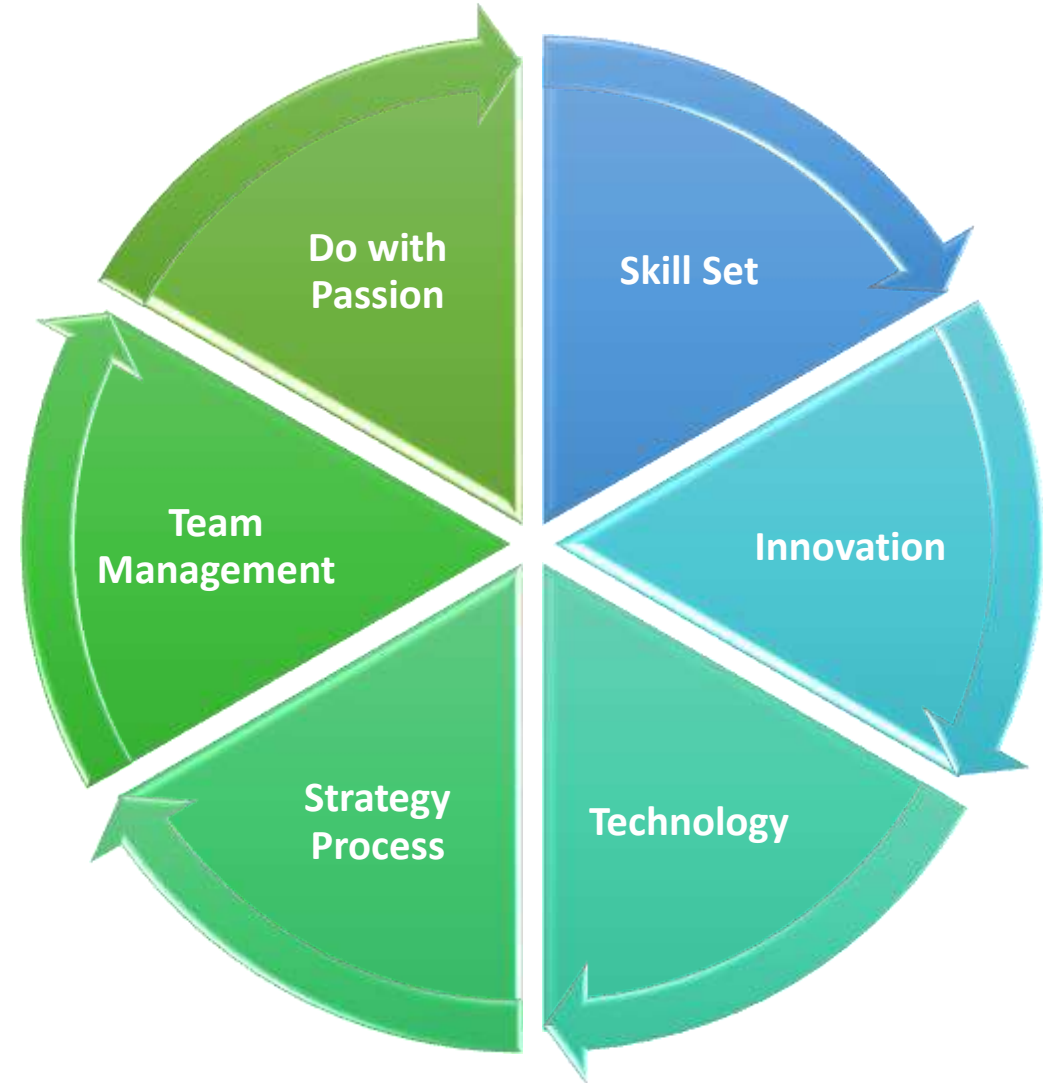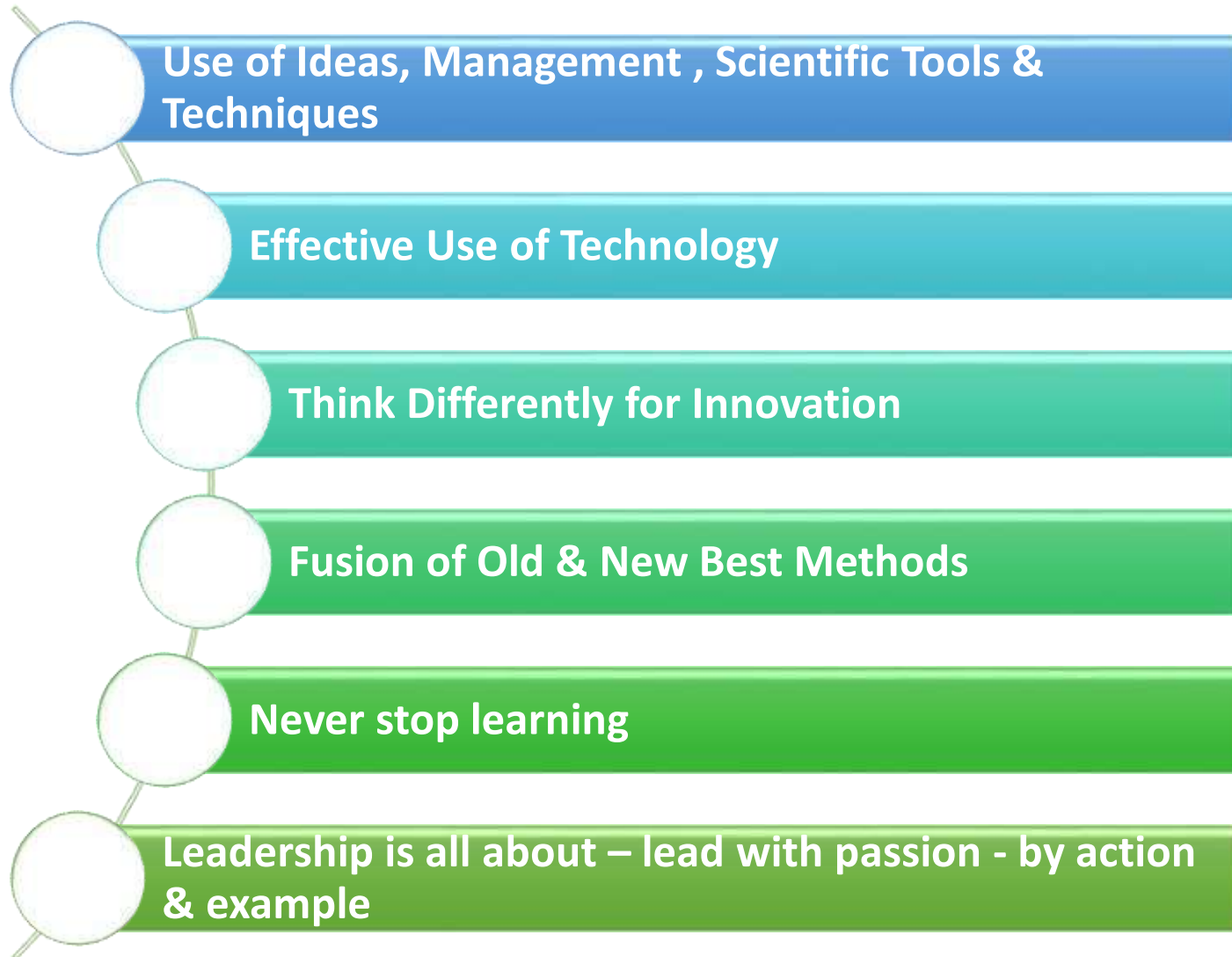
Great Start Up's Humble Origin

Where it all started

APPLE   GOOGLE   AMAZON
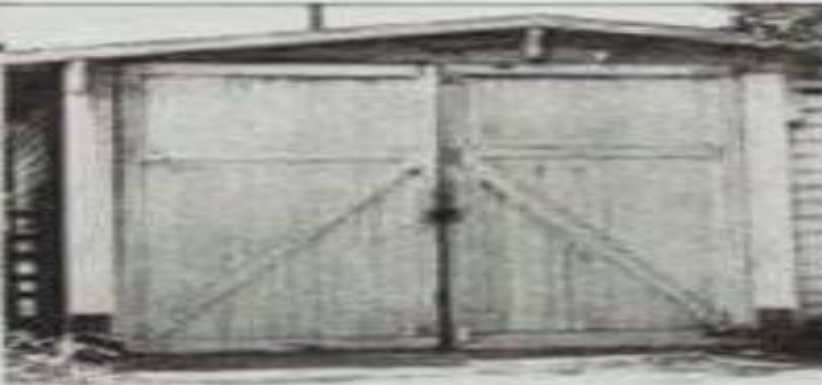
HARLEY   DISNEY   MATTEL

CASE 2 - STRATEGY – TELECOM SERVICE BUSINESS

STRATEGY

- Blended PCM/TDM Network with IP Network

- Higher Compression – Lower B/W per channel (32 IP to 16 TDM)

- Used Satellite C+ transponder (with no echo) instead of OFC STM/SDH

- Innovated with a Gateway solution SS7 developed by Vocaltech Israel

- ASR – 90% on IP and 35% on TDM ; Revenue Advantage – 2 to 5 times for IP

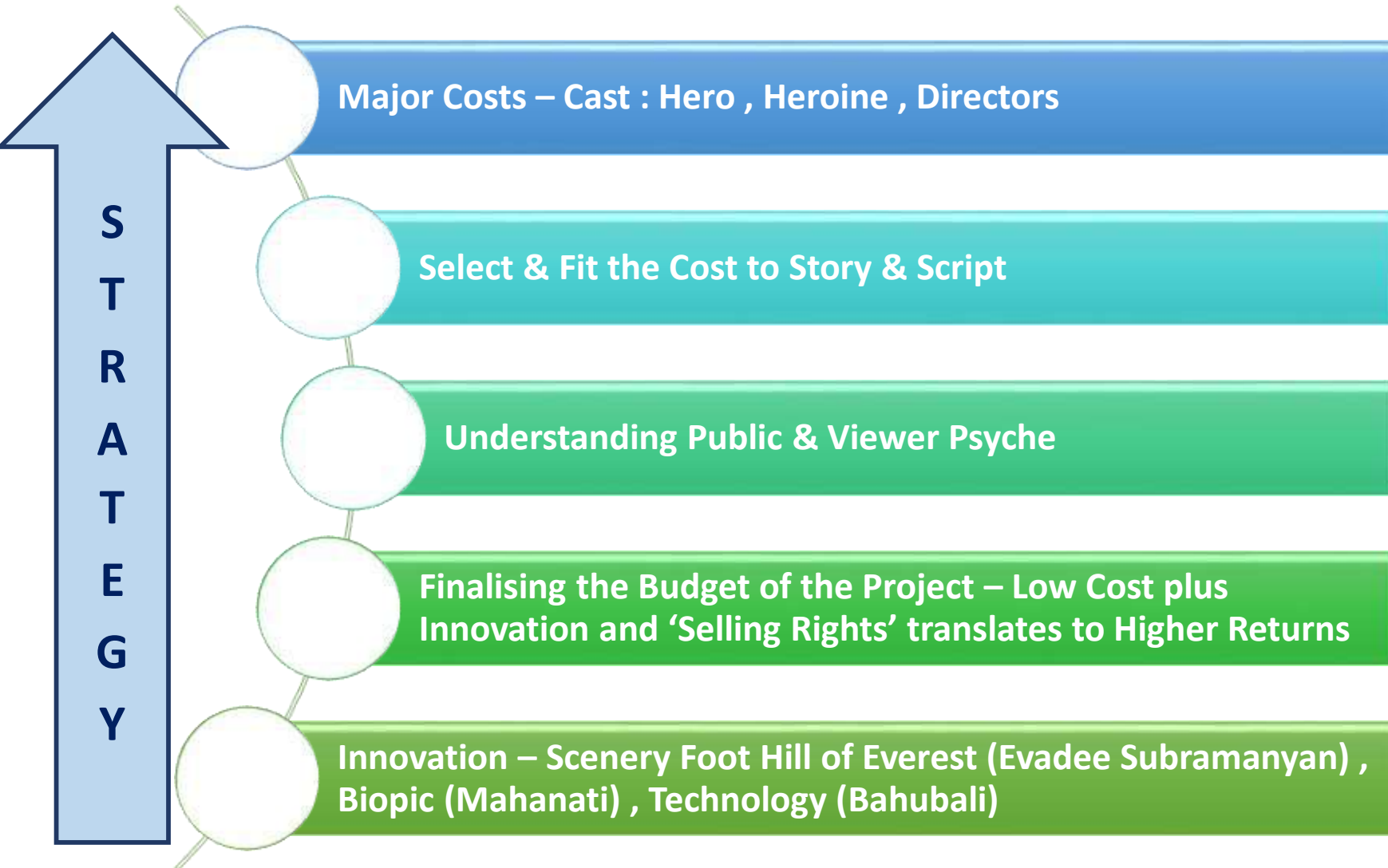- Resulted in lower capex & opex cost Rs.7/min against competition Rs.27/min

- Garnered 38% market share and reached 4 digit (in crore) revenue in 2 years

BACKGROUND
- 3 Strong Competitors
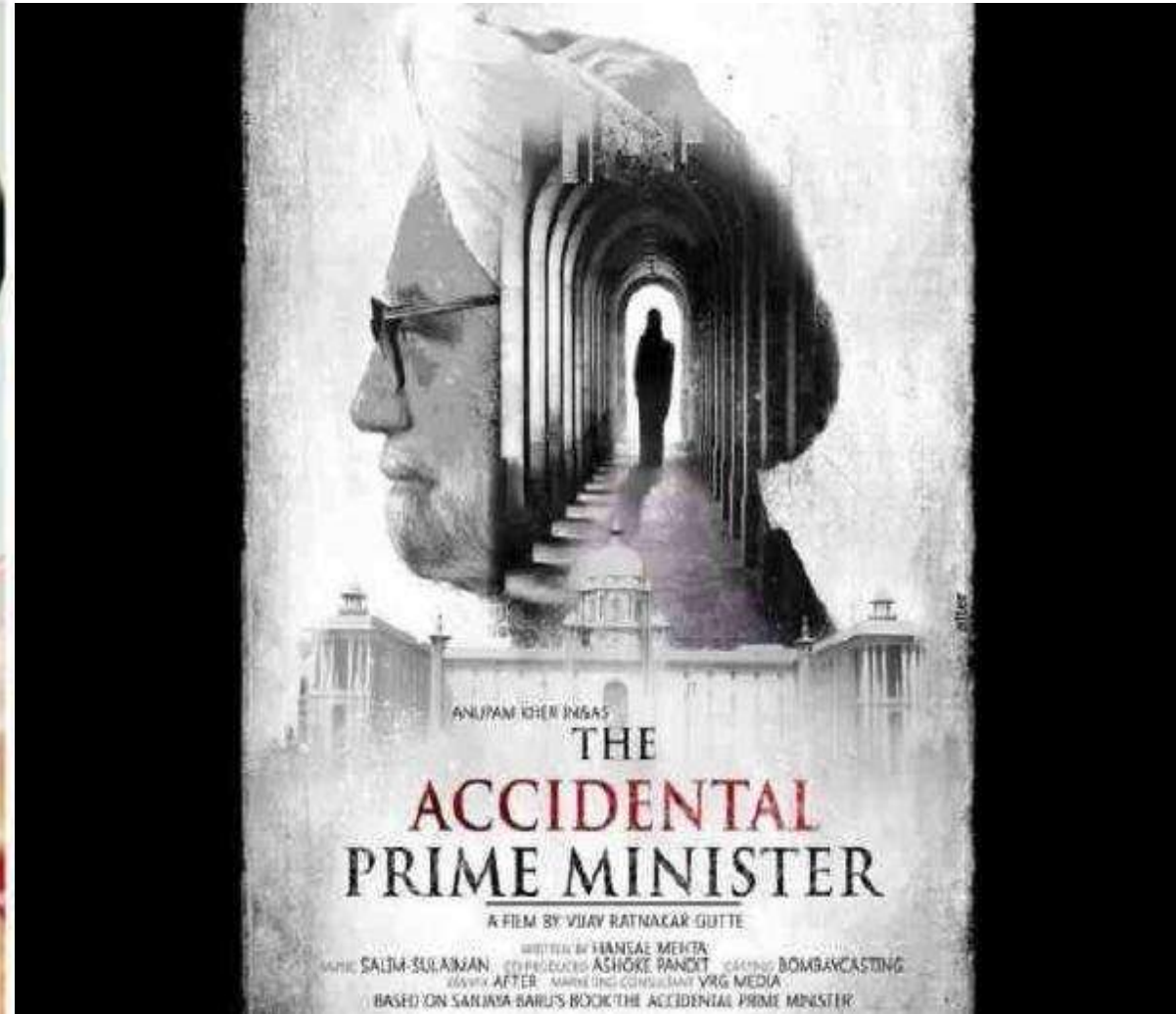- Using PCM / TDM / SDH / STM technologies

STRATEGY – CINEMA

Major Costs – Cast : Hero , Heroine , Directors

Select & Fit the Cost to Story & Script

Understanding Public & Viewer Psyche

Finalising the Budget of the Project – Low Cost plus Innovation and 'Selling Rights' translates to Higher Returns

Innovation – Scenery Foot Hill of Everest (Evadee Subramanyan) , Biopic (Mahanati) , Technology (Bahubali)

S T R A T E G Y

BACKGROUND
- Strong Telugu Media Market
- High Competition

CINEMA- Innovation & Strategy

Cinema Innovation – Independent Biopic Movies are Success and Non-Independent movies are a Failure

# 7 YEAR OLD START-UP : AGRI & SOLAR ECOSYSTEM

CLARO®

http://claroenergy.in/

- Made a mark in the irrigation infrastructure of the country

- Energy efficient, easy access to the farmer & enhanced productivity of land

- Geographical footprint widened to over 17 States

- Valuation has risen to 2x Revenue

- 9000 pumps

- Grown from 6 people to 140

- Income from Rs.2 cr to over Rs.60 cr

- Value: Rs.0.4 cr

- Started in 2011

- Rural ecosystem inclusive business

- 1 state

-30 pumps

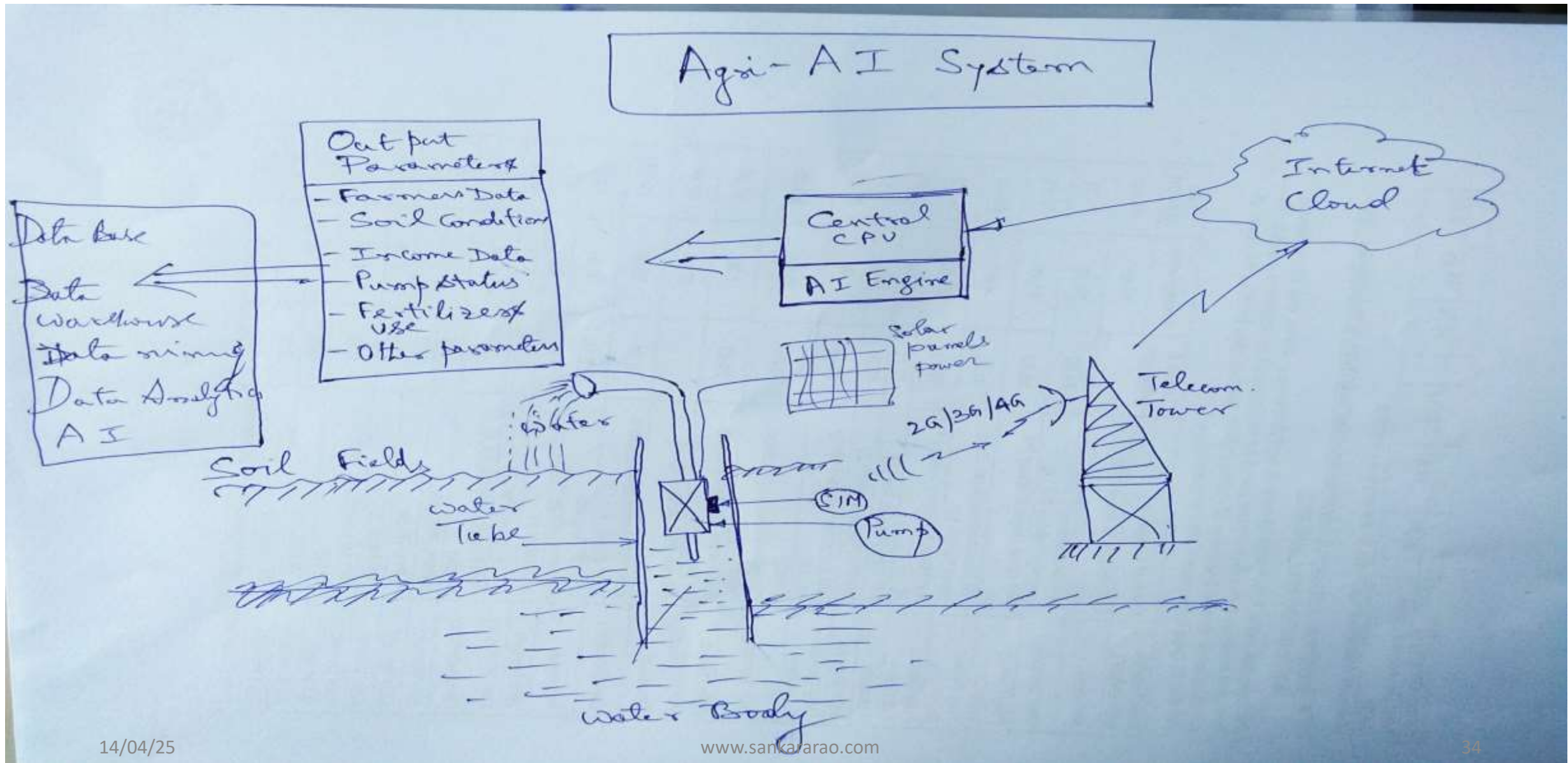*Leading to a New Company integrating Data Analytics & Artificial Intelligence on Soil, Water & Pumps*

CASE: AGRICULTURE & LOGISTICS
Mapping Solar Irrigation Assets Remotely
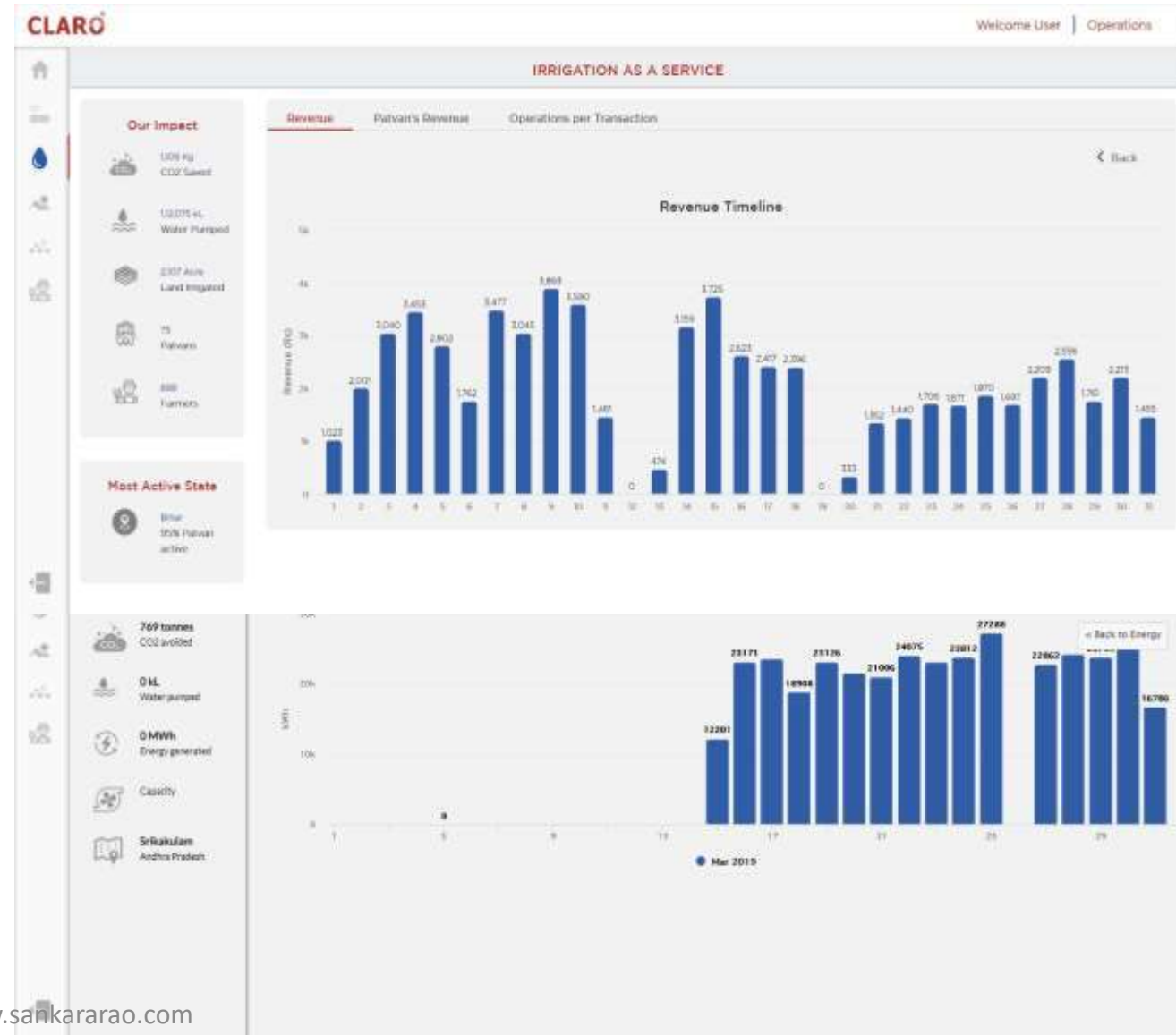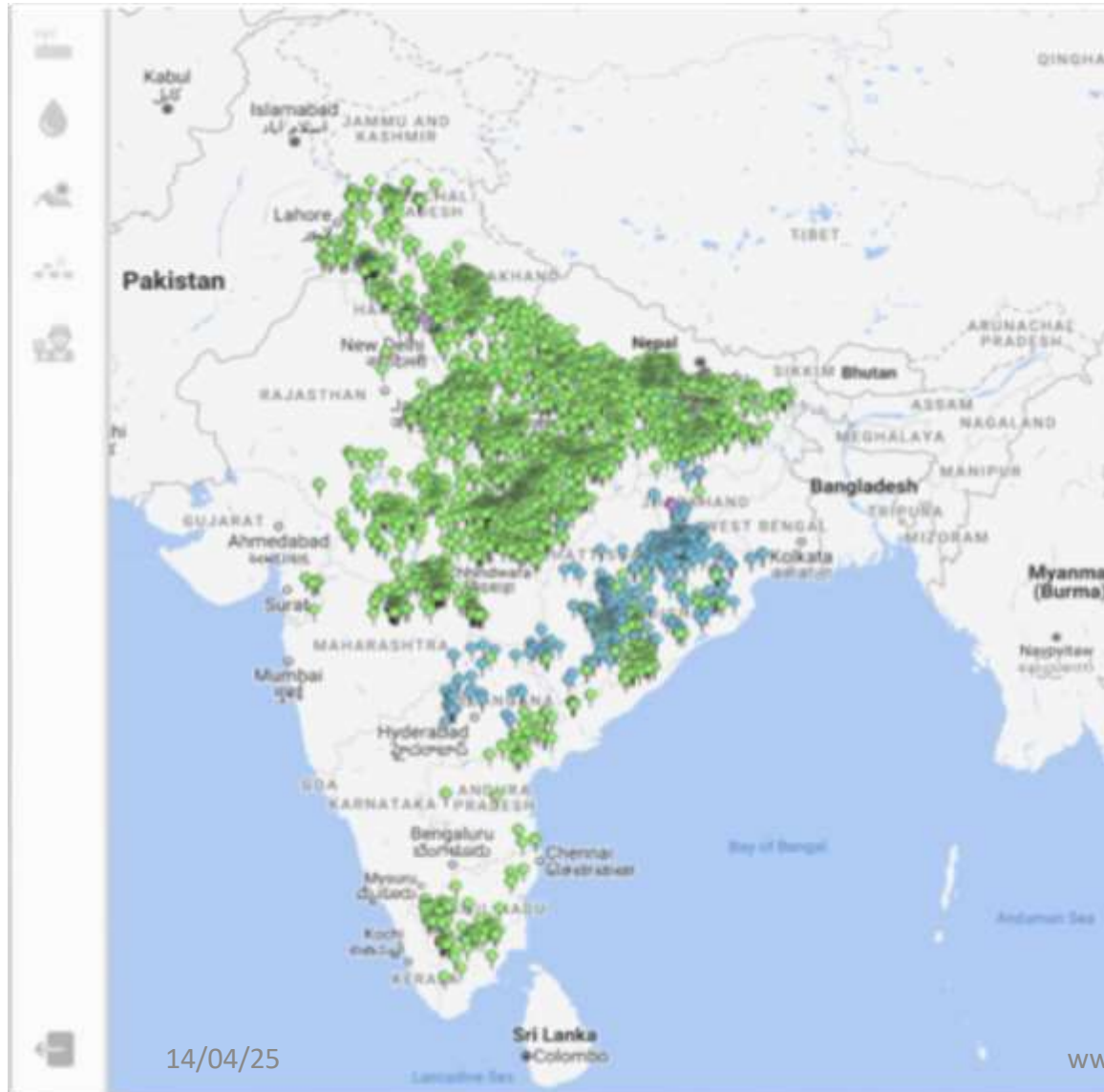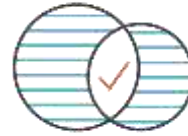
CASE: ARTIFICIAL INTELLIGENCE IN AGRICULTURE

CASE: AGRICULTURE & LOGISTICS

Leveraging Technology to make F&V Chain Efficient and Low-Cost
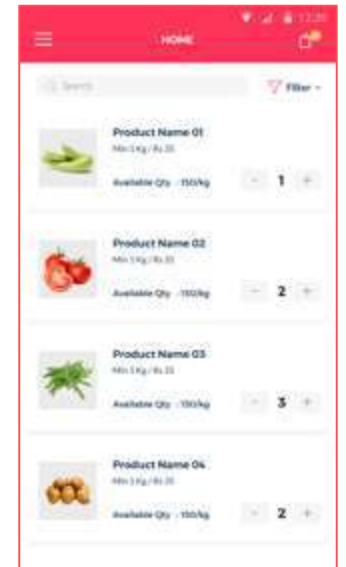
FARMER

RETAILER

Forecasting & Planning

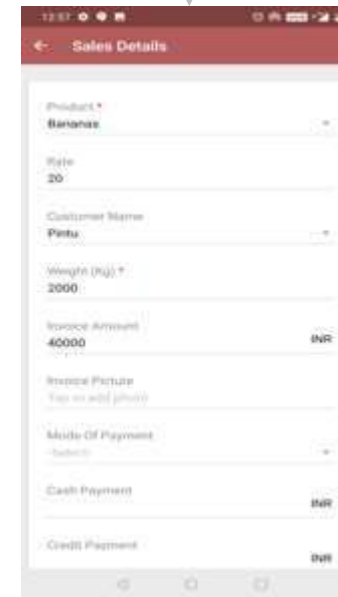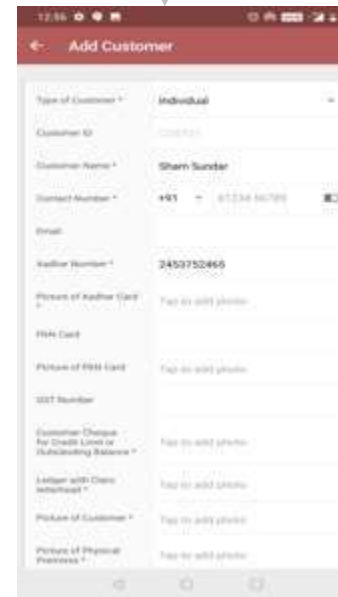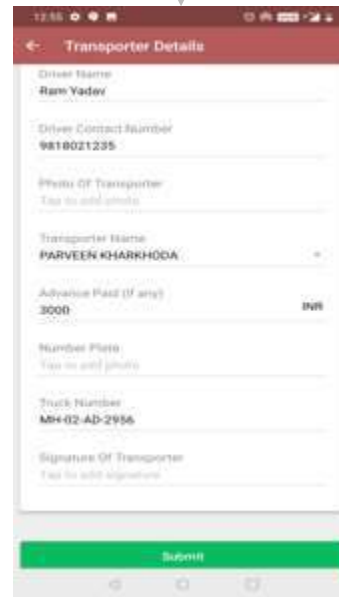Dynamic Pricing Engine
(Simultaneous Sales and Purchase Pricing)
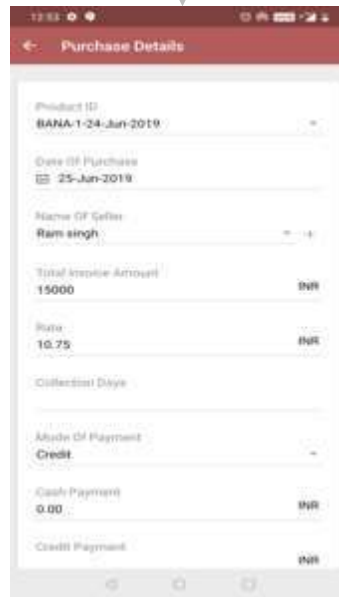
Route Optimization

Building internal Ag stack for efficient fast moving supply chain operation

3 YEAR OLD START-UP : EDUCATION

Stones**2**Milestones
my place in the world

https://www.stones2milestones.com/

- Encouraging & Inculcating Reading habits

- Touching children, parents & teachers

- Sharp jump in user base from 15000 to 250000

- Number of schools reached increased from 8 to 110

- Employee strength risen from 3 to 33

- Income jumped from 0.75 crore to 22.5 crore,

- Valuation has jumped several times

- Started in 2015

- In business to create a Nation of Readers

CASE: EDUCATION – STONES TO MILESTONES

Established Market Fit

Successful acceptance & engagement of a paid product in the target group via **fanatical focus on the end user**
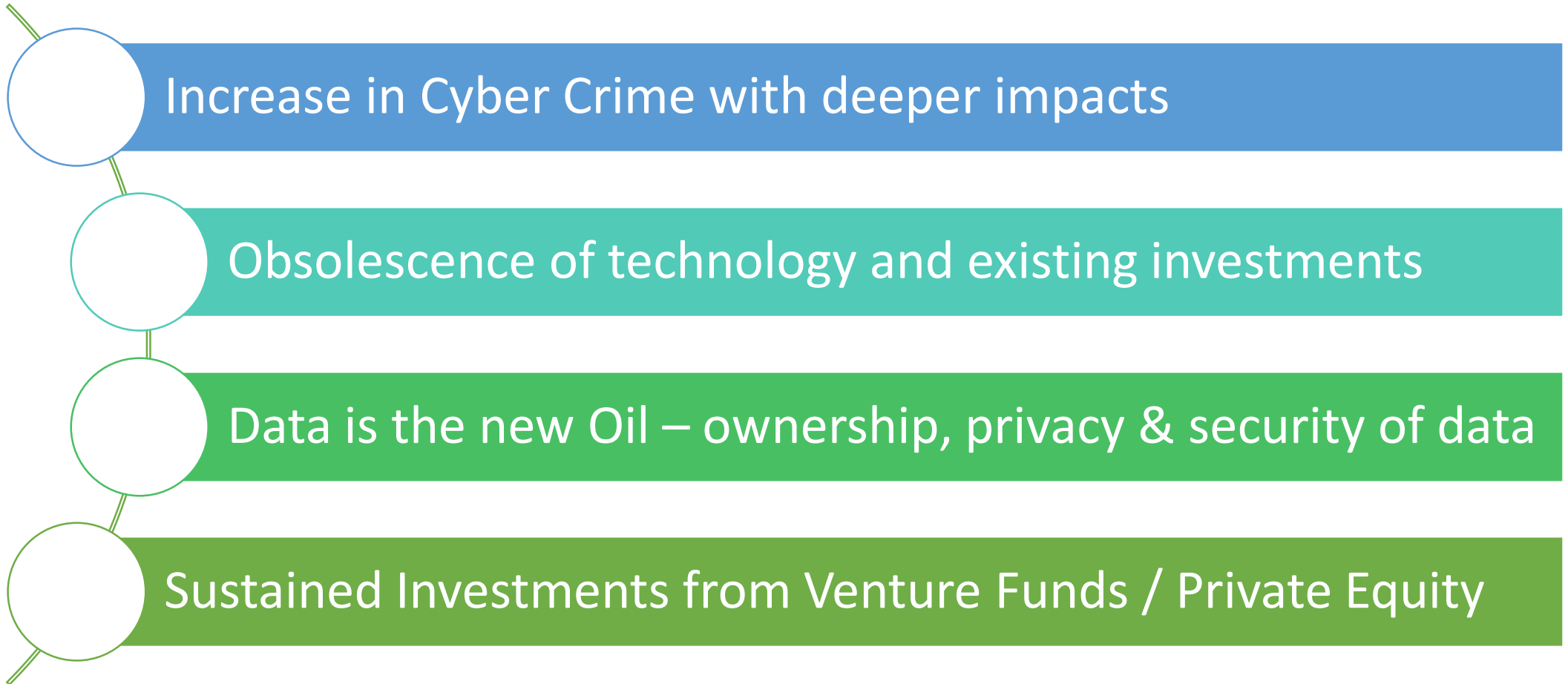
	Product Adoption	Product Engagement
Tier 1	50%	42%
Tier 2	42%	43%
Tier 3	28%	64%

Data from 3 month paid product beta between Jul-Sep'19 of 45,505 children in 130+ schools across all tiers in India
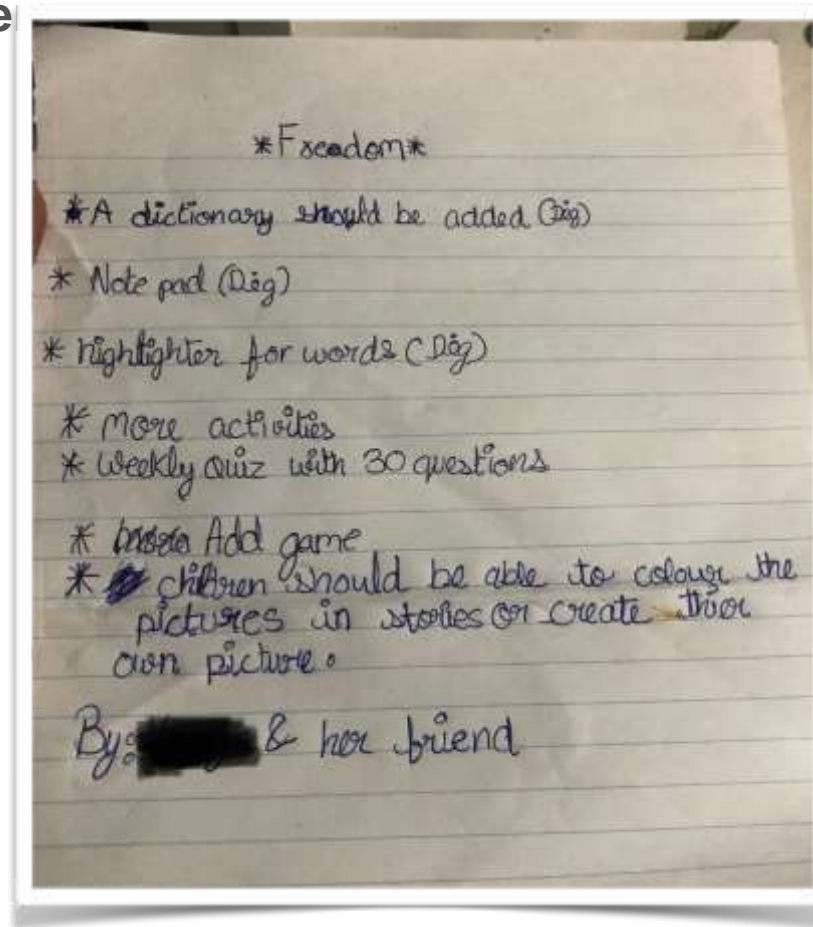
One of the many Product roadmaps as requested by a 7yr old super user

CHALLENGES & WAY FORWARD IN DIGITIZATION

- Increase in Cyber Crime with deeper impacts
- Obsolescence of technology and existing investments
- Data is the new Oil – ownership, privacy & security of data
- Sustained Investments from Venture Funds / Private Equity

Though Challenges in Digitization are large, Opportunities are even larger!

21ˢᵀ CENTURY SKILLED HUMAN RESOURCES & TECHNOLOGY FOR VISION & MISSION OF MAKE IN INDIA

TECHNOLOGY

- Use Effectively the Digital Technologies to provide the Citizens with all Infra Services and Industry Products at affordable prices and accessibility of health care and other urban & rural infra services.
- Make use of **2/3/4 G** digital communication with **IOT** devices eco-system to connect services & products to enhance productivity and quality of services
- Effective IT platforms & applications using **AI & Deep Machine Learning** for making the good policies & regulations
- Digital Technology & AI to be used to enhance the Services & Products productivity but **not to REPLACE** Human Resources

SKILLS & TALENT

- Re-imaging & Re-engineering of **Skill Development programmes for men and women** to meet the new mixed public & private participated economy. More woman to be encouraged & trained in the rural and primary level of economy.
- Skill Development & Talent programmes re-designed to meet the Post Covid-19 Make In India new order of life
- Have more Skill Development Centres in Rural and Sub-Urban areas to have more inclusive participation by all

STANDARDS

- Move fast to implement **Industry 4.0** standards to effectively use Digital Technologies for Smart Infra and Industry
- The New Industry 4.0 Standards with 4&5G, IoT's with AI and Machine Learning enhances the exports & domestic requirements with given effective policies and regulations
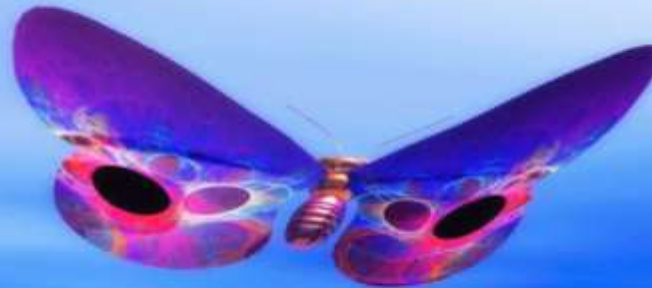
Its time to move ahead in the digital space... its time to push the digital revolution…its time to metamorphosis into a digitally adept and able economy in all sectors…this wont be the end of current style functioning but a beginning of a new brighter stronger digital world which would reinforce India's position on the world map

THANK YOU