

Technology innovation for service delivery

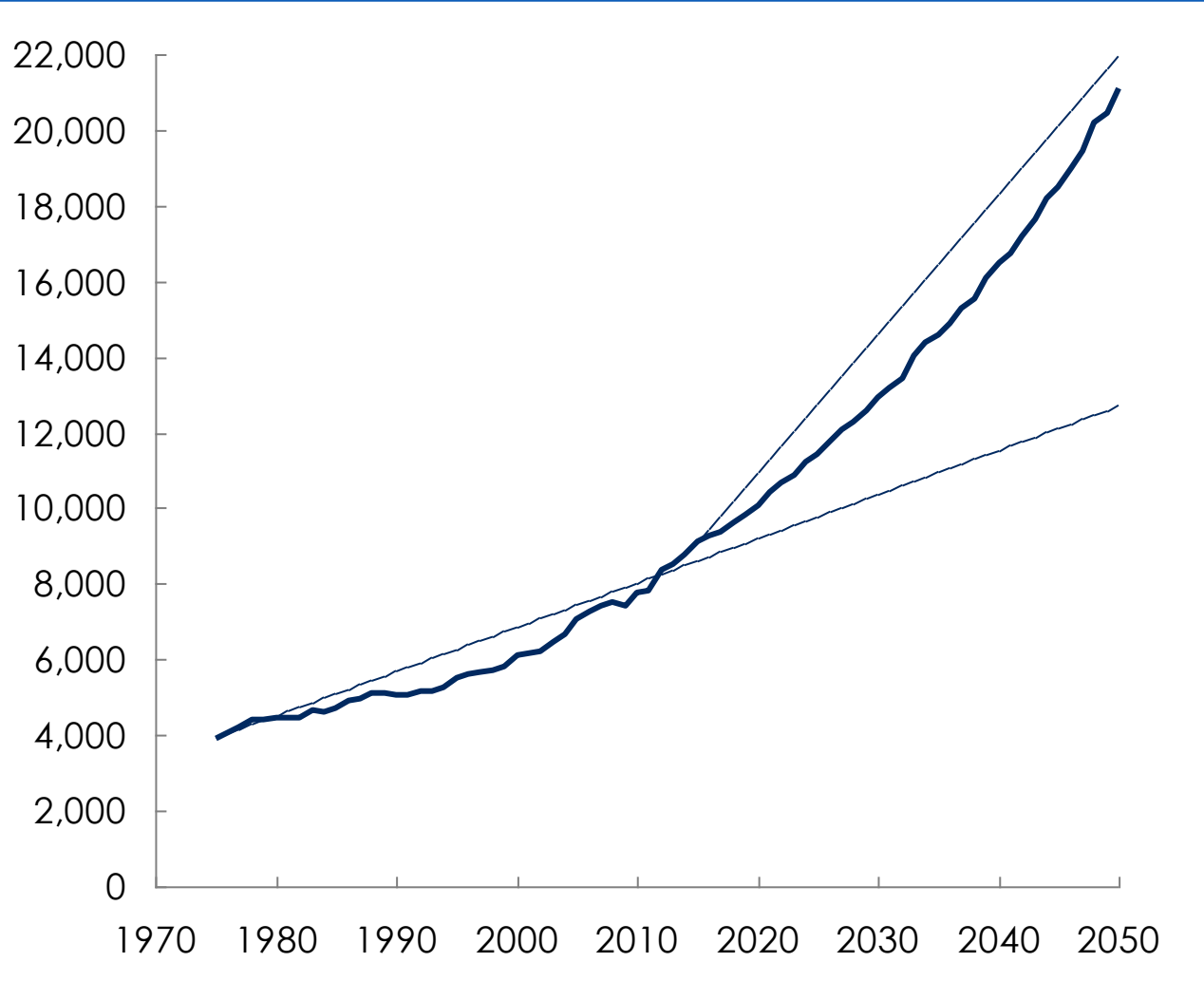
International Conference on
Indian Telecoms Last Mile: So Near Yet So Far

March 7, 2014

The future is exponential and technology is driving it

GDP per world capita

In real USD



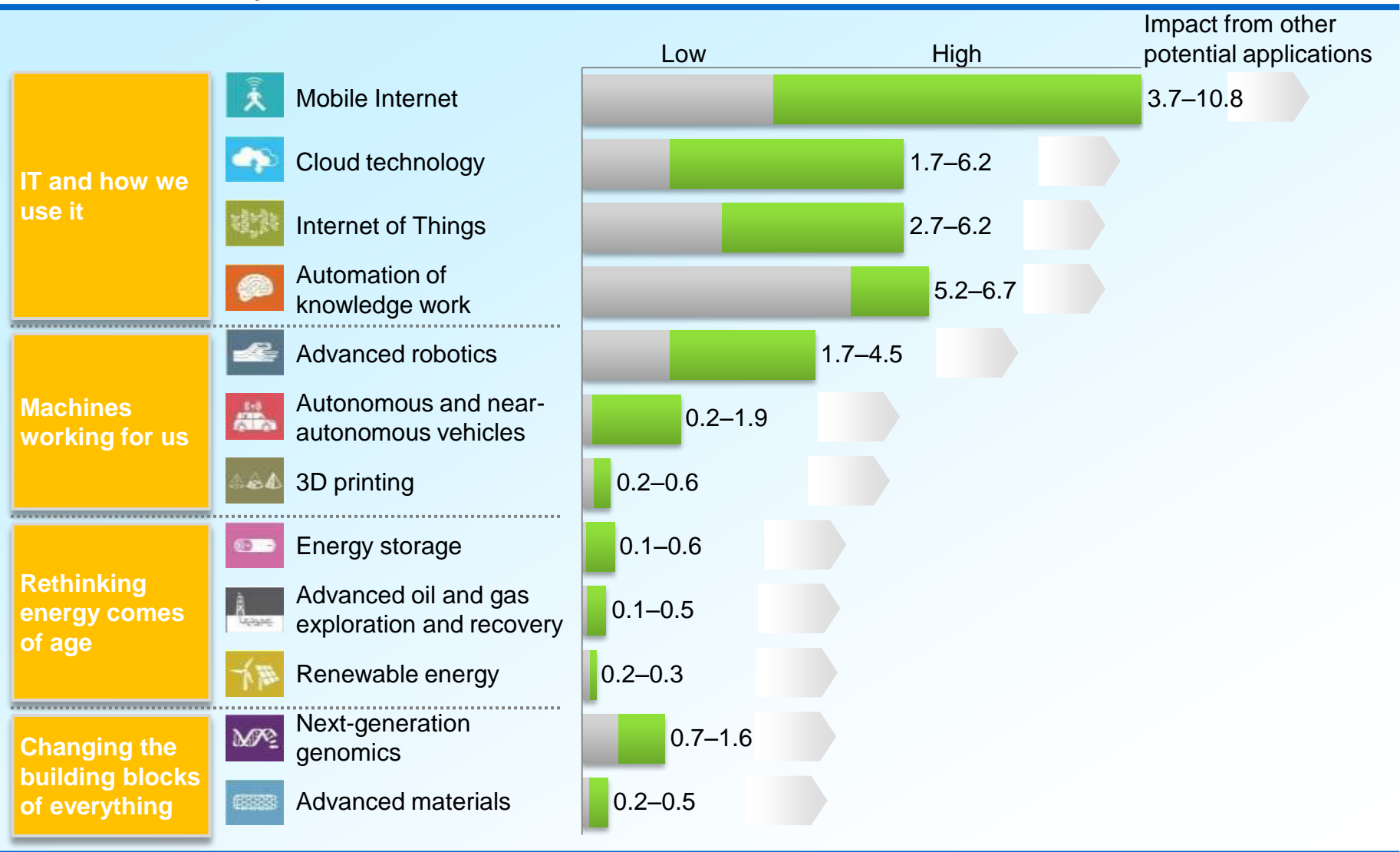
- **Today versus 35 years ago: +80%**
- **35 years ahead versus today: +140%**
- **Technology advances account for 50% of total economic growth and 3 times that in redistributed value**

SOURCE: Angus Maddison's "World Population, GDP and Per Capita GDP, 1-2003 AD"; Projection based on Global Insight economic data; WIPO IP Statistics

Globally, 10 disruptive technologies will have huge economic impact

\$ trillion, annual by 2025

Range of sized potential economic impacts in each category



**India's
needs for the
next decade
are huge**

**Technology
innovation can
transform
service
delivery**

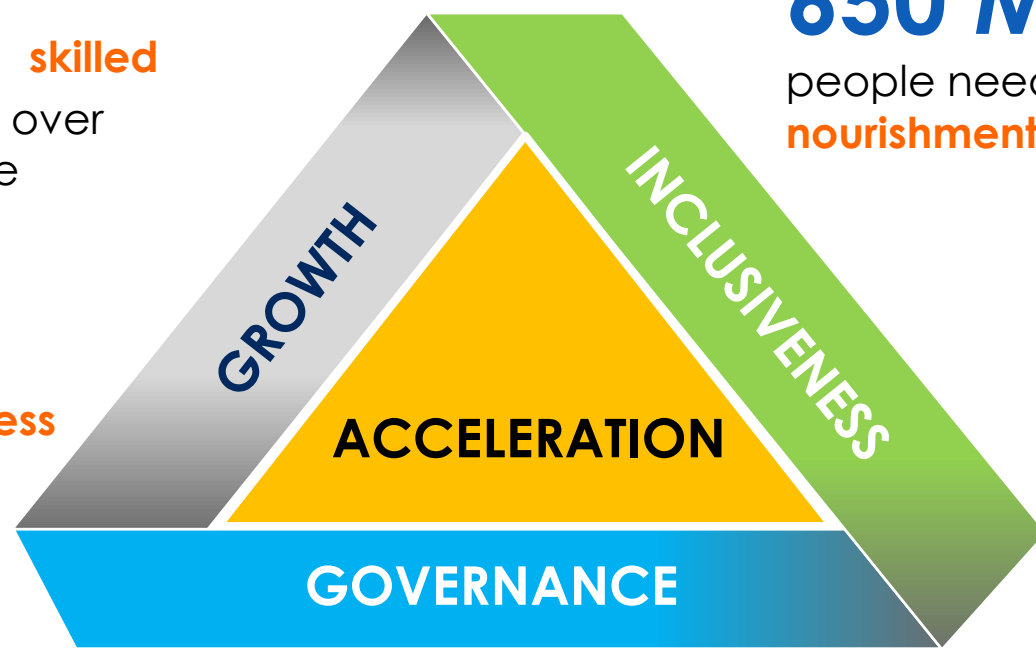
**We need to
move forward
quickly**

India's needs for the next decade are huge

Accelerated growth, inclusiveness and governance

500 Mn **skilled**
people needed over
the next decade

300 Mn
people need **access**
to electricity



650 Mn
people need proper
nourishment

400 Mn
rural people need
access to
healthcare

120 Mn
rural households
need **bank**
accounts

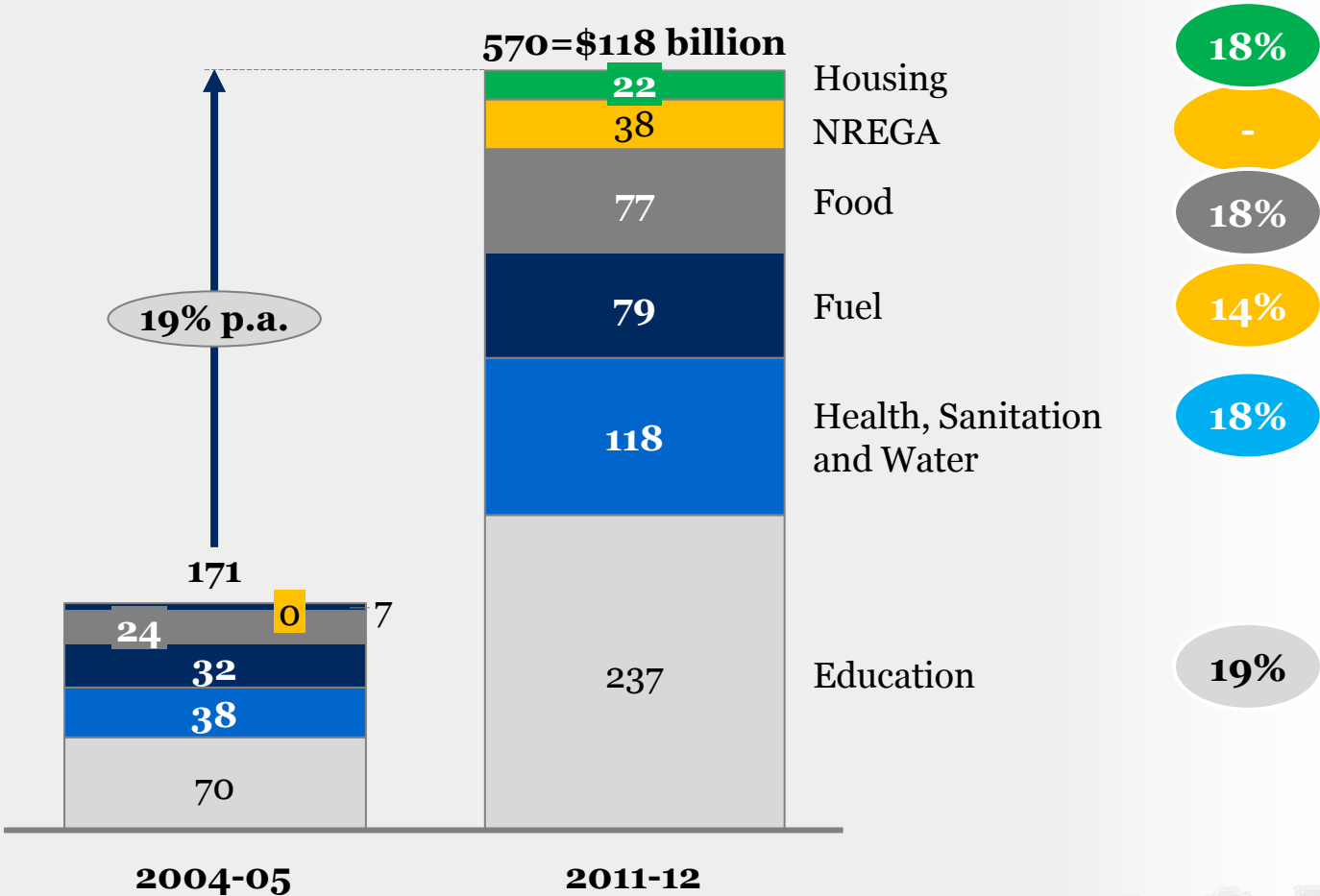
#134 out of 189
countries on **ease of**
doing business

#124 out of 190
countries on United
Nation's **E-Governance**
index

Public spending on basic services has grown rapidly

Public spend on basic services
Percent; INR '000 crore, 2004-05 and 2011-12

CAGR
(2005-12)

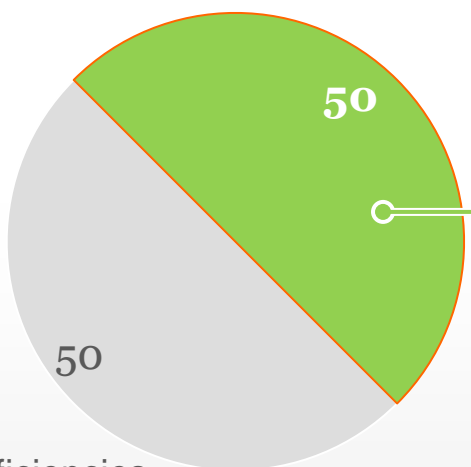


NOTE: Numbers may not sum due to rounding, NREGA was not present in 2004-05
SOURCE: IPFS; McKinsey Global Institute analysis

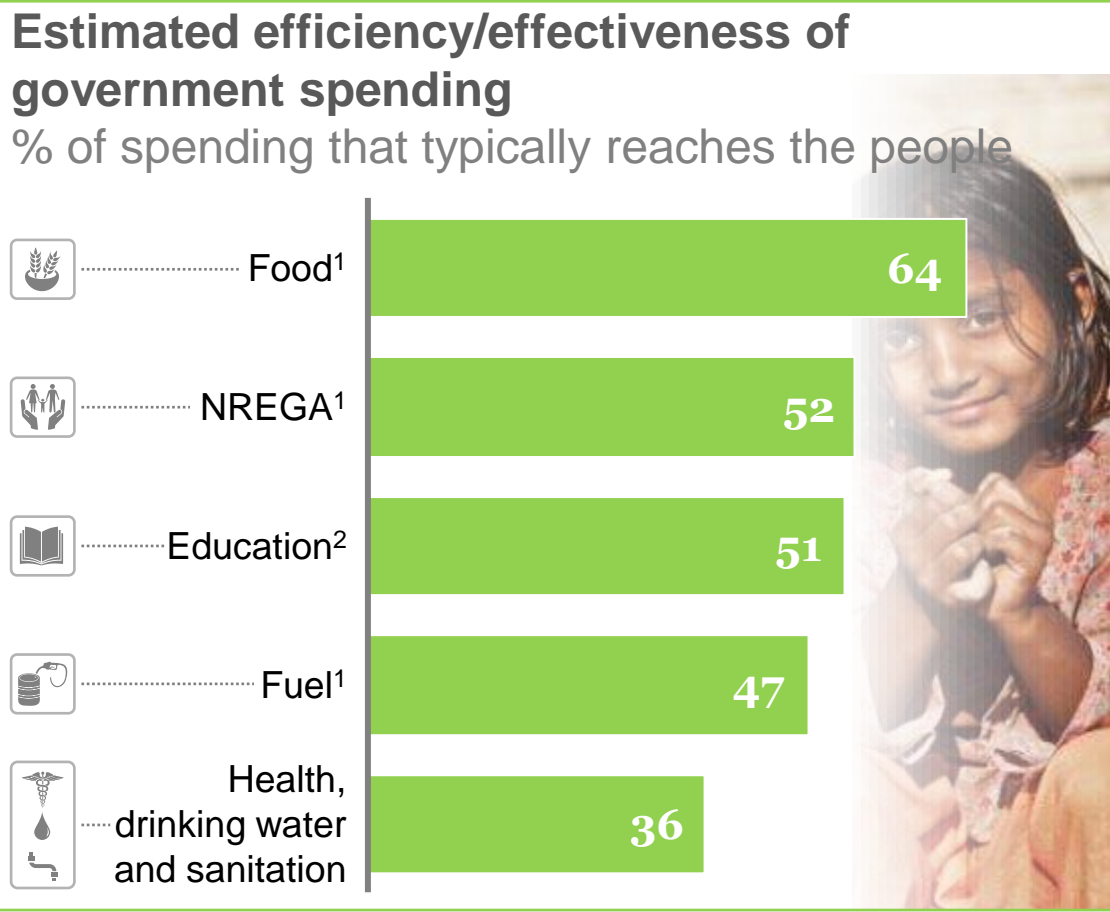
About half of social spending does not benefit the people

2011-12 government spending

100% = INR 570,000 crore



Inefficiencies and leakages



Ten technologies have a key role in India's transformation



Ubiquitous connectivity

- **14% penetration**, with 43% through mobile
- **\$10** per MBPS access cost
- **60-80% penetration** with **>70%** through mobile
- **<\$1** per mbps access cost



Internet of things

- Enabled with **custom devices** for **closed systems** applications
- Enabled with **affordable standardized** devices for **open system** applications across industries



Cloud technology



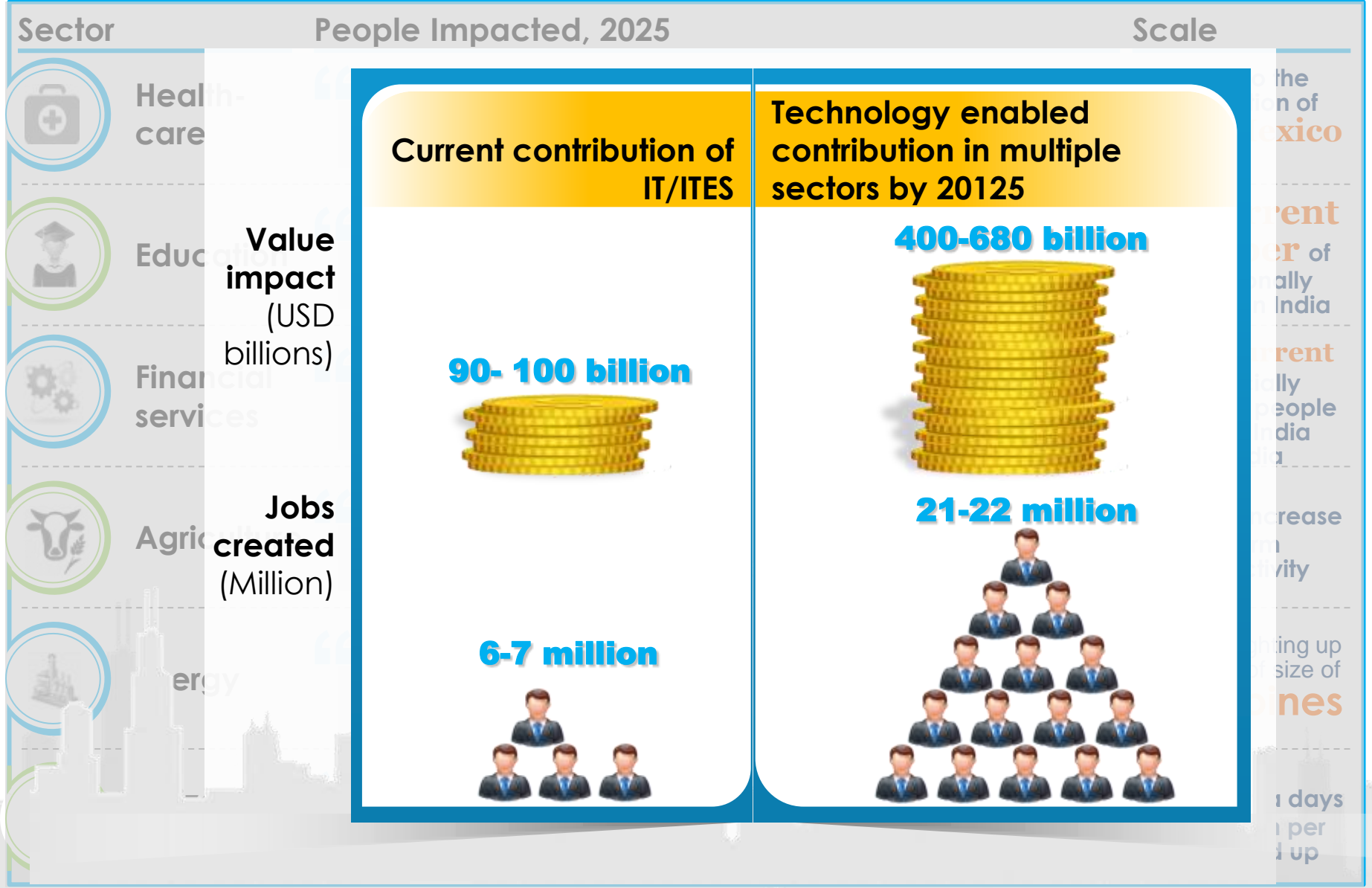
Digital payments

- **~1.4 billion B2B and B2C transactions** driven by high value fixed line transactions
- **5 – 10 billion transactions (large scale)** driven by large scale mobile based **low value P2P payments**



Universal biometric identity

These technologies can change millions of lives, fast



Mobile internet-enabled “business-in-a-box” solutions can accelerate SME productivity

Potential Internet-enabled “Business-in-a-box” solution



- Customizable to a specific vertical
- Offered through a subscription model
- Operators and service providers help with deployment and maintenance

End-to-end internet-led models can provide healthcare to millions in rural communities



Physician training and setup



Education **of medical protocol** for treatment of diseases



2 laptops +
2 tablet per clinic

Setup



Patient enrollment and assessment



Phone tablet
based door to
door enrollment



Geotagging
and **Barcoded UID**
for all patients



Rapid risk
assessment
of patient



Treatment and diagnosis



Protocol
based treatment



Online reports



Low cost
diagnostic through
centralized test labs



Medication and follow-up



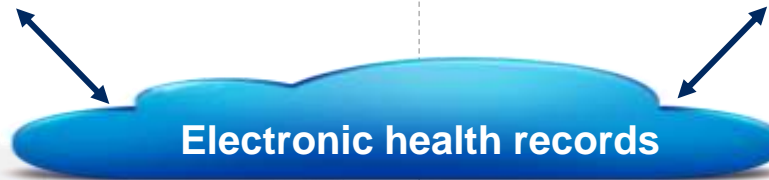
Printed Rx



Auto-
replenishment of
drugs



Auto patient
reminder on visits
scheduled



100,000 patients enrolled and treated till date in the districts of Tamil Nadu

Mobile-internet based school management systems can improve learning outcomes

Biometric attendance



E-content



Self-assessment/ recommendation engines



Data analytics/ report generation



Affordable devices



Impact on disadvantaged schools is much higher, **+56%**, vs. top end K12

Customized learning



Computer adaptive learning allow children to learn at their pace

Solution already delivered to **~50K** students

Performance of students improved by **90%¹**

50% of teacher time can be reallocated

Cost can go down to **INR 50 per month** per student



Performance tracking


















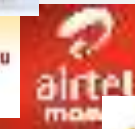


















In Kerala, details of **~60 lakh** student to be recorded and analyzed in real-time

Potential for drastic reduction in the consuming activities, e.g., 20-30% time saved

Enabling fact based schools management

¹ Comparison of pre- and post-test scores for the Ratlam project by EI
SOURCE: McKinsey analysis, Educational Initiatives, Kerala govt

Plenty of pilots at various stages exist in India

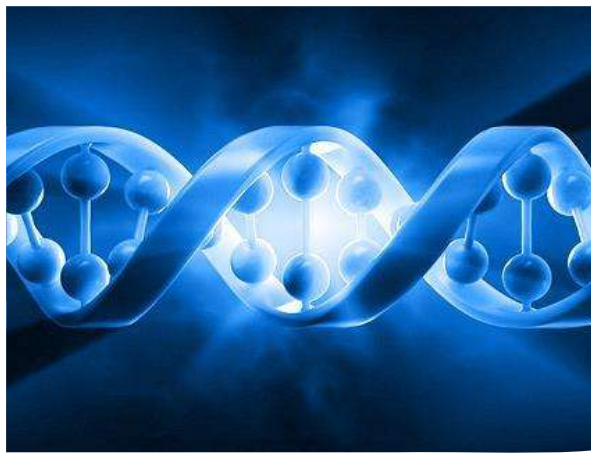
| Technologies | Agriculture and food | Education | Health | Financial services | Energy | Citizen services |
|---|---|---|--|---|--|--|
| Ubiquitous connectivity |  |  |   counterfeit drugs |   A LITTLE WORLD | |  |
| Internet of things |  | | | |  | <ul style="list-style-type: none">Smart public safety and surveillance |
| Cloud technology | |    |   ro insurance |    | |  |
| Digital payments | | | | | | |
| Universal biometric identity |  PDS system |  | | <ul style="list-style-type: none">Mobik | |  |
| Unconventional oil & gas Exploration & Recovery | | | | |   | |
| Renewable energy sources | | | | |  | |
| Advanced energy storage | | | | | | |
| Automation of knowledge work | |      |    | <ul style="list-style-type: none">Automated customer care | | <ul style="list-style-type: none">Automated query handling |
| Next generation genomics |  BT cotton | | | |  | |

What will it take to scale the pilots?

- Create demand outside-in
- Design for the end-user
- Create accountable alliances
- Mandate it
- Fund it well
- Build tech. capability in Government
- Break silos
- Identify and empower missionaries
- Party agnostic technology agenda

What else?

**How to
move
forward on
these?**



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