India must embrace Data Democracy

Nandan Nilekani, 2017
Half the world now uses Smartphones

Out of 5.5 Bn people above age 14

2.5 Bn have smartphones

Source: Ben Evans, 2016
Newer devices are on the way

1960 40:1 1990 4:1 2005 1:1

2020
1 Person
4 Devices

Nandan Nilekani, 2017
IoT will bring 50 Billion devices online

ARM sold 15 billion chips in 2015, expected to sell 1 trillion chips/year in 2035.

Source: ARM Press release, 2016
Everyone and everything will be connected

Generating massive amounts of data

Source: Software.org-BSA Foundation IoT report, 2017

Nandan Nilekani, 2017
Platforms enable products that solve problems, but also **capture** and **claim ownership** of data produced by user interaction.

The world’s largest businesses are building platforms.
Because controlling data creates more of it

- The virtuous cycle of data feeds itself, growing bigger like an avalanche
- With no reason to do otherwise, it encourages capturing more data
- A winner-takes-all model emerges
Data Controllers tend to outgrow competition

In 2016, Google & FB dominated 71% of total digital ad spend & 89% of total growth

In 2016, AliPay & WeChat dominated 93% of total mobile payments a $5.5 Tn market

Source: Mary Meeker, Internet Trends, 2017
Data + AI disrupt adjacencies with great speed

Netflix started creating its own content

Netflix’s first self-commissioned original content series *House of Cards* was released in 2013.

2013

Yu’e Bao, “leftover treasure”, an app-based money market fund started in 2013.

Source: The Hollywood Reporter, FT
Data + AI disrupt adjacencies with great speed

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Netflix’s first self-commissioned original content series *House of Cards* was released in 2013.

Netflix released an estimated 126 original series or films in 2016, more than any other single American network or cable channel.

93 Emmys, 2nd only to HBO’s 110

Yu’e Bao, “leftover treasure”, an app-based money market fund started in 2013.

Reached $90B in ten months

Became world’s largest, reaching a total amount of $165 billion in 4 years

Source: The Hollywood Reporter, FT

Nandan Nilekani, 2017
Data is a new kind of resource
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Data is an unlimited non-rivalrous resource

Yet, it isn’t shared freely
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Data Producers

- Social
- Commerce
- Location
- Search

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Data Consumers

- Social
- Commerce
- Location
- Search

- Self-Driving Cars
- White label retail
- Content & Media
- Bots

Bundling Data into Silos

Nandan Nilekani, 2017
Platforms that accumulate user data
Platforms that accumulate user data rapidly disrupt industries,
Platforms that accumulate user data rapidly disrupt industries, outgrow competition,
Platforms that accumulate user data rapidly disrupt industries, outgrow competition, & create silos.

This is Data Domination
The world is just waking up to the problem

**Can the Tech Giants Be Stopped?**
THE WALL STREET JOURNAL

EU gives companies two years of comply with sweeping new privacy laws
*PCWorld, April 14, 2016*

The UK’s largest nine banks have been given a year to develop & adopt an Open Banking API interface for customer data
*Finextra, Feb 2, 2017*

Japan considers tough anti-monopoly rules on data
*FT, Jul 16, 2017*

China cyber-security law will keep citizen’s data within the Great firewall
*By John Leyden, June 1, 2017*

The U.S. Needs To Step Up To Fight Abuse of International Antitrust
*James, Rill, June 28, 2017*

The UK's largest nine banks have been given a year to develop & adopt an Open Banking API interface for customer data
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*James, Rill, June 28, 2017*
Meanwhile Indians are rapidly adopting digital ...

Jan Dhan
290 Mn
Jan Dhan Bank Account

Aadhaar
1.16 Bn
Enrolments in 6.75 yrs since launch

Mobile
350 Mn
Smartphones

Mobile
1060 Mn
Phone Numbers

Every second, 3 more Indians experience the internet for the first time

77% of urban, 92% of rural
use the mobile phone as their primary device to connect to the internet

Source: UIDAI, NPCI, TRAI Website, Conversations with NPCI, eMudhra, Deity officials

Nandan Nilekani, 2017
... and choosing it as their preferred mode of transacting

- >21 Mn e-Sign in 24 months
- 4.8 Mn Digilocker users, 2 years
- 6.9 Mn Uploaded docs
- 1+ Bn Issued Docs
- 10M+ UPI Transactions in June alone!
- 340 Mn eKYC in 3 years 75 Mn unique ids
- >800 Mn Authentications/month > 500M unique ids so far
- 500 Mn APB Accounts Linked 2.0 B Transactions worth 9.2 B USD in 3 years

Source: UIDAI, NPCI, TRAI Website, Conversations with NPCI, eMudhra, Deity officials
India will go from data poor to data rich in 3 years

Social

Commerce

Payment

Paperless Process

Digital Identity

Machine Learning & Algorithms

Nandan Nilekani, 2017
India will go from data poor to data rich in 3 years

We need to think about how this data wealth will translate to real wealth for users

Nandan Nilekani, 2017
We’re running out of Time
We’re running out of Time

If unchecked, the problem of Data Domination will repeat in India in 3 years
India needs a strategic position on Data

Data Domination represents multiple risks

Nandan Nilekani, 2017
India needs a strategic position on Data

Data Domination represents multiple risks

It is not just a technology challenge, It is ALSO a policy one.
India needs a strategic position on Data

Data Domination represents multiple risks

It is not just a technology challenge, it is ALSO a policy one.

We must Invert the Data

Nandan Nilekani, 2017
WHAT, why, who, how

What is Invert the Data?
Invert usage of data

Data is used to sell things to the user

Data to be used to empower the user

Nandan Nilekani, 2017
Invert ownership of data

Data Producers
- UPI
- GSTN
- BBPS
- Search

Data Consumers
- Flow-Based Credit
- Skilling & Recruitment
- Content & Media
- Bots

Nandan Nilekani, 2017
Inversion is not protectionism

Companies, both foreign and domestic, are still free to collect and operate on data as long as they follow the laws of the land.
Inversion is only about empowering the user with Choice & Freedom

Choice of multiple providers

Freedom to share their data
Why
Invert the Data
Since we don't trust anyone with it, put the users in control of their own data!
If user is the rightful owner of data, data is not locked in silos.

Inversion means Data + AI is used to extract value for user.
Inverting the data defends privacy

Currently, only user choice is either ‘take it’ or ‘leave it’

Inversion lets the user negotiate her own terms with service providers through consent

The privacy tradeoff: Companies provide services for free in exchange for your data.
Inverting the data enables competition and innovation

Sharing of data between services even if owned by same company should happen by consent.

Inversion creates unbundling, real user choice & negates winner-take-all

Nandan Nilekani, 2017
Who benefits if we Invert the Data?
Indians will be data rich before being economically rich

In India, Ads will not subsidise products

Business models cannot be copy-pasted from US to India

India needs to rethink data companies for the Indian context

We’ve done it for Aadhaar, for payments, time to do it for data in India

Source: statista.com, This Year Next Year, GroupM

Nandan Nilekani, 2017
Data is the new Soil

Devi the farmer can use data to navigate the 7 stages of farming

She creates a 360° profile of her farm through personal & public data

Increasing trust and decreasing friction in her interactions with banks, insurers, input vendors, market buyers, etc.
Lack of credit is due to lack of Data

Bottleneck of lending is trust

Knowledge asymmetry creates usurious money lenders

Data measures capacity and intent to pay back a loan

Ramesh
(Mechanic)
Earns Rs 20,000 p.m.

Mohan
(Shopkeeper)
Earns Rs 20,000 p.m.
Creates virtuous cycle of credit to small businesses ...

If data is inverted,

Mohan can demand
- His GST returns &
- His Bill Payments on BBPS be shared with NBFC

Thus, creating a richer digital footprint, and securing a loan.
... and virtuous Cycle of skills for people

- Differentiated Earnings
- Trusted Credentials
- Employment
- Credible History
- Training, Apprenticeship & Certification
- Guru-Shishya Parampara Ecosystem of institutes/agencies
- Aadhaar, Digital Locker for portability and trust

Market places like LinkedIn, Babajobs, etc.
Data is used to eliminate knowledge asymmetry at scale

Data with ML/AI will be used to reduce information asymmetry & provide benefits

 Cannot work if data is in silos.
How to
Invert the Data
India has unique digital infrastructure...

A set of serendipitously developed open APIs, built as public good
... and a robust authentication infrastructure

Access Channels

Domain Identity

Foundational Identity

PCs

Smartphone

Cards

PoS

... AADHAAR (Biometric)

PAN (OTP)

Employee ID

...
India is uniquely positioned to implement inversion

Data consumers must seek consent from user before sharing data

Consent Collection, Storage and Audit can be managed efficiently over Open APIs

Introducing the Data Empowerment & Protection Architecture

1. Consent Flow
   Digitally signed consent artifact

2. Data Flow
   Secure data sharing based on consent

Nandan Nilekani, 2017
“Data is empowering when it is in the hands of the people.”

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“Data is empowering when it is in the hands of the people. We must invert the data, thus ensuring freedom and choice.”

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This is Data Democracy

Nandan Nilekani, 2017
Managing the economy with Data

8 million businesses uploading line item level GSTN data can track GDP consumption / inflation in real-time.

ETC/ e-way bills data of every truck crossing every toll booth can help understand supply chains.

NPCI has Payments Data of transactions done digitally can tell us about real time shift to cashless.

Real-time Macroeconomics

Implement incremental policy changes, and track immediate effect

Targeted policy interventions

Nandan Nilekani, 2017
3 Simple Steps to a Data Democracy

01. Legal Right of public over public data

Govt to unlock public data such as Income Tax, GSTN, Drivers License etc
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   Bank statements, Loans, Mutual Funds, Stocks, Investments, Insurance

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03. Liberate private data via policy
Digital footprints, Health data - medical records, labs, etc. Business data - Transactions,
A no-cost, immediate and viable solution for the triple threat of Data Domination!

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Nandan Nilekani, 2017
India can leapfrog

History has shown time and again, that the best way to check power is to distribute, not accumulate it.

India can only solve its hard problems by empowering its users with their data.