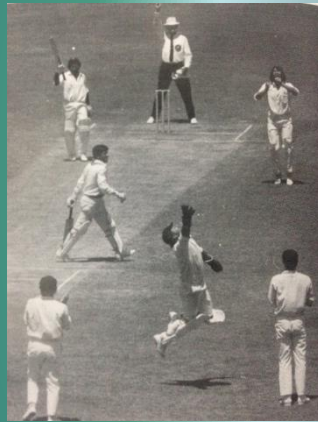
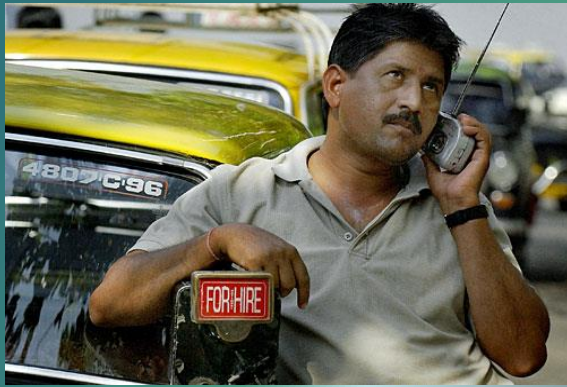


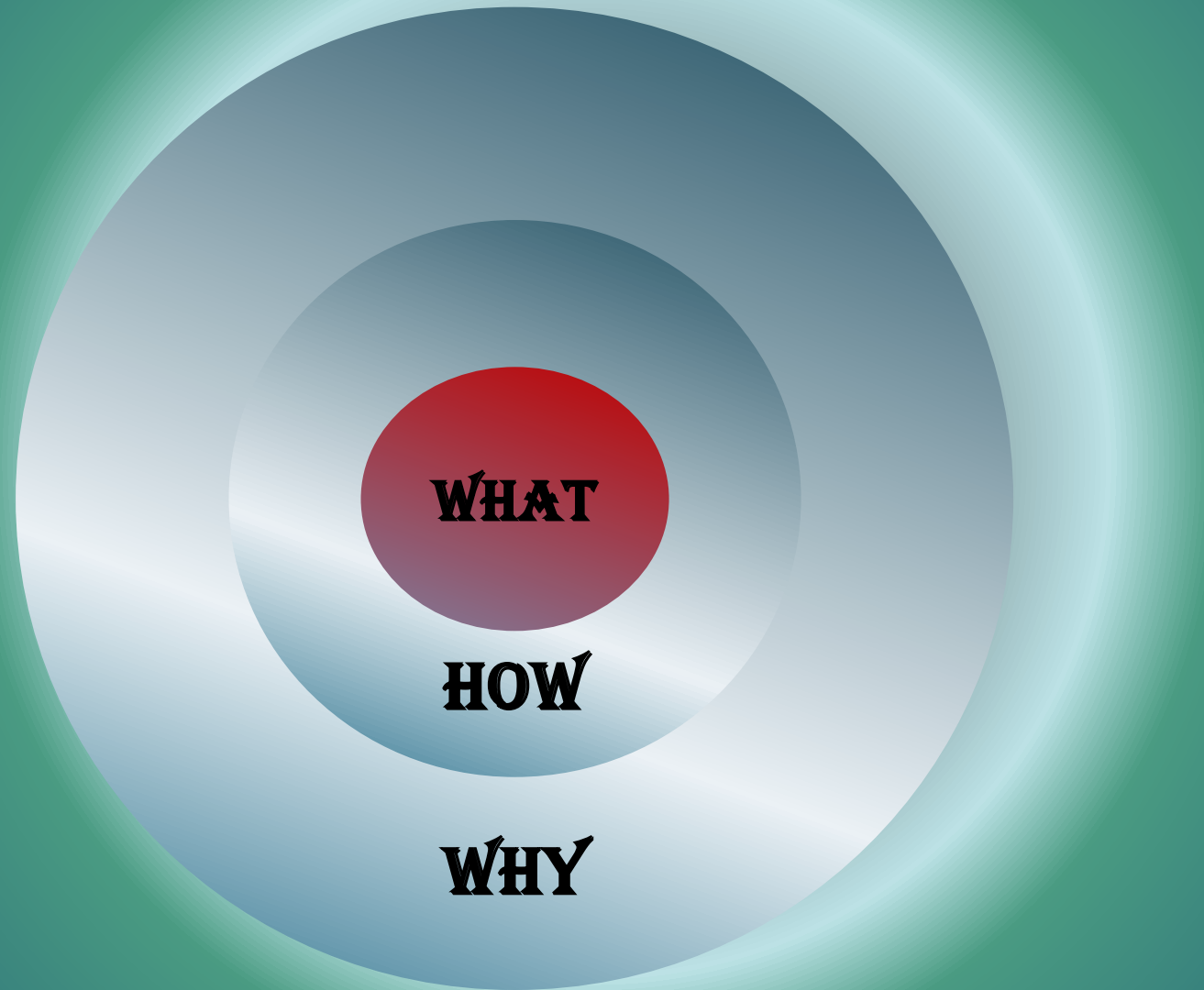
Industrial Revolution 4.0

**Keynote Speech by
Shankar Arun, VP Covance FSPx**





AGENDA

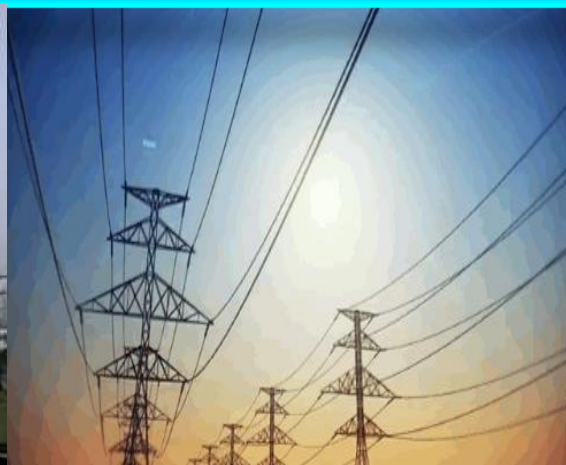


The Revolution



Version 1.0

Steam Engine
Mechanical
Production Equipment



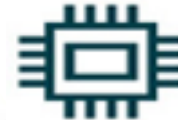
Version 2.0

Division of Labor
Electricity
Mass Production



Version 3.0

Electronics
IT
Automation



Version 4.0

IoT
AI/AR/VR
Block Chain



The Surge



NETFLIX

SCOPE

Google From Search Engine to Health care, Autonomous Car, Quantum Computing

SPEED

Uber-<100 drivers in 2011 to 300K drivers in 2015, 1 Billionth ride in 2016, In 6 months, crossed 2 Billion rides



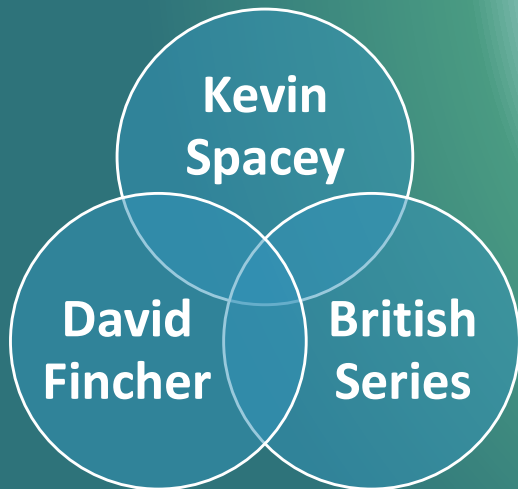
SCALE

Amazon – 302,000 Users in 2016 overtaking Walmart
AirBnB – 2 M rooms by 2015 overtaking Marriots at 750,000



The Data

- On February 1, 2013, a TV series called House of Cards debuted on the video streaming service Netflix.
- Two years later, it has a 9/10 rating from more than 275,000 reviewers. Those numbers place it in the same category as Avatar and The Sopranos, but this success, some said, was guaranteed in advance.
- Netflix had used all the Big Data it collected on its viewers to determine what they might like to see. In other words, data inspired the creative direction.



- 30 Million Plays
- 4 Million ratings
- 3 Million searches
- Fans who watched the UK version also watched movies of Kevin Spacey and directed by Fincher



WHAT

HOW

WHY

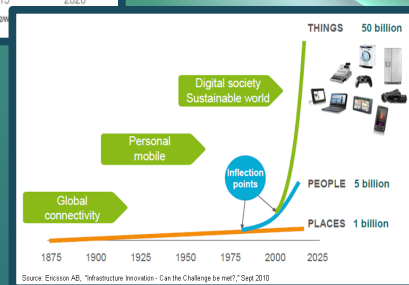
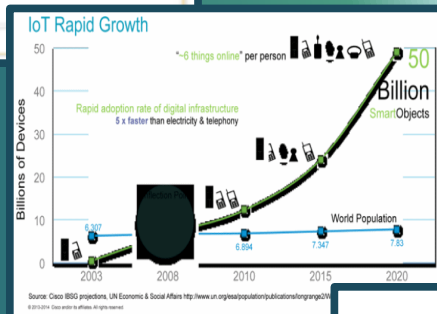
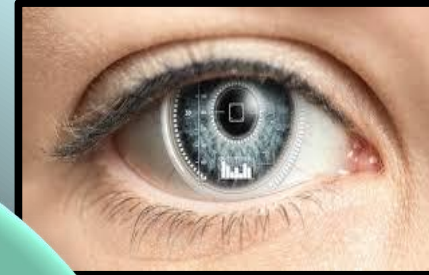


IT is IoT

Diabetes – Dermal Patch

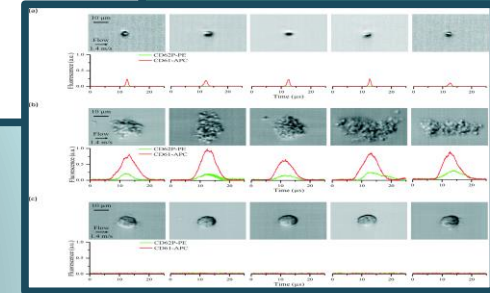
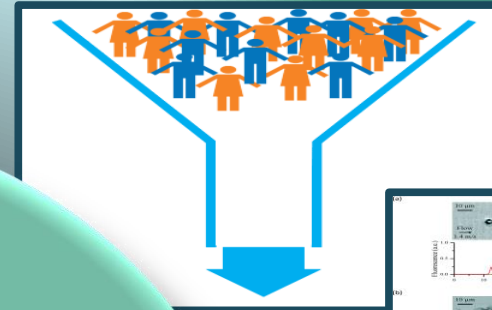
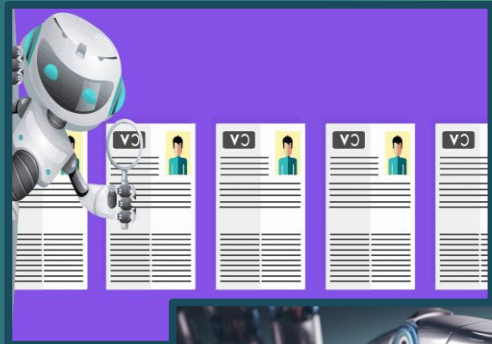
Project Blue Sky

Sudden Arrhythmic Death –
Athletes – Real-time data



Machines can learn??

- Patient Recruitment
- Site Selection
- CDISC Conversions



Block Chain

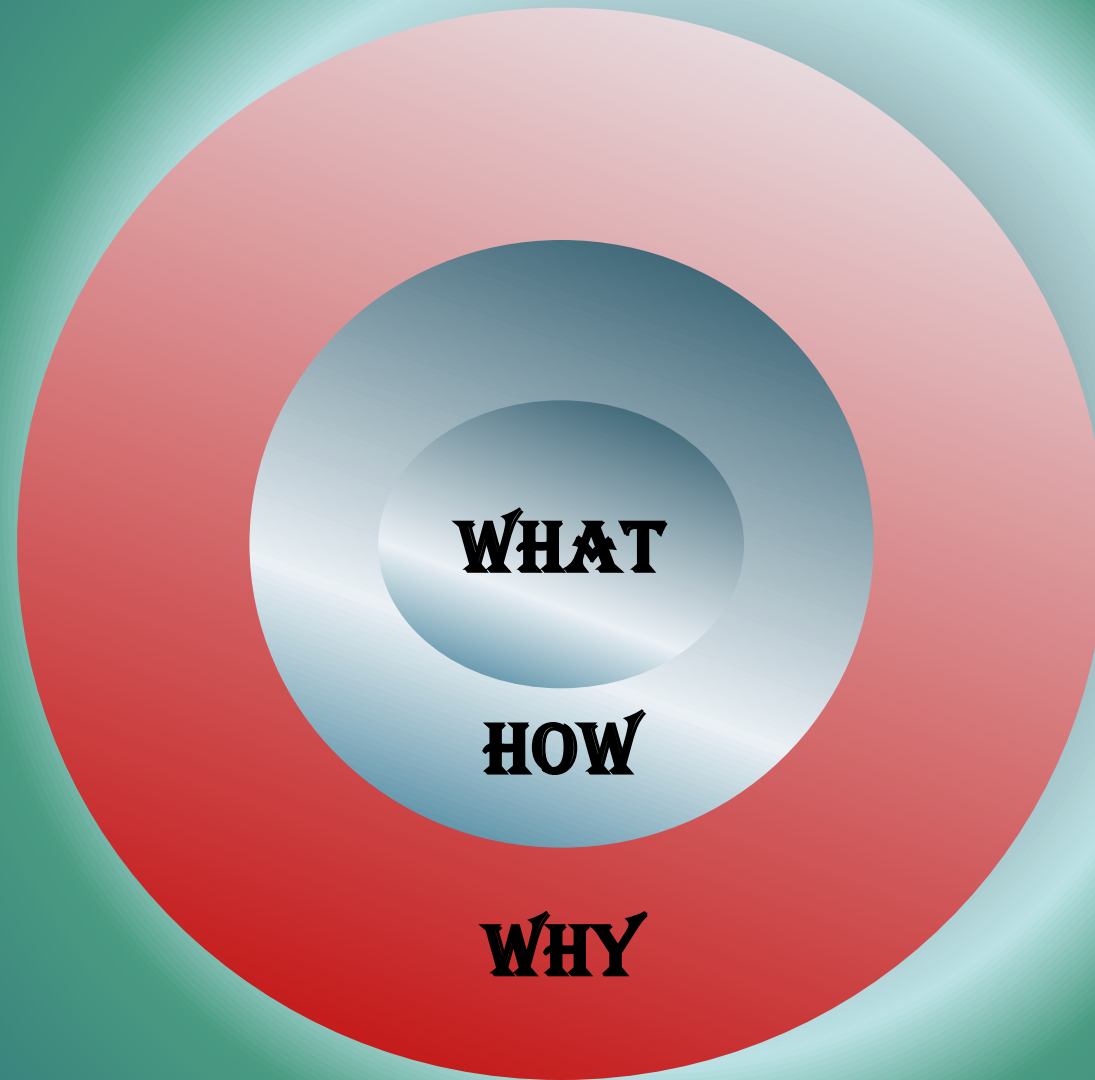


➤ EMRs, Patients and Bitcoins

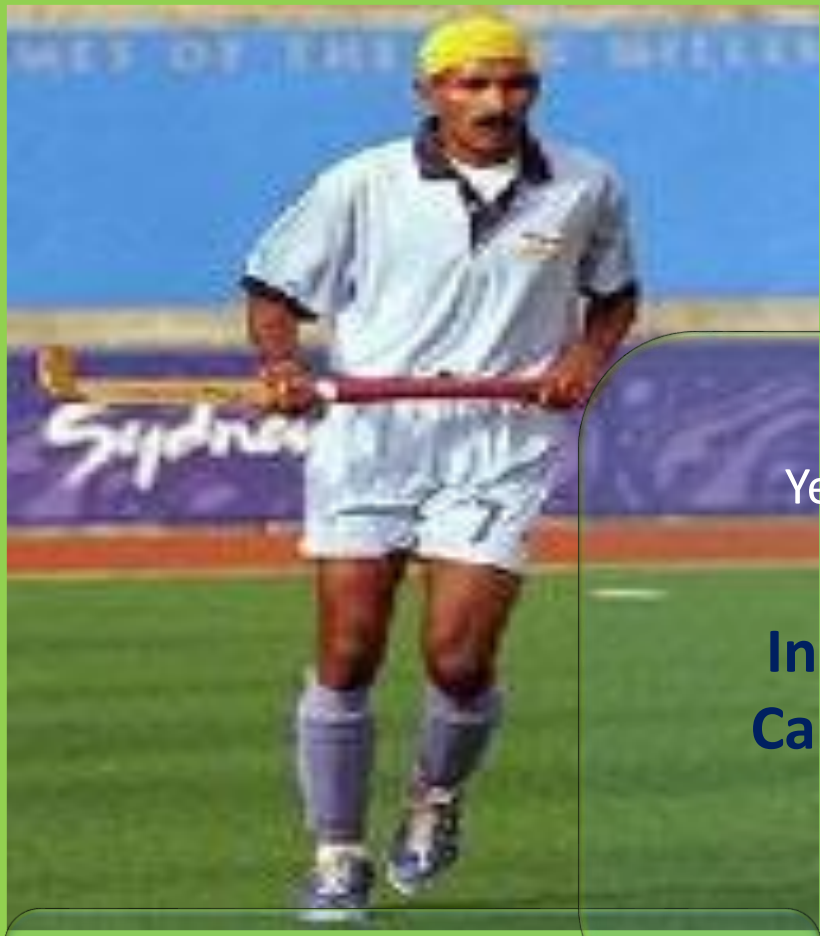
➤ Patient e-Consent



AGENDA



In Reality



Mukesh Kumar
3 Time Olympian Star Forward
(Indian Hockey Team Captain)

Yes I agree, BUT

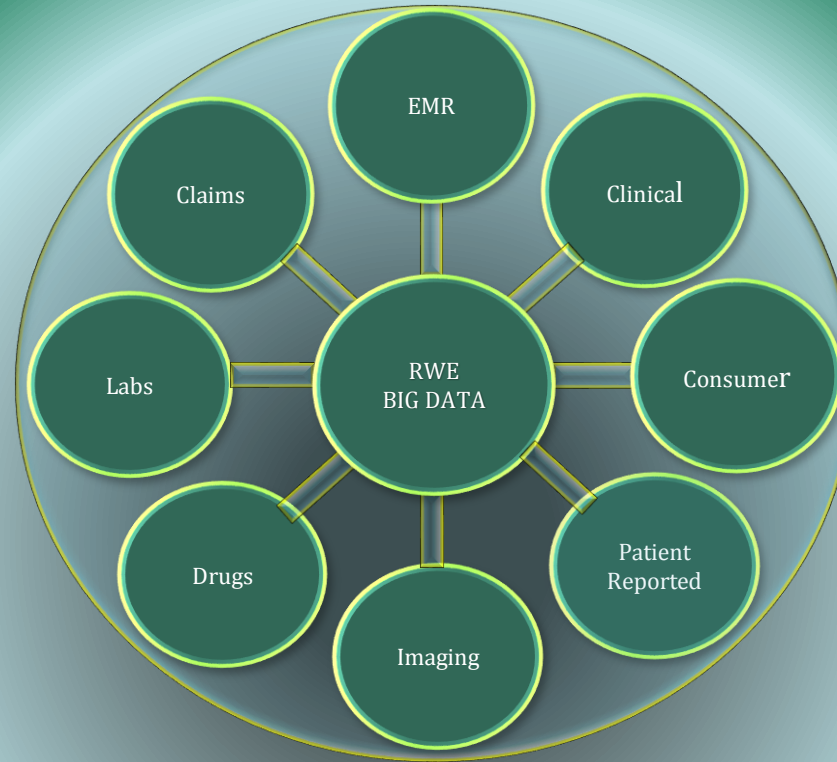
**In Reality, things
Can be different!!**

Mukesh .. From the top, I
see a lot of Gaps?



Cedric D'souza
Former Coach (Indian Hockey)

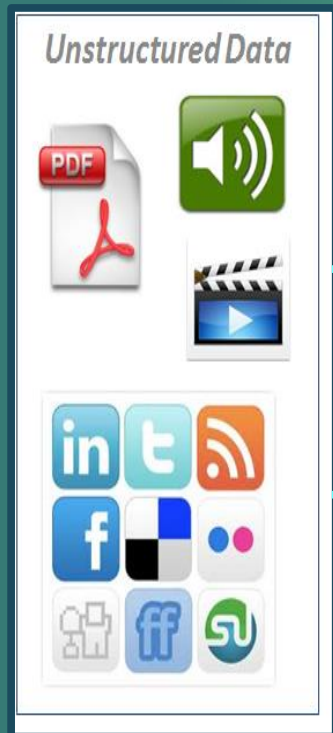
IR 4.0 & RWE – Natural Allies



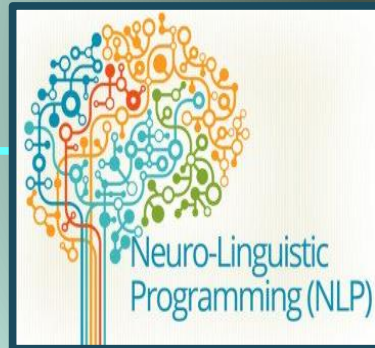
BIG DATA	Characteristics
Variety	Structured->Semi-structured->Unstructured
Volume	KB->MB->GB->TB->PB->EB->
Veracity	Classically Clean Data->Noisy Data
Velocity	Batch->Real Time

IR 4.0 & RWE – Natural Allies (contd)

- Roche – Flatiron acquisition
- Stanford Radiology Deep Learning Exercise



TEXT



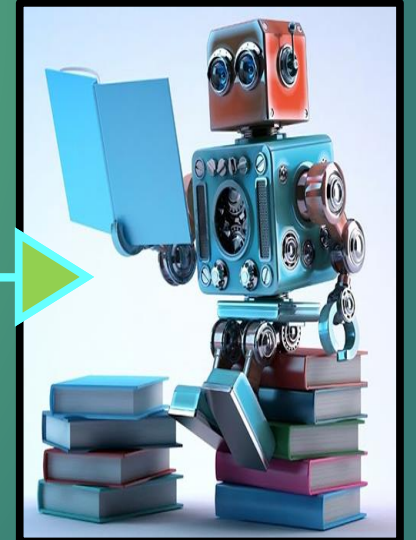
IMAGE



Structured Data



Unstructured Data



Machine Learning

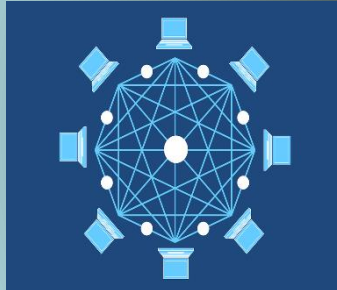
The Future State



“An Idea Whose Time has Come..”
- Victor Hugo



IoT & BigData



Block Chain



Machine Learning



RWE



We are at the right time and at the
right place

Thank you

