

Innovating Disruptive Digital Economy for Japan

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Silicon Valley, CA

SRII Japan Summit

Mar. 1-2, 2015 at University of Tokyo



Service Research & Innovation Institute SRII

Drive Open Innovation for “ICT Enabled Services” for major sectors of global economy and for a better World



SRII Organization

Senior leaders from industry, academia, research and government organizations from around the world

SRII focus on ICT Innovation

- Cloud Services
- Mobile Services
- Big Data Analytics
- Internet Security
- Social Networking

SRII focus on “Service Economy”

Healthcare

Finance

Energy

Transportation

Government

Education

Retail/E-Commerce

Telecom

Manufacturing/Supply Chain

Agriculture & Food Safety

New 21st Century Contexts

Service economy

Digital Economy

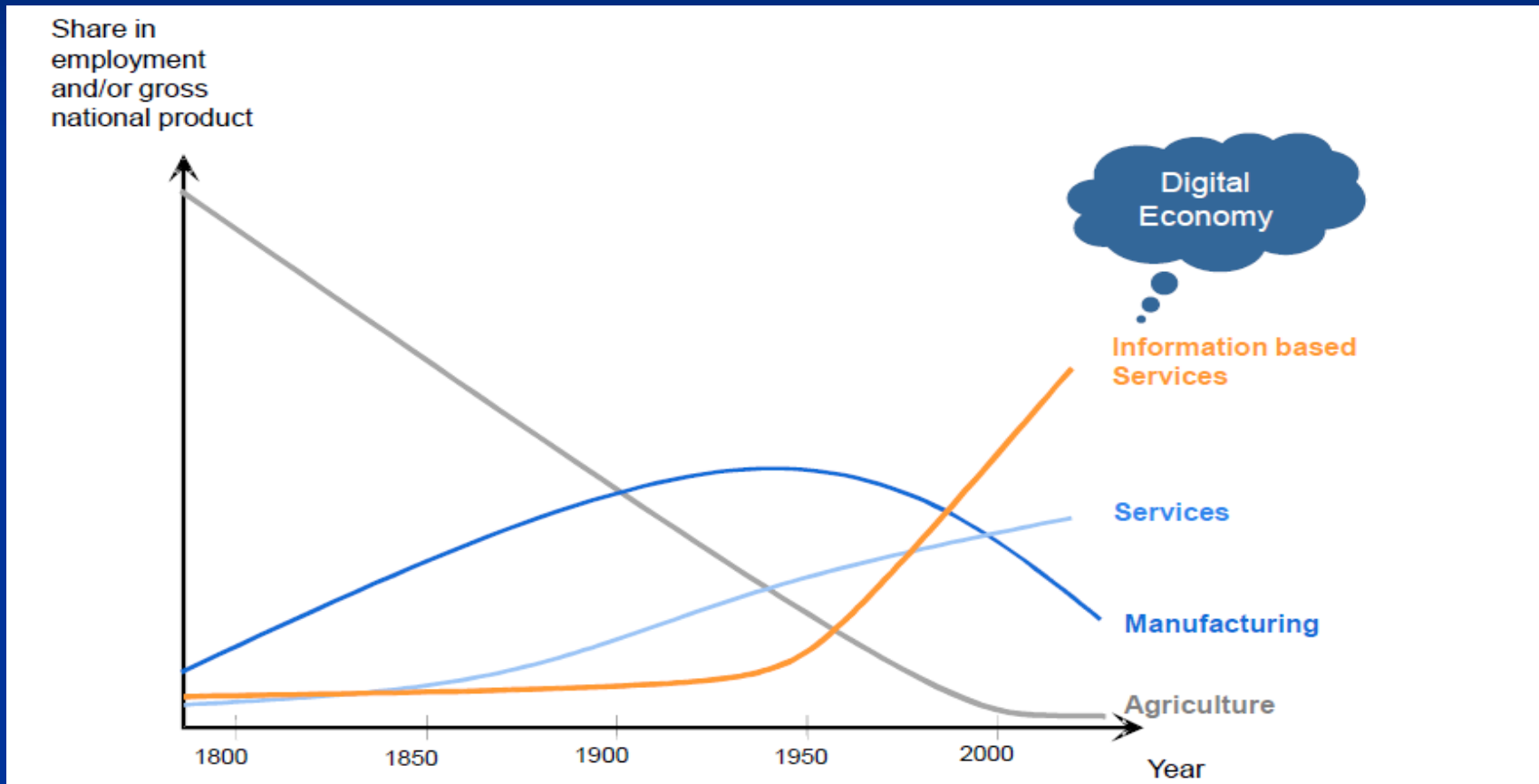
Global Economy

Era of Open Innovation

Service Industry Growth

- Labor Intensive
- Capital Intensive
- Technology Intensive
- Knowledge Intensive

Digital Economy



Digital Evolution

COUNTRIES ARE BUILDING DIGITAL CAPACITY AT UNEVEN RATES

A group of 50 countries reveals four main areas of digital readiness.

HOW COUNTRIES SCORED ACROSS FOUR FACTORS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)



SOURCE DIGITAL EVOLUTION INDEX, THE FLETCHER SCHOOL AT TUFTS UNIVERSITY

HBR.ORG

Emerging markets take a bigger slice of the Global GDP

- China 2000: 7.0% 2010: 13.5% 2020: 19.1%
- India 2000: 3.7% 2010: 5.4% 2020: 7.5%
- USA 2000: 23.1% 2010: 19.5% 2020: 17.2%
- Germany 2000: 5.0% 2010: 3.9% 2020: 3.1%
- UK 2000: 3.5% 2010: 2.9% 2020: 2.4%

Technology Innovation

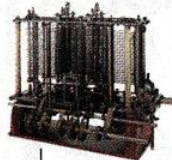
Processing power that \$1,000 can buy will surpass brainpower of humans in 2023

... and exponential growth in computing power ...

Computer technology, shown here climbing dramatically by powers of 10, is now progressing more each hour than it did in its entire first 90 years

COMPUTER RANKINGS

By calculations per second per \$1,000



Analytical engine

Never fully built, Charles Babbage's invention was designed to solve computational and logical problems



Colossus

The electronic computer, with 1,500 vacuum tubes, helped the British crack German codes during WW II



UNIVAC I

The first commercially marketed computer, used to tabulate the U.S. Census, occupied 943 cu. ft.



Apple II

At a price of \$1,298, the compact machine was one of the first massively popular personal computers



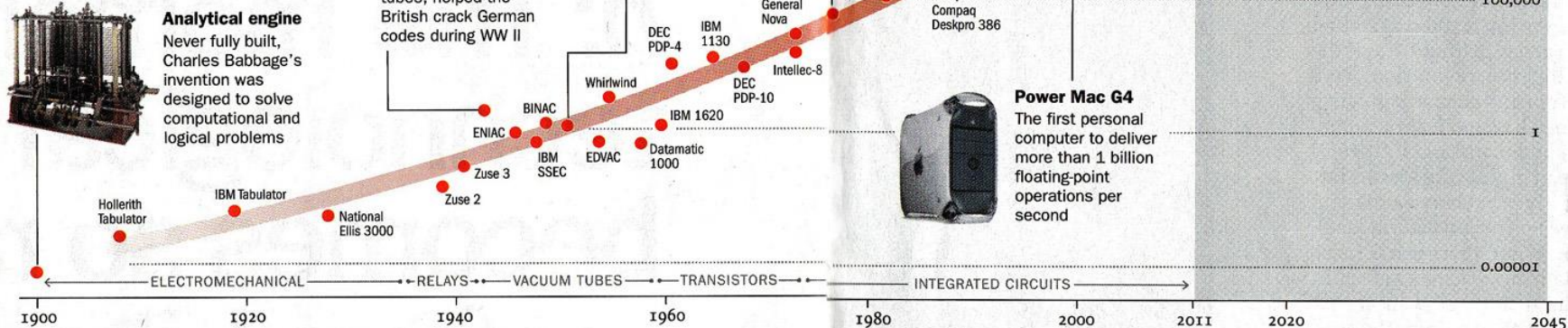
5G

2045
Surpasses brainpower equivalent to that of all human brains combined

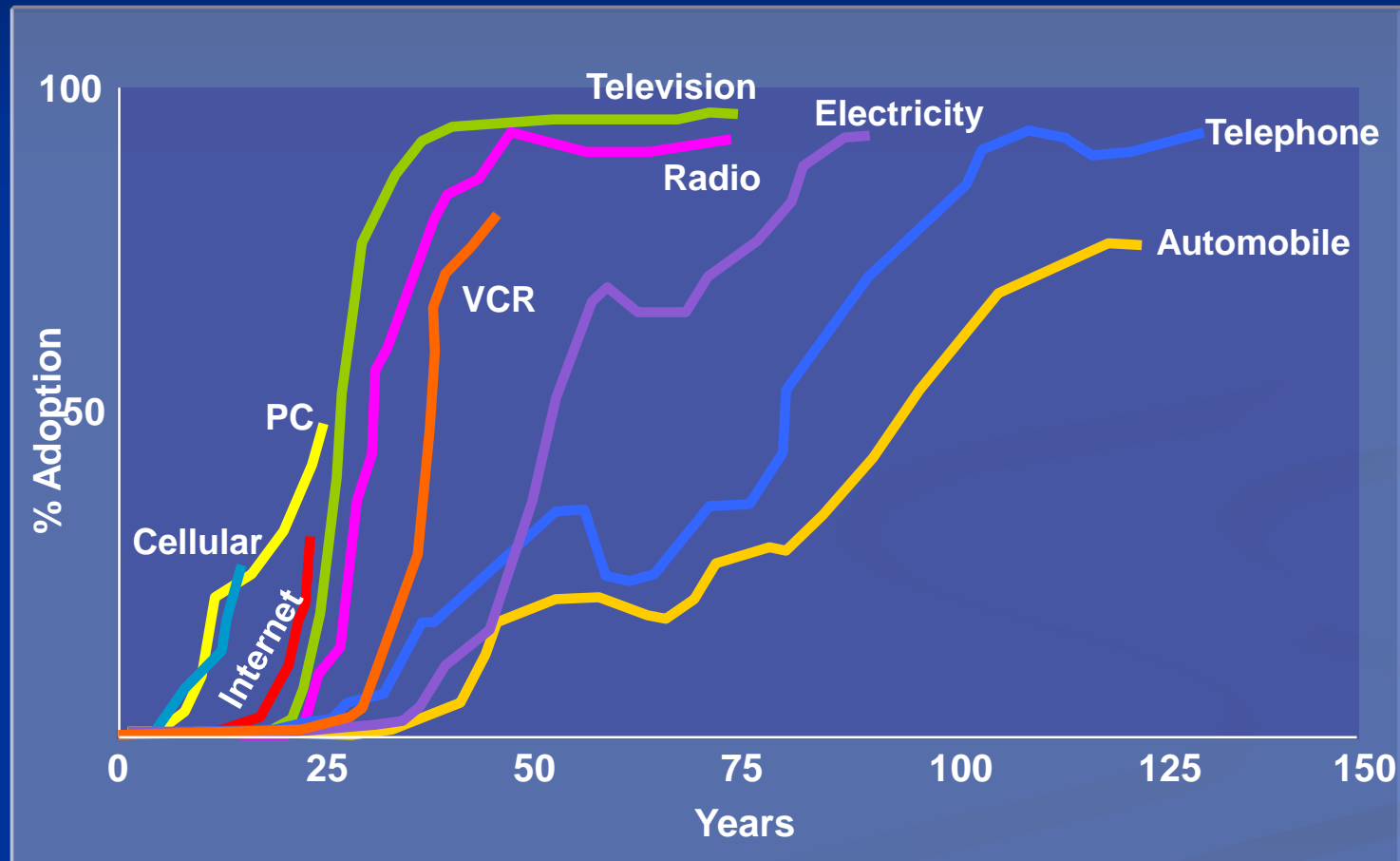
Surpasses brainpower of human in 2023



Surpasses brainpower of mouse in 2015

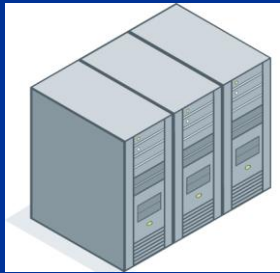


Rate of Innovation in Digital Age

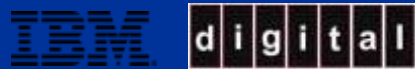


ICT Industry Transformation

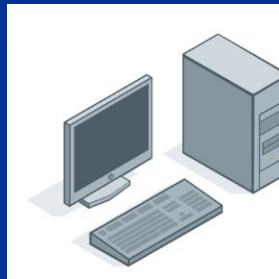
Mainframe



Mid 20th
Century Platforms



Client/Server



Late 20th
Century Platforms



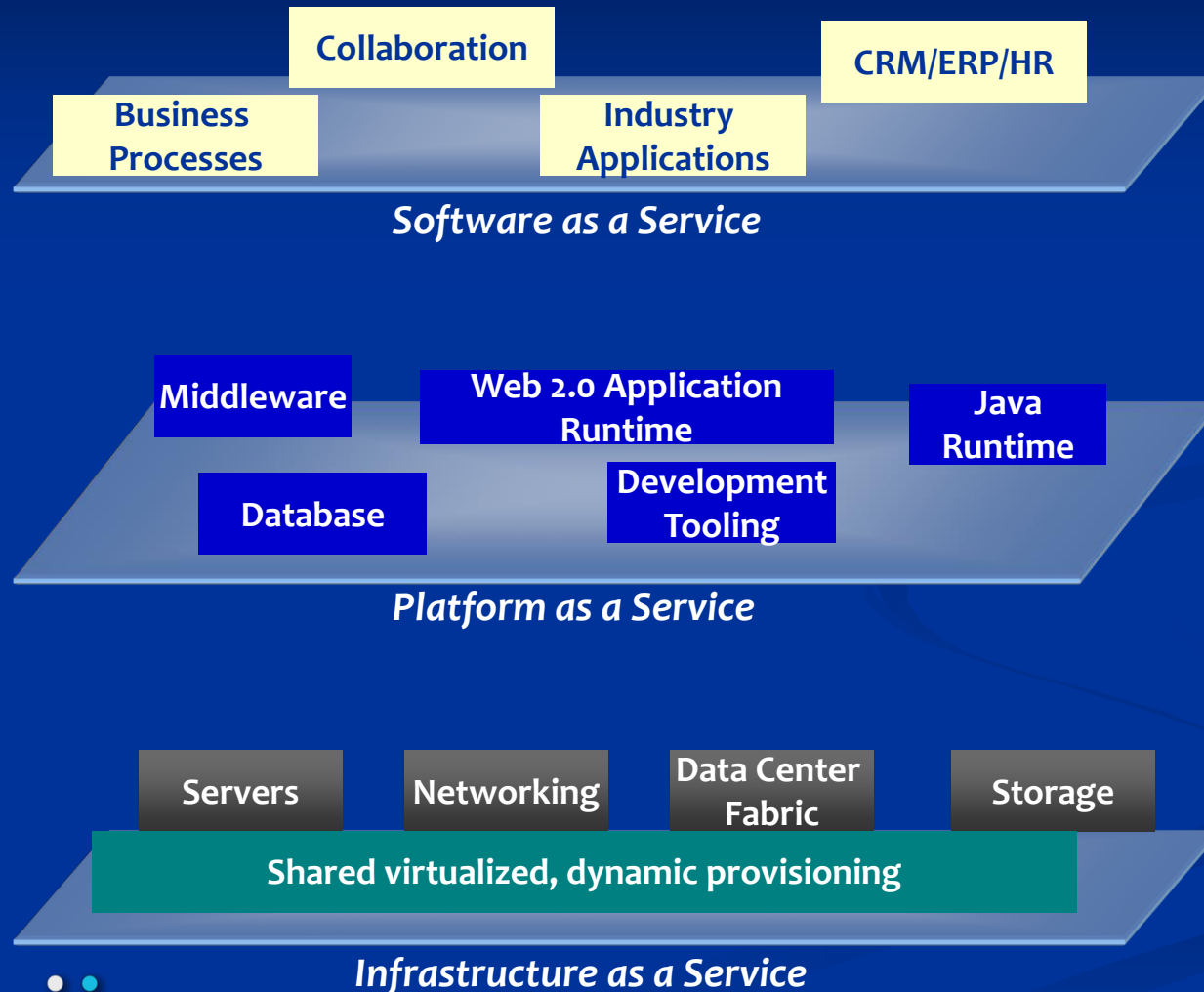
IT as a Service



21st
Century Platforms

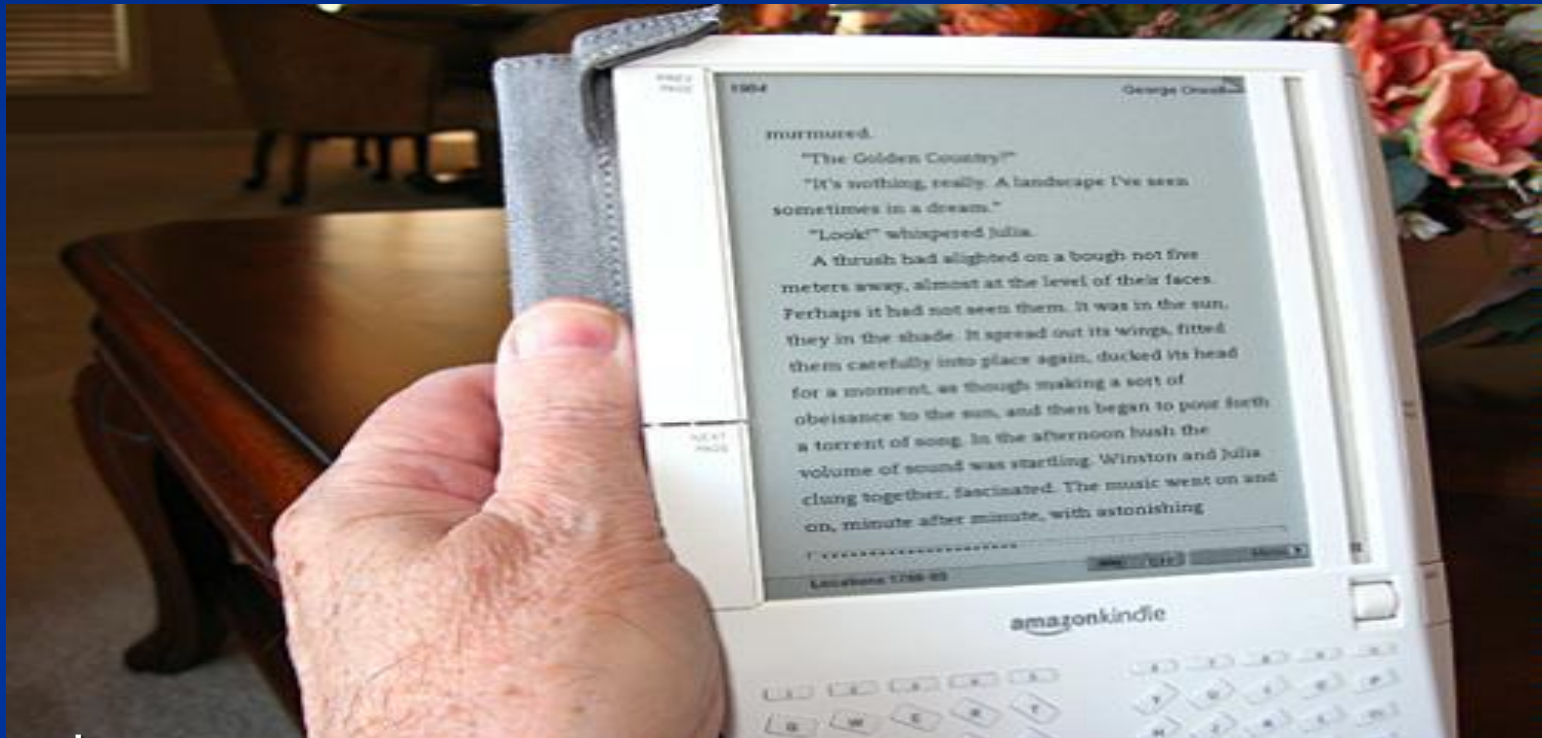


The layers of IT-as-a -Service



Product and Service Convergence

Is this a product or a service?



Bezos: "This isn't a device, it's a service."

Your Digital Life

The diagram illustrates the interconnectedness of digital life across four domains:

- Community (Blue Circle):** Includes News, Tax Info., School Schedule, Sports Standings, E-Gov., Twitter, Facebook, Shopping, RSS, SMS, E-Mail.
- Professional (Red Circle):** Includes Corp. Archives, Training, Production Data, Work at Home, VOIP, Corp Apps, LAN, Benefits, Wi-Fi, Conferencing, Cell, Personal Records, Meeting Records.
- Personal (Green Circle):** Includes Memories, Financial Info., Banking, Broad-band, Cell, Hobbies, Music.
- Family (Orange Circle):** Includes TV, Home Security, Memories, Calendar, Medical, E-Mail, IM, Financial.

The central intersection features icons for a laptop, smartphone, and tablet, symbolizing the convergence of these domains through digital technology.

Gartner®

Internet of Services Vision



A multitude of connected IT services, which are offered, bought, sold, used, repurposed, and composed by a worldwide network of service providers, consumers, aggregators, and brokers

- resulting in -

a new way of offering, using, and organising IT supported functionality

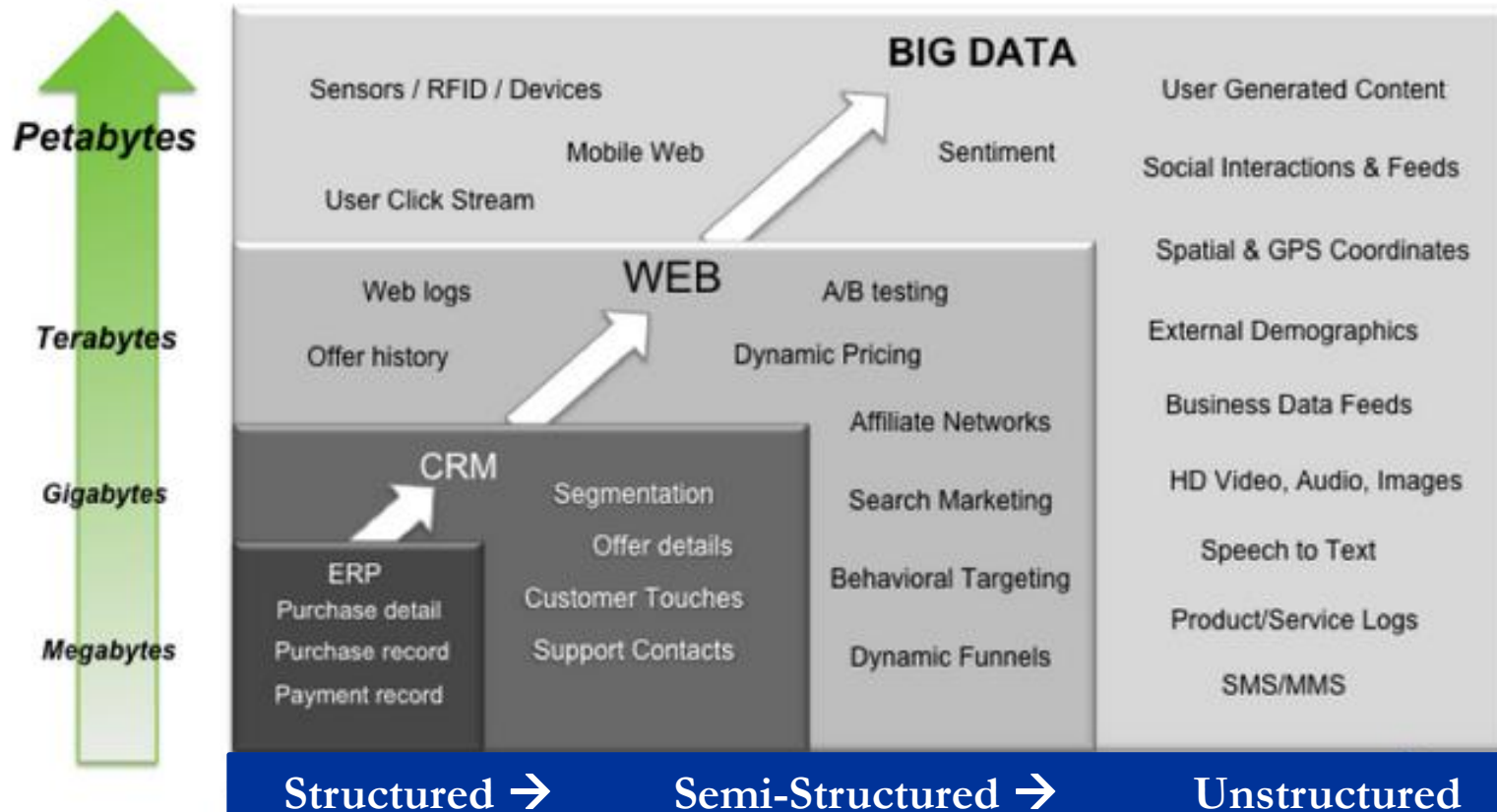
Emerging Technologies/ Information Overload

In the last minute there were.....



Big Data Evolution

Big Data = Transactions + Interactions + Observations



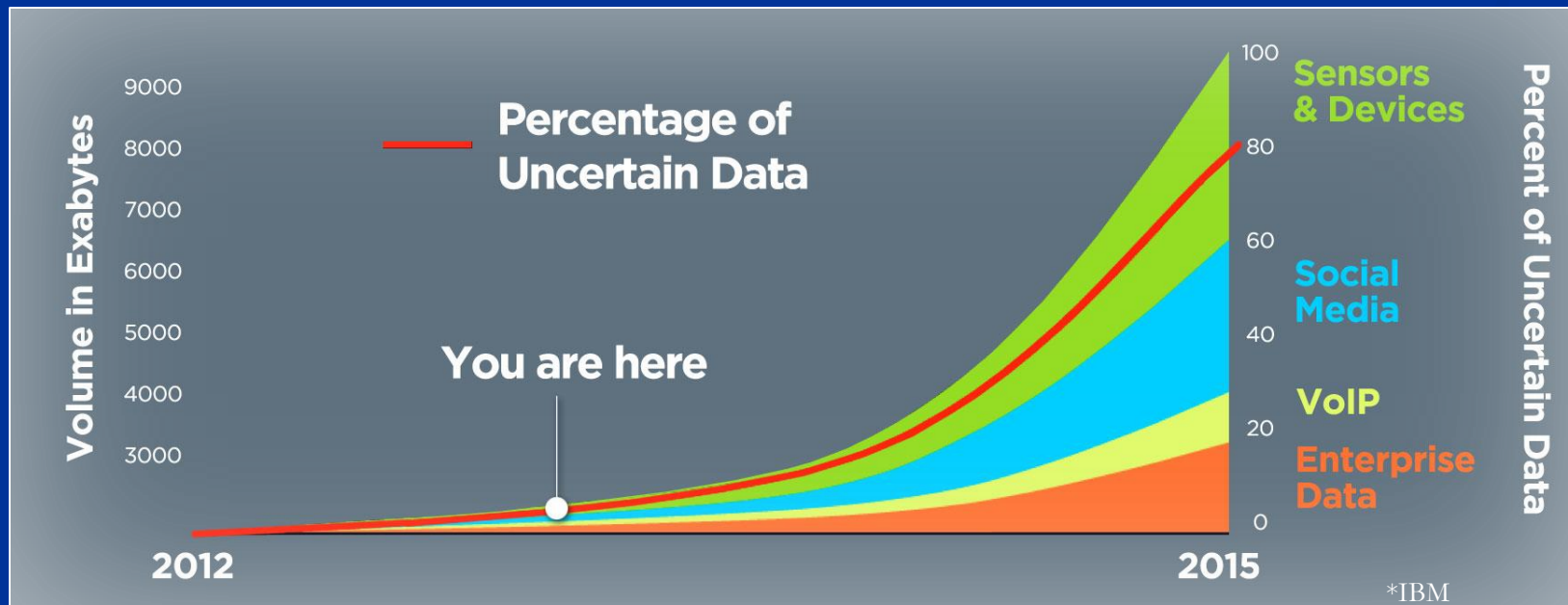
The Zettabyte Era

*High Volume – Crossed 1 ZB in 2010; project 40 ZB by 2020 at 42% CAGR****

*Faster Velocity - IP Traffic alone will pass 1 ZB by 2015*****

*Greater Variety - 90% will be unstructured****

With Increasing Veracity – 80% will be uncertain – data in doubt due to inconsistency, incompleteness, ambiguities, latency, and approximations*



*IBM

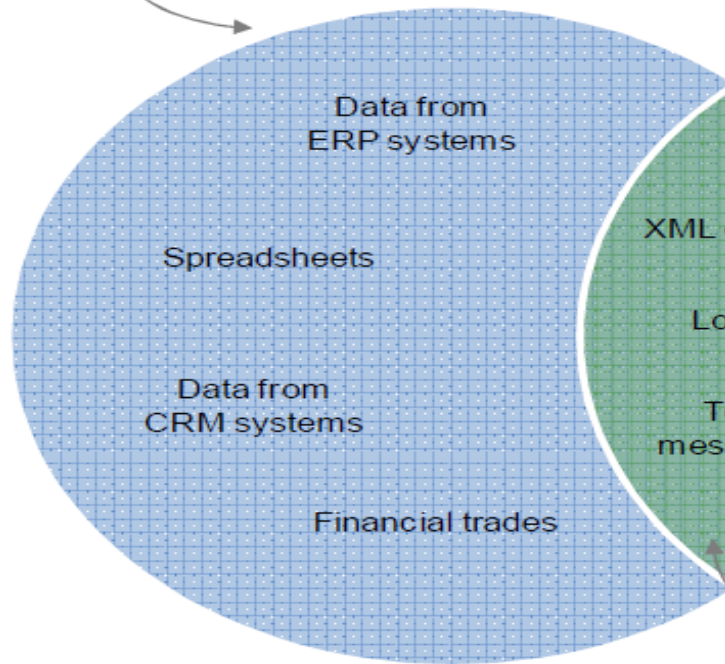
**JP Morgan

***IDC

****Cisco

Variety of Data Types and Sources

Structured Data



Unstructured Data

Semi-structured Data

Source: J.P. Morgan.

Today

1.0

Traditional Analytics

- Primarily descriptive analytics and reporting
- Internally sourced, relatively small, structured data
- “Back room” teams of analysts
- Internal decision support

2.0 Big Data

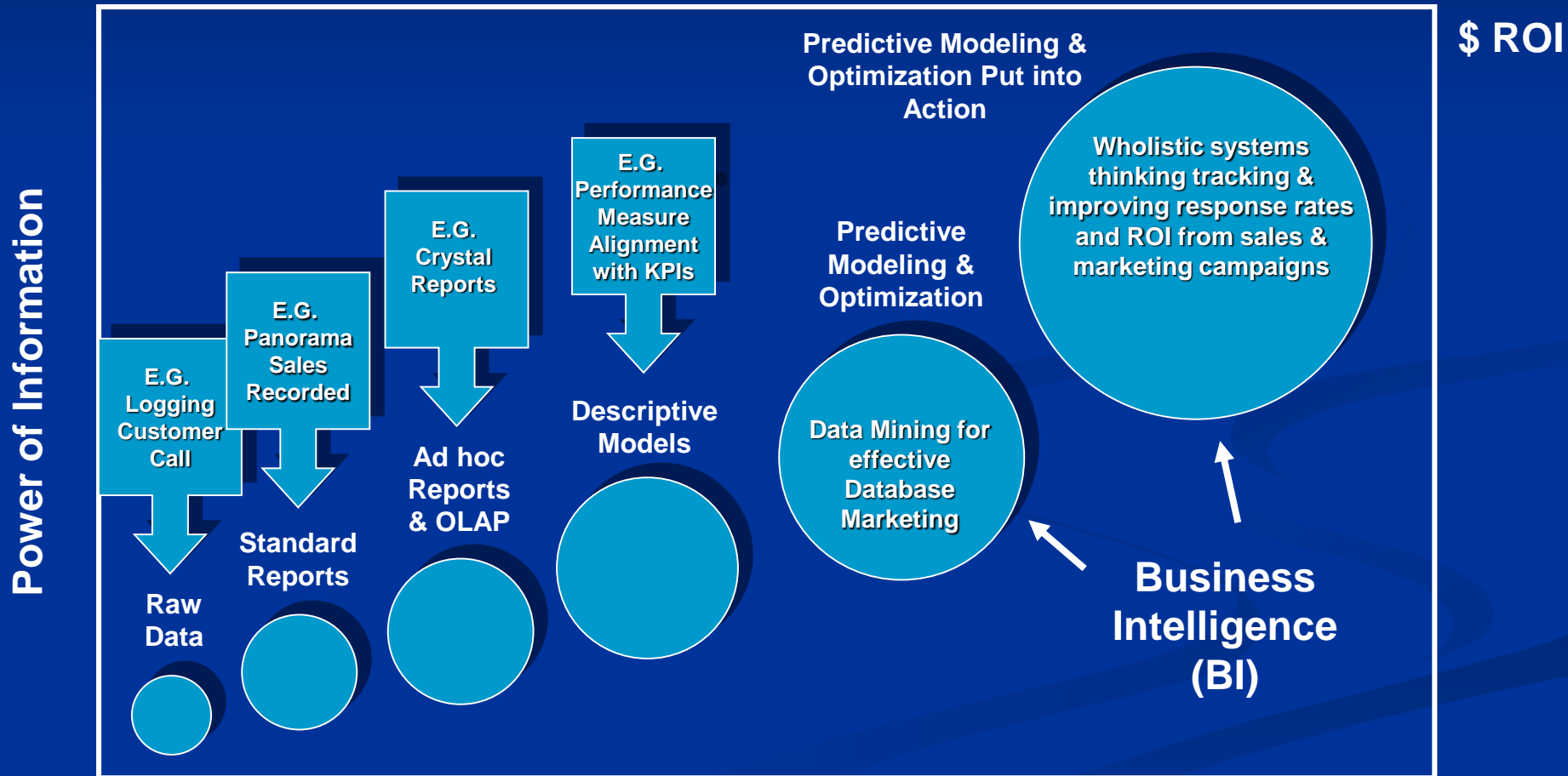
- Complex, large, unstructured data sources
- New analytical and computational capabilities
- “Data Scientists” emerge
- Online firms create data-based products and services

3.0

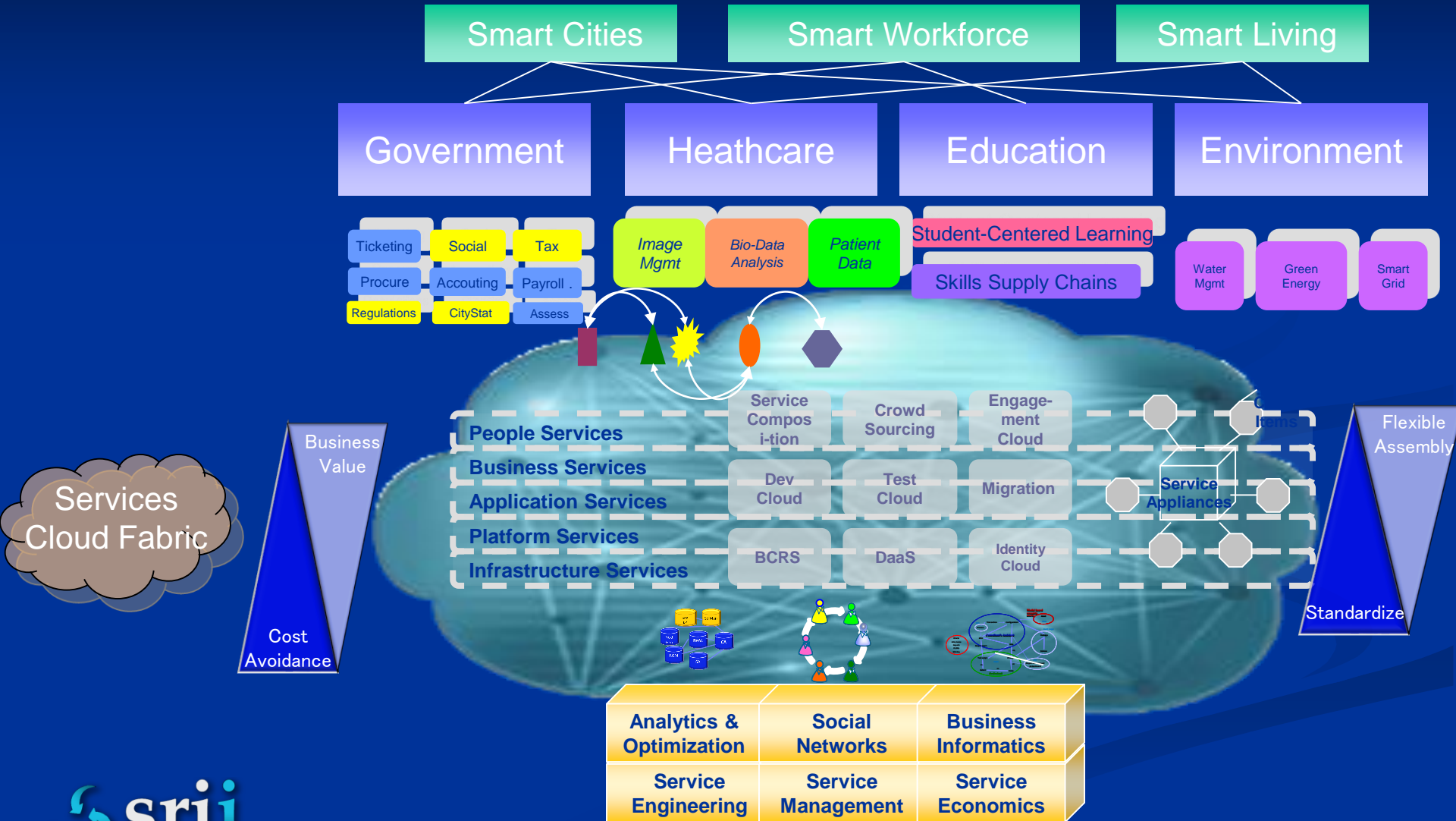
Rapid Insights Providing Business Impact

- Analytics integral to running the business; considered strategic competitive asset
- Rapid and agile insight delivery
- Analytical tools available at point of decision
- Cultural evolution embeds analytics into decision and operational processes
- All business can create data-based products and services

What is Business Intelligence?



Vision of Services Cloud

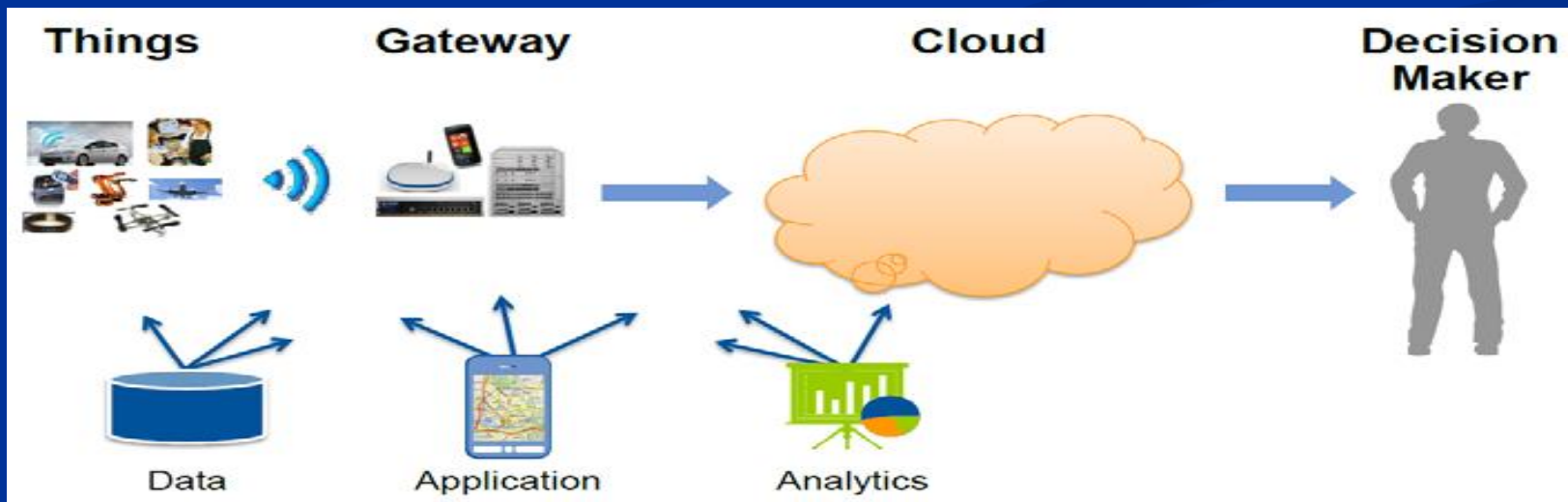


Internet of Things

- \$15T Industrial Opportunity
- Intelligent Machines
- Networked Machines
- 50B devices by 2020

Vast Numbers of Future Applications

- Supply Chain and Logistics
- Intelligent Home
- Smart Cities
- Advanced Vehicle Connectivity
- Ubiquitous Positioning



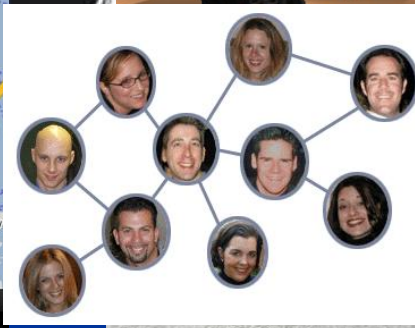
Innovating Mobile Services

Mobile technology is the design point for other connected devices

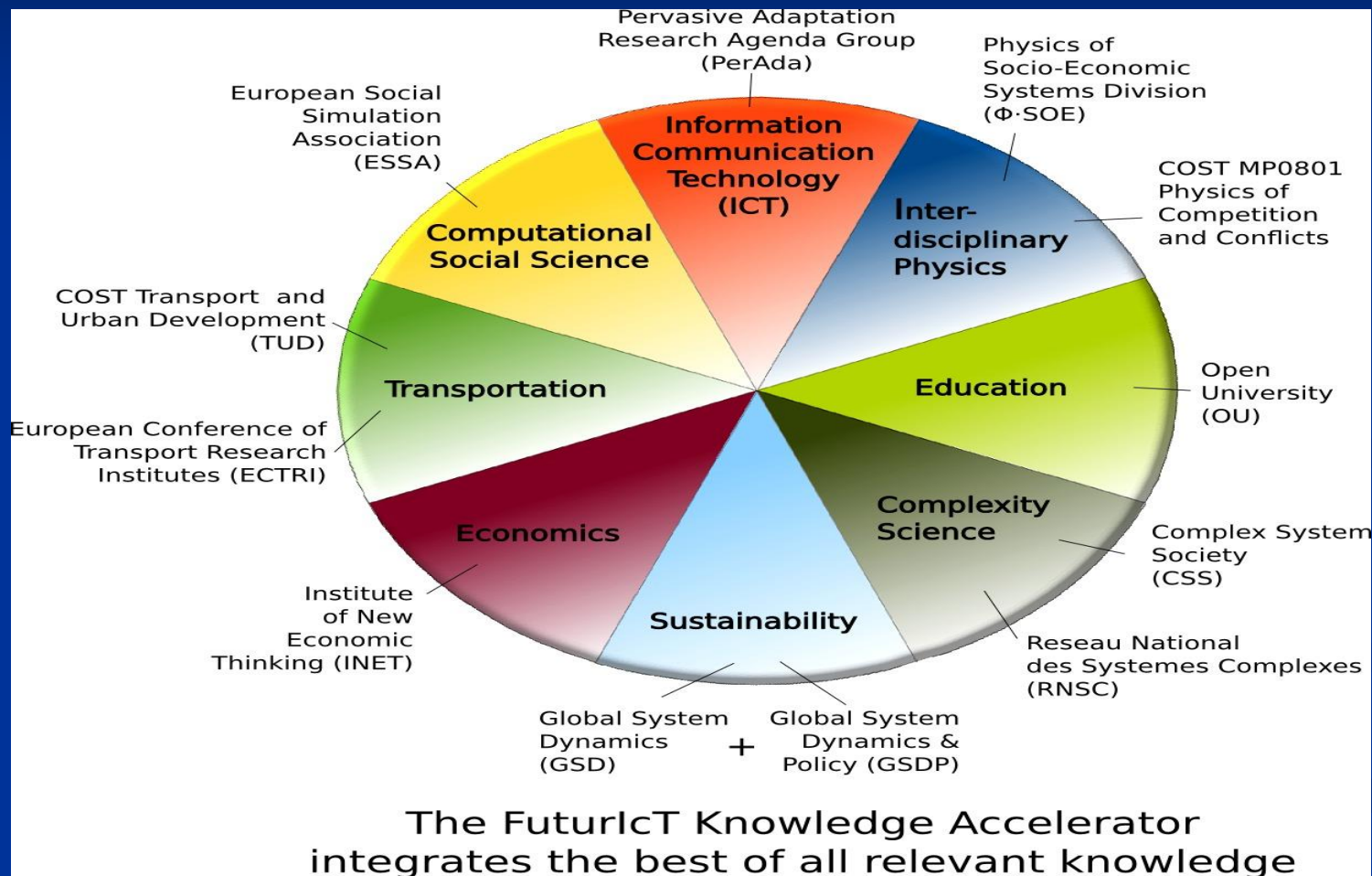


Source: 2018 TAM based on a combination of third party and internal estimates

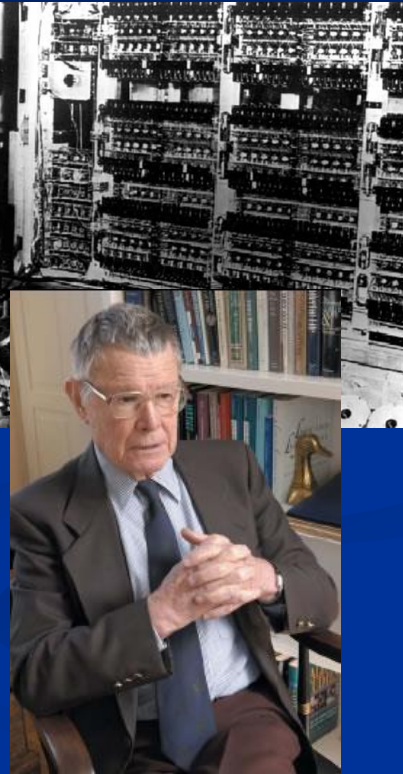
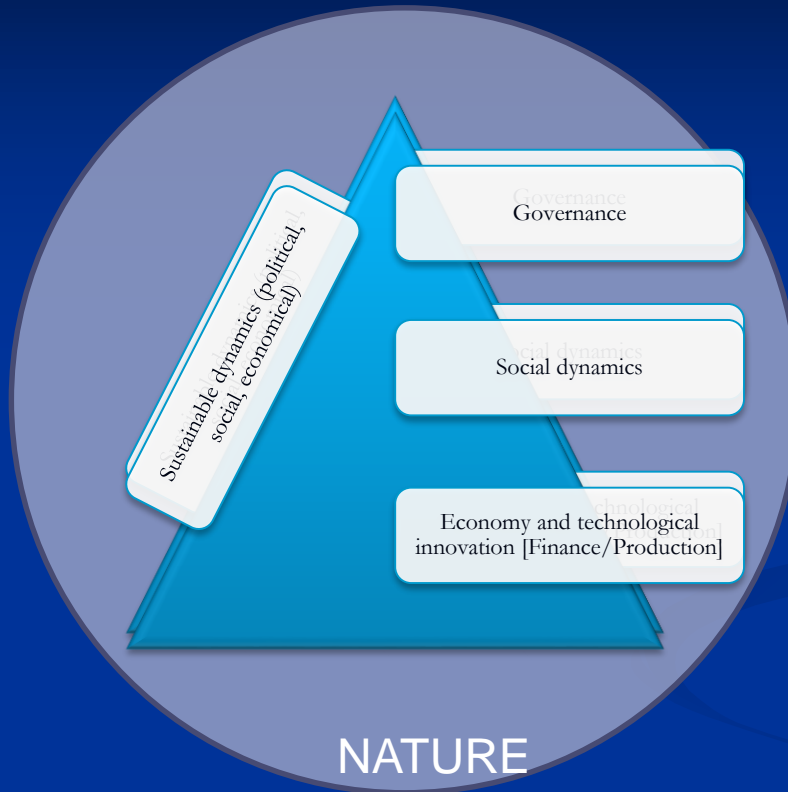
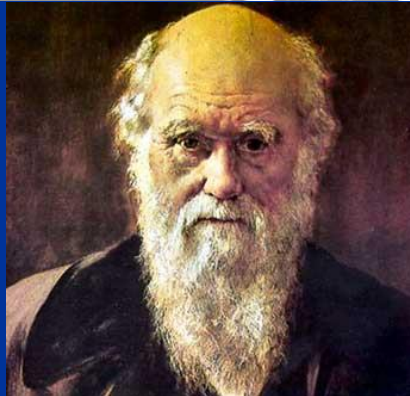
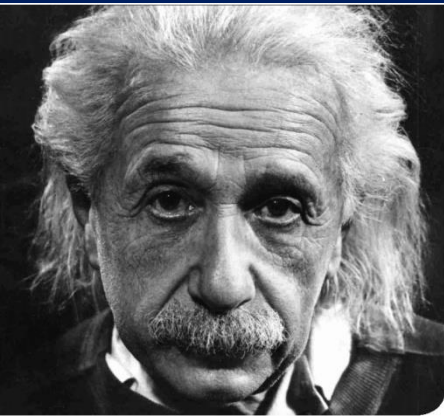
New ICT for Socio-Economic-Ecological Reality Mining + Simulation



ICT Knowledge Accelerator



The Need of A Knowledge Accelerator



Service Research and Innovation Institute

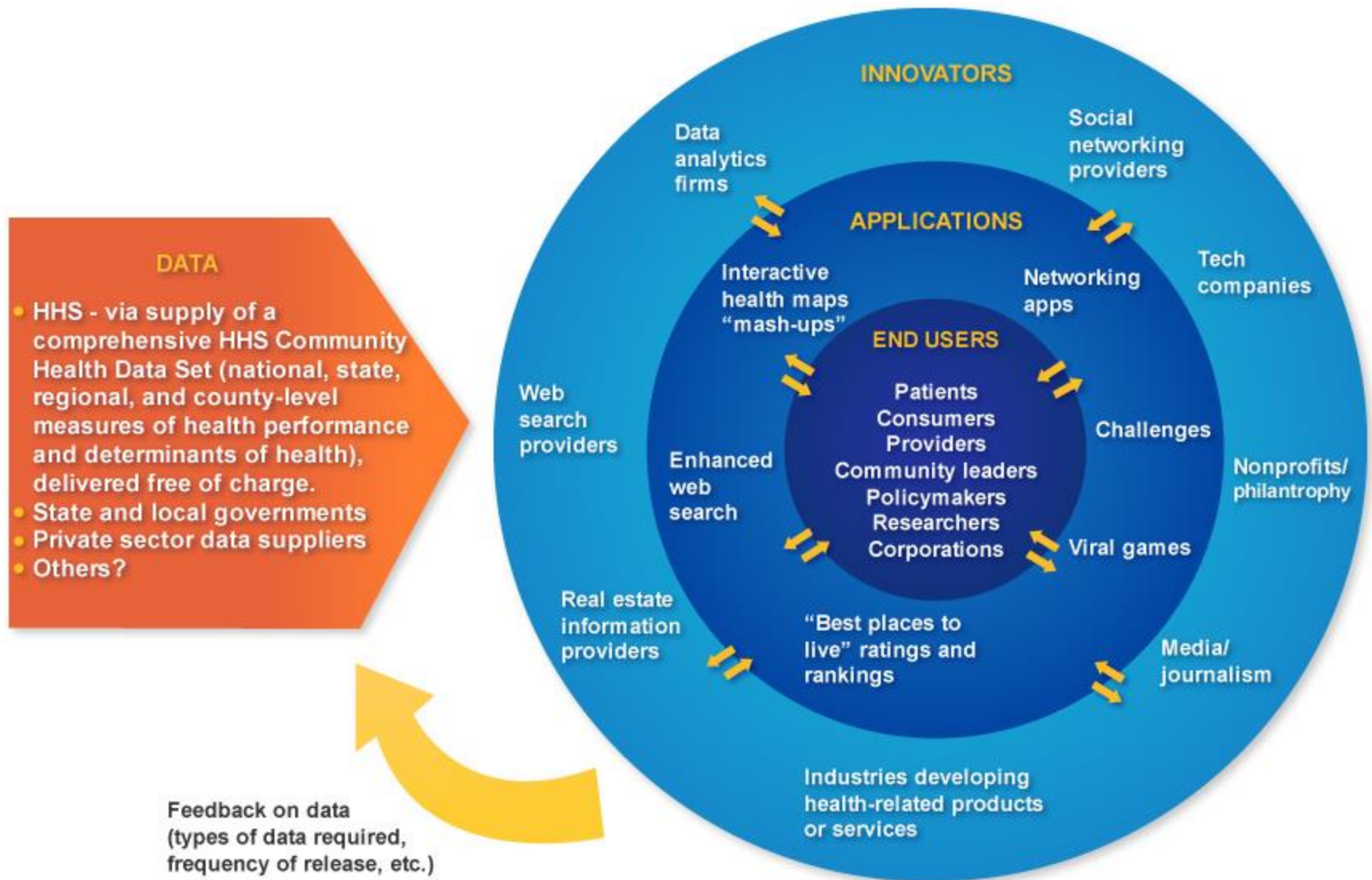
We need to create a **techno-socio-economic-ecological knowledge accelerator** - a kind of multi-disciplinary Apollo project that uses current and future ICT developments to address the challenges of humanity, involving natural scientists and engineers

SRII Health Care IT Services SIG

Mission Statement

- SRII Healthcare SIG is an industry consortium focused on expanding the innovative, evidence-based use of healthcare IT in 4 important areas:
 - **Quality of care** delivered by healthcare system
 - **Consumer experience** with healthcare system
 - **Affordability** of health care
 - **Professional satisfaction** of healthcare workers

SRII SIG on Health Care IT Services



Services for Connected Health

Health and Wellness

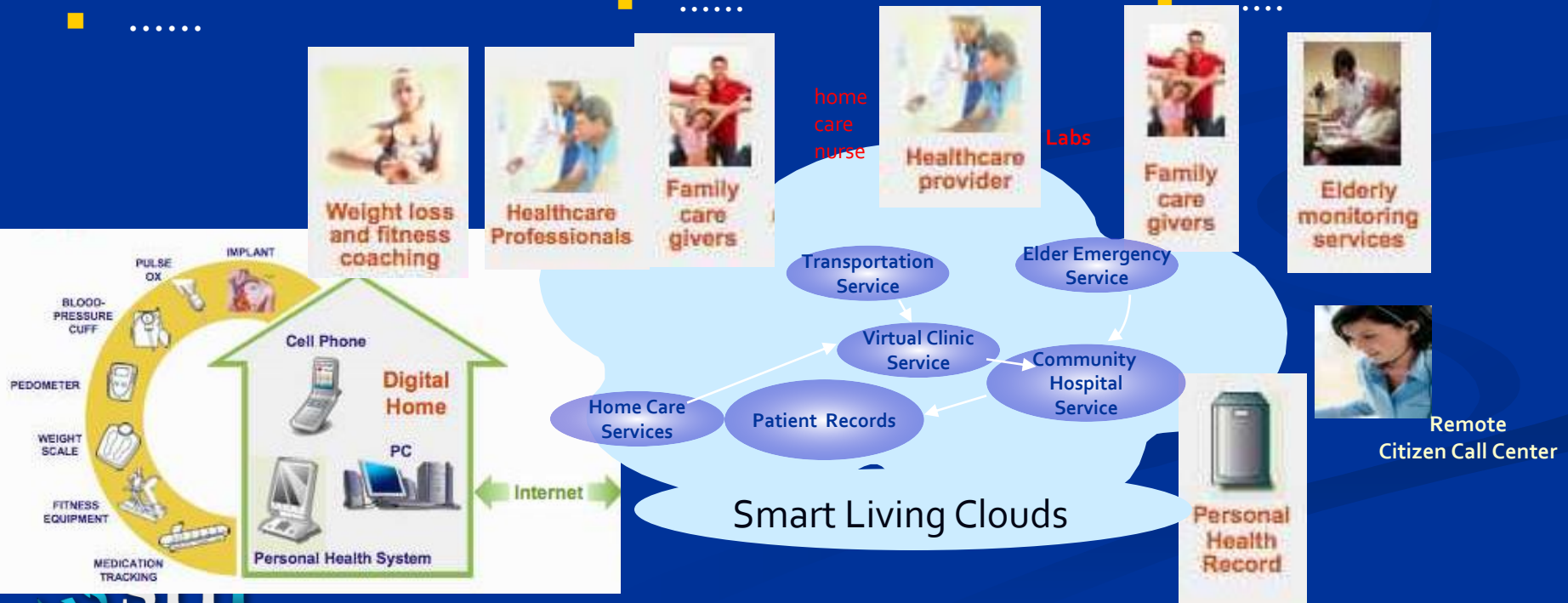
- Weight
- Fitness
- Personal Health Records
- Appointment scheduling
-

Disease Management

- Remote patient monitoring
- Medication reminders
- Trend analysis and alerts
- Appointment scheduling
-

Aging Independently

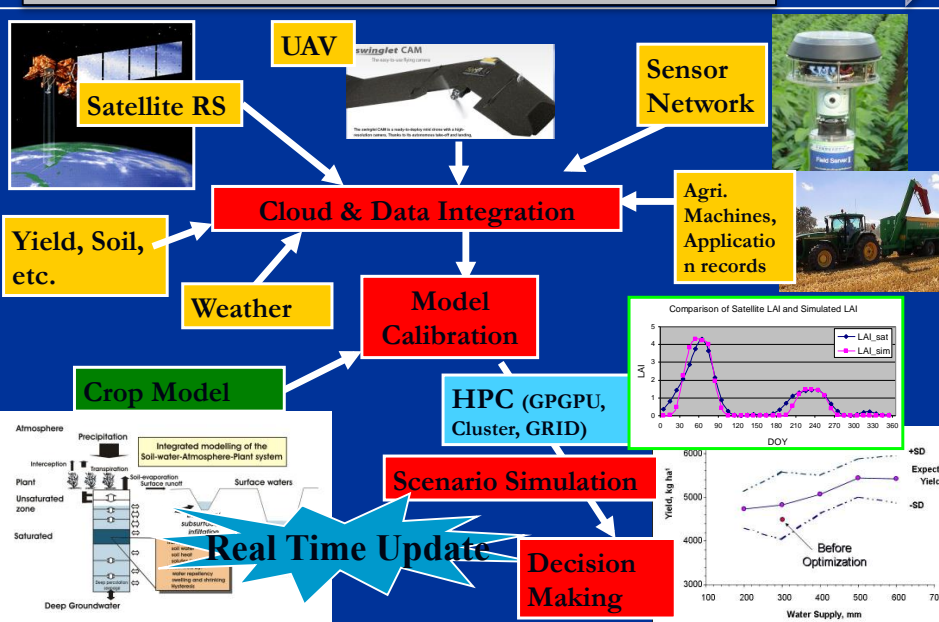
- Family connection
- Basic life monitoring
- Medication reminders
- Trend analysis and alerts
- Appointment scheduling
-



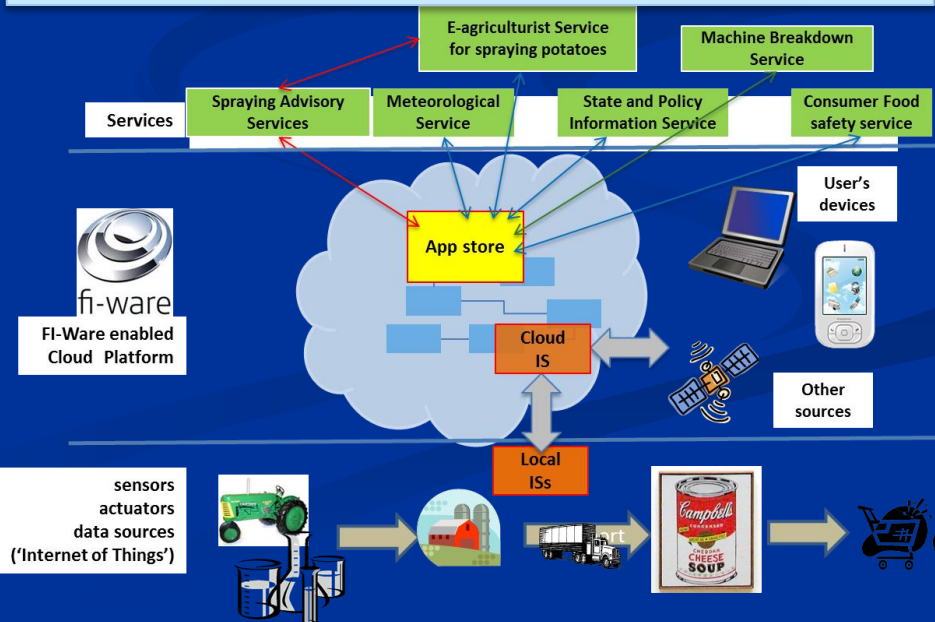
Sustainable Food production and Security

- ✓ Low impact on environment and biodiversity using less chemicals
- ✓ Efficient production with less use of energy
- ✓ Robustness against climatic change
- ✓ Quality and safe food

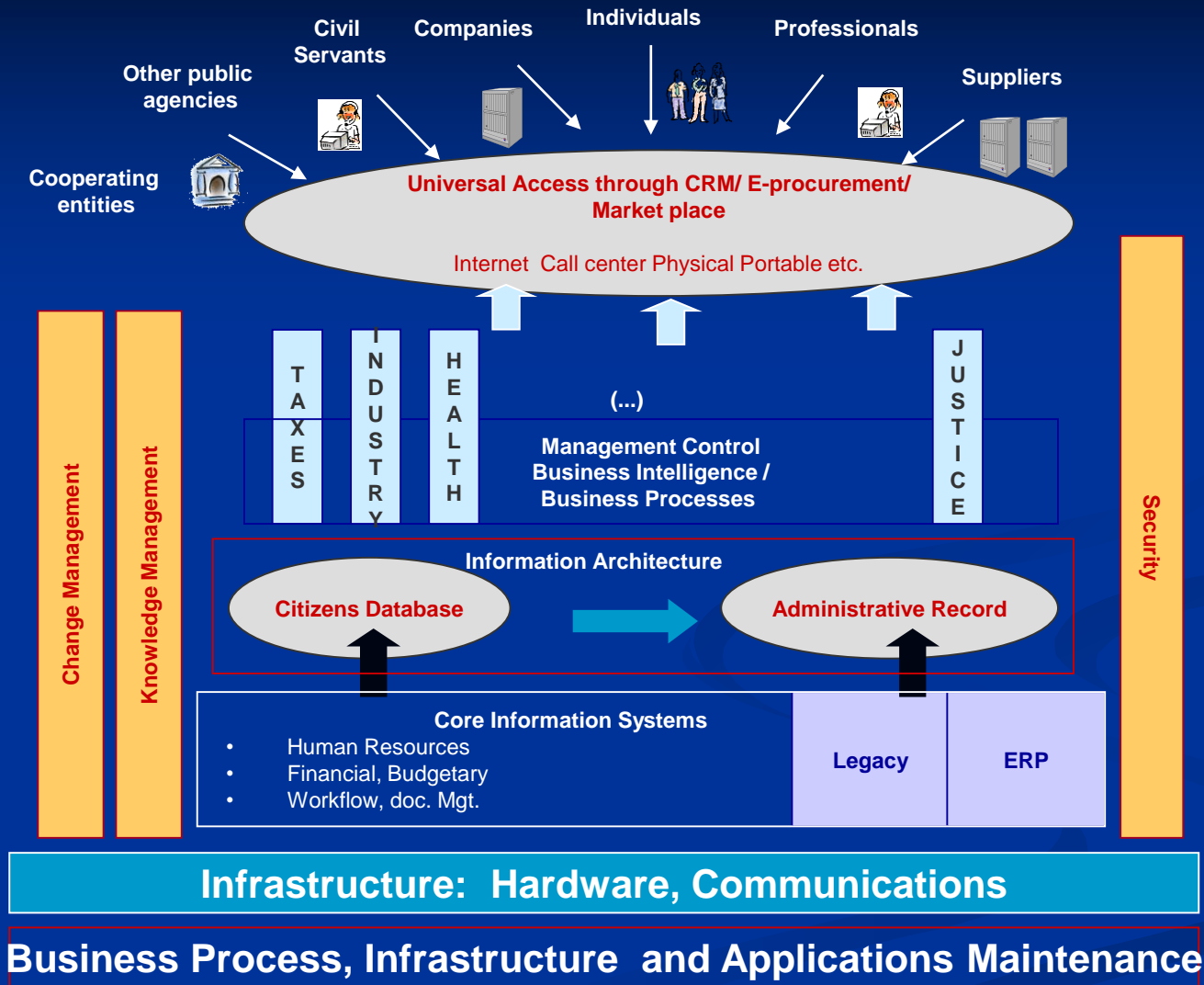
Multiplatform IOT and models



Big data based services for from-farm-to-fork



E-Government Architecture



Policy Making Decision Support ICT Platform

NEWS FEATURE

NATURE | Vol 460 | 6 August 2009



Data collector

Meltdown modelling

Could agent-based computer models prevent another financial crisis? **Mark Buchanan** reports.



Decision



Service Research and Innovation Institute



Political decision-making

Disruptive Innovation in Education

- Realign University Curriculum
- Online Education– Life Long learning
- Teach Entrepreneurship
- Teachers training at K-12

Technology Entrepreneurship

:

MIT, Stanford, Berkeley, Illinois, Michigan, Many others..
Globally: Tsinghua IIT Cambridge, ETH, Many others..



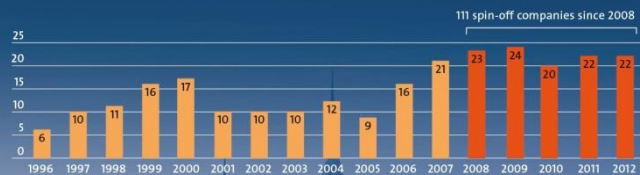
TECHNOLOGY ENTREPRENEUR CENTER
ENGINEERING AT ILLINOIS



**STANFORD
TECHNOLOGY
VENTURES PROGRAM**



259 spin-off companies founded at ETH Zurich between 1996 and 2012



Service Research and Innovation Institute

CAMBRIDGE UNIVERSITY
entrepreneurs
VISION TO SUCCEED

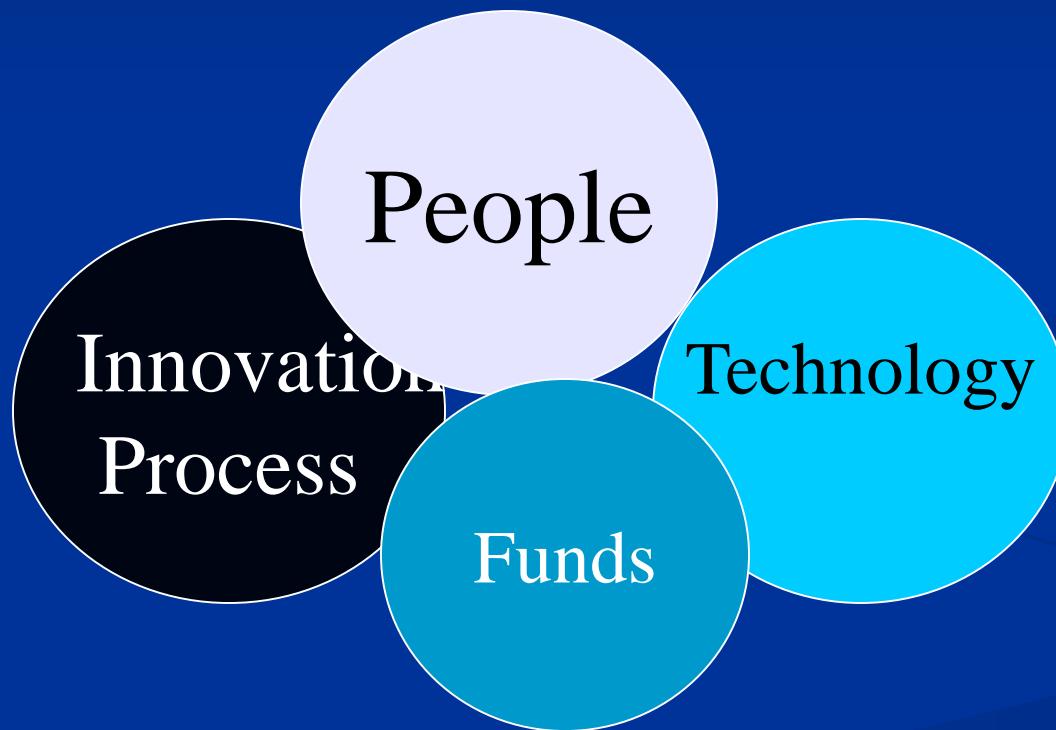
CAD/CAM Tools & Model for Service Sectors

- Service Innovation
 - Focus on Business Process/Models Innovation
- Service Engineering
 - Focus on Methodologies, Tools and Standards
- Service Quality
 - Focus on Metrics, Methods, Tools, and Standard



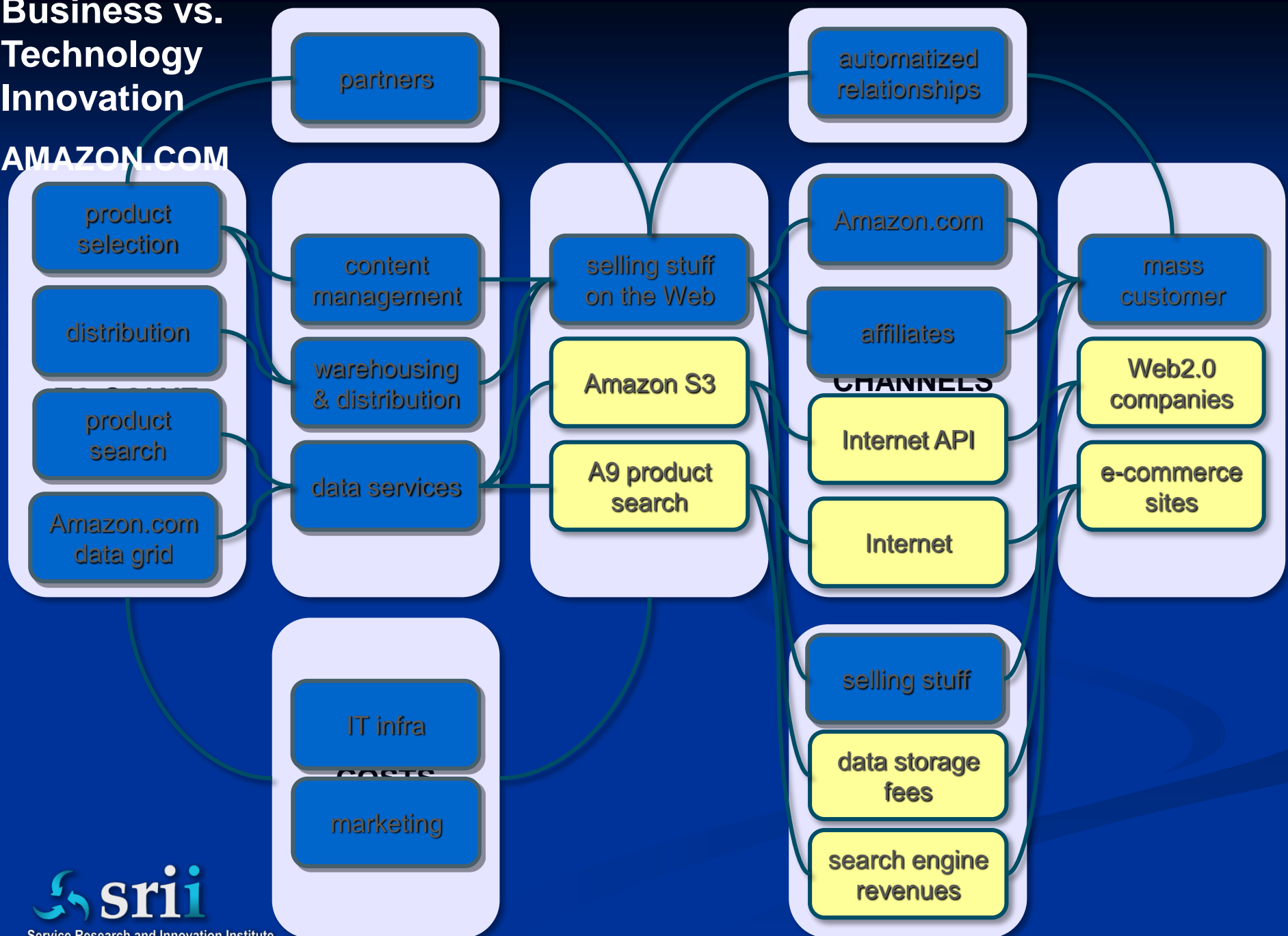
Service Lifecycle

Enablers of Open Innovation



Business vs. Technology Innovation

AMAZON.COM



SRII Global Events in 2015

- SRII Japan Summit in Tokyo on Mar. 1-2, 2015
- SRII China Summit in Shanghai on Mar. 4-6, 2015
- SRII Global Conference in Silicon Valley, CA on June 7-10, 2015
- SRII Europe Summit in Berlin in Oct. 2015
- SRII India Summit in Nov-Dec. 2015

SRII Major Deliverables

- SRII Global Annual Conference/Regional Summits
- SRII focus groups on specific innovation initiatives (for major industry verticals and ICT domains)
- Develop White papers and Consulting Services for Innovating Global Digital Economy
- Drive Govt. policy/regulations for ICT Innovation
- Build Industry/Academia/Government partnership to fund and drive specific research programs with major universities and start up ecosystem

Thank You!

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