

Innovation in the 4.0 Era

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Science and Technology in the Industry 4.0 Era,
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Indonesia



What is Wantiknas?

ORGANIZATIONAL STRUCTURE

(PRESIDENTIAL DECREE 1/2014)

Steering Committee

Chairman : Presiden RI

Vice Chairman: Coordinating Minister for Economic Affairs

Chief Executive of Steering Committee: Minister/ Chairperson of the National Development Planning Agency

Member:

Minister for ICT

Minister for Education

Minister for Industry

Minister for Health

Minister for Finance

Minister for Research and Technology*

Minister for Culture and Creative Economy*

Cabinet Secretary

**Advisory
Team**

Executive Team

Partners

Working Group

Secretariat

ORGANIZATIONAL STRUCTURE

(PRESIDENT DECREE 1 YEAR 2014) cont.

Steering Committee

Executive Team

Chief Executive : Dr. Ing. Ilham Akbar Habibie, M.B.A
Vice : Vice Minister PPN/Bappenas*
Secretary : Dirjen SDPPI Kemkominfo
Vice Secretary : Muhammad Andy Zaky
Vice Secretary II : Mira Tayyiba
Member : Deputi Bid Kord Infra & Peng Wil
 KemkoPerekonomian; Dirjen Aptika Kemkominfo; Sekjen Kemkes;
 Sekjen Kemdag; Dirjen Anggaran Kemkeu; Sekretaris Kempan & RB;
 Sestama Bappenas; Deputi SarPras Bappenas; Kapusintek Kemdikbud,
 Dir ETI Bappenas; Kabirol Ortala Bappenas; Ketua Mastel; Waka umum
 bid ICT & Penyiaran, KADIN; Amir Sambodo; Sylvia Sumarlin; Indra
 Utoyo; Hari Sungkari; Garuda Sugardo; Zainal A. Hasibuan; Virano G.
 Nasution; Ashwin Sasongko Sastrosubroto; Anantyo Wahyu Nugroho

**Advisory
Team**

Partners

Working Group

Secretariat

*tobe adjust

TASK OF WANTIKNAS

(PRESIDENTIAL DECREE 1/2014)

- **Formulate the general policy and strategic direction** of national development, through the development of information and communication technologies, including infrastructure, applications
- Assessment, evaluation, and input in determining the steps to **resolve the existing strategic issues** for the development of information and communication technologies
- **National coordination** with central/ regional government agencies, state-owned / regionally-owned enterprises, private sector businesses, professional institutions and organisations, and the general public in the development of information and communication technology as well as empowering society
- **Approving the implementation** of programs regarding information and communication technology development among ministries in order to be implemented effectively and efficiently.

Current Indonesia

Indonesia's Potential



267 Million People



1.340 Ethnicities



17.508 Islands



746 Local Languages

**We are
big**



132,7 Million
Internet Users



371,4 Million
Cellphone Users



106 Million Users of
Social Media

**We are
connected**



Demographic
Bonus



Growing Economy



Stable Politics and
Security

**We are
strong**

GOVERNMENT CHALLENGES TODAY

External and
internal threats
(e.g. *SARA*)



Stability

Globalization, MEA,
smuggling of goods,
migrant workers



Growth

Taxes, education,
health &
interest groups



Equality

Every government agency should reform the bureaucracy in order to:
resolve public problems accurately and quickly, adapt any changes to become more
responsive, manage the budget in a transparent, effective and efficient way.
ICT is a crucial enabling factor in this process of bureaucratic reform.

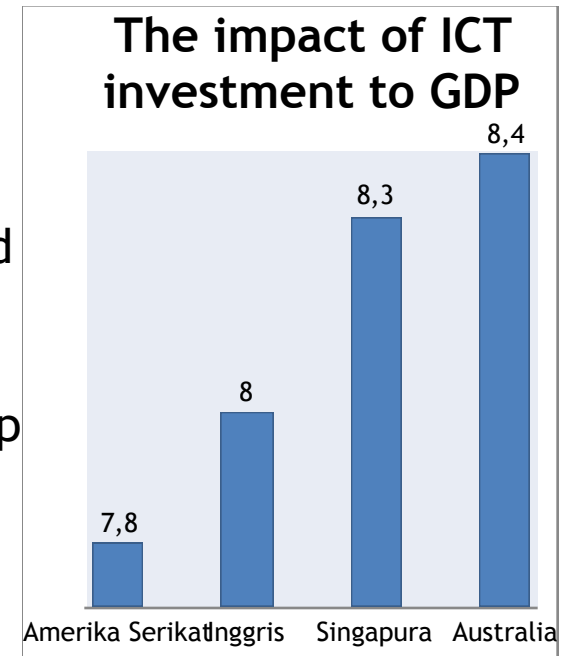
ICT STRATEGIC ROLE FOR NATION

- **ICT is an important infrastructure for all Citizens**

- Citizen depend more and more on ICT. They interact, communicate, coordinate and collaborate now using ICT.
- Community activities are planned, implemented and monitored while being always connected ICT moves economical resources
- Business activities in enterprises are running nonstop
- ICT is an enabler for economic development in a country.

- **ICT is strategic for Government-owned valuable assets**

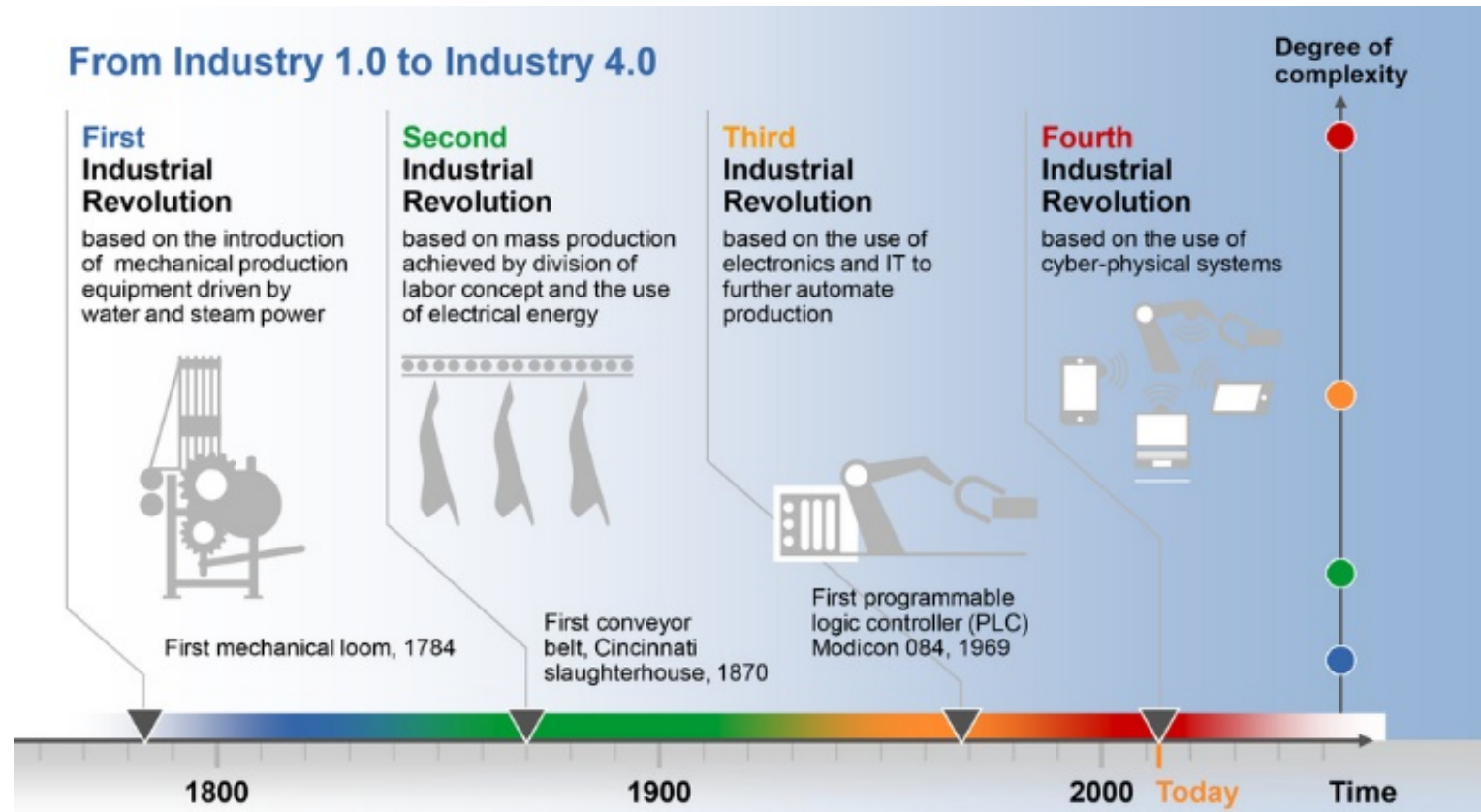
- ICT increases value and enables efficient budget management
- Public services are transformed to become more citizen oriented.



Data Source: Bhatnagar, 2005

Relevant Points about 4.0...

Fourth Industrial Revolution



The world is now entering the era of the fourth industrial revolution, an industry empowered by cyber-physics which is a basis for the digital economy, artificial intelligence, big data, robotics etc. This causes more disruptive innovation

“Making Indonesia 4.0” Launched

www.kemenperin.go.id/artikel/19046/Making-Indonesia-4.0-Bikin-Industri-Nasional-Berdaya-Saing-Global-di-Era-Digital

SIARAN PERS

Making Indonesia 4.0 Bikin Industri Nasional Berdaya Saing Global di Era Digital



Indonesia berkomitmen untuk membangun industri manufaktur yang berdaya saing global melalui percepatan implementasi Industri 4.0. Hal ini ditandai dengan peluncuran Making Indonesia 4.0 sebagai sebuah peta jalan dan strategi Indonesia memasuki era digital yang tengah berjalan saat ini.

“Peningkatan nilai tambah merupakan kunci untuk bisa bersaing dan memenangkan kompetisi pada persaingan global sekarang,” kata Menteri Perindustrian Airlangga Hartarto pada acara Peluncuran Making Indonesia 4.0 sebagai bagian

rangkaian acara Indonesia Industrial Summit 2018 di Jakarta, Rabu (4/4).

Untuk itu, industri nasional membutuhkan konektivitas serta interaksi melalui teknologi, informasi dan komunikasi yang terintegrasi dan dapat dimanfaatkan di seluruh rantai nilai manufaktur guna mencapai efisiensi dan peningkatan kualitas produk.

Menperin menjelaskan, Making Indonesia 4.0 memberikan arah yang jelas bagi pergerakan industri nasional di masa depan, termasuk fokus pada pengembangan lima sektor manufaktur yang akan menjadi percontohan serta menjalankan 10 inisiatif nasional dalam upaya memperkuat struktur perindustrian Indonesia.

- Government launched the "Making Indonesia 4.0" roadmap on April 4, 2018.
- “Making Indonesia 4.0 “ is a Strategy for Entering the 4th Industrial Revolution
- Educating and training adequate Human Resources (HR) is a special concern

Technology drives Innovation for 4.0 (10 Strategic Technology Trends)



Intelligent



AI Foundations



Intelligent Apps
and Analytics



Intelligent Things



Digital



Digital Twins



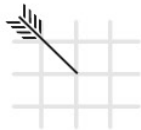
Cloud to the Edge



Conversational
Platform



Immersive
Experience



Mesh



Blockchain

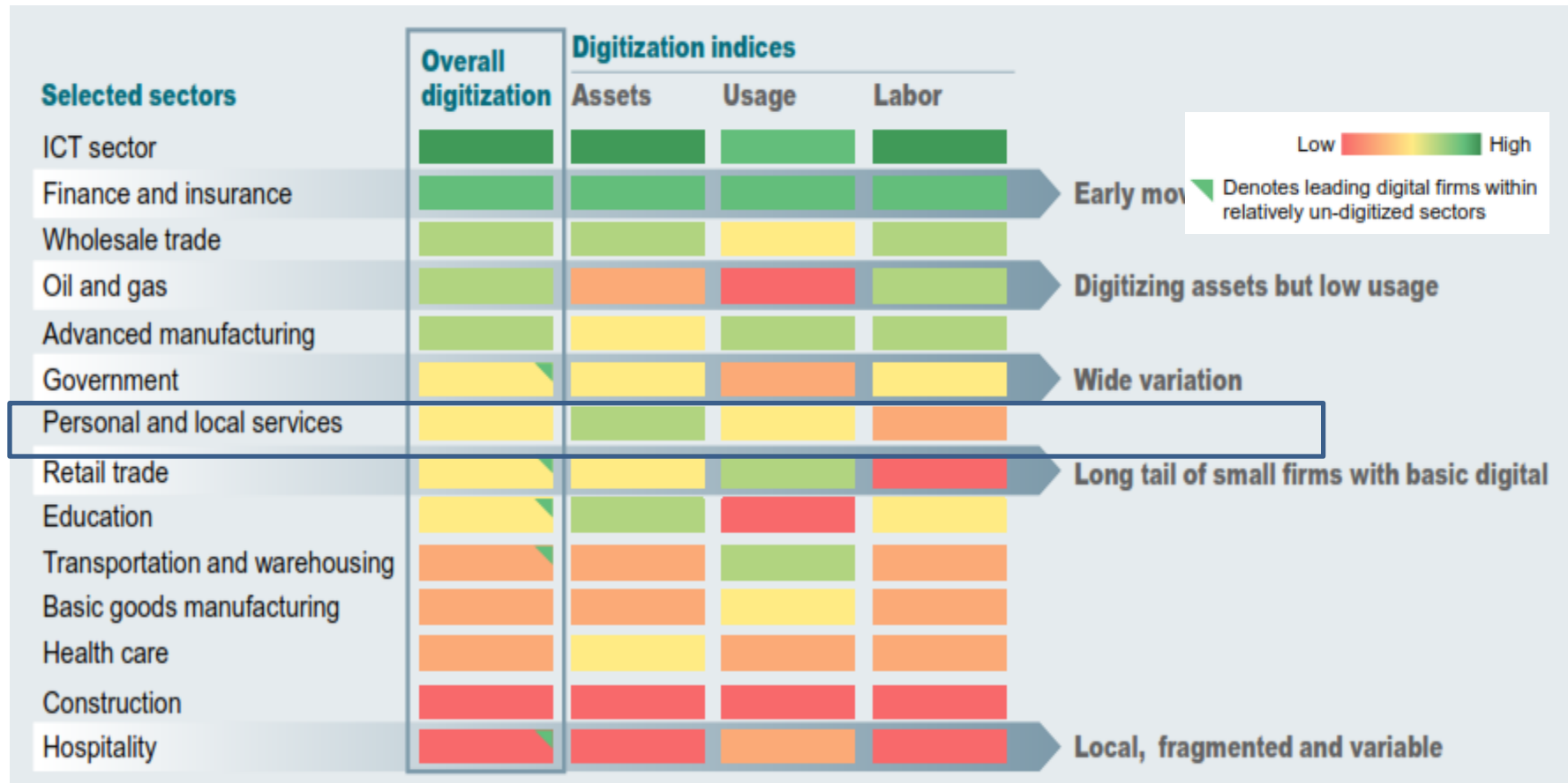


Event-Driven



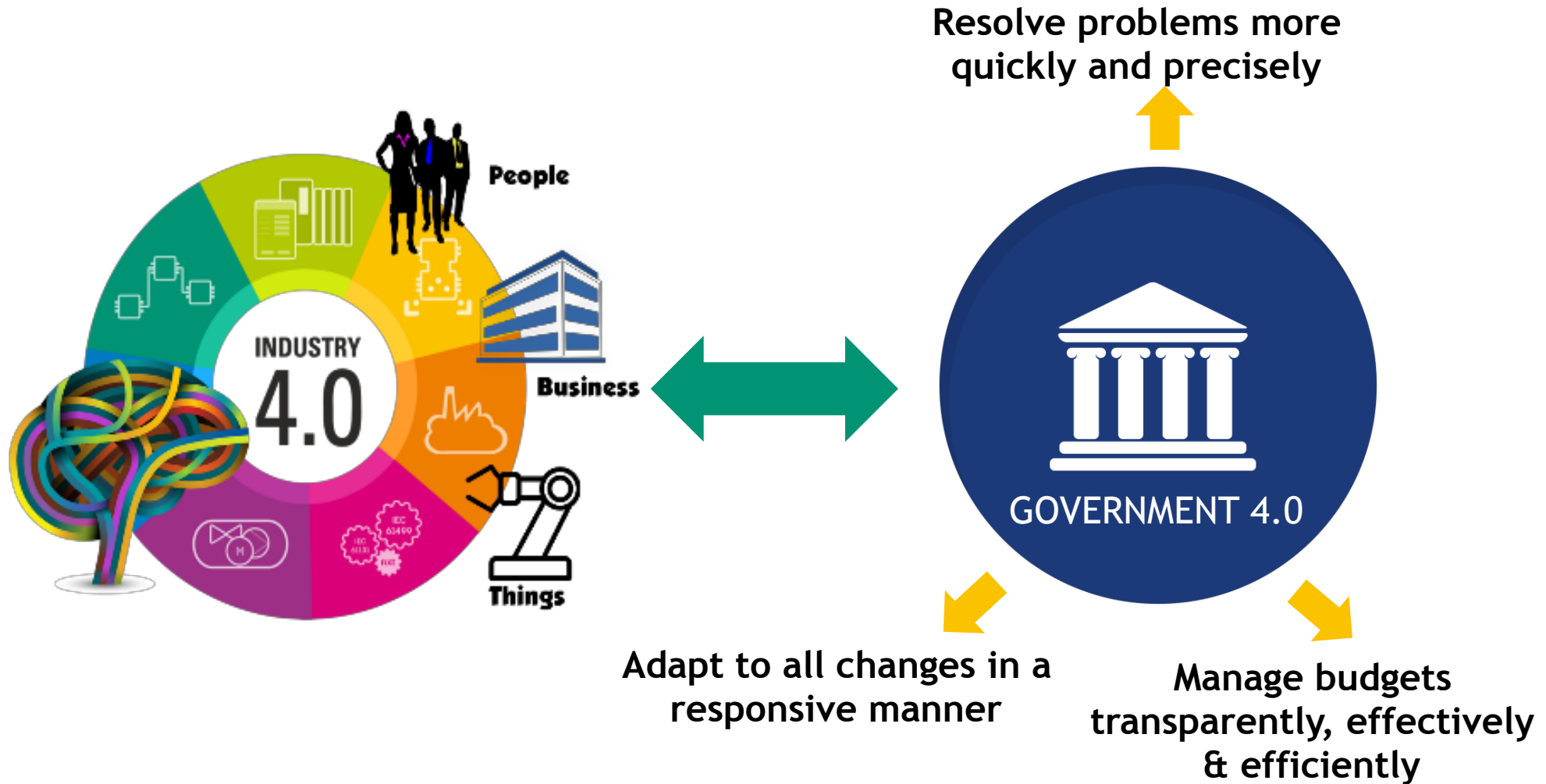
Continuous Adaptive
Risk and Trust

Digitalisation in various Sectors

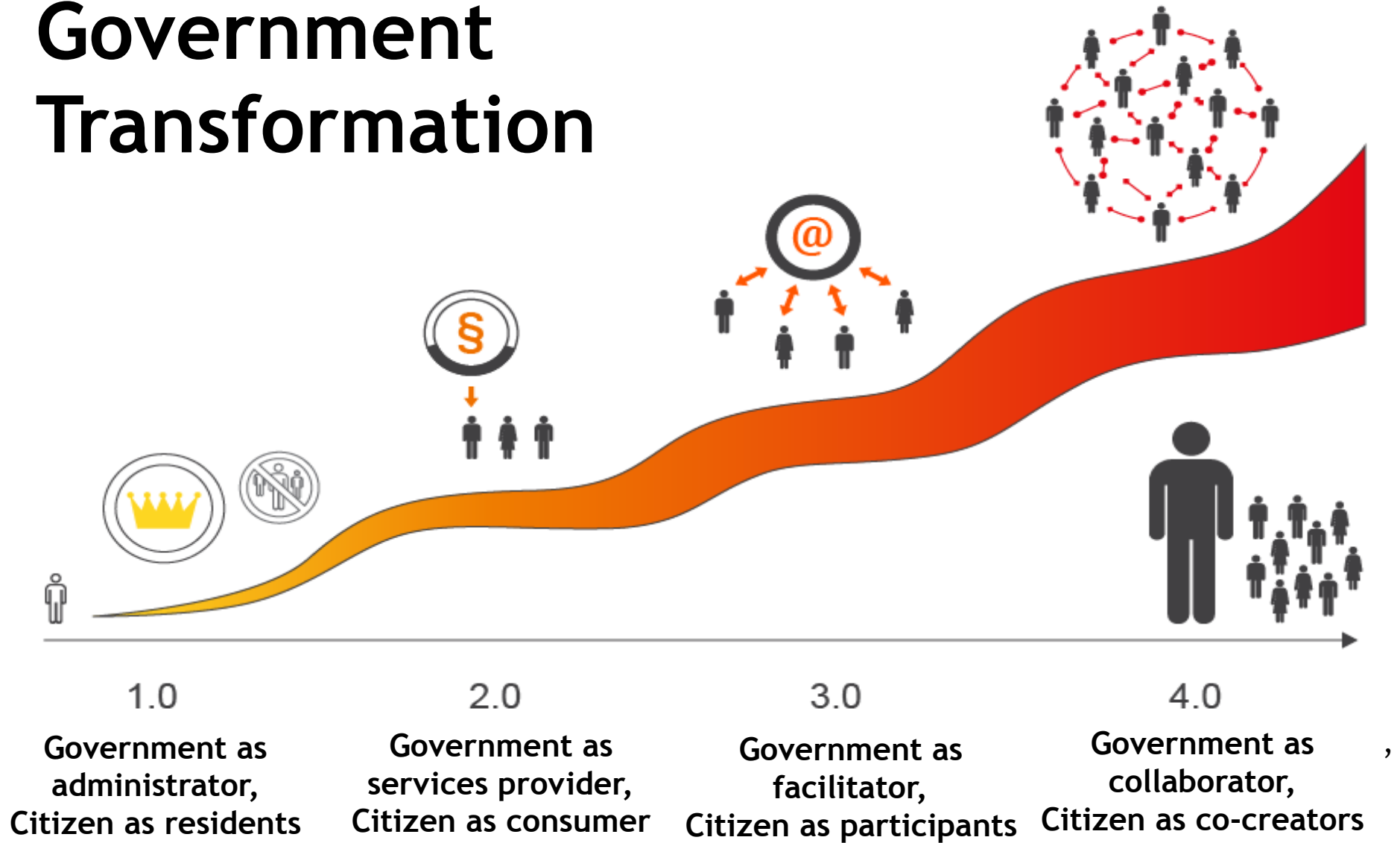


Digitalisation in all sectors which has an impact on processes, use of assets, and labor

Impact of the 4th Industrial Revolution on Government

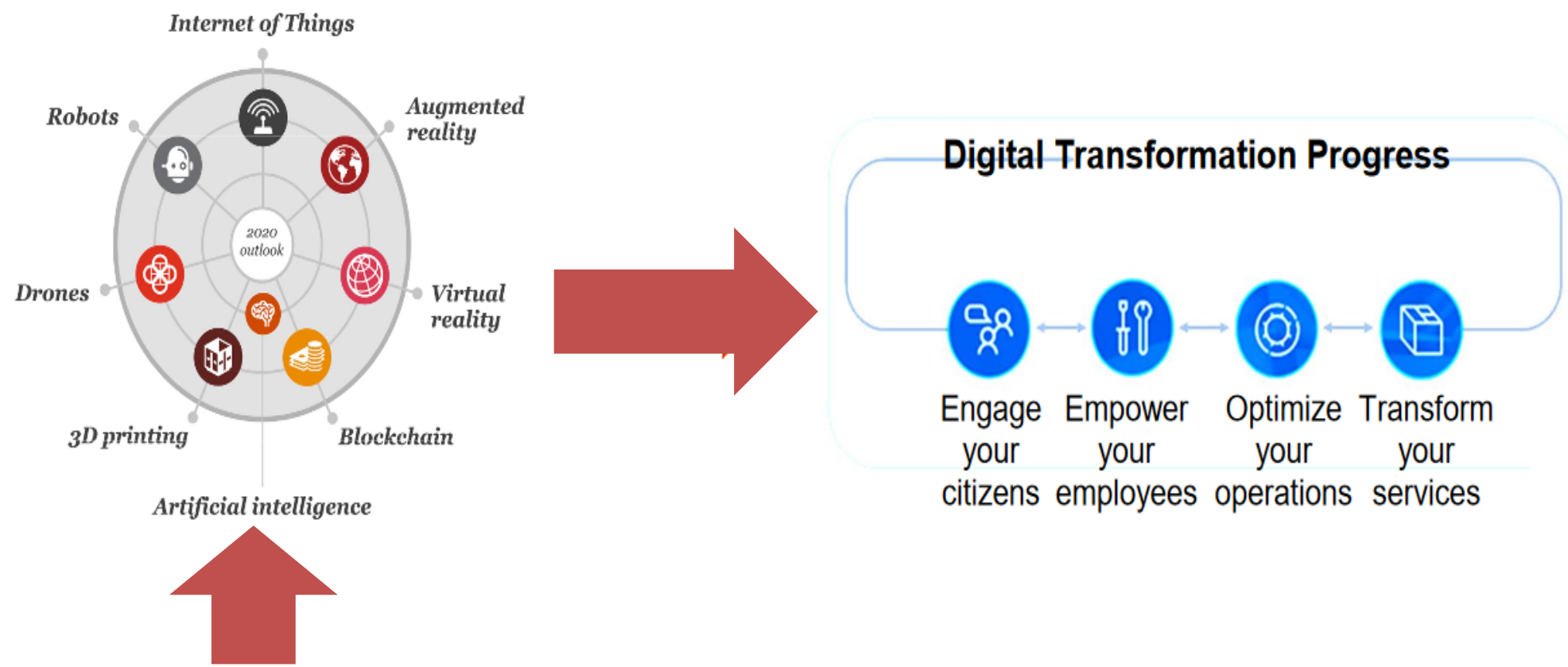


Government Transformation



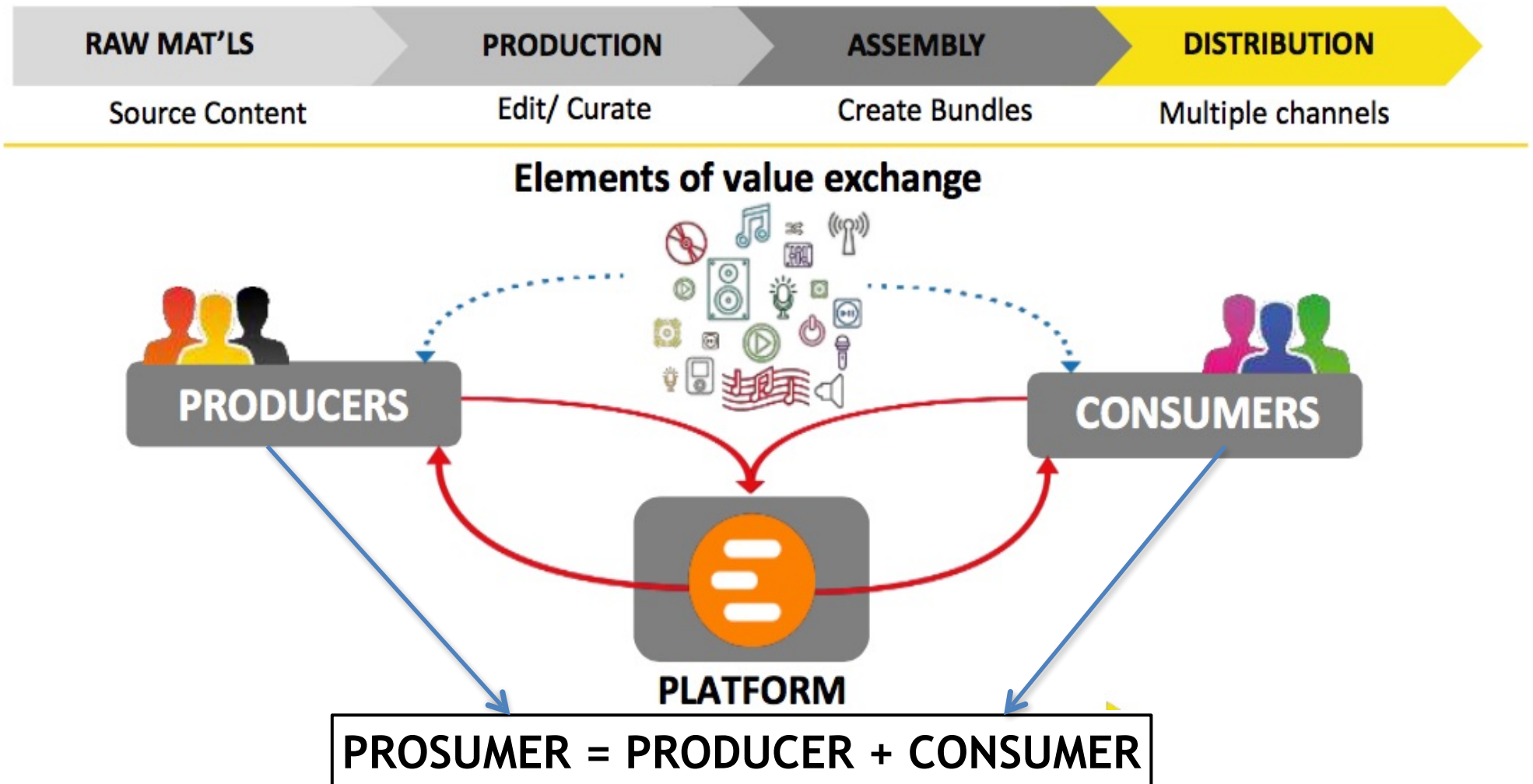
Technology drives the Transformation to Government 4.0

Key Technologies of Industry 4.0



High Skills Digital Talent

Producers collaborates with Consumers



Education is important!

ICT - HR Issue :

“Digital Talent War”

US companies continue to look overseas for tech talent

New research report says software and IT expertise is coming from innovation hubs abroad.



By Bob Violino | August 20, 2018 -- 16:35 GMT (00:35 GMT+08:00) | Topic: Innovation



Swedish government and industry address IT skills shortage

Sweden faces talent

Banyak Dipesan, Gojek Rekrut Programmer India

Aditya Panji, CNN Indonesia | Kamis, 22/10/2015 14:59 WIB

Bagikan :



WORLDWIDE IT
SPENDING WILL
REACH

\$3.8



TRILLION BY 2020



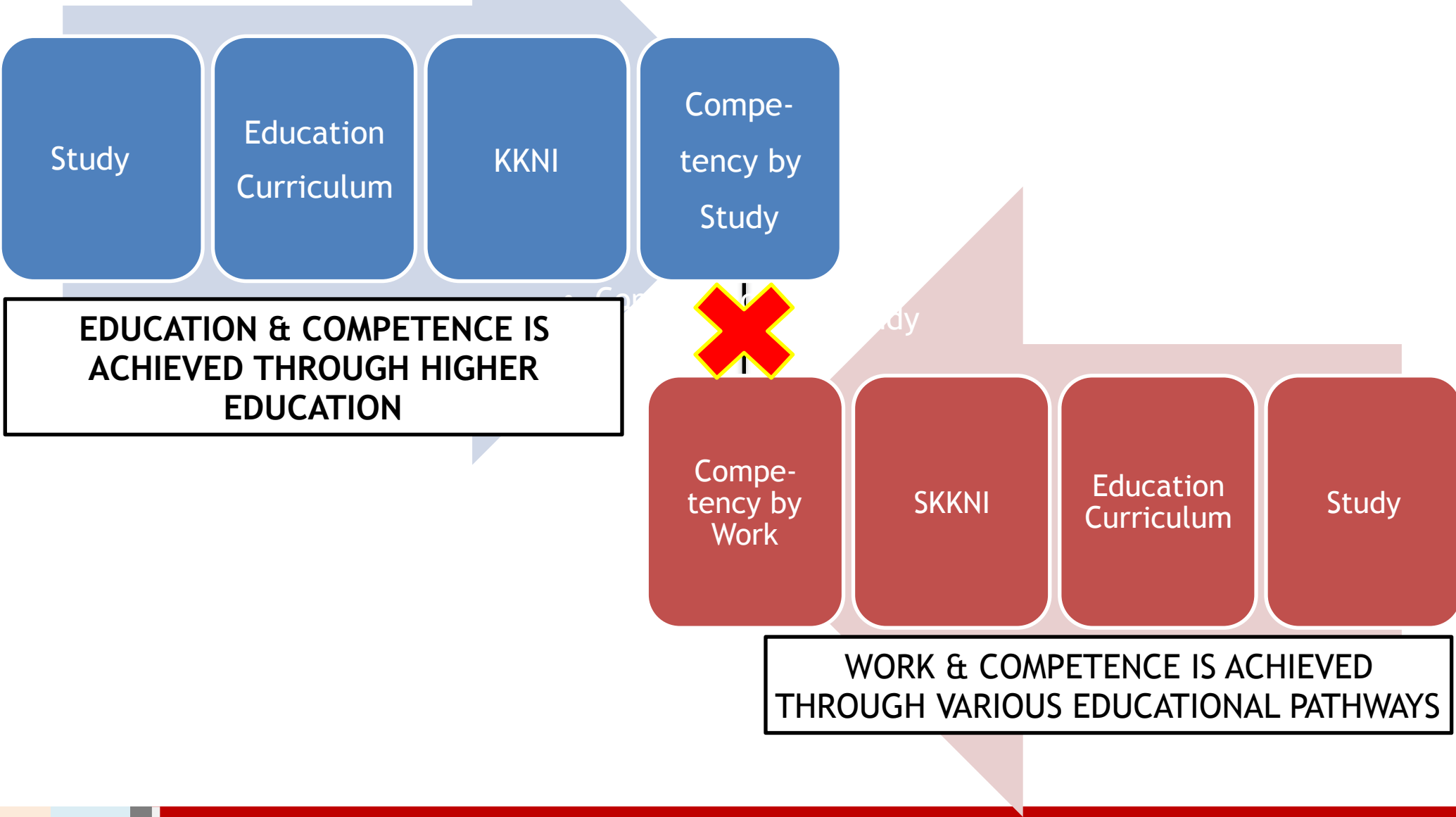
4,400,000

IT jobs have been created
to support
Big Data

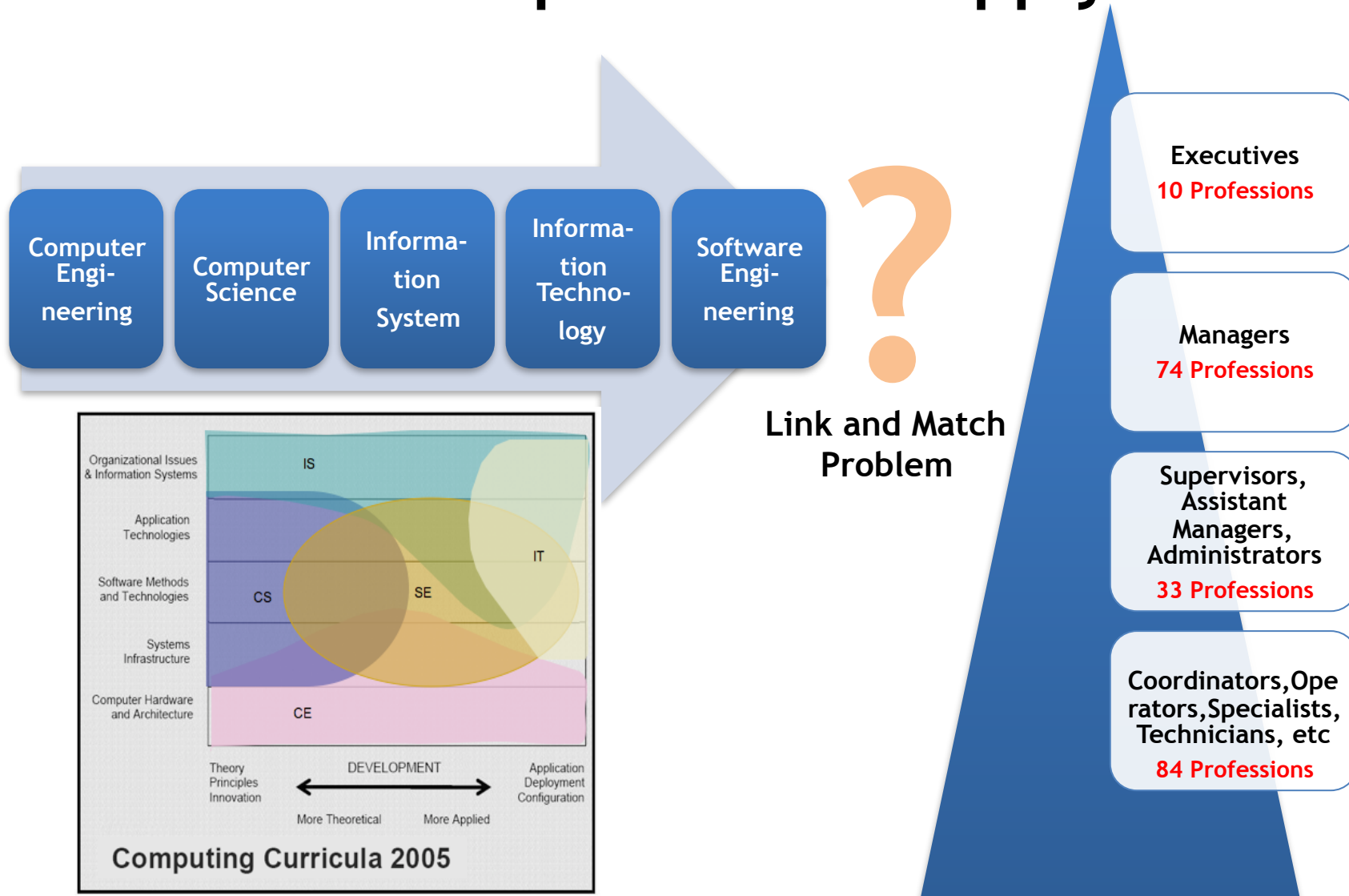


The ICT sector is growing rapidly, and the demand for labor exceeds the available supply

Link and Match Problem

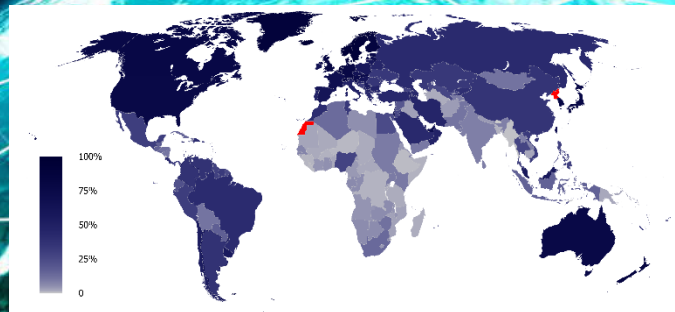
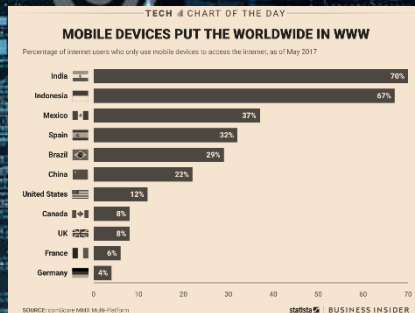


ICT - HR Issue: Gap between Supply and Demand



**Innovation is the Driver of the
New Economy!**

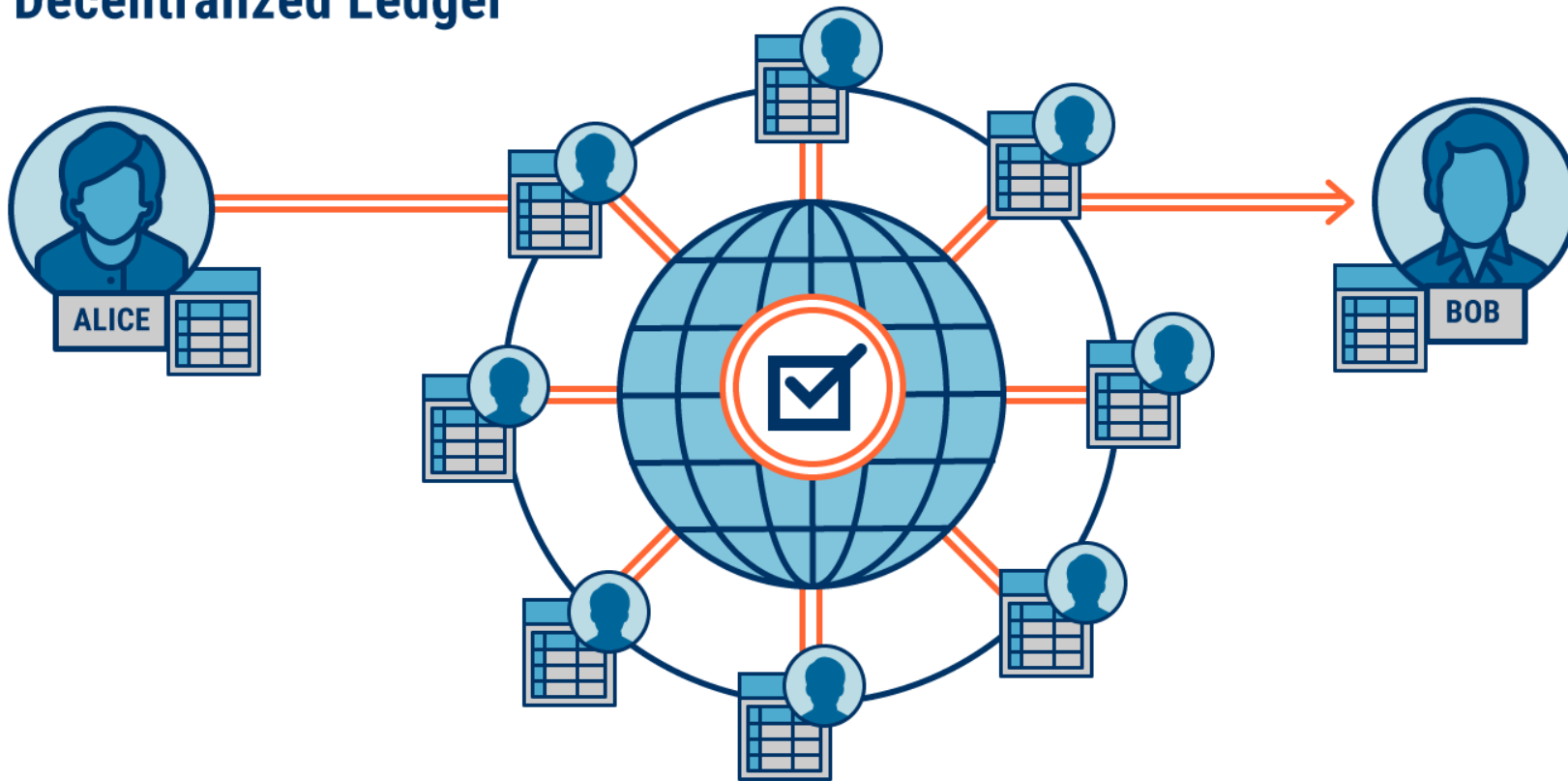
Internet: Democratization of Access & Economic Impact





Blockchain

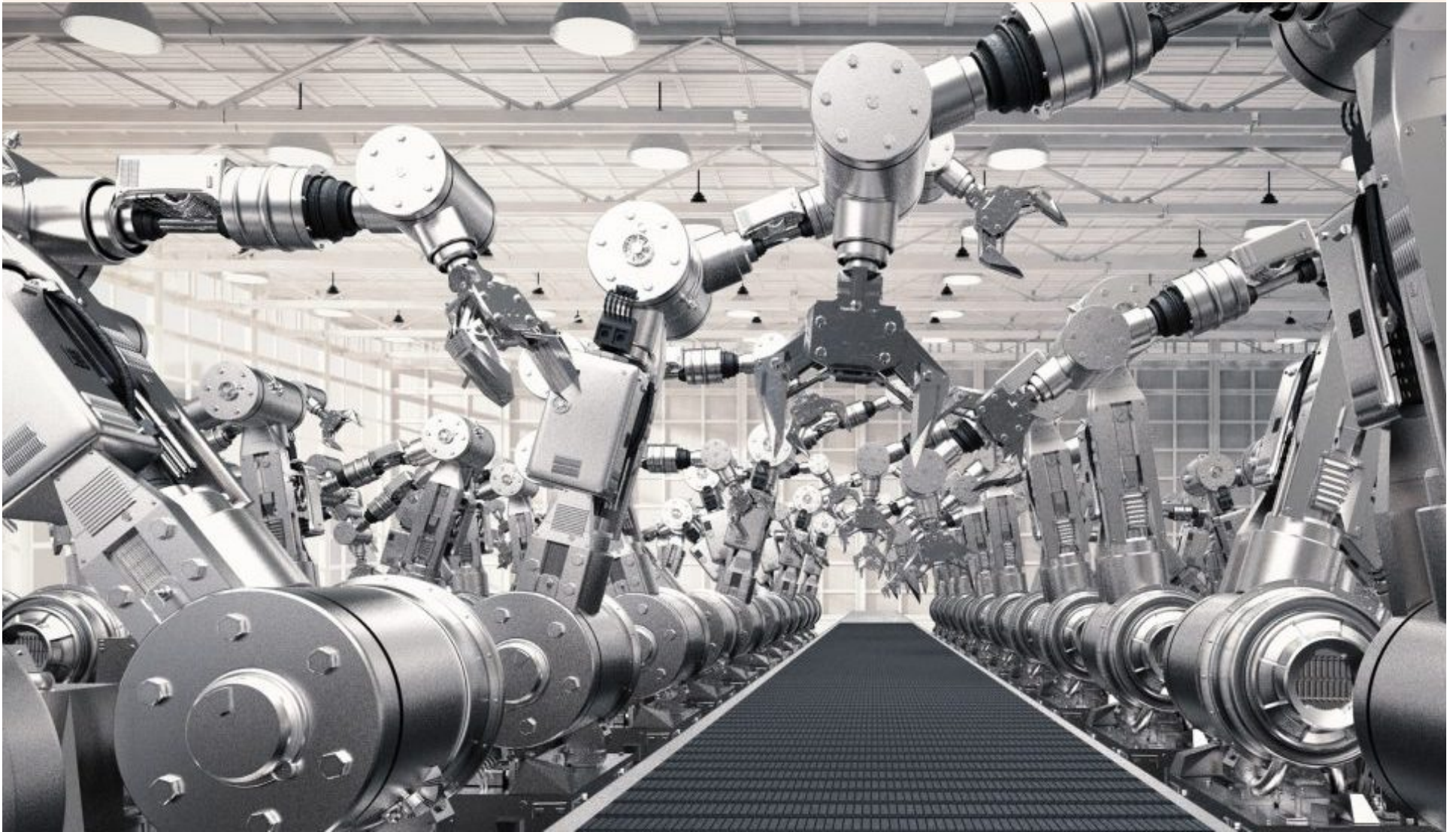
Decentralized Ledger



AI: Dissemination of Knowledge & Escalation of Creativity

















Human-less Automated Factories



Aspects of Innovation in The New Economy

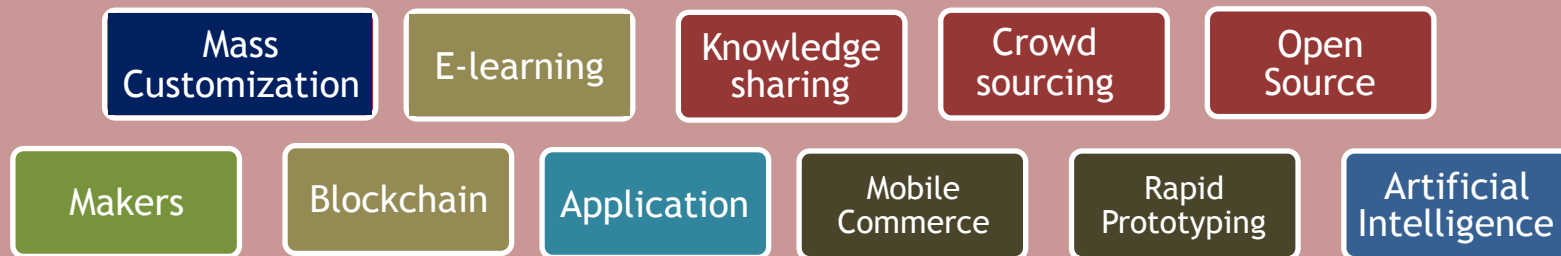
Democratized Knowledge	E-learning, Open Source, Knowledge sharing
Democratized Creation	Crowd sourcing, Rapid Prototyping, Application Models
Democratized Funding	Peer to Peer Lending, Crowdfunding
Democratized Distribution & Commerce	Digital Distribution, e- commerce, Mobile Commerce

New Large Industries?

 UBER World's largest taxi company Owns NO 	 airbnb World's largest Accommodation provider Owns NO 	 skype WeChat World's largest Phone companies Owns NO 	 Alibaba Group World's most Valuable retailer Owns NO 
facebook. Most popular Media owner Owns NO 	 SocietyOne World's fastest Growing bank Owns NO 	NETFLIX World's largest movie house Owns NO 	 Apple Google World's largest Software vendors Owns NO 

New Economy?

Small Medium Enterprises



















Large Industries as Platform

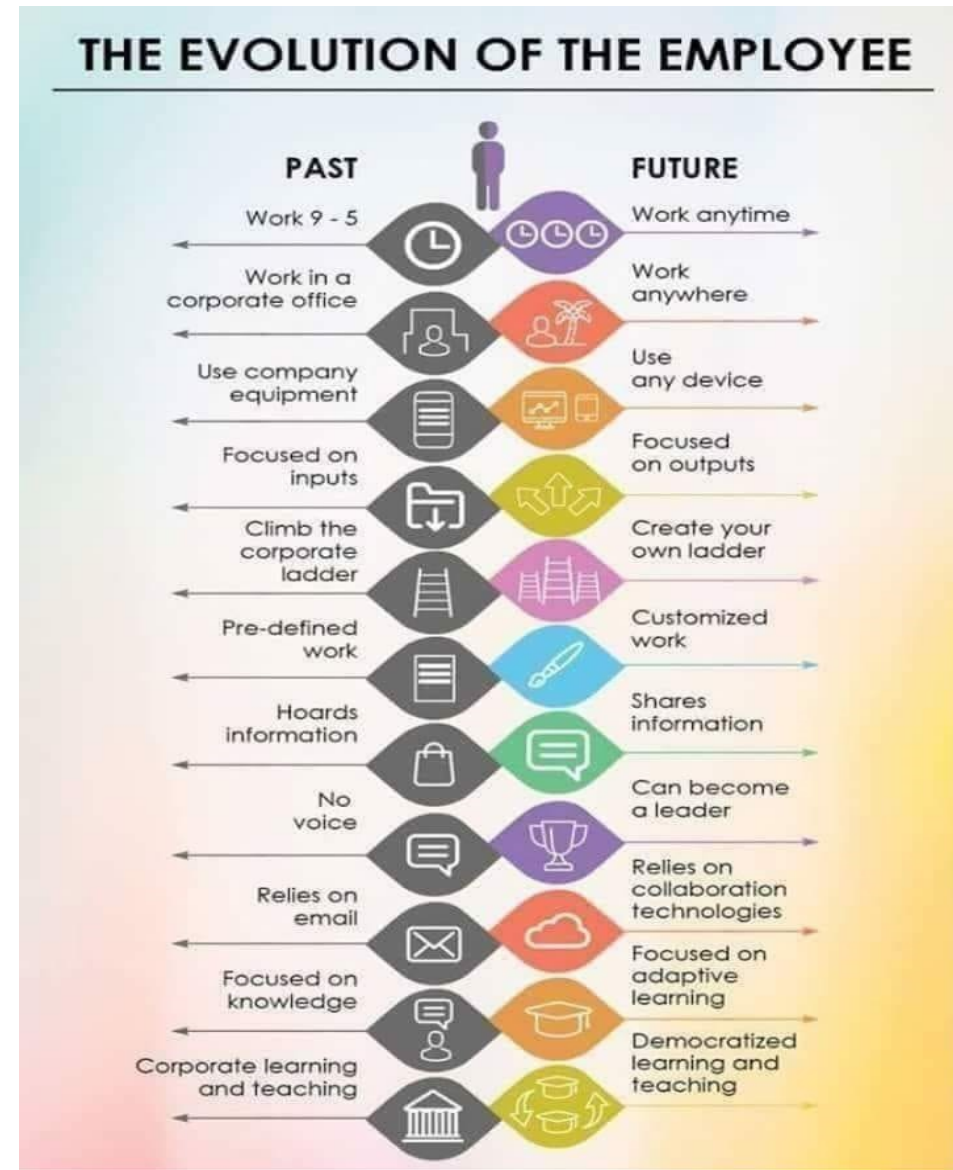
New SMEs? Creativity & Technology



Past vs. Future of Work

20TH CENTURY	21ST CENTURY
 Tangible flows of physical goods	 Intangible flows of data and information
 Flows mainly between advanced economies	 Greater participation by emerging economies
 Capital- and labor-intensive flows	 More knowledge-intensive flows
 Transportation infrastructure is critical for flows	 Digital infrastructure becomes equally important
 Multinational companies drive flows	 Growing role of small enterprises and individuals
 Flows mainly of monetized transactions	 More exchanges of free content and services
 Ideas diffuse slowly across borders	 Instant access to information
 Innovation flows from advanced to emerging economies	 Innovation flows in both directions

Sources: McKinsey & Company, 2017



Terima kasih !



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www.facebook.com/wantiknas



[@wantiknas](https://twitter.com/wantiknas)



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