FGD Dewan TIK Nasional : Arah Strategis Transformasi Digital di Indonesia
Aryaduta Hotel - Jakarta, 28 Januari 2020

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TELKOM's Strategy and Innovation to Build Indonesia Digital Economy

The Way Forward for Digital Business Transformation

SVP Media and Digital Business
& Pgs. EGM Divisi Digital Services
PT. Telekomunikasi Indonesia, Tbk..

OUTLINE:

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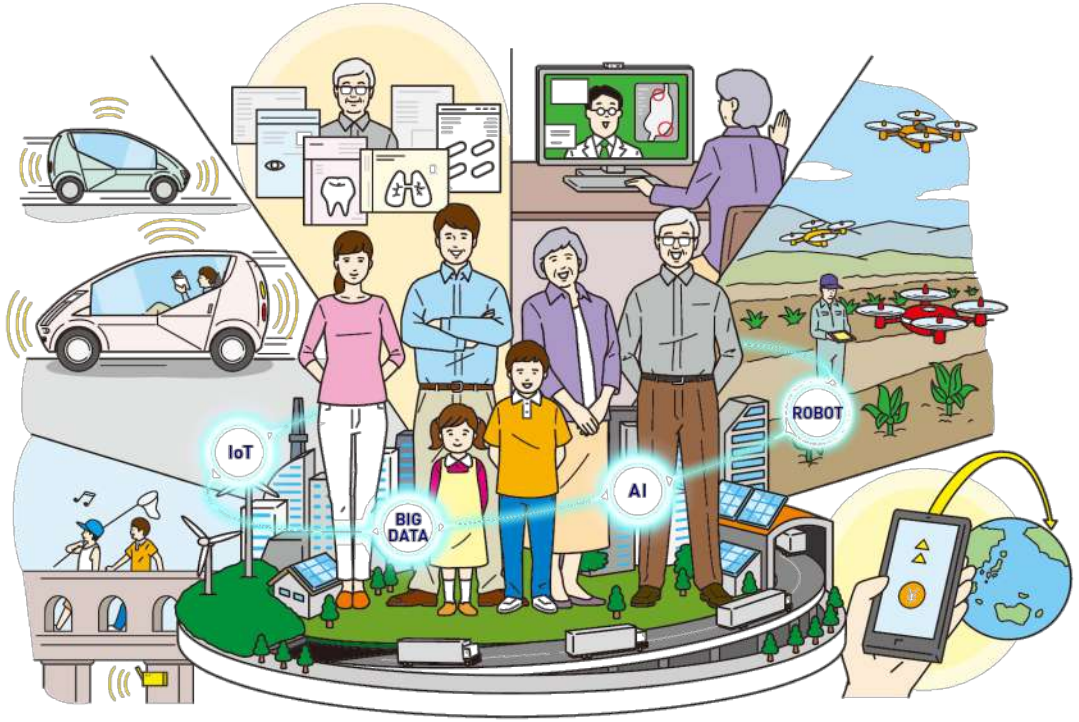
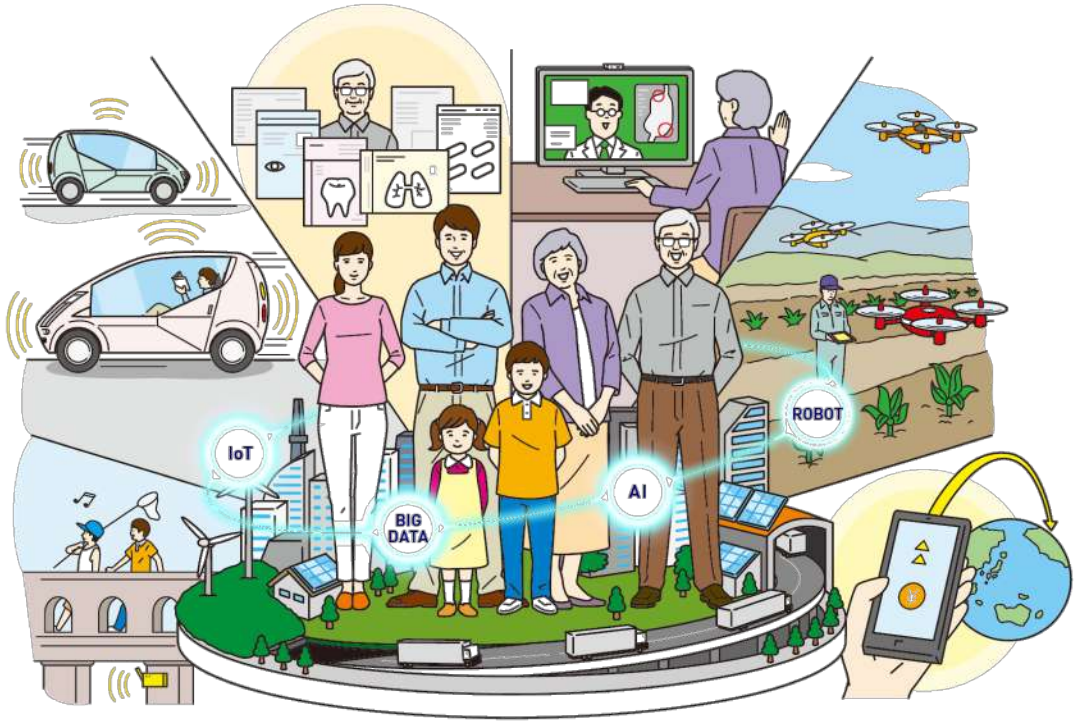


1 Digital Economy of Indonesia and Global Telco Trend /Challenges

2 TELKOM's Transformation into a Digital Telco

3 TELKOM's Innovation Model and New Way of Working



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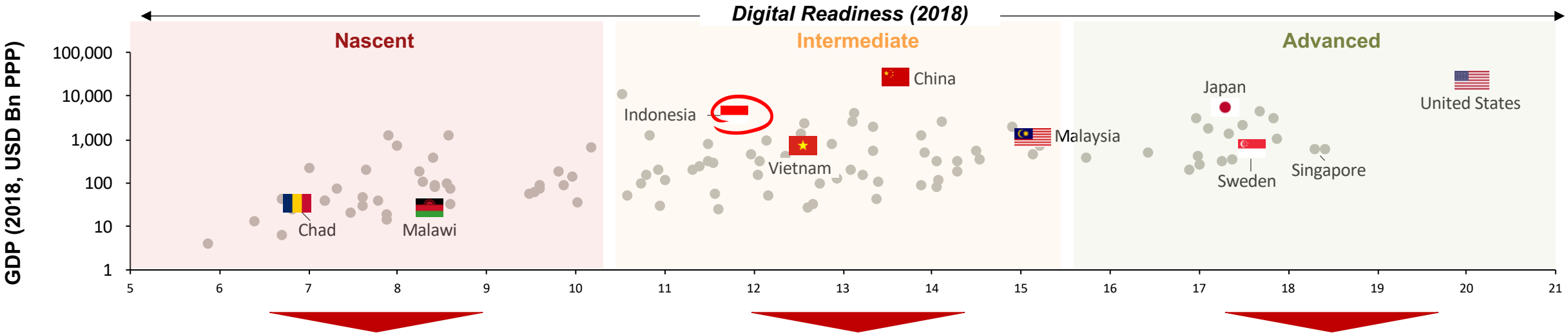
Indonesia is at an intermediate stage of digital readiness…..

Country digital maturity

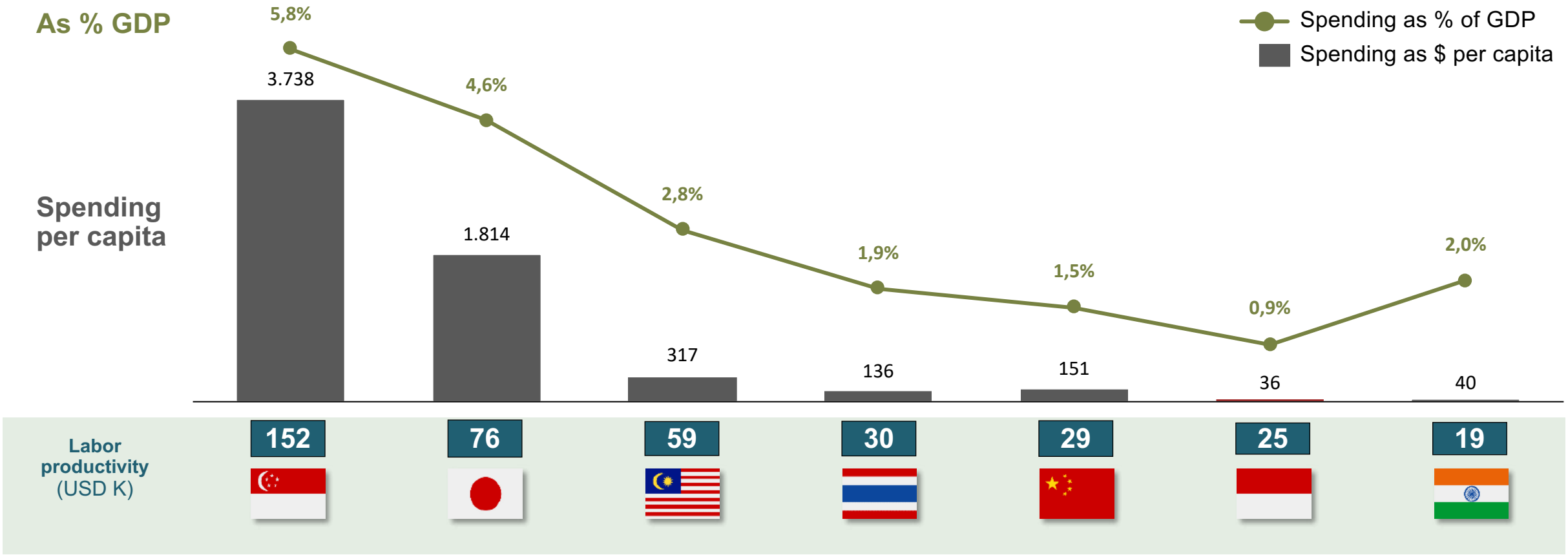


	Nascent	Intermediate	Advanced
Digital CX	• **Manual local engagement, low digital affordability**	• Focus on **mobile platforms** with rapid adoption of **app based services**	• Seamless **Omni-Channel** experience with advanced **personalisation**
Digital Ops	• **Low priority,** exception of **financial services**	• **Point based** application of **digital and** Focus on **digital upskilling** of w/force	• Advanced use of analytics, automation and **skilled workforce**
Digital Infra-structure	• **Limited data infrastructure** and connectivity concentrated in select areas	• Focus on **scaling infrastructure -** focus on **connectivity & devices**	• Focus on **infrastructure upgrades, innovation** and **security**

Source: GMSA: Achieving economic growth and fiscal stability in Chad , Better than cash alliance, Gartner – Verticals Forecast WW 2017Q1, Cisco – Digital Readiness Index, World Bank GDP

And Indonesia spends less on digital than its Global and Asian peers …..

Information and communications technology spending[1] (2018, USD)



Source: A.T. Kearney

But, Indonesia has a potential in digital economy …..

It is predicted that in 2025 Indonesia digital Indonesia will achieve US$ 133 Bn and in 2030 becoming Top 10 digital economy

Geografi & Demografi

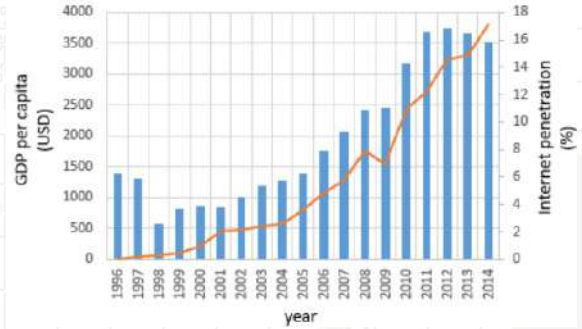
- ± 271.3 Juta Populasi
- ± 17 Ribu Pulau
- 1.9Jt Km² Wilayah
- 514 Kota/Kabupaten
- 183.4jt Jiwa Usia Produktif

Luas wilayah yang cukup luas dan tersebar, serta jumlah populasi produktif besar menyebabkan tidak meratanya pembangunan infrastruktur ICT yang dapat mendukung pengembangan ekonomi digital

Penetrasi Digital

- 150 Juta Internet users
- 355.5 Juta Mobile Subscriptions
- 150 Juta Active Social Media Users
- 6th Peringkat Penetrasi Internet di ASEAN

Relasi Penetrasi Digital dengan GDP di Indonesia dari waktu ke waktu



Pelaku Usaha

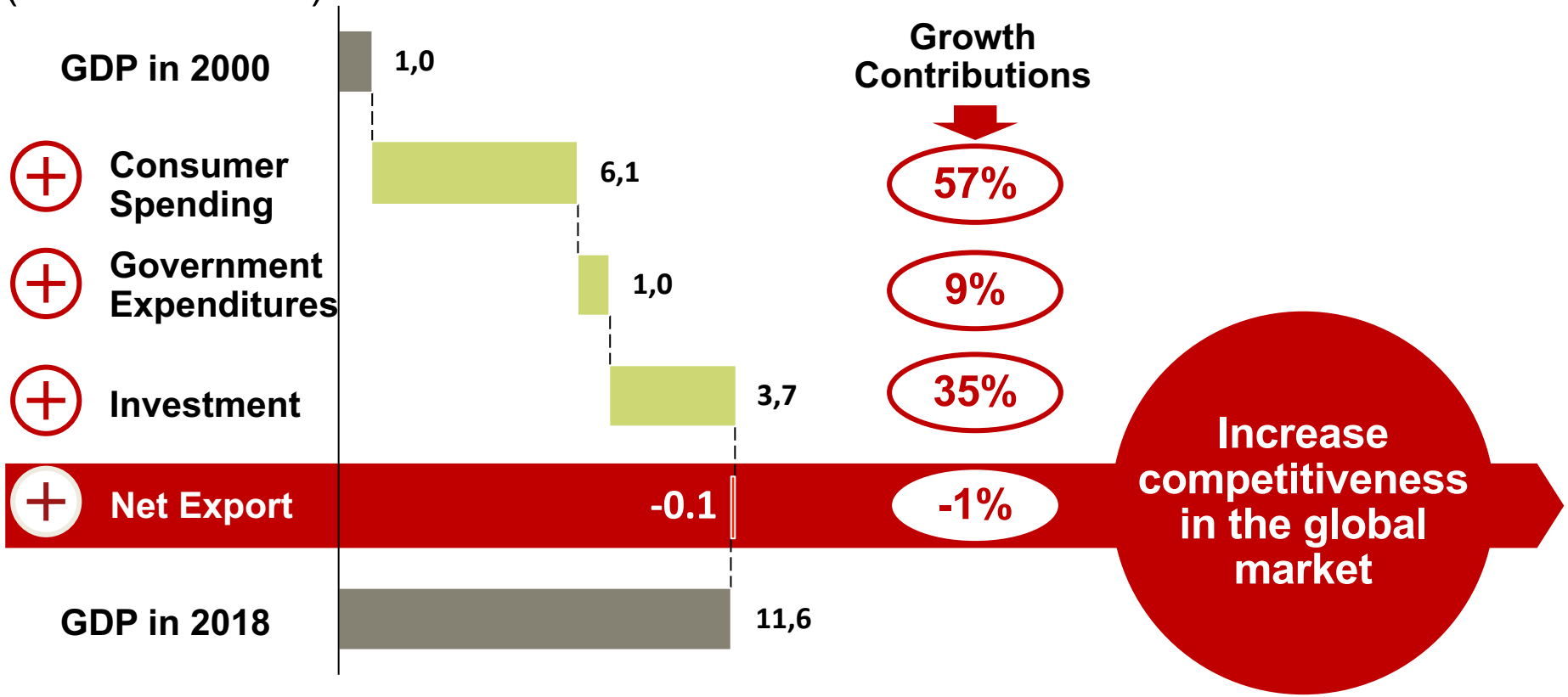
- ± 58 Juta UMKM 14% Go Digital
- ± 4 Startups Unicorns
- ± 2156 Startups

- Sebaran UMKM mayoritas berada di wilayah Pulau Jawa
- Jumlah unbanked people juga cukup besar, jumlah inklusi saat ini 59% dimana target pemerintah 75%

Source : WeAreSocial, Jan 2019 ; Katadata Finansial Inklusi, Sep 2019 ; Badan Pusat Statistik (BPS) 2018; Startup Ranking (2019) ; CNBC Jumlah UMKM 58 Juta ; Impact of Internet Penetration for the Economic Growth of Indonesia (Imansyah, 2018)

To meet its aspiration to be a global top 10 economy by 2030, Indonesia will need to significantly increase its competitiveness…..

Factors contributing to Indonesia's GDP growth
(Index: 2000 = 1)



Global GDP Ranking[1] (Nominal)

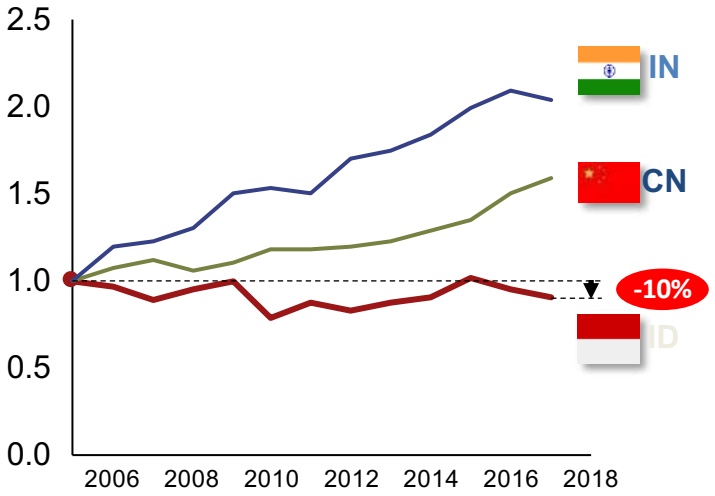
1	US
2	China
3	Japan
4	Germany
:	
10	Indonesia in 2030
:	
16	Indonesia in 2018

1. Based on nominal GDP value in USD
Source: World Bank, A.T. Kearney

Currently, Indonesia faces multiple challenges to compete in the global market

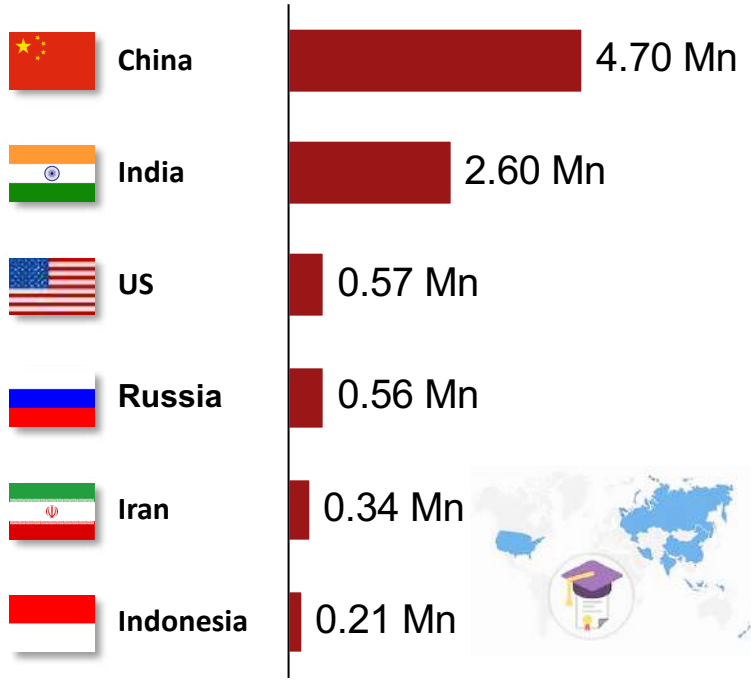
Key Challenges of Indonesia's Economy

Productivity / Cost Comparison
(Index: 2005 = 1)

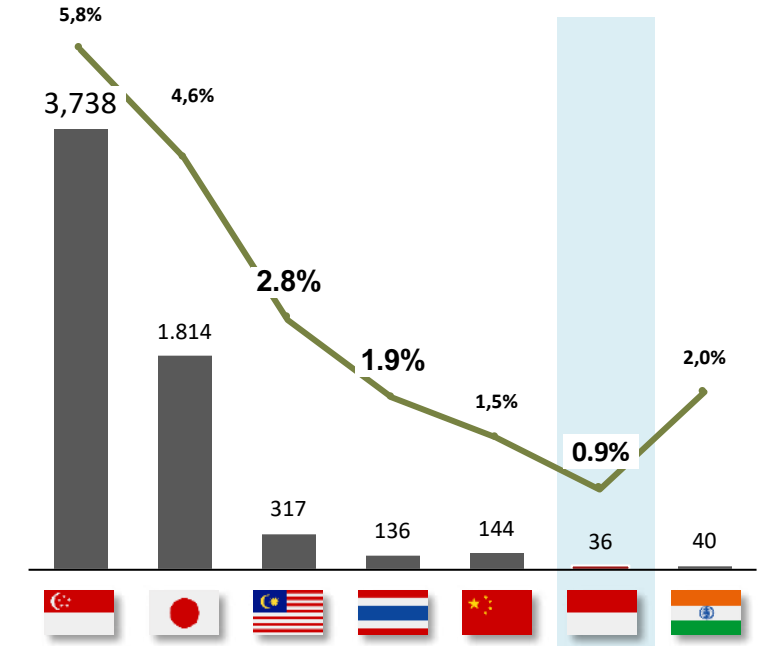


Indo's 2006-18 Changes	Productivity	Cost
	+46%	+58%

Countries by STEM Graduates[1]
(Science, Technology, Engineering, Mathematics)



ICT Spending
(USD, 2018)



Low labor productivity

Lack of skilled labor

Slow digitalization

Note: 1 Data on number of annual graduates in Science technology and mathematics in 2016
Source: Gartner (2017), The Conference Board; Total Economy Database "Output, Labor and Labor Productivity, 1950-2017", Economist Intelligence Unit, World Bank, Survey of Adult Skills (PIAAC) – 2015, A.T. Kearney analysis

Digitalization is the key to strengthen the nation

Digitalization Potential – Indonesia's Industry Challenges

Selected Examples

Agriculture	Logistics	Transportation	Healthcare	Finance	Government
• **Market access for >40M farmers** via ecommerce • **Yield improvement by IOT/AI**	Digital logistics / SCM to **reduce x2 high logistics cost than Thailand**	Traffic control system to **solve the notorious traffic issues**	National medical record system to **improve quality of medical service for all Indonesians**	Financial services for **180M 'Unbanked' population**	**e-government** for more efficient services
Services	**Manufacturing**	**Construction**	**Media**	**Retail**	**Education**
Crowdsourcing to **create job opportunities** for young generations	Productivity improvement by digital to **revive manufacturing sector** in Indonesia	**Productivity & safety** improvement by digital tech for **infrastructure development**	Digital contents for **better QOL (quality of life)** for everyone	Market place to **create new business for MSME**[1] to solve **inequality issues**	**High quality education access via internet** to all the Indonesians

More Job Opportunities | **Better Efficiencies (Productivity)** | **Better Services (Quality)** | **Better Accessibilities to Service**

Workers — **Digital Technologies** — **Consumers**

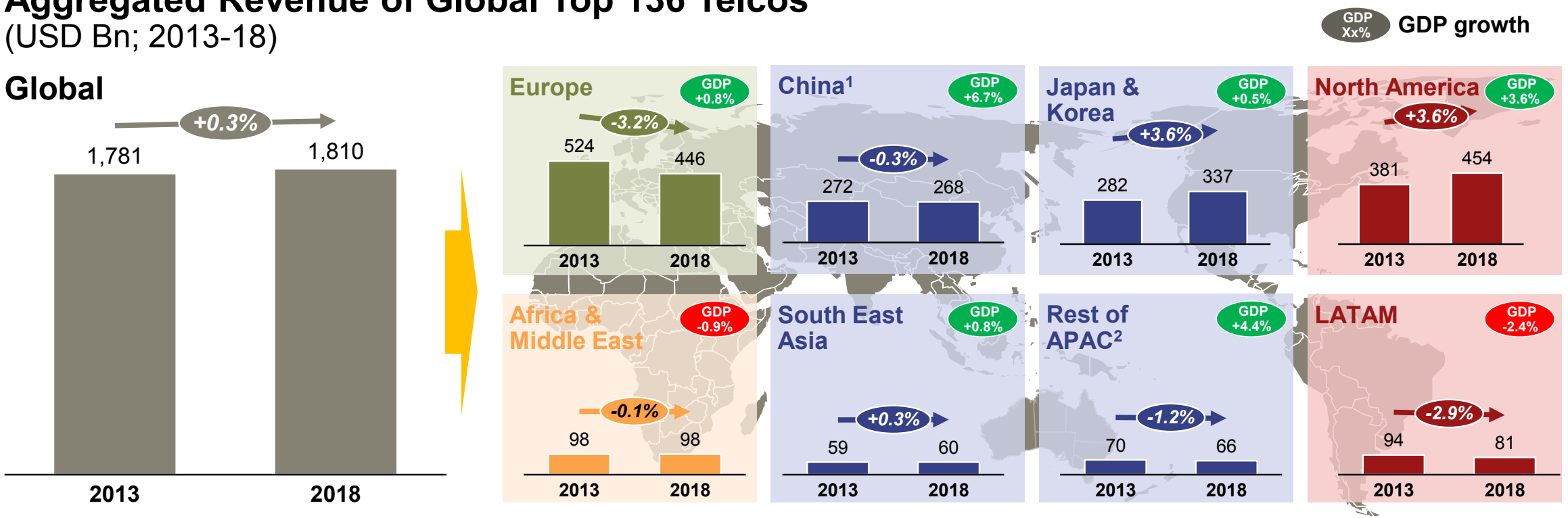
AI / Big Data | Cloud Computing | IOT / M2M | Blockchain | Advanced Robotics | Wearable

Digital Connectivity (4/5G, FTTx, NFV/SDN, Satellite)

1. Micro and small-to-medium enterprises

Global Trend: Telco revenues have bee growing slowly globally….

Aggregated Revenue of Global Top 136 Telcos
(USD Bn; 2013-18)



Overall, global telco market only grew by 0.3% since 2013…

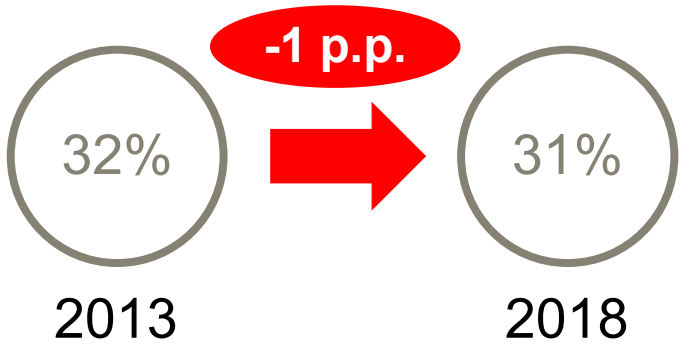
… with mixed growth across regions – Europe and LATAM declining, while North America and Japan & Korea growing

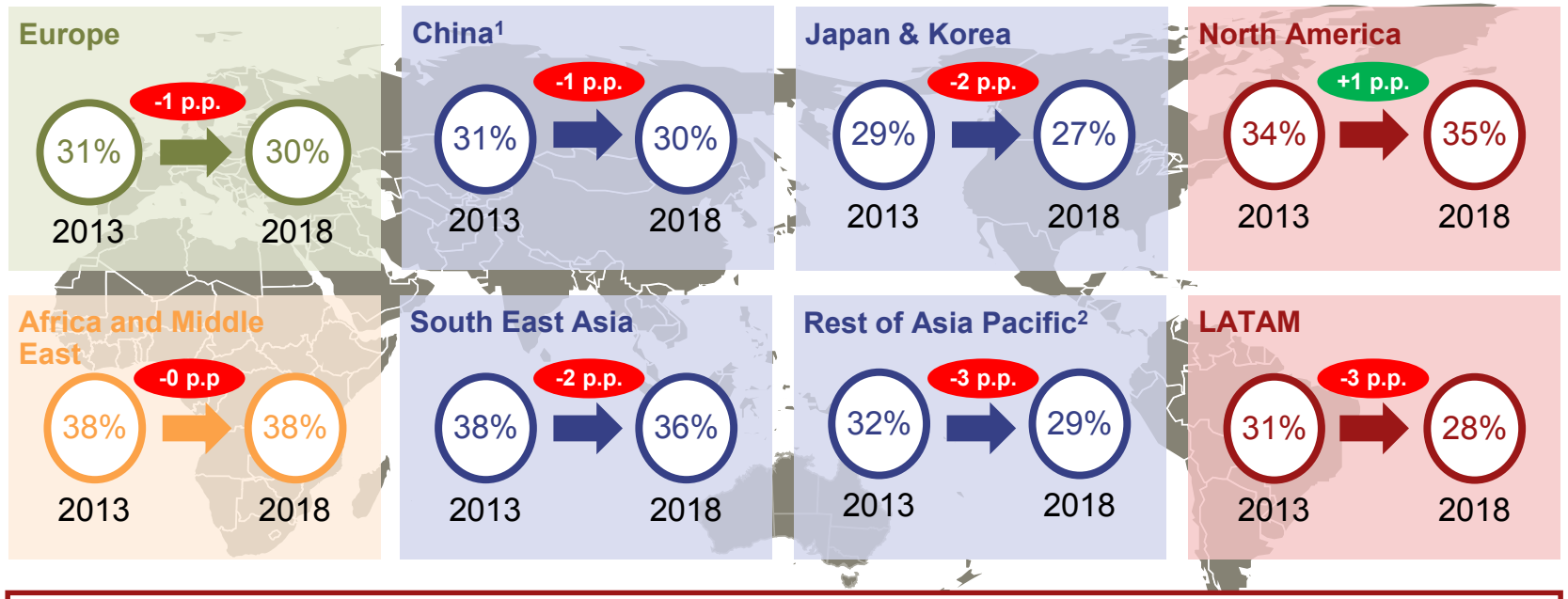
1. China incl. Hong Kong; 2. Rest of Asia (excl. China & HK, Japan, Korea and SE Asia), Australia and Oceania
Source: Capital IQ, Ovum, A.T. Kearney

Global Market:
Overall profitability margins are on the decline, except in North America

EBITDA Margin of Global Top 136 Telcos
(%; 2013-18)

Global





Globally, overall profitability has declined…

… with exception of North America (other regions are seeing decline in profitability)

1. China incl. Hong Kong; 2. Rest of Asia (excl. China & HK, Japan, Korea and SE Asia), Australia and Oceania
Source: Capital IQ, Ovum, A.T. Kearney

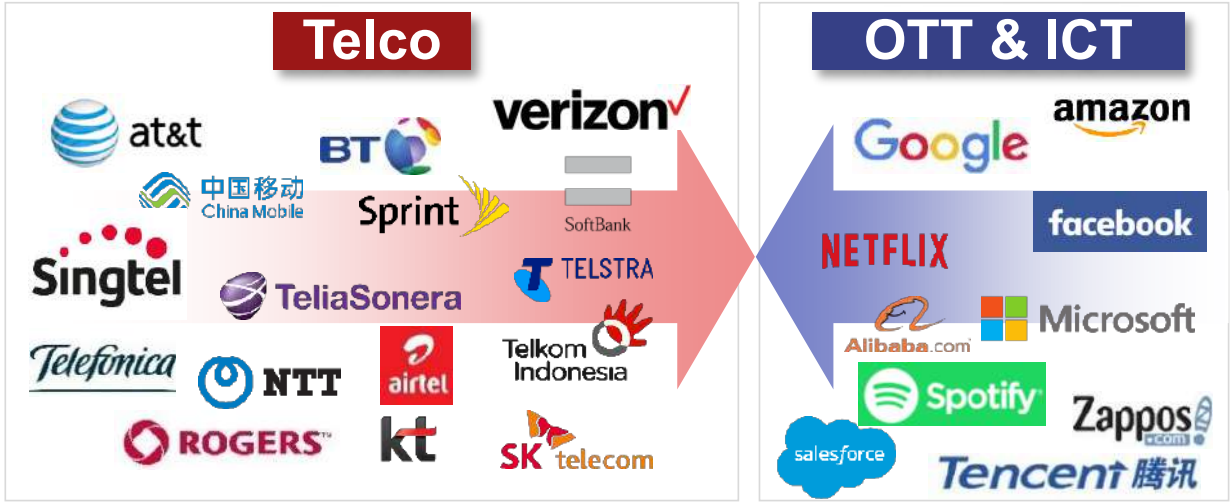
Global Market: Telco industry borders are disappearing – Telcos are facing competition against tech giants in digital businesses

Telecoms / Digital Industry Dynamics

Legacy
- Voice / SMS

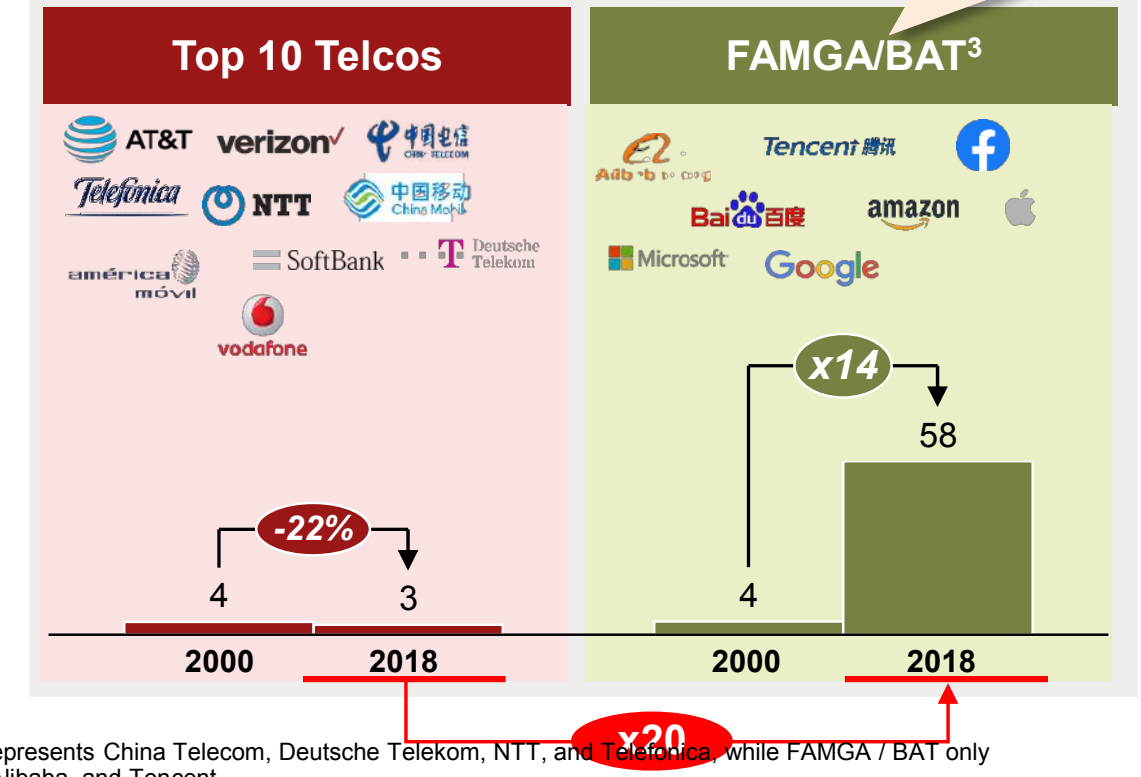
Broadband
- ADSL / Fiber
- 3G / 4G
- Data Center
- Cloud

Digital Services
- Media
- Digital Contents
- Other Digital Services



Telco-related Innovation
- **Google:** Launched Google Fi
- **Apple:** Released Apple Sim
- **FB:** Initiated Telecom Infra Project
- **Amazon:** Developing Project Kuiper

R&D spending[2]



1. Top 10 telcos based on revenue size, 2. Not all telco and FAMGA / BAT R&D figures were disclosed – telco only represents China Telecom, Deutsche Telekom, NTT, and Telefonica, while FAMGA / BAT only represents Amazon, Apple, and Microsoft, 3. FAMGA / BAT = Facebook, Apple, Microsoft, Google, Amazon, Baidu, Alibaba, and Tencent
Source: Capital IQ, A.T. Kearney

In Digital Business companies are required to act and respond faster than they ever have before…

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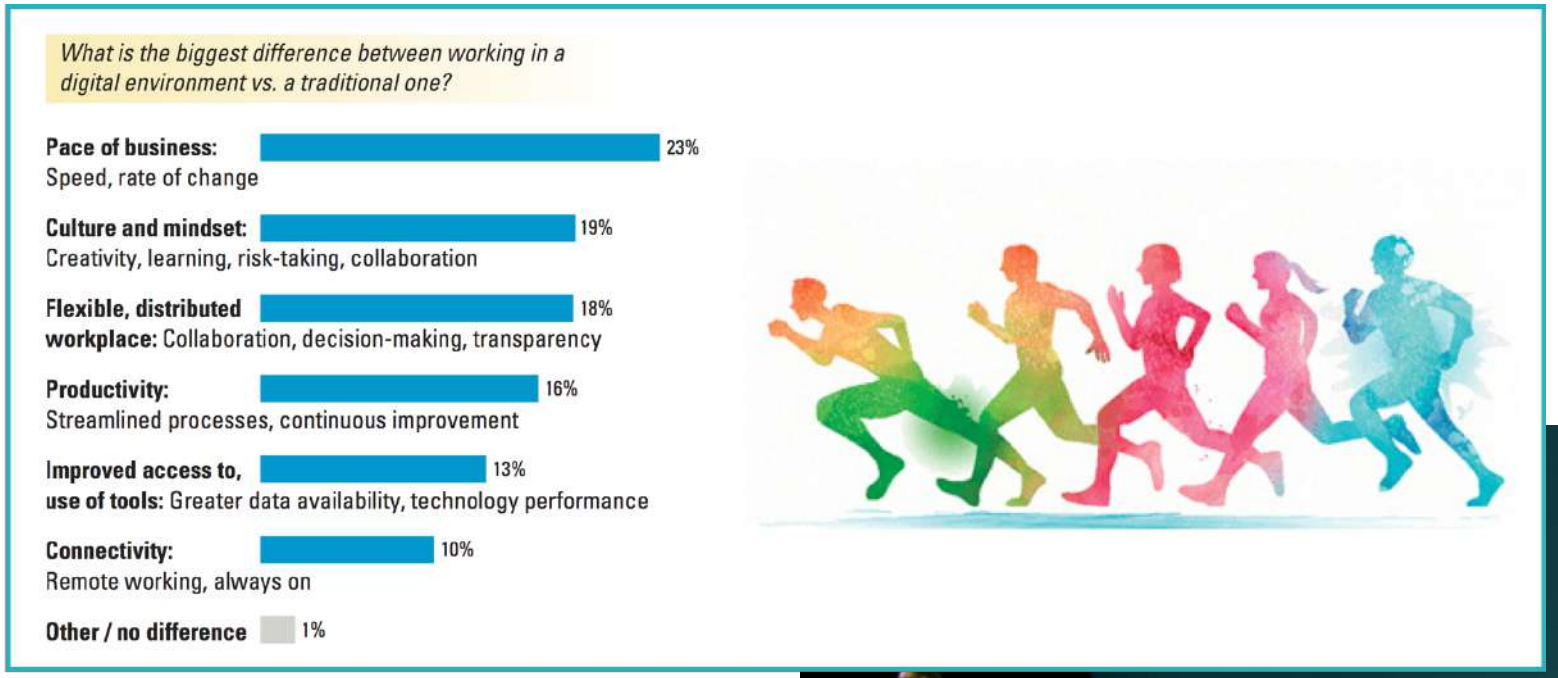
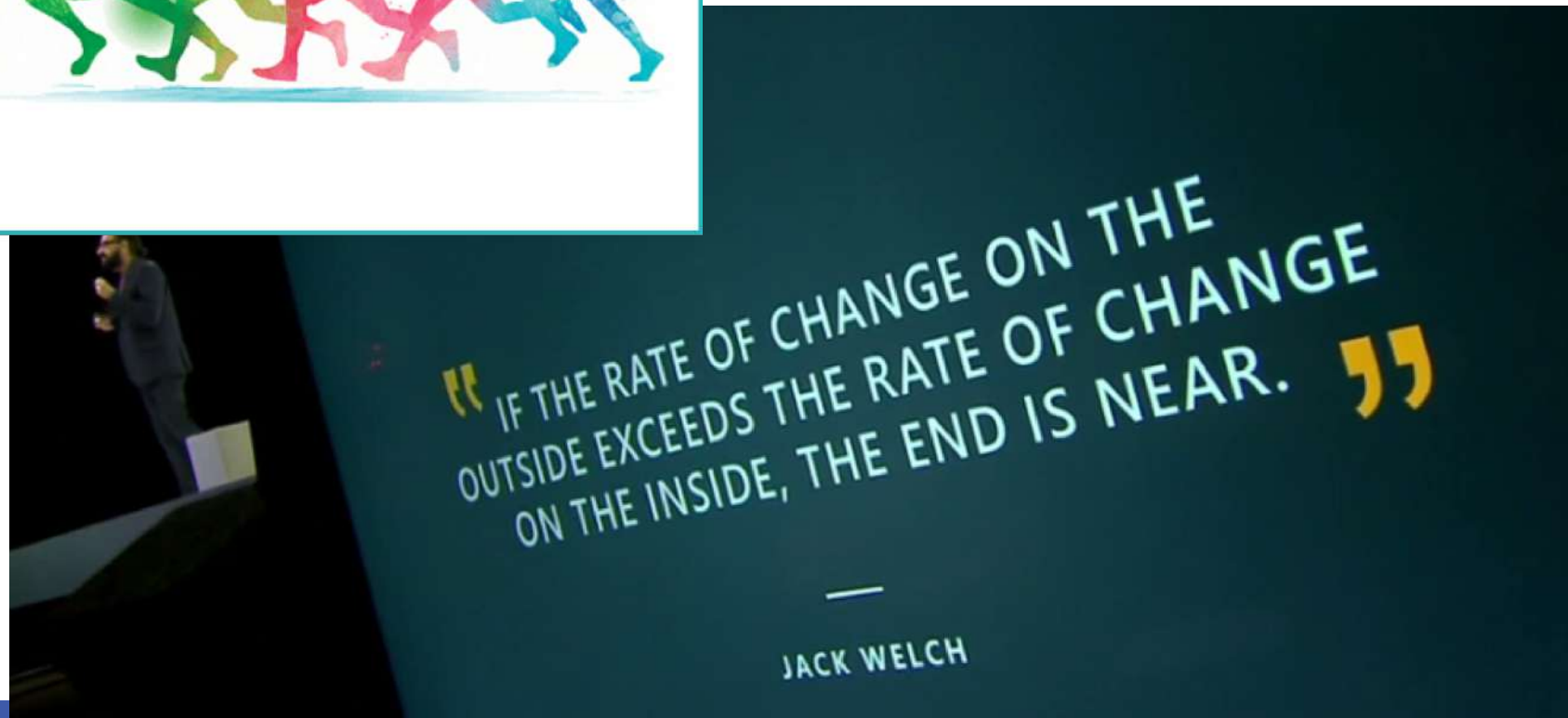
What is the biggest difference between working in a digital environment vs. a traditional one?



Source: MIT Siloan Management Review & Deloitte Insights' "Coming of Age Digitally"



THE NEW GRAND CHALLENGE IN DIGITAL ERA:
Innovation in Digital continues to accelerate …

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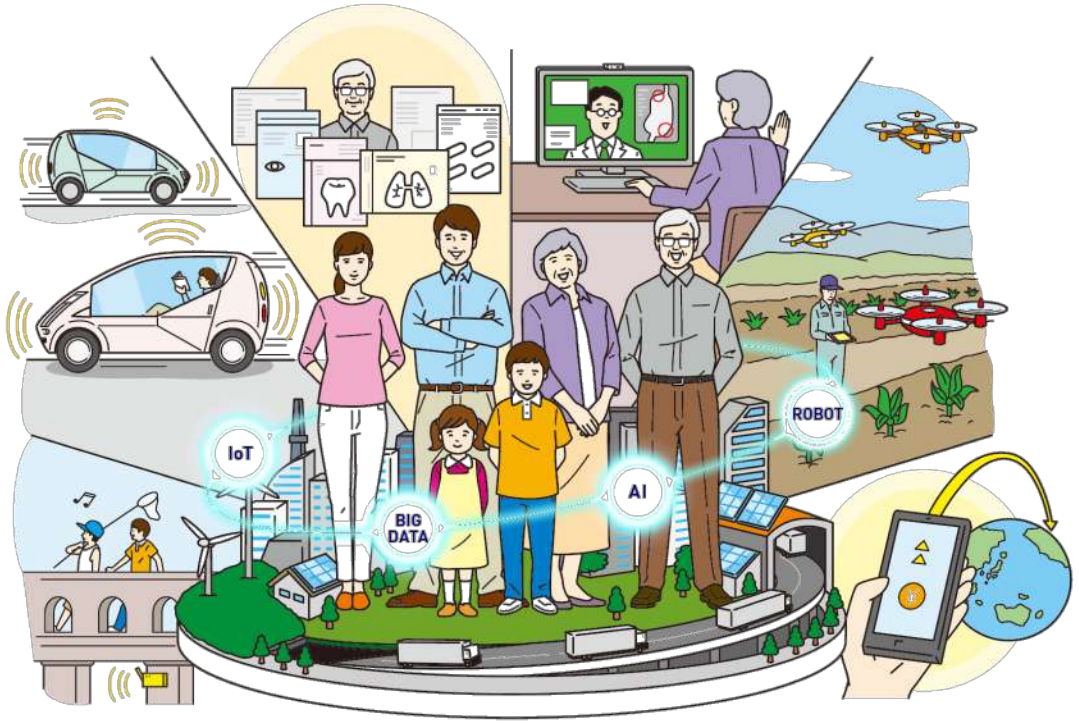
- **Perfect quality** at nearly **zero cost,**
- Delivered almost **instantaneously**
- In the age of **big data, we can measure** the world in ways we never could before

- Computers **get better faster** than anything else ever
- A child's "Play station" today is **more powerful** than a military "Super" computer 1996
- Exponential **trends** take us by **surprise**

- The **stagnation view** is that ideas get **used up**
- the reality is that **each innovation creates building blocks** for even more innovations
- Built Innovation (apps) **on top off…**

The self-driving car is a current example of a whole lot of different technologies—digital mapping, GPS, machine learning, developments in laser and infrared sensor technology—coming together to create something truly innovative.



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Telkom Group has redefined its purpose, vision and mission to contribute to the national aspirations in their digital transformation

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Telkom's New Purpose, Vision and Missions

Purpose

Mewujudkan bangsa yang **lebih sejahtera** dan **berdaya saing** serta memberikan **nilai tambah yang terbaik** bagi para **pemangku kepentingan**

Vision

Menjadi **digital telco pilihan utama** untuk **memajukan masyarakat**

Mission 1

Mempercepat pembangunan **infrastruktur dan platform digital cerdas** yang berkelanjutan, ekonomis, dan **dapat diakses** oleh **seluruh masyarakat**

Mission 2

Mengembangkan **talenta digital unggulan** yang membantu mendorong **kemampuan digital** dan **tingkat adopsi digital bangsa**

Mission 3

Mengorkestrasi **ekosistem digital** untuk memberikan **pengalaman digital pelanggan terbaik**

To transform into a Digital Telco, TELKOM has 3 Main Initiatives

Digitization, Digitalization and New Ways of Working

Digital Transformation for TELKOM Indonesia

Improve FCF

- Increase efficiency:
- Modernize network & IT
- Increase EV (CX Impact)

Improve ROI

- Protect value share on connectivity services
- Capture new revenue streams

1 DIGITIZATION Transforming into a digitised enterprise

- **Digitize operations (e.g. process automation)**
- **Transform back-end functions**
- **Digital Touch Point Customer Interface**

2 DIGITALIZATION : Building a digital business

DIGITAL CONNECTIVITY	DIGITAL PLATFORM	DIGITAL SERVICES
Provide Data Connection	Provide Platform to Enable Businesses on Top	Services on Digital Platform or Independent Services
FTTx, 4G, 5G, SDN/ NFV, Satellite	Connectivity related: Data center / CDN, IoT/ M2M, Big Data/ AI, AdTech, Cloud, Security, Payment / Blockchain, Robotics	Enterprise Digital Services; Consumer Digital Services
• Oligopoly (**short-tail**) – regulated • **Stable cashflow** • High capex • Monetize from end-users • Digital platform will be build on top	• **Mid-tail** – limited winners • **Stable cashflow, once user base** established • Mid-low capex • Monetization may not come from end-users • Digital services will evolve on top	• **Long tail** – limited winners • **Volatile cashflow** • Low capex (but high marketing cost) • Monetize from end-users • Scaled digital service can become platform

3 New Ways of Working

People

Building Talent and Leadership for Digital Future

Culture

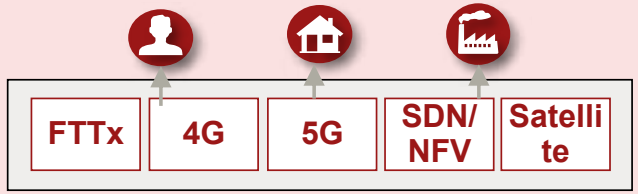
Building Digital and Innovation Culture

Organization

Creating Agile/Flexible Organization

TELKOM's PORTFOLIO/BUSINESS DOMAIN DIRECTION

Telkom Group will focus on leveraging its core strengths in Connectivity to expand into Digital Platforms and select Digital Services

	DIGITAL CONNECTIVITY	DIGITAL PLATFORM	DIGITAL SERVICES
Definition:	**Provide Data Connection**	**Provide Platform to Enable Businesses on Top**	**Services on Digital Platform or Independent Services**
Business / Technology Examples:		Connectivity related Data center / CDN; IoT/ M2M; Big Data/ AI; AdTech; … Cloud; Security; Payment / Blockchain; Robotics; …	Enterprise Digital Services Consumer Digital Services
Business Nature:	• Oligopoly (**short-tail**) – regulated • **Stable cashflow** • High capex • Monetize from end-users • Digital platform will be build on top	• **Mid-tail** – limited winners • **Stable cashflow, once user base** established • Mid-low capex • Monetization may not come from end-users • Digital services will evolve on top	• **Long tail** – limited winners • **Volatile cashflow** • Low capex (but high marketing cost) • Monetize from end-users • Scaled digital service can become platform
Rationale:	**Connectivity continues to be cash cow for Telkom**	**Digital platform business is natural extension for telcos**	**Very different business nature from connectivity business**
Telco's Core Competency Level:	High		Low

“Indonesian Maju” Vision lays out 4 priorities for 2019-24 – where national digital platforms can help support

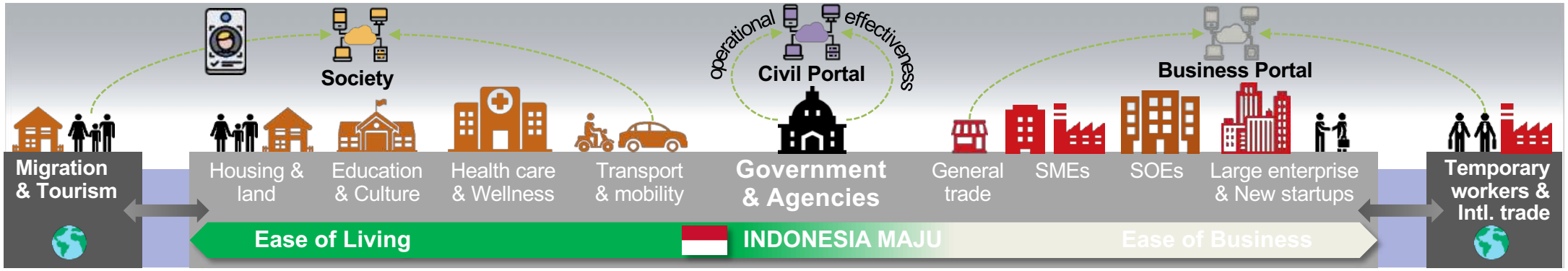
Indonesia Maju 2019-24

Not exhaustive

4 Priorities

1. **Human resource quality upgrade**
   preparing brighter future for next-generation of Indonesians
2. **Nationwide infrastructure development**
   accelerating infrastructure development for economic progress
3. **Economy transformation**
   increasing Indonesia’s economic competitiveness
4. **Government and bureaucracy reform**
   increasing efficiency of government and reduce red tape

Advancing Indonesia Vision



Technology enablers

Storage (Data Center)
- **Dedicated storage** of Big data sets
- Servers allow for private databases to manage and **automate access**

Cloud Computing
- **Reduction of IT cost** for small agencies through virtualization
- Seamless data-sharing to increase collaboration across gvt. functions

Blockchain
- Integrity for eGov **Single Window**
- Enabling use of **National ID** for **multi-purpose verification**

Big Data / AI
- RPA of administrative tasks increasing **operational efficiency** of civil servants

Development journey

Source: President Jokowi’s Inauguration Speech (October 20, 2019), A.T. Kearney

Telkom will aim to build national digital platforms by capturing digitization needs primarily for 5 key verticals

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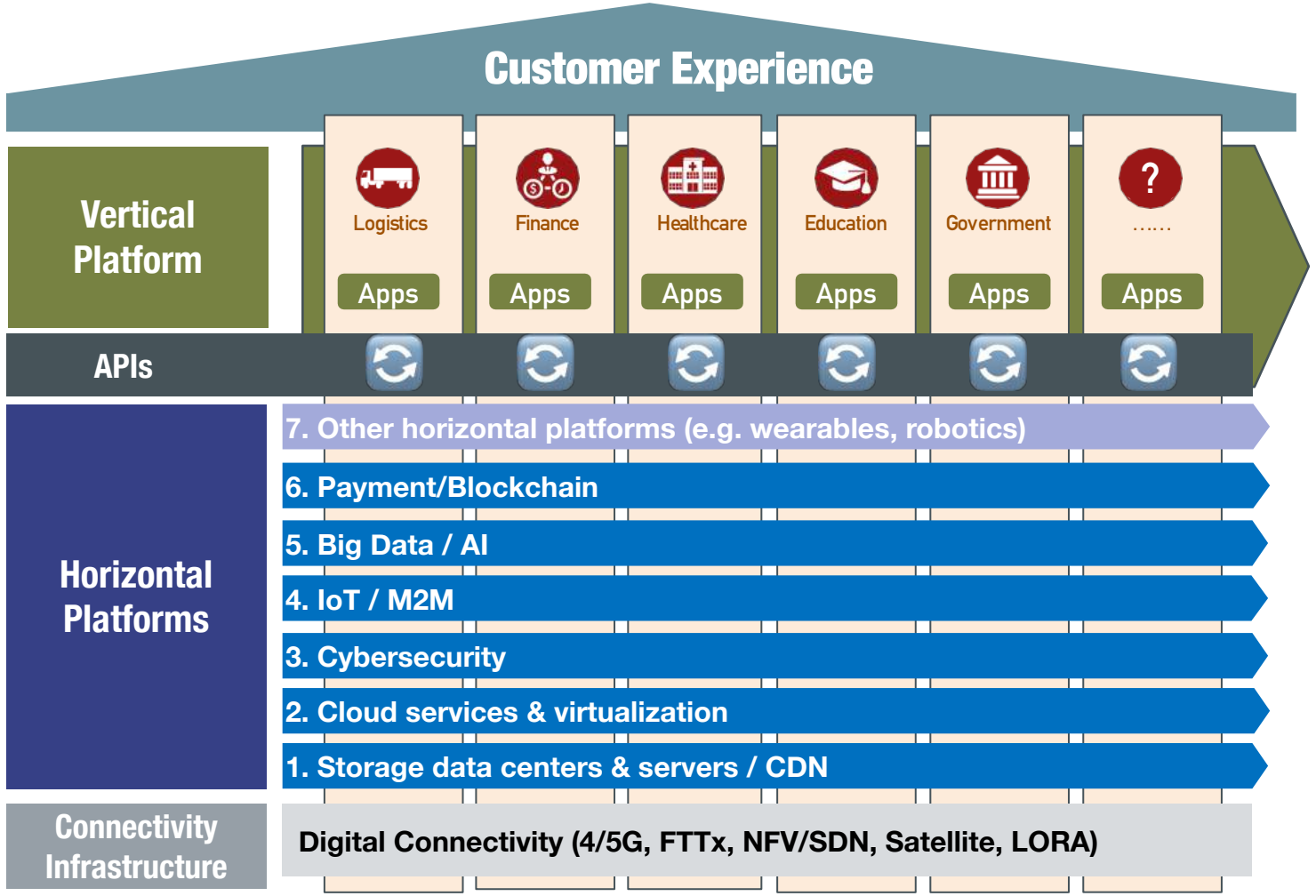
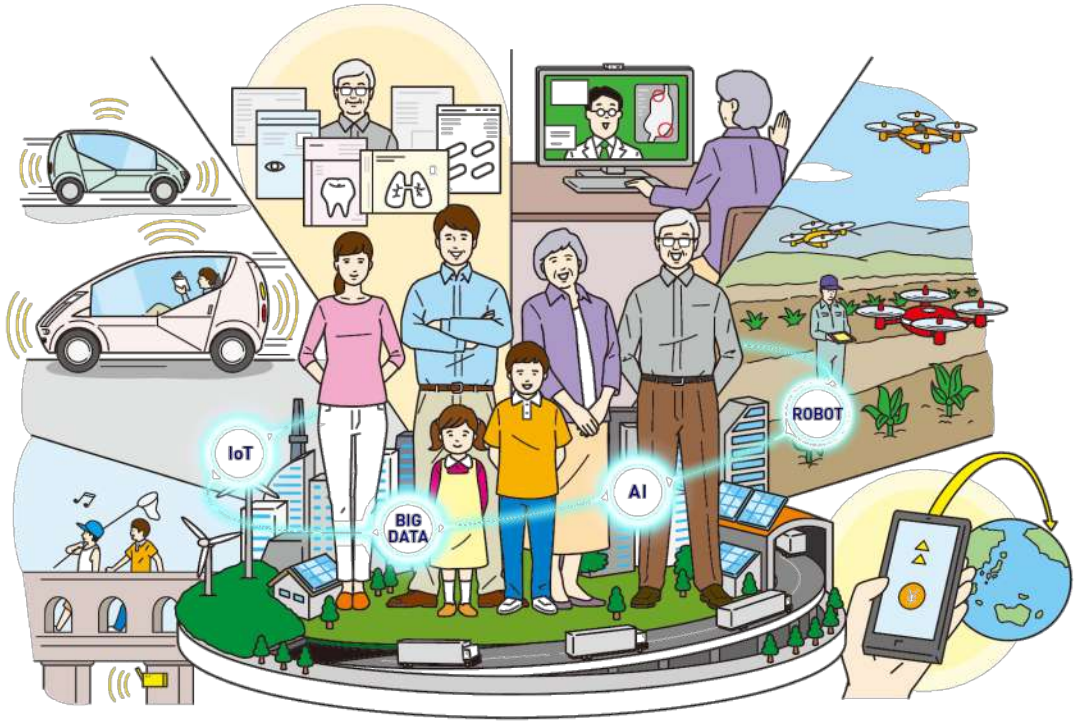
"Digital Platform play" for Telkom

Why digitize nation?

Labor productivity has not improved in the past decade – limited digitization (lowest ICT spend in ASEAN)

Telkom needs to lead the national digitization beyond connectivity and storage business





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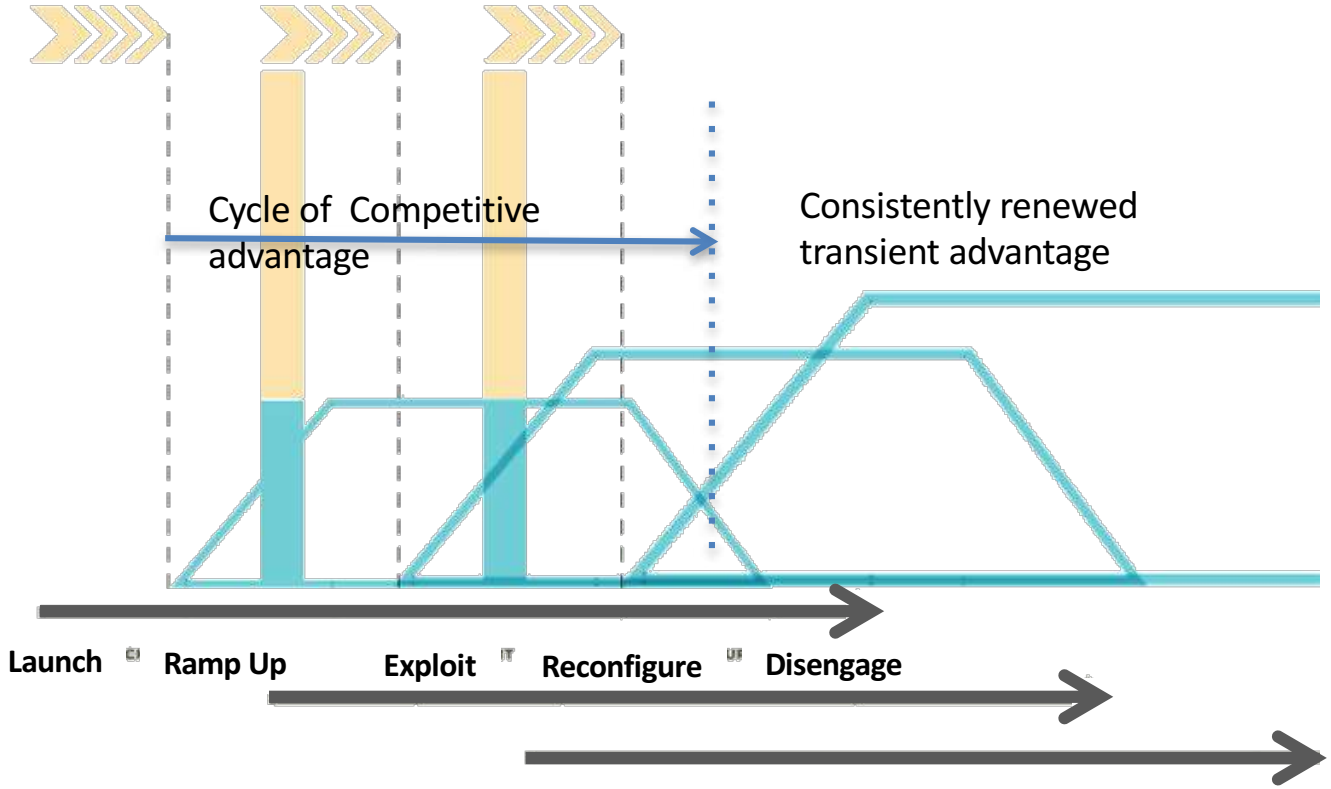
TRANSIENT ADVANTAGE: Strategy in Uncertain Environment

In Digital Era, "Sustainable Competitive Growth" Strategy is not relevant anymore ……

… It has to be accompanied by continuous which is known as Transient Competitive Growth (Rita G McGrath, HBR 2013)

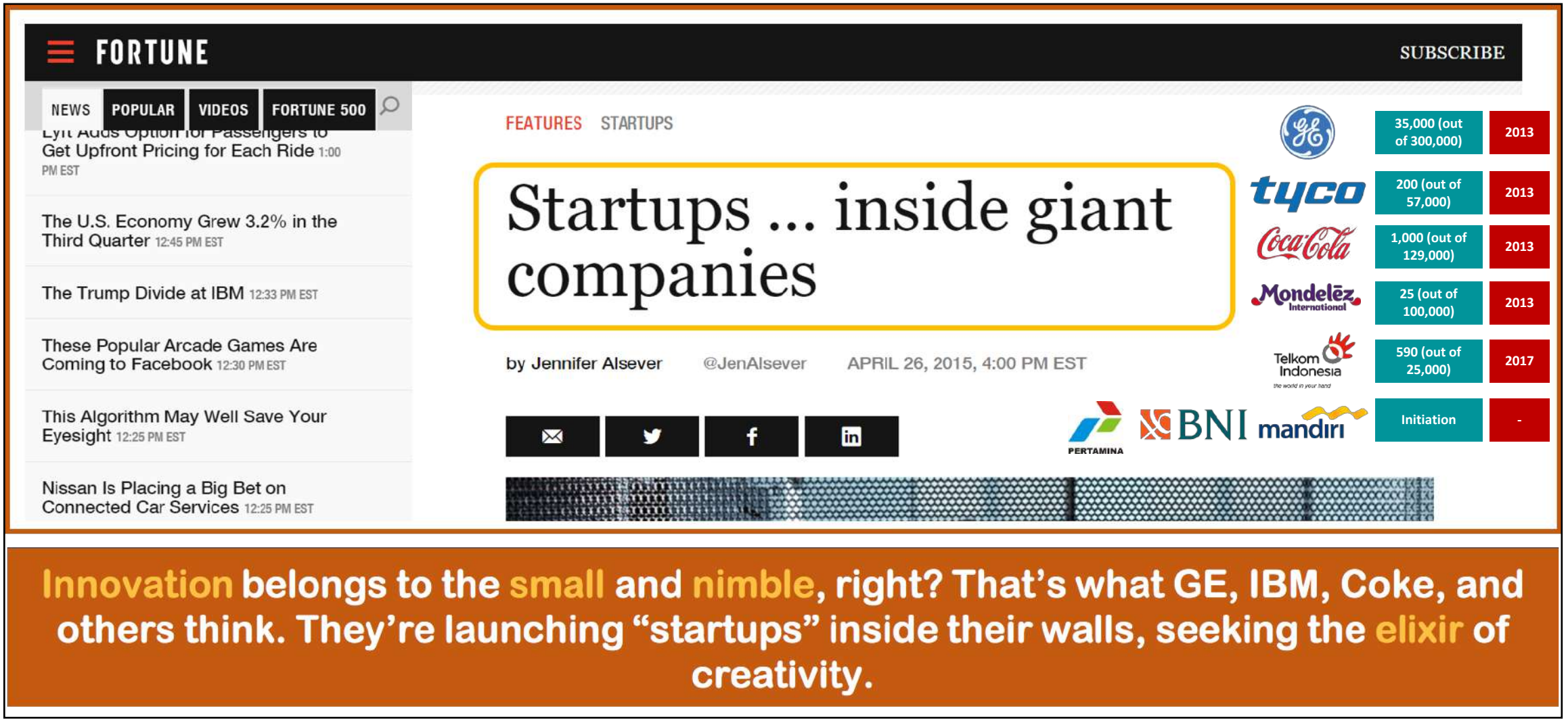


Insight

- **In digital, a company has to maximize short term opportunity** (need speed and agility)
- Innovation has to be a continue process so that **second wave growth will be ready before the existing products declining ,** avoiding to loose competitive advantage
- ***Transient advantage* requires innovative people/talent** to continue making revolution of the business (competitive advantage – Innovation – Organization change)

For digital innovation, we need to learn from small companies

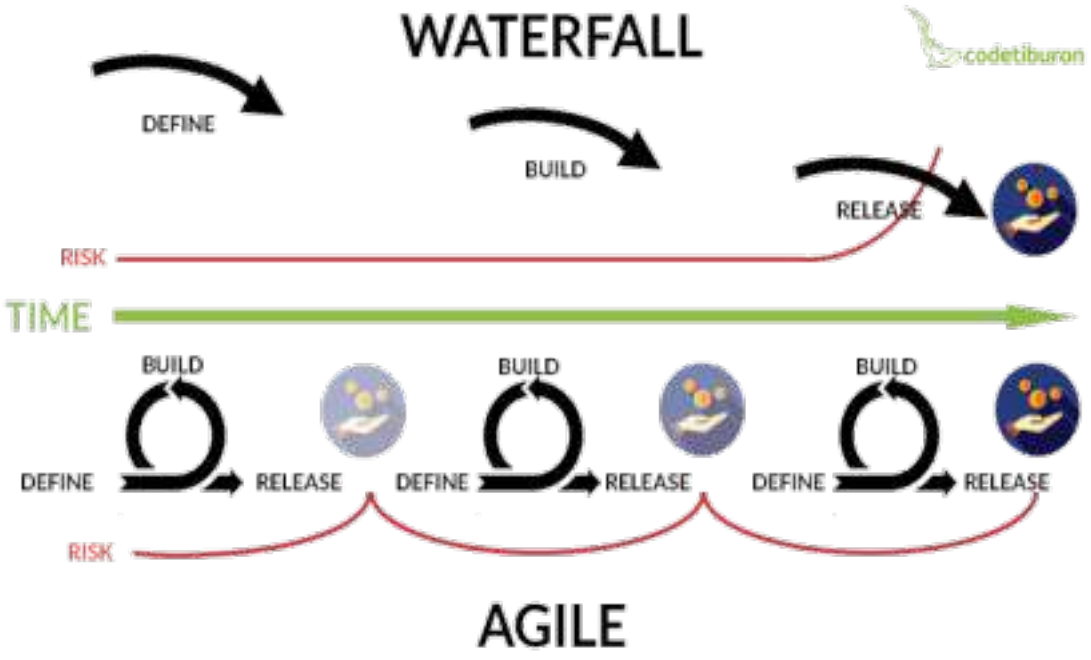
Large firms, TELKOM, need to start "thinking small" to get out from legacy inertia



DIGITAL WAYS OF WORKING : TRIBES, SQUADS AND CHAPTER

Agile Management is the best approach due to rapidly changing environment.
Tribes, Squads, and Chapters are part of agile management of the future workplace

- Designing, development, testing, etc. are completed once in the Waterfall Model
- Definite requirements and changes not at all expected
- Team coordination/synchronization is very limited.

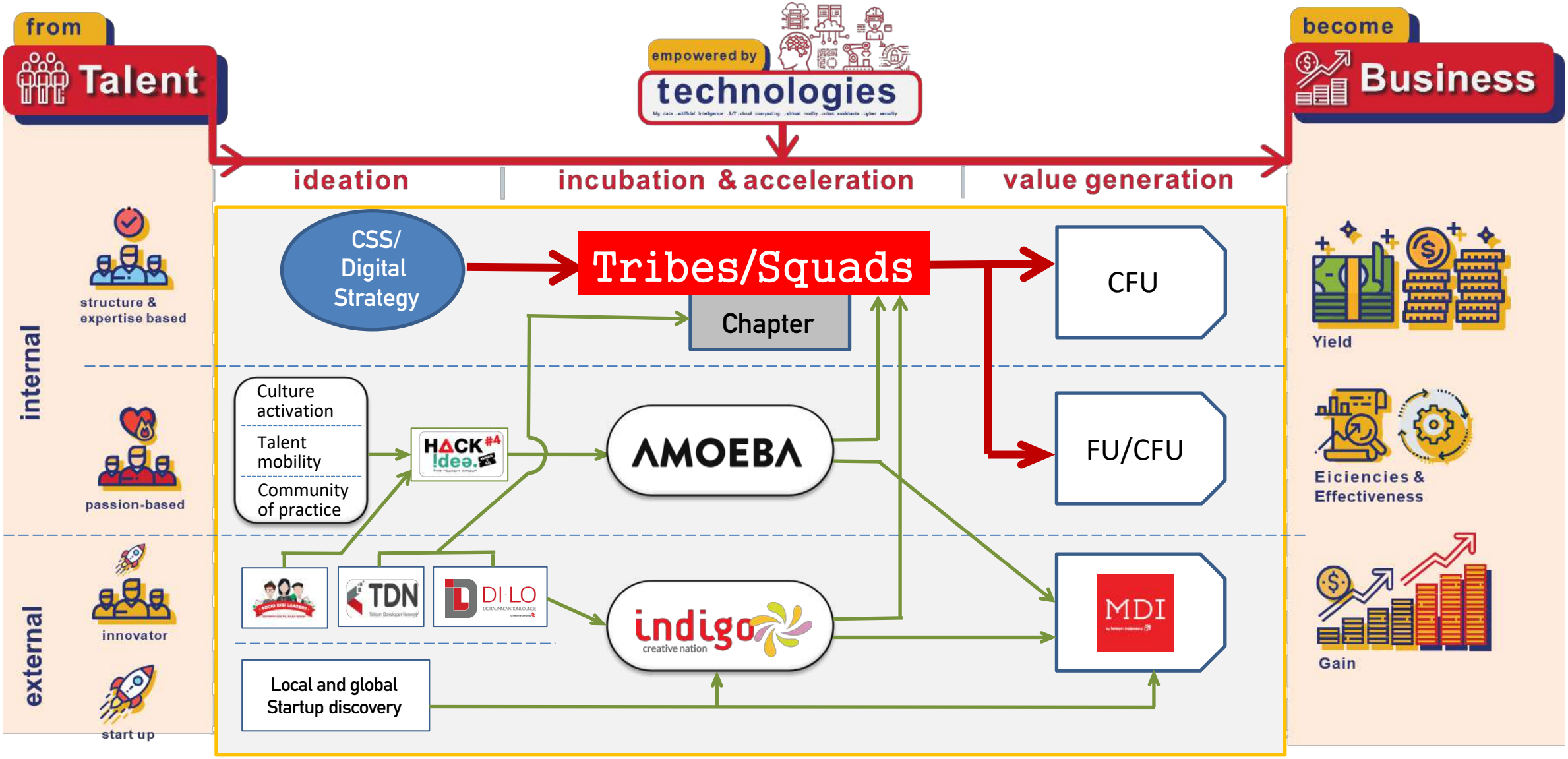


- Agile methodology : an iterative development approach
- The requirements are expected to change and evolve
- Small dedicated teams with a high degree of coordination and synchronization

Tribe	Squad	Chapter
Collection of squads within business area	An independent group which the members are build from different chapter. Primary Home	A group or team members with the same capability. Secondary Home.
"Incubators for the mini startups"	**"Basically a mini startup"**	**People who do similar work (design, testing)**

TELKOM'S Digital Innovation Framework…

Innovation Led that is supported by passion based innovation from both internal and external founders/startups



“Digital Platform/Enabler & Digital Ecosystem Factory” are developed based on our new “Digital Ways of Working” (Tribes/Squads and Chapter))

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DIGITAL ECOSYSTEM FACTORY

Consumer Digital
(10 Tribes)

1. TV/Video
2. Music
3. Gaming
4. Travel
5. eCommerce
6. Digital Ads
7. Digital Fin. Services
8. Communication

Financial services, Video, Music, Gaming, Travel, Commu-nication, eCommerce, Digital Advertising

Industry/Vertical Ecosystem
(10 Tribes)

INDIHOME Digitalization, BUMN, Agriculture, Government Digitalization, Education, Health, Logistic, INDIHOME & SMB Digitization, SEADEX, Enterprise &WH Digitization, Smart City, Enterprise Digitalization, SMB Digitalization, Wholesale Digitalization

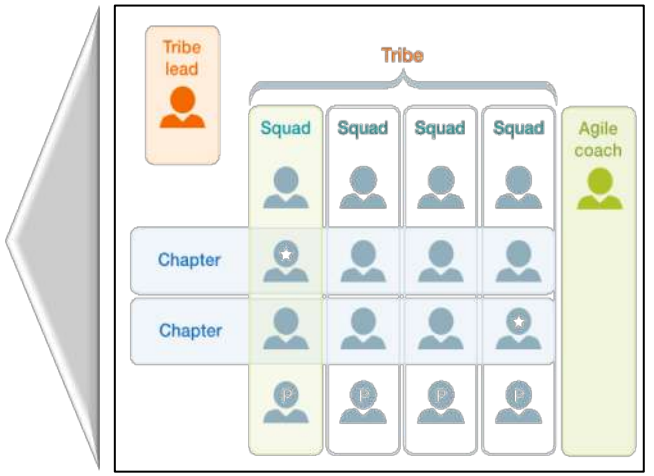
Digital Platform/ Enabler

National; Digital Platform

1. DC & Cloud
2. Big Data
3. IoT
4. UC&C
5. Cyber Security

IoT, Digital Infrastructure (Cloufd), UC&C, Cybersecurity, Big Data+ AI

DEVELOPER | DESIGNER | DATA SCIENTIST | SOFTWARE ARCHITECT | GROWTH HACKING | SERVICE ASSURANCE | AMOEBA | INDIGO | RESEARCH



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