

# Update on Impact of Digital Economy in Indonesia

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# Introduction

- Technological Disruption:
  - Digital economy (internet of things) only one dimension
  - Automation and AI & Jobs and Future of work (another area of great concern for Indonesia currently)
  - Media, politics etc also another area of discourse
- Presenting some updates since the Digital Indonesia Update two years ago
  - Grab took over Uber, GoJek going global; entry of Chinese players such as Alibaba and TenCent both in Indonesian market through investing in existing platforms
  - Emergence of fintech and e-commerce platforms into payments space
  - Continue policy debates: privacy, security, old vs new industries etc

# What is the Digital Economy: Definition?

- Digital Economy: economic activity that results from billions of everyday online connections among people, businesses, devices, data and processes.
  - Backbone is hyper connectivity from internet, mobile technology, and the internet of things (IoT)
- Sharing Economy or Crowd based capitalism (peer to peer exchange, crowd replaces corporation as center of capitalism)
  - Sharing time and asset use (sharing which has valuation)
  - Self employed, peer-to-peer – community for trusted transaction widened with digitization of information, ability to verify and rate
  - 2010-2015, 2015+ exponential growth in Indonesia new companies in this mold emerged (Uber, Airbnb, Lyft, We work, Grab, and homegrown applications Gojek, Tokopedia, Traveloka)

# Potential of Digital Dividends and Development



(World Bank, 2016):

**Digital Economy promotes efficiency:** replace labor and non ICT capital with ICT capital as cost of ICT capital falls (automation, on line bookings, on line banking) and also makes existing factors more productive (streamline tasks, **increase productivity**)

**Digital economy promotes innovation:** new economy, fixed cost of building the platform maybe large but the marginal cost of carrying out another transaction is small. Winner takes all model (competition issue)

**Digital Economy promotes inclusion:** reduce cost of getting information and having more open and transparent information – SMEs in e-commerce platforms, farmers/SMEs who can get credit from their activity such as mobile phone records and other on line reputation mechanism in one platform as credit history. Expand trade, create jobs and increase access to public services.

# Rich-Interactive-Applications (RIA) in Indonesia:

## Value to the Society and the Importance of an Enabling Regulatory Framework



CENTRE FOR  
STRATEGIC AND  
INTERNATIONAL  
STUDIES



YOSE RIZAL DAMURI, VIDHYANDIKA DJATI PERKASA,  
FAJAR B. HIRAWAN, DANDY RAFITRANDI

# Definition

- What are RIA?
  - Rich Interactive Applications (RIA) are over the top services (OTT) such as (iMessage, Facebook, Twitter, KakaoTalk, Threema, Viber, WhatsApp and WeChat)
  - Home grown applications in last 3-4 years: Gojek, Tokopedia, Traveloka

**Table 1. Types of RIA Services in Indonesia**

| No | Type                    | Description                                    | Examples   |
|----|-------------------------|--|--|
| 1  | Communications          | Deliver audio, video and other media           | Skype, WhatsApp, Line, Blackberry Messenger, Signal, Viber, Google Hangouts, Google Allo, WeChat, IM+, Snapchat <sup>4</sup> |
| 2  | Social media            | Social networking platform                     | Facebook, Twitter Instagram, Path, Weibo   |
| 3  | Media and entertainment | Movie streaming, TV on-demand, news/discussion | YouTube, Netflix, Iflix, Spotify, Deezer   |
| 4  | Commerce                | Marketplace, fintech, transportation           | Amazon, Alibaba  |

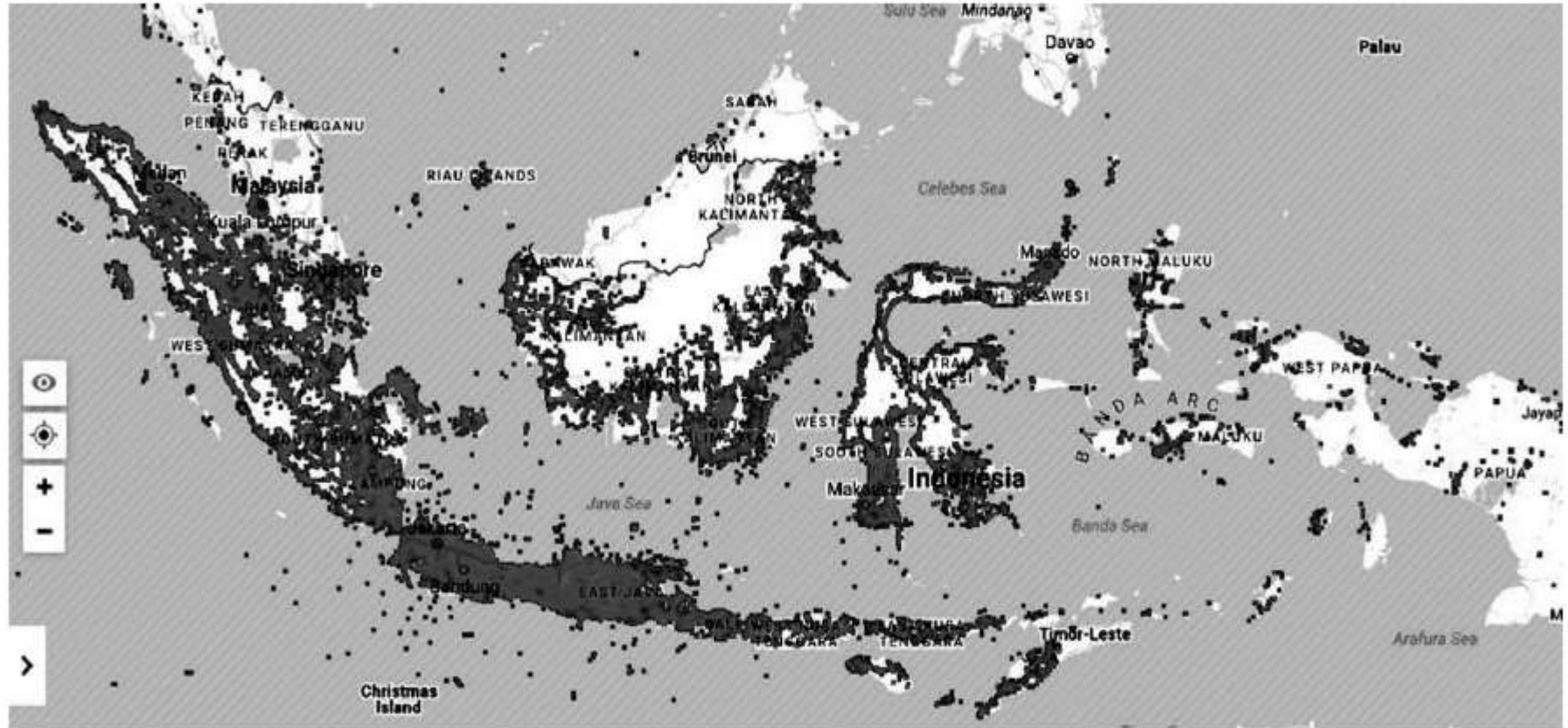
Source: Compiled by author

# Factuals

- High growth of internet penetration and mobile penetration rate (80% of adults have hand phone, more SIM cards than population)
  - Despite high growth 30% internet penetration rate, low compared to other ASEAN (slightly better than Myanmar) connected mostly through mobile phone (85%, similar to other Asia)
  - Digital divide (inclusiveness): geographical (urban/rural), education, gender, age



# Uneven Coverage of Mobile Coverage Across Indonesia

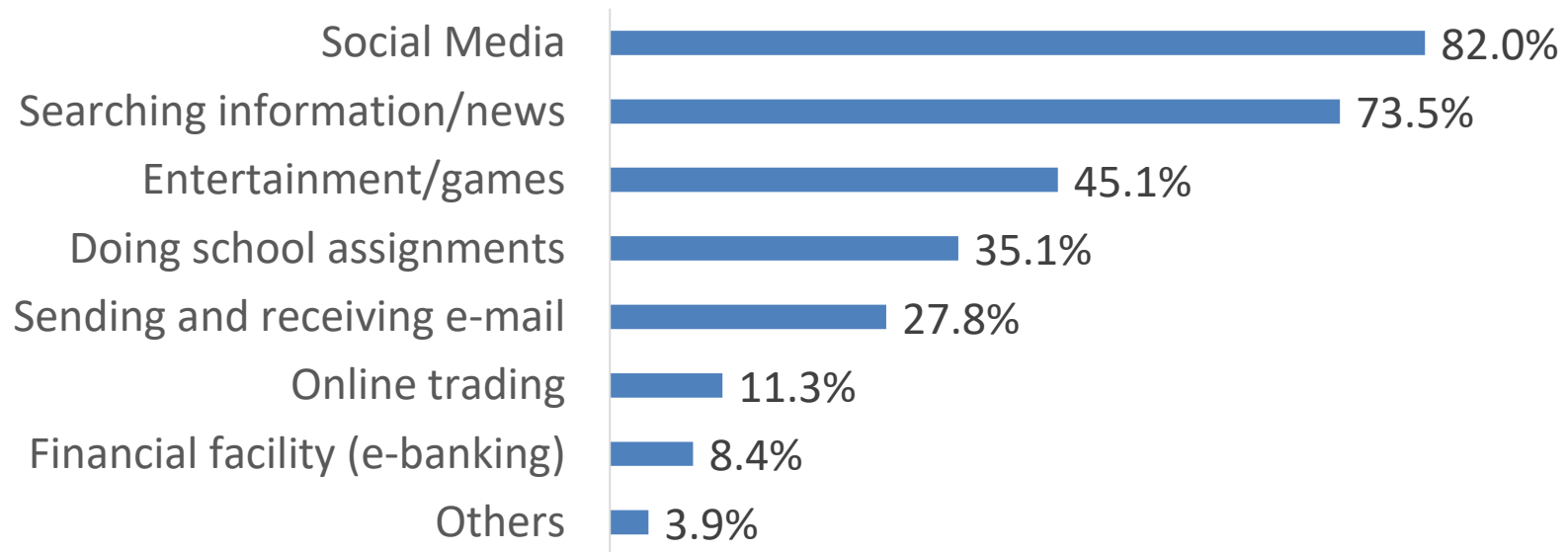


Mobile cellular coverage of Telkomsel

Source: figure 3, Kathleen Azali ((ISEAS, Sept 2017), taken from OpenSingal, 6 August, 2017

# Purpose of using Internet in Indonesia is mainly for **Social Media**

82% out of 50 million (86% in 2016) have Social Media as the main objective of using the internet (80% sos med users are 16-45, 45% are HS grad and 30% tertiary)



# Why is it important?: Trying to understand the Economic Impact

- In 2017, a report by WIK found that each 10% increase in RIA usage leads to an average increase of US\$5.6 trillion in global GDP (0.33% of GDP) from 2000 to 2015.2
- A 2014 report by the McKinsey Global Institute identifies digital innovations as a key driver for growth in ASEAN with a potential economic impact of between US\$220 billion to US\$625 billion by 2030.
- OTTs that make up the “app economy” support an estimated 22,000 jobs in Indonesia.
- This digital technology can boost growth for Indonesian labor and productivity by an estimated US\$150 billion and can potentially create 3.7 million additional jobs in Indonesia by 2025

# Economic Impact

- In order to effectively support the growth of RIAs and digitalization in Indonesia, a sufficient level of broadband infrastructure quality must be attained
- CSIS study: using regional and village level data, our econometric estimations found that a 10% increase in network coverage is associated with a 0.92% increase in Gross Domestic Regional Product (GDRP) growth. ( use the GDRP to measure the economic output of the district/city from BPS, which comprises more than 500 districts/cities
- The distinct feature of the study: explore the regional economic diversity in Indonesia. From Village Potential statistics (*Podes*), extract the Base Transceiver Station (BTS) coverage data in 2014 from 73,709 villages with district/ city as the observation unit. Mobile internet and social media penetration are retrieved from Susenas 2015.
- Also did some survey and case studies

# Economic Impact

- In terms of economic impact, CSIS study identified three potential areas: commerce and SMEs, tourism, and jobs.
  - trying to bridge the macro impacts with micro impacts – based on survey, case studies and next should be using big data?

# RIA is vital for SME commercial engagement

- Importance of SMEs: contributed approximately 60% of Indonesia's GDP and 97% of total employment (2016).
- A survey by Indonesia's e-commerce association, iDEA, in 2017, reveals that Indonesian SMEs utilize social media such as Facebook and Instagram for their operations, while others maintain online presence through websites.
- Social media and RIAs facilitate SMEs to connect and communicate with customers, suppliers and other members of the business chain.
- Impact on SME Merchants (recent study of Gojek by Lembaga Demografi UI): Rp. 1.7 T increased sales (76% did not do delivery before, 76% went on line, 85% experienced more than 5% increase in sales, access to market and adoption of technology)

# RIA and Tourism Priority of GOI

- Government prioritizing of the tourism sector (20 million arrivals of international tourists and IDR 240 trillion of foreign exchange income in 2019, no.3/4 forex earner for exporting sectors).
- Platform for Indonesia's tourism industry, especially local businesses and SMEs, to tap into this opportunity.
- Based on the Travel and Tourism Competitiveness Index by the World Tourism Organization (UNWTO), Indonesia was ranked 42nd out of 136 countries in 2017, with poor ICT readiness as the major constraint.
- CSIS Study found that more than 700,000 users follow the top 20 Instagram accounts related to ticketing promotions and online reservations. Almost all accounts provide their contacts and information in the form of messaging apps such as WhatsApp, Line, and BBM.

# RIA and Tourism

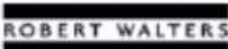






- Instagram—home to 45 million Indonesian active users (the largest in Asia5), is one of the platforms playing a major role
- “Instagrammable” and “insta-worthy” pictures and videos are effective marketing tools especially for millennial customers. One indicator of popularity in Instagram is the number of public posts using the related tags. In Indonesia, *#Bali* is the most popular tag with 35 million public posts. As comparison, *#Phuket* and *#Pattaya* in Thailand each has around 6.5 million and 2.7 million tags in public posts, respectively.
- However, emerging tourism spots, or known as “the new Bali”, such as *#Bromo*, *#RajaAmpat* and *#Labuanbajo* are still relatively less popular, with under 1 million tags for each tags.



# RIA and Jobs

- Several RIAs have begun to introduce and promote job marketplace to connect employees with employers and also to create additional jobs: growth of SMEs using RIA, “partners” in the Ride Sharing Apps
  - Impact on Driver Partners: Rp. 8.4T increase income (77% 20-39 yrs, 83% middle/HS, 78% have dependents, income av Rp. 3.3 m > Rp. 2.8 m min wage, increase quality of life)
  - Also facing problems of worker/partner protection – who is responsible: accident and health insurance, adequate returns, competition between traditional vs disruptors
- In Indonesia, **LinkedIn** connects around 8 million users and lists Greater Jakarta as the fourth most connected city in the world. (can better identify job demand and supply of the future?)
- It also contributes to the emergence of the “online work” enabling people to earn money by **performing a job remotely through the internet.**
- One prime example is found in Tunjungmuli village in Central Java,
  - a local “leader”/catalyst transformed the employment prospect of hundreds of local residents by involving them in the online business services sector. This is made possible by conducting capacity building programs for local residents that are specifically designed to upgrade their customer service skills.

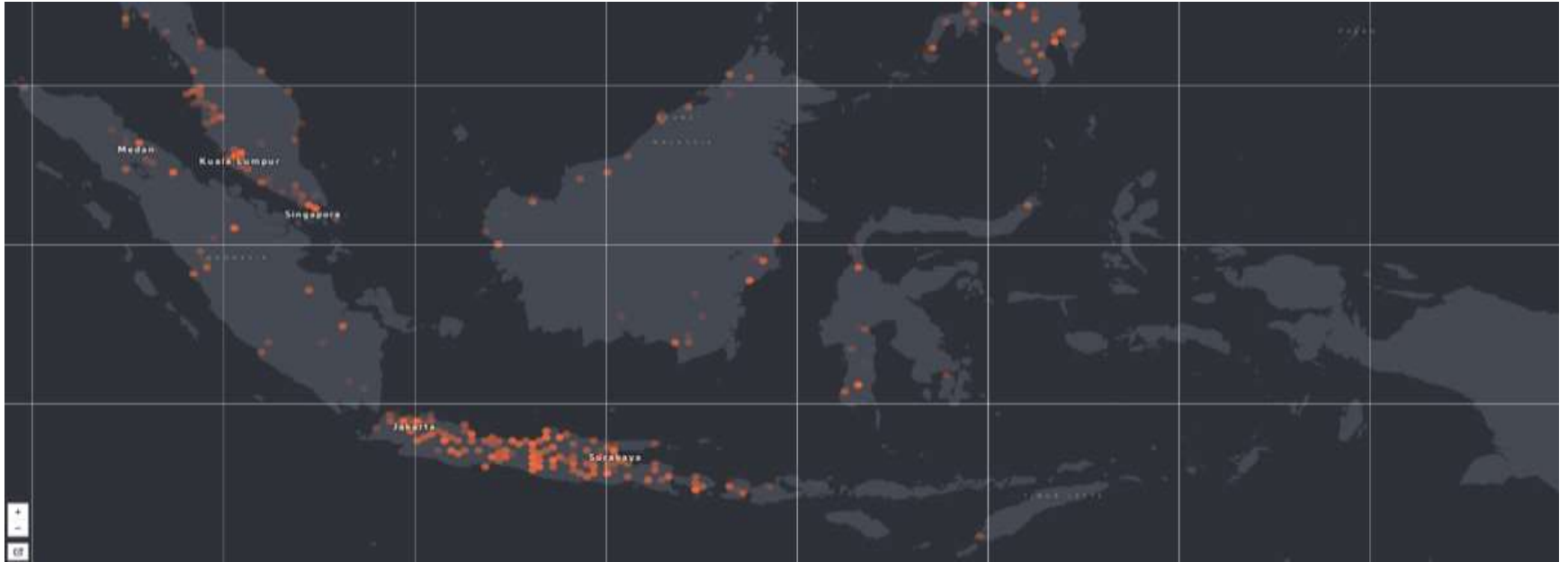
**Table 2. Several popular global and national job sites/online platforms**

| Company Name  | Year of establishment | Scope          | Headquarter               | Jobs available in Indonesia |
|---|-----------------------|----------------|---------------------------|-----------------------------|
|  | 1985                  | Global         | London, UK                | Not specified               |
|  | 1997                  | Southeast Asia | Kuala Lumpur, Malaysia    | 25,000-30,000               |
|  | 1998                  | Asia           | Hong Kong                 | 5,000-6,000                 |
|  | 1999                  | Indonesia      | Jakarta, Indonesia        | 500-1,000                   |
|  | 1999                  | Global         | New York, US              | Not specified               |
|  | 2002                  | Indonesia      | Jakarta, Indonesia        | Not specified               |
|  | 2002                  | Global         | California, US            | 20,000-25,000               |
|  | 2004                  | Global         | Texas and Connecticut, US | 5,000-8,000                 |
|  | 2007                  | Global         | California, US            | Not specified               |
|  | 2009                  | Indonesia      | Jakarta, Indonesia        | 100-300                     |
|  | 2010                  | Global         | Montreal, Canada          | 30,000-40,000               |

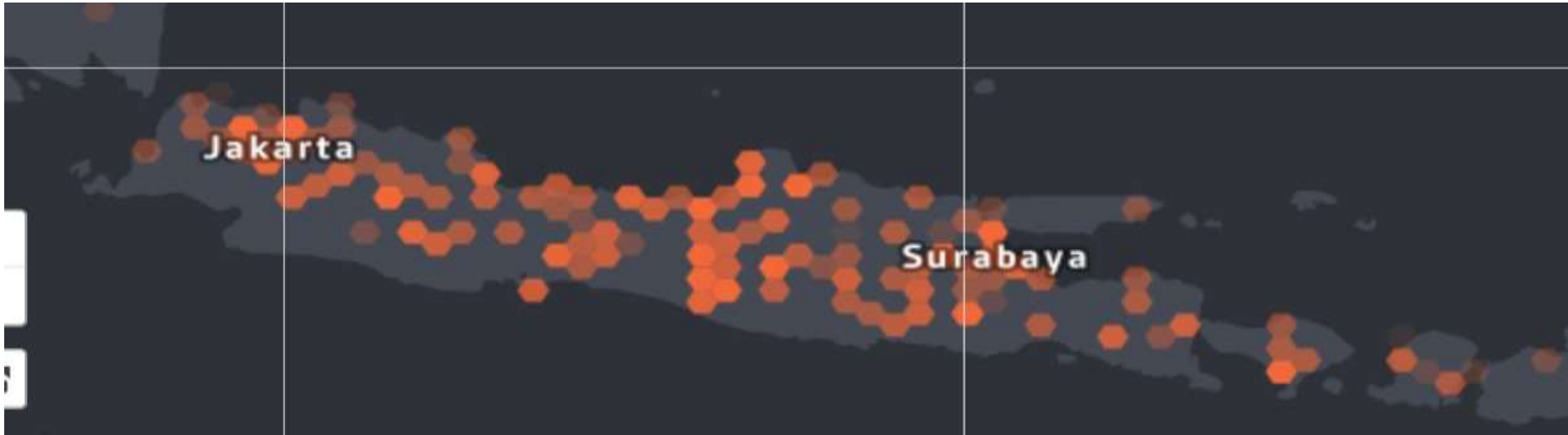
Source: companies' website

6 <http://www.thejakartapost.com/life/2017/04/25/greater-jakarta-ranked-fourth-most-connected-city-on-linkedin.html>

# Case Indonesia: 99designs



Indonesia has been the main source of designers in a one of the world's major design-task marketplace, 99designs.com. Indonesia was the biggest source of designers in 2013, and was the second in 2014. By February 2015, there are more than 129 thousands registered Indonesian designers in 99designs.com.



In Java, the outspread of designers is the most striking. These designers do not only come from urban and educated group but rather mostly come from rural area with no formal training in design.

Some examples:

- In Salaman District, Magelang Regency (1 hour from Yogyakarta), the designers are spread out in 20 villages, with each village has approximately 100-200 designers.
- In Parakan District, Temanggung Regency (Parakan District is suburb of Temanggung, one of main producers of tobacco), there are 60 designers, 4 of whom already platinum designers in 99designs.com




# RIA and Access to Better Public Services (Smart Cities): e.g. Health

- Given the currently unequal access to health services, RIAs have an important role in improving accessibility of health services across Indonesia.
- In a **field survey in Yogyakarta**, we found that WhatsApp group were used by health practitioners to deliver health services and capacity building activities, (direct consultation with patients/community, discussions of various policies and standard operating procedures among colleagues.
- In **Kudus, Central Java** local government: use WhatsApp to register National Health Insurance-Indonesia Health Card (JKN-KIS).
  - local citizens only need to send photos of their ID and Family Card (KK) via WhatsApp to register.

# RIA and Access to Better Public Services : e.g. Education

- Enable more educators and students to experience a more interactive learning process: in Yogyakarta found that RIAs facilitate optimal two-way communications between teachers and students.
- The rise of digital technology has also created more opportunities for Indonesian start-ups and non-profit movements to provide innovative solutions for Indonesia's education problems, as demonstrated by examples of *Ruangguru*, *Quipper*, *Kelase* and *Akademi Berbagi*.

**Table 3. Several popular education platforms in Indonesia**

| <b>Education platform</b>   | <b>Year of establishment</b> | <b>Main objective</b>                                       | <b>Headquarter</b> | <b>Number of users</b>                |
|---|------------------------------|---|--------------------|---------------------------------------|
|  | 2014                         | Online education and learning services                      | Jakarta, Indonesia | 6 million (up to January 2018)        |
|   | 2014                         | Social media learning                                       | Jakarta, Indonesia | 4 million (up to February 2018)       |
|   | 2014                         | Social media learning, collaboration and knowledge exchange | Jakarta, Indonesia | 200,000-250,000 (up to December 2017) |

Source: companies' website

## RIA and Financial Inclusion: Represents a large unpenetrated market for financial services



Only 36% of adults have a bank account



~50% send remittances through non-banks



Only ~27% save money at a financial institution



Only 7% used an account to receive wages in the last year



44% borrowed money from family, friends or informal lenders



Only 9% used a debit card to make payments



# RIA: Policy Makers, Civic Engagement and Political Aspiration

- Most policy makers turn to social media
- Constituents directly communicate with their representatives and express their political aspirations. Political elites are also more engaged with their constituents at a much lower cost.
- Usefulness of social media platforms such as Facebook, Twitter, Instagram, or YouTube to support their political campaigns. In addition to being more cost-efficient than conventional campaigns, social media applications prove to be a more effective means for influencing millennial voters who have access to social media.
  - Disruption in political parties: Partai Solidaritas Indonesia – PSI with platform of anti corruption and tolerance – crowd funding of party officers, candidates for legislative, funding
  - There is also the dark side: black campaign, hoax, going viral and ability to mobilize
- This is echoed by CSIS Millennials Survey in 2017, which found that as much as 54.3% of millennials consume online media on a daily basis, compared to only 11.9% of non-millennials.

# Policy Implications

- To maximize the economic potential: from a regulatory perspective, at this early stage of development, Indonesia needs to make more room for RIAs to grow and should avoid restrictive regulation which could potentially hinder society from enjoying the benefits, while also creating barriers to entry especially for SMEs and local innovator
  - Challenge to balance allowing innovation and experimentation to happen (sand box approach) and appropriate regulations for security (cyber security, consumer protection), privacy, level playing field (taxation, competition) and incentives/disincentives

# In Brief: The Major Issues

- The Big Issue :
  - **digitization means need for freedom of data flows** (seamless) and allowing innovation to enter “uncharted” and “unregulated” territory **vs**
  - **managing security, privacy, disruptions, competition and regulatory agency’s capacity** (also raises issues of interoperability and standards – within a country and between countries)
- Lack of an understanding of this major issue has led to **risks of the policy responses being protectionist and behind the curve, which can affect speed of innovation and change, e.g. localization requirements, barriers to entry for foreign presence/talent**
- At the same time there is also emergence of a new digital divide in terms of access to these new services and hollowing out: **managing transition**
- **Businesses need to innovate and be agile**: investment in innovation will benefit from larger market (importance of regional integration and addressing the old and new issues -- interoperability and seamless)

# Some Recommendations

- First, improve studies, data and analysis on digital economy and technological disruption
  - BPS data not sufficient: Survey Industry does not capture use of technology/innovation, no survey of services industry, Susenas?; some attempts to improve: survey with IDEAS on e-commerce co, services sector survey
  - Use of big data – access to telecom and banking data, and RIA platforms

# Some Recommendations

- Second **Reduce digital divide (access and utilization)** – access not enough need ability to utilize technology effectively
- Internet penetration
  - Connectivity infrastructure: speed, affordability, reliability, security (physical connectivity, electricity and telecom infrastructure, broadband, spectrum use, services),
  - Cost and access to devices
- Affordability of data: open data programs
- Digital literacy and mass education of usage (*basic skills and ICT literacy, prepare for careers instead of jobs and facilitate lifelong learning*)
  - Better understanding of the use of RIAs would help the public in making their own judgment and selection of content and applications, while facilitating better decisions regarding inappropriate content. (self censorship, crowd wisdom)
  - Create greater economic opportunity by facilitating the use of RIAs and other online platforms for more productive activities and for the purpose of reaching new markets and costumers.
- Address lack of systems of identity and trust (key for inclusion): Digital ID

# Some recommendations

## **Digital Payments and Financial Inclusion**

- Tech enabled financial inclusion (cost of devices/smart phones, connectivity)
- Scalable e-payment alternatives/e-money framework: trusted e-money and payment system (technology platforms, regulatory issues e.g. branchless banking, payment agents, security issues: money laundering, who can be in this payments and e money space: banks vs non banks)
- Bank of Indonesia (BI) regulation on National Payment Gateway (NPG): can create misunderstanding and imposes high cost restrictions, as consumers and service providers should be able to use the most efficient and secure payment mechanisms.

# Some recommendations

## **3. E-commerce and RIA Platforms: including cross border**

National: Taxation and level playing field, competition issue, Consumer trust and data security, cyber security

Cross border: trade facilitation issues: harmonization of customs regulations, last mile delivery (logistics),

Cross border flows of data and information

# The case for cooperation across borders in resolving this dilemma.

Are these new issues? Are there parallels in goods? Yes.

Findlay (2016)

|   |   |
|---|---|
| Sovereignty and jurisdiction                  | <ul style="list-style-type: none"><li>- Given the cross-border mobility nature of data, how can and should this be regulated? Where does the transaction occur?</li><li>- Who has jurisdiction over data gathered eg by outsourced back-office functions or the internet of things?</li></ul> |
| Trust   | <ul style="list-style-type: none"><li>- <b>Agreeing on systems for establishing trust in cross border data transactions</b></li><li>- <b>How is identity established and contracts made enforceable? Especially across borders?</b></li></ul>   |
| Capturing the gains from trade and investment | <ul style="list-style-type: none"><li>- Avoiding the cost of data localization policies to local firms – limiting access to cheapest, most efficient <u>providers</u></li></ul>   |
| Security and privacy                          | <ul style="list-style-type: none"><li>- Value of agreeing on common approaches, since choices made by one affect the welfare of another</li><li>- Eg one community highly risk averse and another less so</li></ul>   |



# Adoption of E-Commerce Legislation in ASEAN

| Country   | Electronic Transactions | Consumer Protection | Privacy and Data Protection | Cybercrime        |
|---|-------------------------|---------------------|-----------------------------|-------------------|
| <b>Indonesia</b>  | Legislation             | Legislation         | Legislation                 | Legislation       |
| <b>Singapore</b>  | Legislation             | Legislation         | Legislation                 | Legislation       |
| <b>Malaysia</b>   | Legislation             | Legislation         | Legislation                 | Legislation       |
| <b>Philippines</b>  | Legislation             | Legislation         | Legislation                 | Legislation       |
| <b>Vietnam</b>  | Legislation             | Legislation         | Legislation                 | Legislation       |
| <b>Thailand</b>   | Legislation             | Legislation         | Draft legislation           | Legislation       |
| <b>Myanmar</b>  | Legislation             | Legislation         | No legislation              | Legislation       |
| <b>Brunei Darussalam</b>  | Legislation             | Legislation         | No legislation              | Legislation       |
| <b>Lao PDR</b>  | Legislation             | Draft legislation   | No legislation              | No legislation    |
| <b>Cambodia</b>   | Draft legislation       | Draft legislation   | No legislation              | Draft legislation |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <span style="font-size: 2em; font-weight: bold;">90%</span> <span style="font-size: 2em; font-weight: bold;">80%</span> <span style="font-size: 2em; font-weight: bold;">50%</span> <span style="font-size: 2em; font-weight: bold;">80%</span> </div> |                         |                     |                             |                   |

Source: UNCTAD, July 2017

# Some Recommendations

## **4. Technology, Talent and Human Capital: future of jobs, future of work, sources of competitiveness and job creation**

Training and recruitment of software developers

Future focused skills development

Tech education programs: vocational training e-literacy program

Openness to talent movement: needed for development of innovation and becoming a hub

# Some Recommendations

- To promote an enabling regulatory environment - based on higher digital literacy, improved connectivity, and a greater pool of talents and skills – to ensure that all members of society benefit from digital technology: need a wholistic approach, not piecemeal

## The government's vision:

“Establish Indonesia as the largest digital economy in Southeast Asia --worth US\$130 billion and involves the emergence of 1,000 Indonesian *technopreneurs* by 2020.

On various occasions, President Jokowi and his cabinet members enthusiastically assured greater support from the Government in developing Indonesia's digital economy. “

Need: conducive and favorable investment climate and a predictable,  
yet appropriately flexible, policy and regulatory environment that recognizes the nature of technological developments and provides opportunities for innovation.

# Some Recommendations

## Who?

- National Level: political will and whole of government approach (infrastructure, standards, regulations) (e.g. Minister of Digital Economy or National Task Force?)
- International Cooperation: where and how to organise the relevant international cooperation to deal with these issues? Many new issues and only some covered or beginning to be addressed in trade agreements.

# Policy Assessment: National Level

- National Level:
  - Most have some kind of blue print and targets (quantitative and other)
  - National policies focus on: ICT Infrastructure, skills development/education, E-government, regulations (general, financial), digital identity (inclusion vs privacy, trust)
  - Institutional structure for implementation: political will and whole of government approach (infrastructure, standards, regulations) + intense involvement of stakeholders (sand box for innovations)
    - Minister of Digital Economy and Society like in Thailand or National Task Force – most important is their link to the real players in the sector
    - Role for learning best practices and regional cooperation
    - Sandbox approach