



Internet Users, Market Target and Digital Trading of MSMEs in Indonesia

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Abstract

The digital economy has been remarkably adapted by all levels of society in Indonesia, especially as the number of mobile phone users tripled in the past couple of years. The daily life of Indonesian people had been affected tremendously by digital application and through-out the trading-marketing processing in commercial businesses.

People who live in remote areas to those working at Micro Small Medium Scales Enterprises (MSMEs) can conduct their marketing and trading of their goods with less constraint than ever before by traditional factors, endowments, and technological capacity. It can also up new types of opportunities. For example, the graphic design company 99Designs have given construction workers and farmers opportunities to work as graphic designers, where they can earn twice their usual income.

This digital application in their daily lives, especially on producing-marketing-trading processes has changed their traditional business process and significantly increased their profit due to entering global markets at a low cost. To effectively measure and design policies around this opportunity for growth, the appropriate data collection must be attained and made available to policymakers. In this paper, we will dive into data collected by BPS Statistics Indonesia that looks into the most recent Internet behavior data among Indonesians to explore both the potential for the internet to unlock new markets for MSMEs. We will also look at the impact of digital innovations for MSMEs labor productivity in key sectors such as agriculture, which highlight the importance for digital innovations to further Indonesia's goals to meet SDG targets.

JEL Codes: E22, J11, O14, O38, O47

Keywords: internet access, MSMEs, digital trading, market and Indonesia

1. Background

The role of the industrial sector is important in Indonesia. In calculating the gross domestic product, industry sector provides a substantial contribution to national economic growth. In 2014, the contribution of the industrial sector amounted to 21.02, higher than 2013 at 20.98 percent (National Statistics News, No 17/02/Th. XVIII, February 2015). The industrial sector not only contributes to economic growth and increased value-added production, but also contributes to employment. In 2014, the industrial sector employed 13.49 million people and amounted to 61.96 per cent of those working in micro and small industries (BPS 2015 and 2016). ADB report in 2017 found that the industry sector has proved as the salvation of unemployment and contributed the high productivity in the Indonesian economy.

During the reformation era, the economy was built on a democratic economic system. The main components of a democratic economic system is human resources as consumers, as workers, and as a businessperson. The democratic economic system provides employment opportunities and seeks for the public to achieve increased prosperity evenly and equitably. Specifically, this requires efforts to improve the local economy be made in a variety of programs, including the development of Small and Micro Industries (IMK) or as commonly called MSMEs (Micro Small Medium Scales Enterprises).

MSMEs have a vital role in economic development. Because labor intensity is relatively higher and the amount of investment is relatively small, MSMEs businesses are more flexible and able adapt to market changes, even during volatile economic condition. MSMEs are not overly affected by external pressure as it can be responsive to seize opportunities for import substitution and increase domestic supply. MSMEs development can contribute to the diversification of the industry and accelerate changes in the structure as a pre-condition of long-term economic growth that is stable and sustainable.

The current unstable world political economy in Europe and America is due to the prolonged world crisis, and the map of global economic power that has always shifted over time, has opened up opportunities for China and other Asian countries to take on the role of investment objectives. Given the investment in the European region and America are less profitable and costly due to the lack of working age population and productive (15-55 years). Meanwhile, Asian countries such as China, India and Indonesia have a very high population power in the productive prime age (working age), resulting from the explosion of babies born in the 60s to 80s. This is a demographic bonus (window of opportunity), a golden opportunity for Indonesia to take advantage of this momentum to empower the capital of the working age population to run the Indonesian economy (Adioetomo and Elda 2018). Through the open opportunity of entrepreneurship and self-supporting business since the early age of the widest and support of the pro regulation to entrepreneurship of MSMEs. We strongly believe that Indonesia will be able to have a high level of national income (GDP) and can overcome a problem of high unemployment rates.

2. Methods and Data source

MSMEs Survey Data

The main data sources of this analysis rely on the *Survey of Small and Micro Industries 2015*, which assesses the presence, distribution, activity, and activity characteristics of MSMEs as collected by BPS Statistics Indonesia. The enumeration approach was made through a company / business. The MSMEs survey included the identification and enumeration of micro and small scale enterprises, with a workforce of 1-4 people, and small enterprises with a workforce of 5-19 people including its owners. In addition, a literature study on secondary data analysis was implemented for both quantitative and qualitative using the explorative method. The secondary data sources and previous research study exploration aims to strengthen the analysis and robustness research findings for problem identification and variety prospective solutions towards policy actions.

The MSMEs survey aimed to determine the profile of MSMEs in Indonesia that can be used as an ingredient in macro planning of economic activity. The SMEs survey collect and present data about the company / micro and small scale enterprises detailed and updated according to the Indonesian Standard Industrial Classification (ISIC) at the national level. Specifically, SMEs survey's goal is to get basic information on a wide range of information on the economic activities according to the two-digit ISIC, as estimates for IMK indicators, such as:

- a. The number of enterprises
- b. The number of labor
- c. Spending on labor
- d. The structure of the input and output
- e. Constraints and marketing
- f. Other information relating to the business of IMK

In order to strengthen the analysis of causal problem-solution and better observation, thus additional data sources are derived from literature studies, namely: the 2016 Economic Census, other institution / company on research data collection and report, and Indonesian Government Regulations.

MSMEs Survey Data Method

The SMEs survey of BPS Statistics Indonesia was implemented in almost all districts / cities in all provinces in Indonesia with as many as 7,988 selected census blocks and 60,000 companies (micro and small). The identification and enumeration included micro and small industrial enterprises with 1-4 workers and small businesses with a workforce of 5-19 people including its owners.

1. Sample Frame

Sampling frame used two types, namely sample frame for the census block selection and sample frame for election effort.

- a. Census block sample frame used is the list of census blocks were equipped with information on the number of micro and small industrial enterprises (MSMEs) enumeration results of the 2006 Economic Census (SE06).
- b. Business sample frame is the list of business registration results survey sample frame IMK 2015. This effort is differentiated according to industrial enterprises of small and micro industrial business.

2. Stratification Block Samples

Stratification census blocks used in the survey MSMEs 2015 together with stratification formed based on the SE, 2006. This section describes the return process of stratification of the census block. The purpose of the census block stratification is to classify census blocks into groups based on the relative number of business Small and Micro Industries (MSMEs) according to Indonesian Standard Industrial Classification (ISIC) base class (two digits). For each type of ISIC, strata concentration corresponding to the type of business is a census block group with a composition dominant type of business Stratification block census conducted at the provincial level.

3. Sampling Procedures

The design of sampling used is a two-stage stratified sampling (Stratified Two - Stage Sampling). The first phase consisted of sampling frame 7,988 census blocks selected census block in Probability Proportional to Size (PPS) with the size of many businesses MSMEs registration results 2006-EC (SE06). Sampling block between strata census should be conducted independently. In the second stage, the list of all industry of the number selected block censuses resulted from the 1st stage is taking into account as a small sample. When the number of small industries in the province exceeded the target sample MSMEs effort, it must be done selecting samples for small industries. As for the micro industry, by samples systematically from the registration linear MSMEs.

4. Allocation of Business Samples MSMEs by District / City in a province

Allocating the target enumeration for industrial micro and small industries is done based on the results listing. Especially for small industries, all businesses within each census block elected to do a complete enumeration (take all) unless the amount exceeds the industry target sample or election homogeneous sample, while micro industry enumeration only at selected businesses.

Allocation of the sample micro and small industrial enterprises (MSMEs) conducted by BPS Statistics Indonesia based MSMEs recapitulation of the results listings per district / city. Allocation of micro industries (MSMEs) per district / city carried out following a reduction target sample IMK province with a small industry (SEs) for all districts / cities in the province (BPS 2015). MEs allocation is done proportional to the square root square root of the number of MEs in each district / city. The results of MEs allocation per district / city returned to the respective district / city, for further allocation according to ISIC.

Resulted Data

Data presented by applying KBLI (2-digit Indonesian Business Standard Classification Code) of which referring to the Indonesian Standard Industrial Classification of all Economic Activity (ISIC) rev. 4 of 2009 with the following details:

- a. Food industry KBLI: 10
- b. Beverage Industry KBLI: 11
- c. Tobacco Manufacturing KBLI: 12
- d. Textile Industry, KBLI: 13
- e. Garment Industry KBLI: 14
- f. Leather, leather goods and footwear KBLI: 15
- g. Wood Industry, Manufactures of wood and cork (excluding furniture), Woven goods from rattan, bamboo and the alike. KBLI: 16
- h. Industry Paper and Paper Products from KBLI: 17
- i. Industry Printing and Reproduction of Recorded Media KBLI: 18
- j. Industrial Chemicals and Chemical Products of ISIC: 20
- k. Pharmaceutical Industry, Chemical Medicinal Products and Traditional Medicine KBLI: 21
- l. Rubber Industry, Manufactures of Rubber and Plastics KBLI: 22
- m. Non Metallic Minerals Industrial Goods KBLI: 23
- n. Basic Metal Industries KBLI: 24
- o. Metal Goods Industry Machinery and Equipment is not KBLI: 25
- p. Industrial Computers, Consumer Electronics and Optics KBLI: 26
- q. Electrical Equipment Industry ISIC: 27
- r. Industrial Machinery and Equipment YTDL (not included in other) ISIC: 28
- s. Manufacture of Motor Vehicles, Trailers and Semi-Trailers KBLI: 29
- t. Other Transport Equipment Industry ISIC: 30
- u. Furniture industry KBLI: 31
- v. Other Processing Industry KBLI: 32
- w. Repair and Installation of Machinery and Equipment KBLI: 33

3. Literature of SMEs and Digital Market

The concept definition in this data and analysis derives from BPS Statistics Indonesia's concepts and been applied in the Small and Micro Industry (IMK) Survey in 2015.

3.1. Type, Concept and Definition

The concept definitions are necessary so that the perception of the information produced is not biased. Defined SMEs activities:

- a. Manufacturing Industry: Production activities that transform basic goods (raw materials) into finished goods / semi-finished and or of goods of less value to goods of higher value. Included in this category are the activities of the manufacturing industry services (Colloquially called *makloon* in Indonesian).

- b. Company / Business Manufacturing Industry: The unit of economic activity does / commercializes the manufacturing industry; located in a building / specific locations as well as at least one person who is responsible for such activity.
- c. Company / Business Services Manufacturing Industry (*makloon*): Unit activity of an industry that serve the needs of others. In this activity the raw materials supplied by the party served and the companies / businesses carrying out the treatment process to obtain payment as a reply to his services.
- d. Indonesia Standard Industrial Classification (ISIC) is the standard statistical classification of the economic activities that are in Indonesia. KBLI only groups production units according to economic activity; they do not distinguish production units based on ownership, type of legal entity, formal or informal. ISIC 2009, using a 5-digit code, indicates the classification structure.
- e. Primary production

The main production enterprises produced is determined by:

- 1) Production of which has a value of production / services the largest industry;
- 2) If the value of production / services industry at large, the production of which produce goods / services with the largest volume;
- 3) If the value of production / service industry and the volume of goods / services of the same, the production of which produce goods / services with the longest time;
- 4) If the value of production / service industry, volume, and the time it takes the same, then it is determined according to the confession of respondents.

f. Education Attainment

- 1) Did not complete primary school: They are not in school / have never attended school or who have school / not completed primary school 5/6/7 years, School of Basic Level, Government Elementary School, Elementary School Tutors (Education of children by parents and teachers), Small Elementary School, Package A1 - A100. Those who graduated from elementary school 3 years or equivalent is not considered completed.
- 2) SD (Primary school) and equivalent: Those who completed primary school 5/6/7 years, School of Basic Level, Government Elementary School, Elementary School Tutors (Education of children by the Society of Parents and Teachers), Small Elementary School, Package A1 - A100.
- 3) SMP/ SLTP (Junior high) and equivalent: Those who graduated from junior high school, MULO, HBS 3 years, SLB junior high, MTs, Princess Skill School, SMEP, ST, Schools First Family Welfare, School of Vocational Skills 4 years, Farmer Business School, Junior High School of Agriculture, School Teacher Aid, Religion Teacher Education 4 years, Administrative Employee Classes, Classes Employees of the Company, and Employee Education Affairs Religious Courts.
- 4) SMA/SLTA/ SMK (High school) and equivalent: Those who graduated from high school, HBS 5 years, AMS, Madrasah Aliyah, School of Social Work, School of Handicraft Industry, School of Fine Arts, School Karawitan Indonesia (traditional music and songs of certain tribe/ indigenous peoples, mainly in Java), High School Musical Schools Intermediate Technology development, School of Economics,

School of Intermediate Technology, School of Agricultural Technology, School of Technology Shipping, Mining Technology Middle School, and High School Graphic Technology.

- 5) DI / DII: Those who graduated from the School of Master Sports, School of Teacher Education, Teacher Education junior high school, Teacher Education Religion 6 years, School Teacher Kindergarten, Course Teacher Education, Educational Analysis of Secondary Chemical Up, School assistant Pharmacist, School of Midwives, School Governing Rontgen, and course of Administrative Officer, Diploma Diploma I or II in a special education diploma awarded to the program. Program Act I and Act II included in the education level I or Diploma II.
- 6) Bachelor / DIII: Those who graduated from the Academy / Diploma / Act III or who have earned a baccalaureate degree at a faculty. For those who have studied up to half of the 8/9 and have not graduated in the faculty who did not issue a baccalaureate degree, graduated from high school and is expressed as equivalent.
- 7) DIV, S1 or More: Those who graduate Diploma IV education program, Bachelor (Strata-1), Masters (Tier-2), and Doctoral (Tier-3). School level is generally conducted by a University / Institute / High School.

g. Start of operation / production in Commercial

First year the company produces / manufactures goods / services commercially (excluding production trials). When there is a change ISIC, then that is written in the new ISIC. An attempt to open a branch in an area, then the year started operation is the opening of a branch at the venue.

h. Labor

- 1) Workers continue to be paid: Workers who work in companies / businesses to receive remuneration in the form of salaries and other (overtime, gifts, bonuses, etc.) in the form of money or goods.
- 2) Remain unpaid labor: labor or labor owners and families who are usually active in the company / business, but did not receive remuneration. For unpaid workers who work less than 1/3 (one third) applies regular working hours (one week) in a company / business is not included as a worker.
- 3) Workers of production: the direct labor work / dealing in the production process. For example: labor directly oversee the production process, operating machinery, noting the raw materials used and the goods produced.
- 4) Other Labor: Labor is not directly related to the production process. This labor as workers usually supporting companies, such as; manager (not production), head of personnel, secretaries, typists, the night watchman, company driver, etc.

i. Reply Paid Workers Services (in Rupiah): Remuneration paid workers differentiated wage of permanent and temporary workers.

- 1) Wages / salaries: Reply services company for the workers / employees, before deduction of taxes either in cash or in kind. Estimated rental home offices, transport facilities and the like included in wages and salaries even if not written in the balance sheet (record) companies.

- 2) Overtime pay: Wages given / paid to workers who work outside normal working hours.
- 3) Prizes: Spending companies / businesses in the form of money or goods given to workers / employees. The expenditures are only occasional. Expenditure during the month is obtained by summing the expenditures during the year divided by 12.

Bonus: The provision of a company / business to workers in the form of money or goods for corporate / business progress / improvement in profits, which are usually paid once a year, therefore, to determine the amount of the bonus in the first month divided by 12.

- 5) Allowance: Spending companies / businesses in the form of money or goods paid to institutions / foundations in order to improve the welfare of workers / employees.

j. General costs: Costs incurred to support the activities of the company / business include:

- 1) Raw Materials: The component materials used in the production process to produce the goods / services.
- 2) Material Helper: The material used to assist in the production of raw materials into manufactured goods, excluding auxiliary materials: wrapping, packing, and fastener finished goods.
- 3) Fuel: Any material, either liquid or solid that is used as the burner to run the engine, cook and others used for business, such as: petrol, diesel, kerosene, LPG, coal / briquettes, firewood, charcoal and materials other fuels.
- 4) Lubricant: Liquids that have a certain viscosity is used to smooth the way for the machine to function properly, such as SAE 20, SAE 30 and so on. It also includes the cost of fuel and lubricants for the power plant (diesel) used by the company.
- 5) Power Consumption (electricity fee): Cost of the entire electricity consumption for a company / business, such as for lighting and running the engine.

6) Use of Water

The cost of clean water usage: the cost of purchasing water from the water company / water management body or from other parties for the purposes of the company / business.

7) Use of Liquefied Natural Gas (LNG)

LNG costs: The cost of the entire LNG usage for a company / business.

- 8) Stationery and office supplies: All stationery and office supplies are consumables such as paper, markers, pencils, ink, carbon, typewriter ribbon, folders, chalk, and the like.
- 9) Interest on loans: Spending companies for payment of interest on capital loans to other parties, e.g. the interest paid to the Bank, Pawn, etc. Interest paid on the loan should not in 2015, but including interest on the loan the previous year.
- 10) transport / shipping, postal and telecommunications: The entire cost of the transport / shipping, postal and telecommunications that are used for business purpose.
- 11) Maintenance and repair of minor capital goods: Routine spending to maintain or repair of capital goods in order to continue to function as usual without adding capacity, change the shape or extend the life cycle of capital goods, such as the cost of

replacement of parts, maintenance of machinery and building improvements place of business that are not expanding.

- 12) Hire machinery, tools and equipment, vehicles, building / construction, and other capital goods

Expenditure that is used for business purposes and household included as expenditures for business, except expenditures for building / construction is hired. Calculation of the building lease has been proportionally between the use of buildings for businesses and residences. Charging the amount of rent the building / construction is only used for business only, not including household activities.

- 13) Rent land for business: Costs incurred by a company / business during the last month (last month in production before enumeration) on the use of land owned by another party.

- 14) Taxes indirect: Taxes imposed on consumers by manufacturers to the purchase of goods / services, eg value-added tax for goods and services, property tax, customs and excise, export taxes, entertainment taxes and levies (including *retribution of board advertisement*, advertising, etc.), including vehicle registration fees and levies pick-test (KIR) specifically for vehicle operation company / business. Excluding the tax paid by the company for tax withholding workers' remuneration.

- 15) Other services

Payment of other services: All expenditures or services of other parties issued by companies / businesses for smooth operation / business such as insurance companies, promotion / advertising, lawyers etc.

Cost accountant / consultant: cost to the company / business to accountants / consultants, such as: the cost of the preparation and implementation of accounting systems, cost accounting and the preparation of inspection reports, legal fees, financial consulting etc.

The fee for insurance: Premiums paid by a company / business to the insurance company upon the insured property, such as fire insurance, vehicle insurance and insurance other capital goods.

Promotion / advertising: Costs for promotional / advertising done by the company itself, for example post banners, billboards (the company pays taxes billboard / advertisement).

k. Income

Revenue includes the main income, revenue from industrial services (*makloon*), income from other activities, and other income.

- 1) The main income: The value of goods produced by an industry, both primary production, as well as follow-up side. Included in the production of goods that are ready to be marketed and goods that are still in the process (half all goods produced must be assessed even if not sold, have already been sold (cash or credit), taken alone, is awarded, and so on.
- 2) Income from other activities: Income derived by an enterprise of activity is not the main but still constitute a single entity and not the main activity.

- 3) Other income: Revenue / receipts from other activities related to the business such as interest on deposits, on the other or lend to others, dividends, royalties / copyright and the like are acceptable, and transfers from other parties (donations and gifts).

l. Property owned

- 1) Assets: The wealth that comes from self-owned and used in a production process as an economic enterprise.
- 2) Current assets: Includes all cash, accounts receivable, and goods production / raw / auxiliary materials provided.
- 3) Fixed assets: Equipment and supplies are used as a means of business / production tools / attempted generally have a lifespan of more than a year include:
 - a) Soil
 - b) The building / building
 - c) Machinery and equipment such as sewing machines, stoves, cabinets, etc.
 - d) Vehicles
 - e) Other Fixed assets (copyrights, patents)

- m. Sources of capital: Shows the legal conditions on ownership of venture capital, working capital and fixed capital.

Sources of capital can come from:

- 1) Owned itself: It is the property of the company / business alone without any contribution / participation of the company / business / other party. For businesses with capital originating from 2 or more and the person participating in business management, incorporated as its own capital.
- 2) The other party: It is the property of the other party, the employer has no contribution at all. The meaning of other parties in MSMEs are banks, cooperatives, non-bank financial institutions, venture capital companies, individuals, families and others.
 - a) Banks: Institution / institutions engaged in the financial sector to undertake activities to receive, store, and lend money. In specific terms for the transaction then the money, the bank also has the authority to issue checks or securities
 - b) Cooperative Organization popular economic social character, of persons or legal entity which is a cooperative economic arrangement as a joint venture based on the principle of kinship.
 - c) Non-Bank Financial Institutions: Financial institutions other than the Bank and the Cooperative, such as mortgage, lease (leasing), venture capital, factoring (factoring), credit institutions (individuals and companies) and so on.
 - d) Venture Capital: The business entity conducting equity into the joint-venture company for a certain period of time, excluding Bank Muamalat / Islamic Bank.
 - e) Family / relatives: Parties who still have relatives relationship / family, either directly or indirectly. Direct relationship is incestuous relationship, while the indirect linkage is a linkage for their marriage.
 - f) Other: The other party is not an activity of banks, cooperatives, Non-Bank Financial Institutions (NBFIs), family and personal loans.

3.2. What is the MSME Market

Based on field research and discussions involving key stakeholders, it can be concluded that marketing or market access is important for the development of MSMEs in Indonesia. Indonesia is a huge market that has the potential to generate huge trading profits in terms of the number of consumers, the fourth largest population in the world.

Of the approximately 253 million people, 64 million are mobile users, 72.7 million are active Internet users, and 74 million are users of social media networks. With the large number of mobile and internet users, the conventional market is no longer a medium to maximize the potential of MSMEs in Indonesia, rather it takes the electronic market to maximize the potential of digital economy. With this huge market potential, investing in Indonesian e-commerce will be a very profitable investment for foreign investors.

For Indonesia, the concept of e-marketplace can solve some or even all MSME problems. A main challenge specific to MSMEs is that they do not have access to bank loans nor are they bankable; this hampers greater market access capabilities. Whereas with an e-marketplace, market coverage is as large as permitted by the owner of an e-marketplace service or often at the seller's ability to deliver its products through an available logistics services, without considering the need to take out a loan to open a sales branch.

Another benefit of e-marketplace service is reducing the labor cost, overhead and other fixed costs. Traditionally in an e-marketplace the cost of placing product ads to potential buyers is much smaller than having to open a store, hire employees and advertise their products through conventional media. Additionally, in terms of marketing the seller in the e-marketplace does not need to worry too much because the owner of the e-marketplace itself is very interested to market the product into the e-marketplace; thus, shifting the burden of marketing and expenses to the e-marketplace service provider. Lastly, the ease of technology in ordering and paying for the seller's products is provided by the e-marketplace, so the cost of development is also borne out by the e-marketplace service provider.

This makes the empowerment of MSMEs in Indonesia possible because MSMEs receives many benefits from the provision of digital electronic market, with global access, together with the reduction of production costs, transportation and research. As a consequence, people as consumers will have a wider variety of products and lower prices and have an impact on improving welfare, savings and investment opportunities, thereby creating an equitable distribution of benefits. Referring to Indonesia's digital economic potential, the Indonesian government seeks to help fulfil its potential through relevant legislation and institutional provisions, one of which is to create a roadmap to a target called a blue blueprint.

The Coordinating Ministry for Economic Affairs of the Republic of Indonesia, as the representative of the Government of Indonesia in February 2018, announced the establishment of the National E-commerce Road Map program. This program

involves government, e-commerce professionals and small reseller traders belonging to MSMEs scale, to be established in the form of regulations. The policy has been followed up with a plan to help open various e-marketplaces. Given with a minimum investment of Rp 100 billion, the e-marketplace is open to 100% of foreign investors' investment through foreign direct investment after the revision policy of Presidential Regulation no. 39 of 2014 (Indonesia Government-Trade Ministry 2018). Its contents concerning the field of closed business and open business fields for foreign investment as the requirements. This is because market access and marketing are important factors to develop MSMEs in Indonesia. These conditions and regulations are also confirmed in the Japan Economic Institute Inc. report. on February 27, 2015 on Asian Industry Development Research in FY 2014 (Fact Finding Survey on Local MSMEs in Indonesia).

3.3. Why the Digital Market is important for MSMEs

From GO-JEK to 99Designs, the very nascent Indonesian digital space has already made a strong impression on Indonesia. In particular, the Australian-based graphic design market place called 99Design has been a force of economic inclusion by opening the door for Indonesians to participate in the global economy. While 70% of 99Designs' customers are from North America, over half of graphic designers are from Asia with Indonesians and Filipinos in the majority.

While only anecdotal data, not only are the majority of their graphic designers from Indonesia, 99Designs claims that many of them are from humble village backgrounds as construction workers to farm workers and stone workers. Nevertheless, these Indonesian graphic designers – *some of which use Google Translate to communicate with their clients* – are able to garner twice the monthly income than their previous jobs.

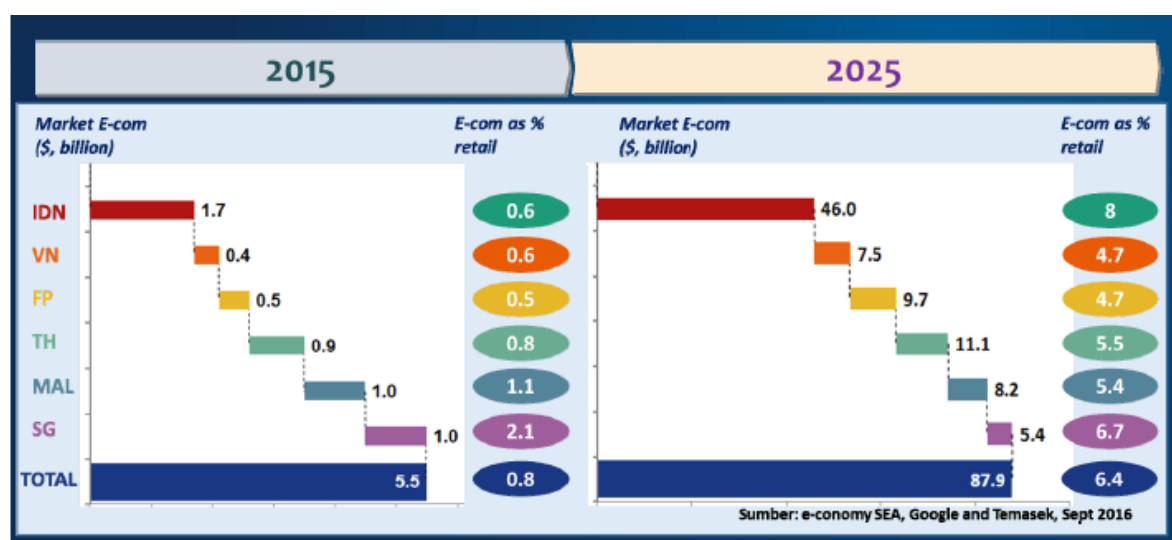


Figure 1. E-Commerce and Its Growth Potential

The anecdotal insights from 99Design reinforces studies that anticipate that within the 2015 – 2025 period, e-commerce growth in Indonesia will become the biggest in Asian

region. Figure 1 forecasts that Indonesia will lead in the e-commerce space in the region, leaping from 0.6% in 2015 to 8% in 2025. Such a growth would mean a growth of 13 times in a decade whilst other countries such as Vietnam and Singapore in 2025 will reach 4.7 percent and 6.7 percent respectively.

Data from Indonesia's Ministry of Communication and Informatics suggests that as of 2018, only 13.5 of MSME businesses use online tools (Setyowati, 2018). This suggests a huge untapped potential for the Indonesian e-commerce market.



Figure 2. Digital Economic Development Opportunities

According to Figure 3, the huge labor absorption of MSMEs in Indonesia is linked to the great number of MSMEs. It is also implied that most of MSMEs actors are self-employed without the help of employees. The business of MSMEs are dominated into the three biggest proportion are trading, accommodation and eating drinking, and industry where digital markets can be applied. These, the three are categorized into services sector of which developed economies [have dominated](#).

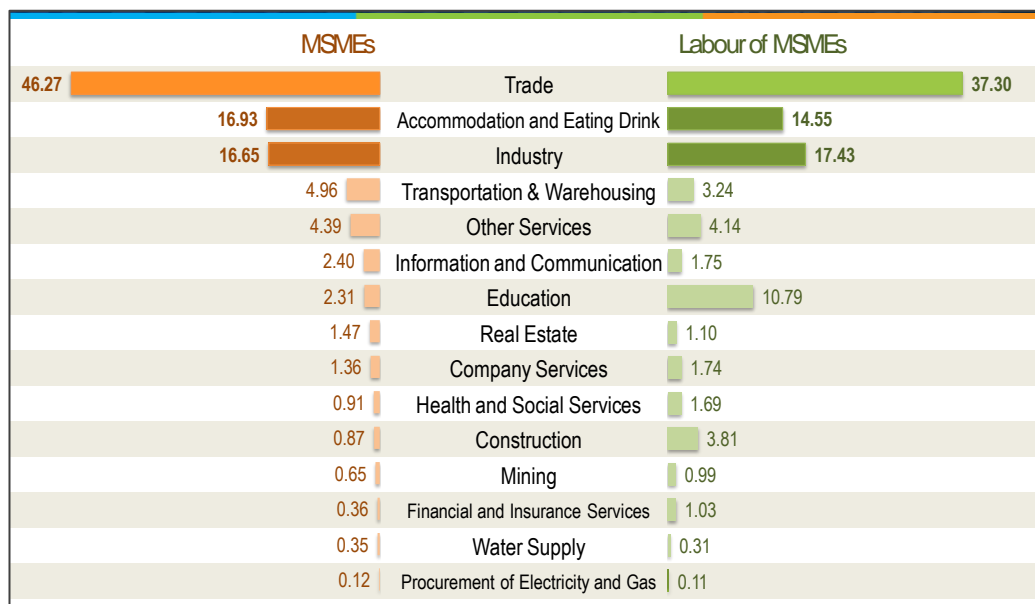


Figure 3. Distribution of Business and Labour on MSMEs (percent).
(Source: 2016 Economic Census, BPS Statistics Indonesia)

Within the digital space, the FinTech industry in Indonesia has enormous potential to provide broad benefits to society, especially in terms of increasing financial inclusion. However, the risks embedded in FinTech's business models need to be scrutinized and mitigated so as not to have a systemic impact on the stability of the Indonesian financial system. Digital finance opportunities in Indonesia seems high in a demand and penetration within a short period. Figure 4 shows that mobile phone penetration has reached 99.7 percent and debit card penetration 26 percent.

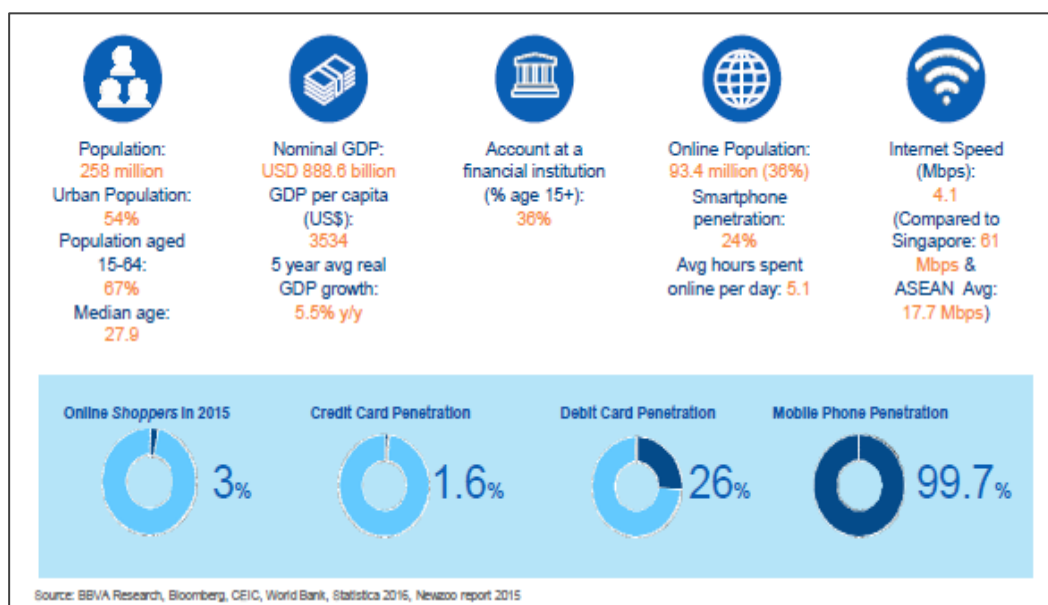


Figure 4. Digital Finance Opportunity in Indonesia between Population-Demography-Economy and Technology

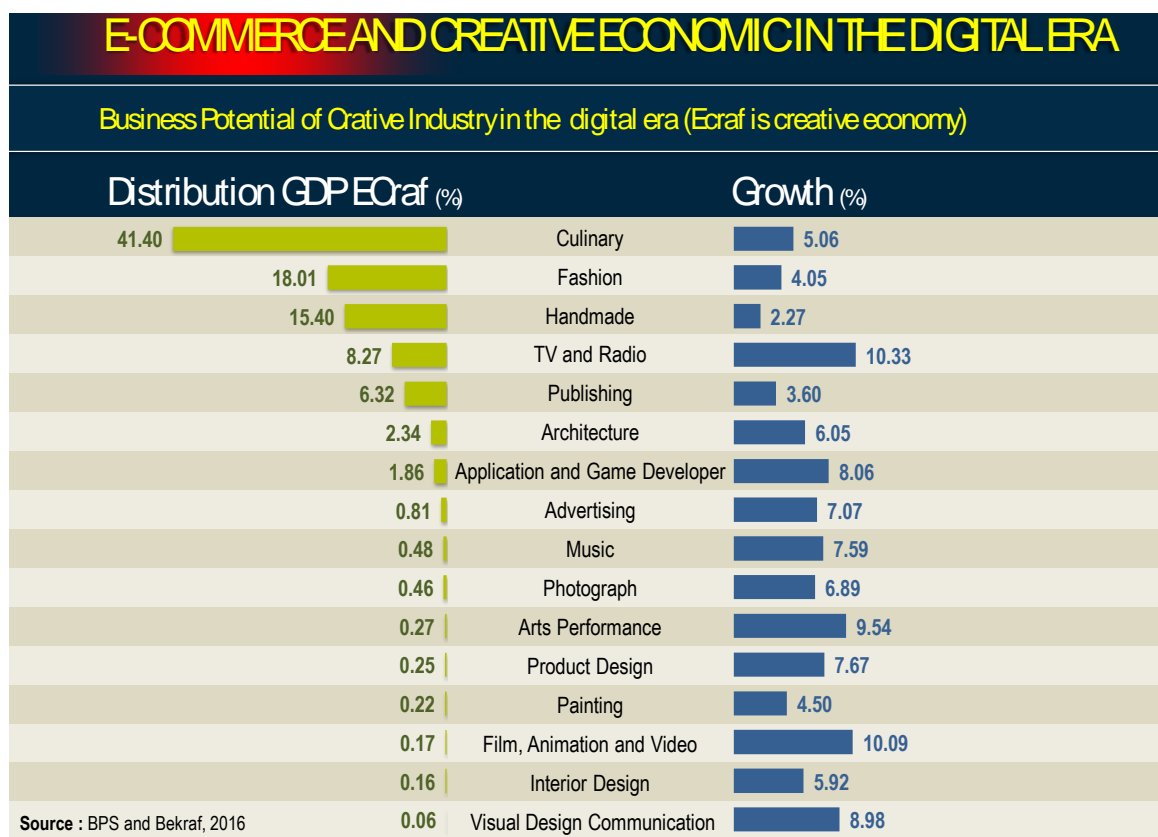


Figure 5 . Distribution of GDP Creative Economy and Growth (percent).

(Source: Collaboration data collection between BPS Statistics Indonesia and Creative Economy Board (Bekraf), 2016)

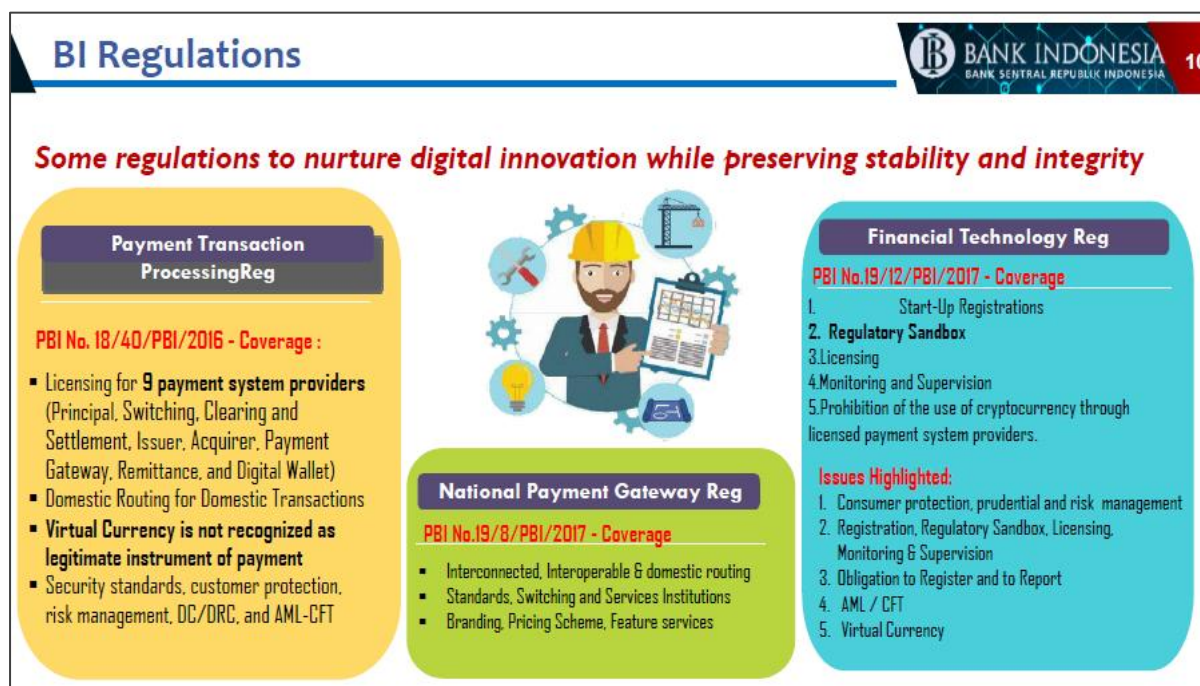


Figure 6. Bank Indonesia's Push for Greater Inclusion

(Source: Central Bank of Indonesia, 2016)

According to Indonesia University research on GO-JEK Impact to Socio-Economic of Indonesia (2016-2017), they reported that GO-JEK contributes 1.7 trillion rupiah annually to the Indonesian economy through the income of MSMEs partners. GO-JEK is a hybrid platform that provides motorcycle taxi service, courier service, fintech banking, payment services, and online marketplace. GO-JEK supports MSMEs to go online, increasing the volume of MSMEs partner transactions and opening market access in using technology and increasing business assets.



Figure 7. Vision for 2020 Digital Economic Country

(Source: Official Regulation and Policy of Trade Ministry of Republic Indonesia)

The research is in line with the Indonesian Government policy. MSMEs links to e-commerce and digital economy are the three most important targets and supported by eight priority policies regulated by Presidential Decree (Perpres) No. 74 in 2017.

3.4. Is Digital Innovation an urgent need?

Anecdotal evidence like those from 99Designs (above) support forecasts conducted by the likes of Oxford Economics. In their June 2016 *The Impact of Mobile Internet in Southeast Asia* research, Oxford Economics estimates that each percentage point increase in mobile internet penetration over the next five years could translate to adding \$640 million to the GDP. Additionally, they forecast that each percentage point increase translates to an additional 10,800 formal jobs. Regardless of the exact numbers forecast, the main trend is that mobile internet opens doors for new employment, new jobs in the formal sector, and a source of upskilling human capital.

Country	Ranking	Score
(1)	(2)	(3)
Amerika Serikat	1	100,00
Singapura	2	99,42
Swedia	3	97,45
Denmark	4	96,76
Swiss	5	95,85
Norwegia	6	95,72
Finlandia	7	95,24
Australia	13	90,23
Jepang	22	82,17
Malaysia	27	80,63
Thailand	39	65,27
Filipina	56	53,37
Indonesia	62	45,77
Venezuela	63	24,79

Figure 8. Competitive Ranking
(Source: IMD World Digital Competitiveness Ranking, 2018)

Factors & Sub-factors Ranking, 2017-2018

Details	2017	2018
(1)	(2)	(3)
Knowledge	58	61
- Talent	48	51
- Training and Education	59	61
- Scientific concentration	54	58
Technology	56	59
- Regulatory Framework	61	57
- Capital	37	34
- Technological Framework	58	60
Future Readiness	62	62
- Adaptive attitudes	63	61
- Business agility	35	46
- IT integration	61	60

Figure 9. Factors & Sub-Factors Ranking, 2017-201
(Source: IMD World Digital Competitiveness Ranking, 2018)

Regarding to the factor and sub factor ranking of Indonesia competitiveness in 2017-2018 condition, the biggest challenge are the readiness of human resources and IT infrastructure in Indonesia whether both of these factors can be set up appropriately and timely.

TECHNOLOGY

Subfactors	2014	2015	2016	2017	2018
Regulatory framework	57	60	60	61	57
Capital	25	35	42	37	34
Technological framework	57	59	57	58	60

Regulatory framework	Rank
Starting a business	58
Enforcing contracts	59
Immigration laws	37
Development and app. of technology	40
Scientific research legislation	44
Intellectual property rights	55

Capital	Rank
▶ IT & media stock market capitalization	15
Funding for technological development	42
Banking and financial services	30
Investment risk	54
Venture capital	30
Investment in Telecommunications	34

Technological framework	Rank
Communications technology	53
Mobile Broadband subscribers	57
Wireless broadband	60
▶ Internet users	61
Internet bandwidth speed	51
High-tech exports (%)	54

FUTURE READINESS

Subfactors	2014	2015	2016	2017	2018
Adaptive attitudes	56	61	61	63	61
Business agility	36	41	48	35	46
IT integration	57	59	59	61	60

Adaptive attitudes	Rank
▶ E-Participation	61
Internet retailing	56
▶ Tablet possession	60
Smartphone possession	53
▶ Attitudes toward globalization	26

Business agility	Rank
Opportunities and threats	44
Innovative firms	35
Agility of companies	43
▶ Use of big data and analytics	29
Knowledge transfer	41

IT integration	Rank
▶ E-Government	61
Public-private partnerships	35
Cyber security	45
▶ Software piracy	61

Figure 10. Indonesia's Competitive Ranking for Technology & Future Readiness
(Source: IMD Survey on World Digital Competitiveness Ranking, 2018)

4. MSMEs Profile in Indonesia

The majority of MSMEs businesses in 2015 was a micro industrial enterprises, namely enterprises with a workforce of 1-4 people. Number of micro industrial businesses as much as 3,385,851 (92.29 percent), while the remaining 7.71 per cent is a small industry, with a workforce of 5-19. There were 1,316,278 businesses (35.88 percent) with a workforce of 1 (one) person, as many enterprises 2,069,573 (56.41 percent) to the amount of labor between 2-4 people, as many as 210 975 businesses (5.75 percent) with the amount of labor between 5-9 people, a total of 48 540 businesses (1.32 percent) with a workforce of 10-14 people, and the remaining businesses 23 507 (0.64 percent) with a workforce of 15-19, MSMEs venture capital sources is generally a self-owned, amounting to 81.41 percent, while the business with the majority of the other party capital of 14.04 percent. Moreover, there was no attempt of MSMEs that all of its capital coming from the other party, which amounted to 4.55 percent. The average working day in a month on MSMEs business generally 21 working days or more, which amounted to 66.20 percent with an average working hours per day approximately seven (7) hours. There are also businesses that have an average weekday between 11-20 days in a month, amounting to 23.75 percent, and the rest of 10.05 percent only work between 1-10 days per month.



Figure 11. Profile of MSMEs 2017 by Province in Indonesia
(Source: 2017 MSMEs Survey 2nd Quarterly, BPS Statistics Indonesia)

The figure 11 shows that there are 8 (eight) provinces during Year on Year of the 2nd quarterly have negative growth of their MSMEs productivity. These condition in field industry should be intervening by local Government Policy related to the MSMEs development where strength-weakness should be observed and identified in terms of finding the appropriate solution. So far each province in Indonesia has its own characteristics of local-cultural industry product, thus in turn the justification local policy should be made by high consideration of local wisdom and power on its matter. For example: the island of Java is over populated and lack of raw materials for industry production, this should be replaced by the type of industry to other type of industry such as tourism and other sustainable industry links to green environment and green growth economy.

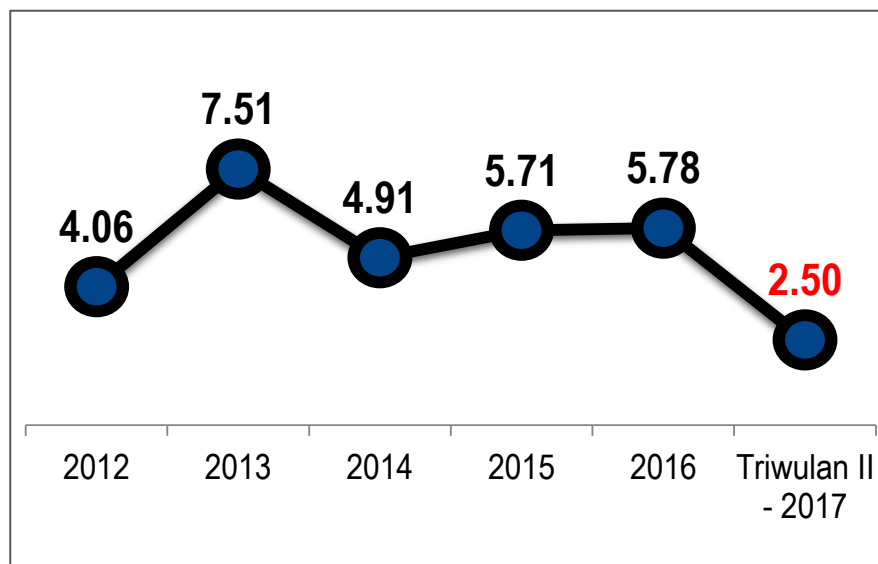


Figure 12. Production Growth of MSMEs (IMK) 2012 – the 2nd Quarter 2017
(Source: MSMEs Survey 2017, BPS Statistics Indonesia)

Meanwhile, in over all the national production growth of MSMEs during the 2nd quarter of 2017 had increased by 2.50 percent (y-on-y) compared to the 2nd quarter of 2016. Even though been found some provinces have negative growth of their production.

5. Contemporary Digital Market

Graph below shows the growth of internet user in Indonesia since 1998 up to 2017 has increased dramatically and is at almost half the total population of Indonesia, estimated at 247 million people.

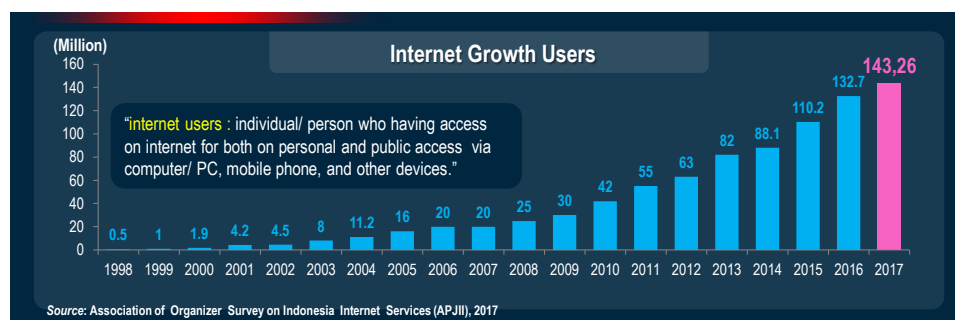


Figure 13. Utilization and Internet Access

6. Findings and Discussion

6.1. Current Economic Overview

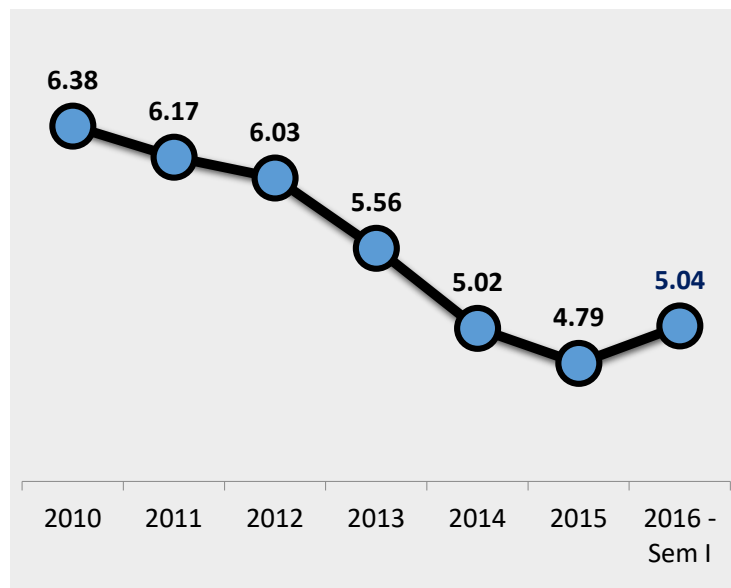


Figure 14. Outlook of Indonesia Economic Growth 2010-2016 (%)
(Source: calculated by BPS Statistics Indonesia, 2016)

The target of Indonesia economic growth in 2016 claimed around 5.2 percent, more likely with conditional as financial policy effect on cutting budget at national level.

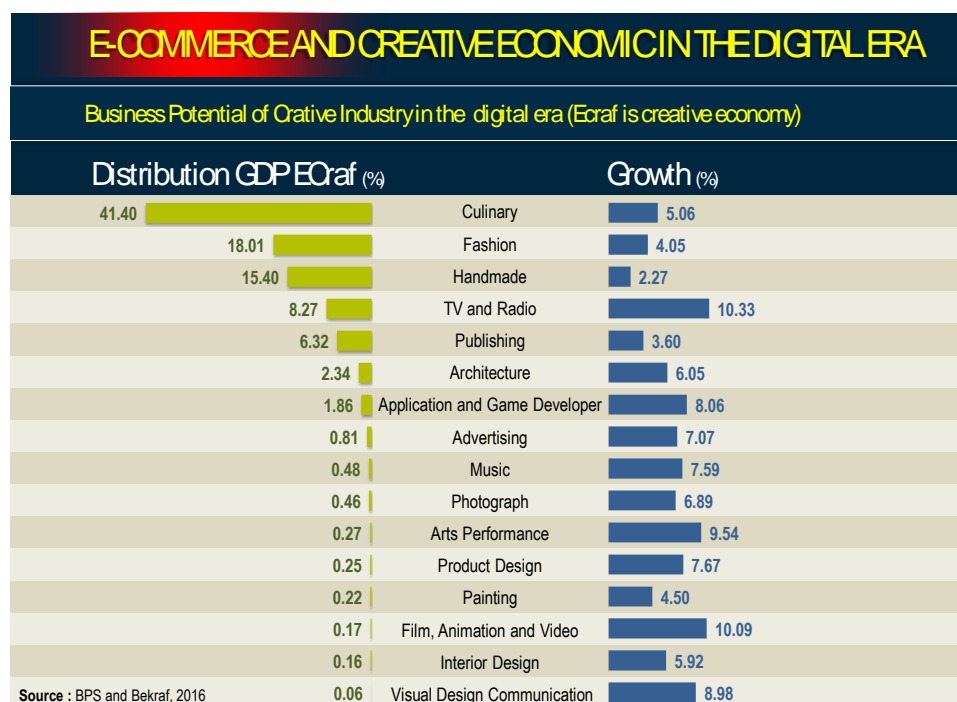


Figure 5. Table for Comparison GDP by Creative Economy within Sub-Sector in 2000 and 2010.
(GDP is Gross Domestic Product, regional Income yearly)

Referring to the results of the *2016 Economic Census Listing*, enterprises / companies in Indonesia are dominated by businesses / companies with the scale of MSMEs business. Percentage of MSMEs reach 98.3 percent able to absorb the labor of 76.28 percent of the total workforce outside the sectors of Agriculture, Forestry and Fisheries. MSMEs are able to

absorb more manpower than medium and large scale business (UMB), which are only able to absorb labor by 23.72 percent to total worker outside agriculture sector, forestry and fishery. Meanwhile, the creative economy is very dominated by service sector where digital things have a major role accordingly.

Small and Micro Processing Industry

The industry development is part of the national development should be implemented in an integrated and sustainable, so that the industry development can provide great benefits to society. Contribute in a concrete effort to improve the local economy should be done in a variety of programs, including the development of MSMEs. The industrial sector is one of the main components in the national economic development MSMEs is a strategic and important force to accelerate regional development. This sector is shown to contribute significantly to the GDP (Gross Domestic Product) and employment. In addition, MSMEs have an important position in terms of distribution of welfare of people in the region and reduce the gaps revenue. SMEs are generally household businesses, which is still largely mixed with residence. They require continuous training so that the problems encountered such a problem of marketing, capital and management can be addressed immediately.

Number of Company / Business

In the Survey of Small and Micro Industries in 2015, nationwide the number of companies / business MSMEs is 3,668,873 and is divided into 23 Indonesian Standard Industrial Classification (ISIC) 2009 revision 4 (four). Many of the companies / businesses are sorted from the most are: Food Industry (ISIC 10) 1,567,019 total business (42.71 percent), Timber Industry, Manufactures of wood and cork (excluding furniture), and Woven Goods from rattan, bamboo and like (ISIC 16) of businesses 694 924 (18.94 percent), as well as the Garment Industry (ISIC 14) in the business 407 223 (11.10 percent). The number of SMEs fewest namely, Electrical Equipment Industry (ISIC 27) in 216 businesses (0.01 percent), Industrial Computer, Electronic and Optical Barangi (ISIC 26) 306 businesses (0.01 percent), as well as Industrial machinery and equipment YTDL / not included in the other (ISIC 28) as many as 1,210 businesses (0.03 percent).

Distribution of companies / businesses MSMEs by province was still concentrated in Java as an industrial district with the largest province being the Central Java province 1 030 374 effort (28.08 percent), the next highest province of East Java business 820 844 (22.37 percent), and Java Western businesses as much as 480 240 (13.09 percent). The province of North Kalimantan is a province has the least company / business MSMEs at 1,300 businesses (0.04 percent), followed by West Papua province with 1,523 businesses (0.04 percent), and Bangka Belitung with 6,151 businesses (0, 17 percent).

Labor Size

The number of manpower companies / businesses MSMEs in 2015 include as many as 8,735,781 people, comprising 3,221,036 votes (36.87 percent) paid workers and as many as 5,310,248 votes (63.13 percent) of workers are not paid. Of workers being paid, there are 67.43 percent are male workers and 32.57 percent are female workers. With not paid workers, 47.50 percent are male workers and female workers amounted to 52.50 percent. Distribution of the number of workers by KBLI are not much different from the distribution business. Employment is dominated by the Food Industry (ISIC 10) which absorb the labor force amounted to 41.94 percent, followed by Wood Industry, Manufactures of wood and cork (excluding furniture), and Woven Goods from Rotan, Bamboo and the like (ISIC 16) amounted to 14.82 percent, Garment Industry (ISIC 14) 11.03 percent and Non Metallic Minerals Goods Industry (ISIC 23) 9.09 percent. Industries to absorb labor force is at least Electrical Equipment Industry (ISIC 27) respectively by 0.01 percent, Industrial Computers, Electronics and Optics (ISIC 26) by 0.02 percent, and and Industrial Machinery and Equipment YTDL (ISIC 28) at 0.05 percent. SMEs employment in 2015 by province is still concentrated on the island of Java: Central Java Province amounted to 29.44 percent, East Java province at 21.94 percent, and the province of West Java at 14.85 percent. While employment was lowest in West Papua Province and North Borneo, respectively at 0.04 percent and 0.13 percent for North Maluku.

Worker Revenue of Services

Workers are not paid in the enterprise / business MSMEs 2015 amounted to 63.138 percent. This indicates that most companies / enterprises MSMEs is a business that is familial and has a business administration that has not been good. During 2015, companies / ventures involved 36.87 percent MSMEs paid workers. The average remuneration as is derived per worker per month in 2015 to 1 (one) million rupiah or more amounted to 63.90 percent, while the remuneration per worker below one million rupiah for 2015 amounted to 36.10 percent.

The percentage of workers' remuneration by type of industry, the third largest in 2015, namely the type of Food Industry (ISIC 10) amounted to 27.15 percent, Garment Industry (ISIC 14) amounted to 14.77 percent, and Industrial Goods not Metal Minerals (ISIC 23) amounting to 11.99 percent. Meanwhile, three workers' remuneration in 2015 was the smallest Electrical Equipment Industry (ISIC 27) at 0.05 percent, Industrial Computers, Electronics and Optics (ISIC 26) at 0.07 percent, and Industrial Pharmacy, Medicinal Chemistry products, and drugs traditional (ISIC 21) and Industrial Machinery and Equipment YTDL (ISIC 28) respectively by 0.10 percent.

According to the province, the percentage of the remuneration of workers in 2015 is the highest of three Central Java province amounted to 24.56 percent, West Java Province amounted to 23.88 percent, and East Java Province 17.93 percent. The provinces with the lowest percentage of remuneration is North Maluku at 0.06 percent, followed by North Kalimantan and West Papua, respectively 0.07 percent, and the province of Riau Islands by 0.11 percent.

Spending

MSMEs business expenses includes expenditures raw and auxiliary materials, expenses for fuel and lubricants, electricity, gas and water, stationery and office supplies, transportation / shipping, postal and telecommunications, building lease, rental machines, rental equipment, maintenance costs and minor repairs of capital goods, as well as other services (except expenditures for remuneration of workers). Of the 3.6 million SMEs businesses in 2015, the largest expenditure is the Food Industry (ISIC 10) which is 48.57 per cent, Garment Industry (ISIC 14) of 10.04 percent, and Industrial Wood and articles of wood and Woven Goods of Bamboo, Rattan and the like (ISIC 16) by 9.22 percent. The smallest expenditure occurred in ISIC 27, the Electrical Equipment Industry by 0.01 percent, Industrial Computers, Electronics and Optics (ISIC 26) by 0.02 percent, and ISIC 28, namely Industrial Machinery and Equipment YTDL (which is not included in the other) 0.04 percent. Geographically, the largest expenditure MSMEs 2015 on the island of Java that is equal to 78.06 percent of the total national expenditure MSMEs effort. Contribution of the SMEs business expenses outside Java at 21.94 percent. By province, the largest business expenses MSMEs Central Java province, reaching 25.32 per cent of the national expenditure, followed by West Java Province amounted to 24.59 percent, and East Java province at 20.99 percent. While spending is the smallest province of North Kalimantan and West Papua, are respectively 0.03 percent, North Maluku province at 0.05 percent.

Income

MSMEs operating revenue includes revenue from production, industrial services (*makloon*), and other income. MSMEs revenue in 2015 largely contributed by the Food Industry (ISIC 10) amounted to 43.55 percent, Garment Industry (ISIC 14) amounted to 11.19 percent, and Industrial Wood and articles of wood and Woven Goods from Bamboo, rattan and the like (ISIC 16) amounted to 9.77 percent. The smallest revenue is ISIC 27, the Electrical Equipment Industry by 0.02 percent, Industrial Computers, Electronics and Optics (ISIC 26) by 0.03 percent, and ISIC 28, namely Industrial Machinery and Equipment YTDL (which is not included in the other) of 0.06 percent. The MSMEs Operating Revenues in the island of Java, amounting to 75.70 percent of total revenue MSMEs 2015, while revenues in the Outer MSMEs amounted to only 24.30 percent. By province, the largest operating revenue IMK Central Java province, reaching 24.55 per cent of the national income, followed by West Java at 22.89 percent, and East Java province at 20.44 percent. While income is the smallest province of West Papua and Kalimantan Utara, respectively 0.05 percent and North Maluku province by 0.08 percent of the 3,668,873 businesses MSMEs in 2015, 11.86 percent of the MSMEs businesses with annual income of less than five million rupiah, while the SMEs businesses that have revenues of more than one billion rupiah in 2015 amounted to 2.45 percent.

Constraints and Marketing

Most of MSMEs businesses in 2015 admitted having difficulties in running its business (73.96 percent). The main difficulty is felt by businesses is the difficulty MSMEs

38.84 percent of venture capital, marketing difficulties operating results 25.00 percent and 22.29 percent raw material difficulties.

In general (95.83 percent), MSMEs business never received the service / assistance in carrying out their business activities. MSMEs businesses that had received services / assistance amounted to only 4.17 percent. Type of service / assistance most accepted are cash donations amounting to 49.01 percent, next was a relief for capital goods by 16.78 percent, 12.61 percent and raw materials.

Most of the main reasons MSMEs businesses accepts the service / support business development is due to not know any assistance amounting to 64.61 per cent, followed by the reason does not know the procedure reached 15.82 percent and had no interest in approximately 14.81 percent. MSMEs not all employers take advantage of the cooperative. MSMEs Survey of 2015, only 2.65 percent MSMEs entrepreneurs who become members of the Cooperative, the rest (97.35 percent) MSMEs employers are not members of the cooperative. This indicates that where cooperatives have not been felt by most of entrepreneurs MSMEs. Mainly of MSMEs difficulties, there amounted to 22.29 percent of businesses having trouble main raw material. The cause of the company / business MSMEs on raw material are experiencing difficulties, scarce raw materials amounted to 53.68 percent, the raw material is expensive by 30.24 percent, raw material away at 9.20 percent and 6.88 percent other.

Recorded from MSMEs survey result, most of or approximately 90.11 percent of the business is not a partnership. 9.89 percent of business partnerships, there amounted to 39.19 per cent partnership in the form of procurement of raw materials, amounting to 37.17 percent of marketing partnerships, amounted to 11.2551 percent of a partnership loan of money, amounting to 7.04 percent of partnership items capital, and amounted to only 2.96 percent partnership machines. Indonesian economy has not fully recovered from the crisis was marked by not changing the general business climate. Most of MSMEs employers still market the production in one district / city that is equal to 89.45 percent, outside the district / city amounted to 7.98 percent, outside the province at 2.47 percent, and abroad (exports) amounted to only 0, 10 percent. Exports of industrial products in the industry SMEs conducting overseas marketing is almost entirely (99.81 percent) of less than 25 percent of the production of the company / business.

7. Conclusion and Policy Recommendations

By reviewing the Indonesia MSMEs condition based on the main BPS Statistics survey data in 2015, added by literature study of the 2016 Economic Census - Listing result been published in 2017, along with a literature review of Indonesia's digital economy and adoption rates, we are slowly able to piece together disparate data points that point to both the extent of the potential for MSME to excel under the Digital Economy and also early peaks of successes. To summarize the key points:

- *MSME activity and labor focused on areas opportunistic for Digital Marketplaces*
The majority of the MSME industry and labor are found in Trade, Accommodations & Eating Drink, and Industry. These three industries represent

79.8% and 69.28% of all MSME industries and labor force, respectively. As of 2018, Government data suggests that only 13.5% of MSMEs sell online.

- *High Mobile and Growing Financial Adoption*
Indonesia has 99.7% mobile phone adoption, 50% internet adoption, and a growing 26% debit card penetration. Government support of FinTech solutions will aim to help grow digital banking solutions for a broad sector of Indonesians.
- *GO-JEK Contributes 1.7 Trillion Rupiah Annual to Economy via MSMEs partners*
GO-JEK digital market place provides the digital platform, including courier logistical and payment services, help bring MSME online to the national marketplace.

The Indonesian Government has recognized these potential and have designed various policies, such as the National E-commerce Road Map and efforts by the Central Bank to support FinTech innovation. At the high level, we have identified challenges and thus areas for government policy to address and further support MSMEs through:

- *Address Unbanked Population to Help Facilitate E-Marketplaces*
The 26 percent debit card penetration, while improving, still represent a barrier to a more seamless payment environment on e-marketplaces. Financial inclusion is critical to helping facilitate e-marketplaces buying and selling among MSMEs and the general public.
- *Extend Markets for MSMEs*
According to the BPS MSME Survey, 89.45 percent of MSEM's employers market to one district / city. MSMEs must be encouraged to expand its market beyond its district both via training MSMEs and helping build an effective national logistical system.
- *Address Low Human Resources & Talents*
Per IMD World Digital Competitiveness Ranking, Indonesia lags behind its neighboring countries in competitive rankings, e.g. Thailand ranks 27 vs. Indonesia at 62. These issues will hamper productivity, competitiveness, and also could limit the ability to create effective e-marketplaces. The Indonesian Government must push for both better training to improve productivity and help build the digital economy for MSMEs.

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