

MICRO AND SMALL BUSINESSES IN INDONESIA'S DIGITAL ECONOMY

KEYS TO DEVELOPING NEW SKILLS
AND HUMAN CAPITAL

ALEX CAPRI



ASIA PACIFIC
FOUNDATION
OF CANADA

FONDATION
ASIE PACIFIQUE
DU CANADA

TABLE OF CONTENTS

ABOUT THE ASIA PACIFIC FOUNDATION OF CANADA	4
ABOUT THE AUTHOR	5
INTRODUCTION	6
<i>Indonesia, Technology and MSMEs</i>	
<i>Report Objectives and Focus</i>	
<i>Key Technologies Empowering MSMEs</i>	
<i>Technology Landscape</i>	
<i>MSME Success Drivers and Critical Technology</i>	
LITERATURE REVIEW AND ECONOMY	15
<i>Main Body of Research and General Narrative</i>	
RESEARCH METHODOLOGY	17
<i>General Approach</i>	
<i>MSME Case Studies and Interviews</i>	
CASE STUDY FINDINGS AND DISCOVERIES	20
<i>Case Studies: Digital Tech Used to Grow MSME Businesses</i>	
<i>MSME Case Study Snapshot - Evoware</i>	
RECOMMENDATIONS FOR POLICY-MAKERS	24
<i>General Recommendations</i>	
<i>Digital Infrastructure</i>	
<i>Training and Human Capital Development</i>	
<i>MSME Funding and Financing</i>	
<i>Empowering Women in the Indonesian Workforce</i>	
<i>Promoting Environmentally Sustainable Businesses</i>	

CONCLUSION	32
APPENDIX	33
<i>Footnotes/References</i>	
<i>Survey Results</i>	
<i>Company Operations</i>	
<i>Digital Awareness</i>	
<i>Digital Infrastructure</i>	
<i>Digital Technology Used to Grow Business</i>	
<i>Funding and Financial Support</i>	
<i>Regulatory Environment</i>	
<i>Digital Readiness</i>	
<i>Data Pooling, Collecting and Sharing</i>	
<i>Training and Access to Knowledge</i>	
<i>MSMEs Snapshots</i>	

ABOUT THE ASIA PACIFIC FOUNDATION OF CANADA

THE ASIA PACIFIC FOUNDATION OF CANADA is dedicated to strengthening ties between Canada and Asia with a focus on expanding economic relations through trade, investment, and innovation; promoting Canada's expertise in offering solutions to Asia's climate change, energy, food security, and natural resource management challenges; building Asia skills and competencies among Canadians, including young Canadians; and improving Canadians' general understanding of Asia and its growing global influence.

The Foundation is well known for its annual national opinion polls of Canadian attitudes regarding relations with Asia, including Asian foreign investment in Canada and Canada's trade with Asia. The Foundation places an emphasis on China, India, Japan, and South Korea while also developing expertise in emerging markets in the region, particularly economies within ASEAN.

Visit APF Canada at <http://www.asiapacific.ca>

The **APEC-CANADA GROWING BUSINESS PARTNERSHIP** is a four-year initiative jointly implemented by the Asia Pacific Foundation of Canada (APF Canada) and the Asia Pacific Economic Cooperation (APEC) Secretariat. Funded by Global Affairs Canada, this initiative helps build the potential of micro, small, and medium enterprises (MSMEs) to promote poverty reduction and sustainable economic growth in the APEC region.

The Partnership offers best practice tools, ideas, knowledge and critical connections derived from Canadian experience, tailored to local APEC markets. The current economies of focus are: Indonesia, Peru, the Philippines, and Vietnam. The focus areas of the Partnership aim to address key challenges faced by MSMEs and aspiring entrepreneurs from APEC developing economies in the areas of technology and innovation, market access, human capital, and social entrepreneurship, with an emphasis on the crosscutting themes of women, youth, governance and the environment.

Visit the APEC-Canada Business Partnership at <https://apfcanada-msme.ca/>

ABOUT THE AUTHOR



Alex Capri is a Senior Fellow and full-time lecturer in the Business School at the National University of Singapore. Alex also lectures in the NUS Lee Kuan Yew School of Public Policy.

From 2007-2012, Alex was the Partner and Regional Leader of KPMG's International Trade & Customs Practice in Asia Pacific, based in Hong Kong.

Alex has over 20 years of experience in global value chains, business and international trade - both as an academic and a professional consultant. He has advised clients on cross-border projects in more than 40 countries and he has worked in some of the

most challenging regulatory environments in the world.

Alex works in emerging economies on projects involving micro and small and medium enterprises (MSMEs), particularly with the aim of developing and enabling entrepreneurs in local export markets (both products and services). He advises governments and businesses on matters involving “upskilling” and developing human capital. Some areas of focus include mobile financial services, peer-to-peer lending scenarios, AI and e-commerce strategies. His work with the public and private sectors includes:

- Skills building re: digital platforms, e-logistics and digital trade platforms
- Assisting companies with Free Trade Agreements (FTAs) and cross-border trade
- Traceable and sustainable supply chain strategies

Alex has been a panellist and workshop leader for the World Economic Forum.

He writes a column for Forbes Asia, the Nikkei Asian Review and other publications and is a frequent guest on global television and radio networks.

He holds a M.Sc. from the London School of Economics, in International Political Economy. He holds a B.Sc. in International Relations, from the University of Southern California.

INTRODUCTION

INDONESIA, TECHNOLOGY AND MSMEs

Micro and small and medium enterprises (MSMEs) account for around 99 per cent of existing business enterprises in Indonesia and employ more than 95 per cent of the total workforce across the country. These businesses should be the primary engines of economic growth. But they generate only around 56 per cent of the GDP in Indonesia¹.

The United Nations defines a micro-enterprise as having fewer than 10 employees; small businesses as having fewer than 50 employees; and medium sized businesses, fewer than 250 employees. In Indonesia, the majority of businesses are micro enterprises.

Indonesian MSMEs historically have been excluded from regional and global value chains — and even marginalized within local markets — due to a lack of connectivity with markets, access to finance and knowledge networks and a dearth of human capital (the right skill sets), particularly when it comes to the fundamentals of starting and running a successful digital business.

Today, the harnessing of digital technology combined with proactive policy-making has the potential to empower MSMEs and “level them up” into new value chains. Policy-makers in Jakarta and stakeholders throughout the country have recognized this.

In 2016, Indonesian President Joko Widodo launched a technology development plan to make Indonesia the largest digital economy in Asia by 2020, with a target of US\$130 billion in digital revenues². As part of this initiative, the Gerakan Nasional 1000 Start-up Digital Initiative was launched and has made tremendous progress³. Investment in Indonesian start-ups in 2016 reached US\$1.4 billion and then jumped to US\$3 Billion in the first eight months of 2017⁴.

In 2017, Indonesia’s Commission for the Supervision of Business Competition (KPPU) issued a report that concluded that 3.7 million new jobs would be created within the digital economy by 2025⁵ and that MSMEs could leverage technology to achieve an 80 per cent increase in revenue growth⁶.

¹ Global Business Guide. (2016).

² Australia Indonesia Partnership for Economic Governance. (2017).

³ IBID

⁴ IBID

⁵ Nikkei Asian Review. (2016).

⁶ We are social. (2018).

Technology is creating new opportunities and lowering barriers to entry for MSMEs. The digital platform economy is enabling the development of human capital by connecting small enterprises to the digital global commons. This means access to new markets and resources such as cloud-based tools, e-commerce platforms, and mobile apps that can facilitate an infinite amount of economic and social activities.

According to Statistica, smart phone penetration in Indonesia has reached 43.2 per cent of its population and is rising rapidly. Indonesians spend an average of eight hours and 51 minutes per day on the Internet and the country is currently ranked fourth in the world in this category, behind Thailand, the Philippines and Brazil⁷.

In this regard, digital technology should be regarded as a power multiplier or a “levelling up” mechanism for MSMEs. This should be viewed positively by policy-makers, particularly as governments in emerging markets are striving to embrace strategies that create an environment of “inclusive capitalism” for small business owners.

Digital mobile technology is fuelling growth of the informal economy which presents regulatory challenges to Indonesian policy-makers as well as depriving the government of valuable tax revenues.

According to a report by the Foundation for Economic Education, as much as 60 per cent of Indonesia’s economy is already in the informal sector⁸.

There are caveats associated with these new technologies, primarily when it comes to the role that large platform companies play in the growth of the digital economy. Facebook, Twitter, YouTube, and Instagram, for example, have an overwhelming — some would say oligopolistic — presence in Indonesia and these firms have been accused of crowding out local players.

Large foreign tech companies have been investing heavily in Indonesia’s digital landscape. For example, Tokopedia, one of Indonesia’s largest e-commerce platforms, recently secured US\$1.1 billion from China’s Alibaba investor group⁹. Similarly, Go-Jek, Indonesia’s first unicorn — a privately held start-up company valued at more than US\$1 billion — has been rapidly diversifying its revenue stream from ride-sharing to digital payment and last mile logistics apps and has relied on Chinese tech giants Tencent Holdings Ltd. and JD.com Inc. to secure crucial funding. Most recently, Google, Singapore’s Temasek Holdings and China’s Meituan Dainping teamed up for a \$1.2-billion fundraising campaign on behalf of Go-jek, which also included investment firms KKR and Warburg Pincus¹⁰.

⁷ IBID

⁸ Foundation for Economic Education. (2017).

⁹ Techcrunch. (2017).

¹⁰ Daga, Anshuman. (2018).

The presence of the world's largest tech firms in Indonesia's digital economy present both tremendous opportunities and challenges for Indonesian MSMEs. Indonesia's policy-makers will have to strike a balance between embracing foreign investment, while at the same time creating a business environment that nurtures the development of local firms in a fair and open digital market place.

But the challenges posed by large foreign tech giants in Indonesia's emerging digital economy is not the focus of this report. That is a topic that needs to be addressed in a separate study.

The focus of this report is the positive impact that technology can play to integrate MSMEs into markets, and, most importantly, how to develop and promote human capital through training programs and partnerships to maximize the economic participation of MSMEs in local, regional, and even global value chains.

An overview of how this report is structured and what key questions it attempts to answer is provided in the next section.

REPORT OBJECTIVES AND FOCUS

This report explores how MSMEs in Indonesia can leverage technology to better access the digital economy and grow their businesses. A fundamental question to be answered is: How best to develop skill sets and resources so MSME business owners can achieve this goal?

This study is divided into four key sections: first, a brief snapshot of the digital landscape in Indonesia and what kinds of technologies are driving change for MSMEs; a brief literature review and comparison of salient reports and analysis on this subject; a section on general findings and discoveries, and, finally, a section on recommendations for policy-makers.

Key Questions

This report seeks to answer the following questions:

- What does the rapidly evolving digital landscape look like in Indonesia?
- How do cloud-based artificial intelligence (AI), analytics, e-commerce, social media and the sharing economy create economic opportunities for MSMEs?
- How best to harness the above to provide critical training and support to Indonesian MSMEs?
- What are the key challenges MSMEs face when it comes to gaining access to, and participating in these dynamic digital ecosystems?

- What are the key recommendations for Indonesian policy-makers regarding how to support and nurture MSMEs, particularly regarding training, skills development, knowledge sharing, collaborative networking, and strong framework of rules?
- How can policy-makers promote MSME training programs that create inclusive growth along with environmentally sustainable practices?

In an attempt to answer the above questions, the author identified and worked with eight Indonesian MSMEs — each serving as an individual case study — and was able to identify common themes that coincide with key findings from previous studies referenced throughout this report. Interactions with the above eight MSMEs prompted many of the author’s recommendations for policy-makers, business leaders, NGOs, MSMEs, and other key stakeholders, which can be found later in the report.

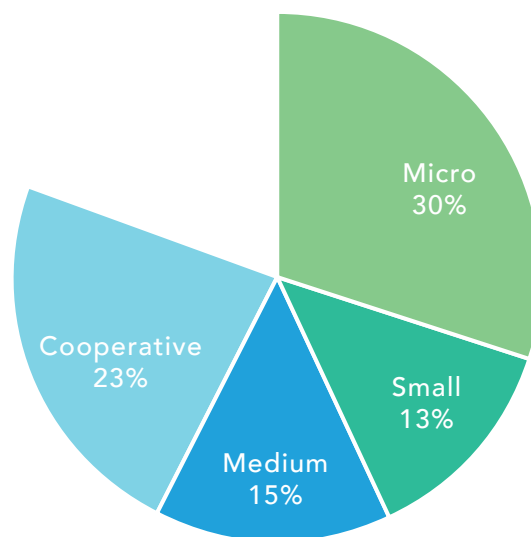
As a rule, the information gathered in this project is intended to serve as the basis for further discussion and policy formulation, specifically regarding the task of developing human capital for further MSME empowerment in the digital sector.

Snapshot of Indonesian MSMEs

About 57 million MSMEs were operating in Indonesia in 2017. About 97 per cent of the total workforce is currently employed in MSMEs, while 99.9 per cent of all businesses in Indonesia are MSMEs¹¹. MSMEs account for approximately 60 per cent of the overall GDP of Indonesia.

Business Type	Asset (IDR)
Micro	Max 50 million
Small	50-500 million
Medium	500 million

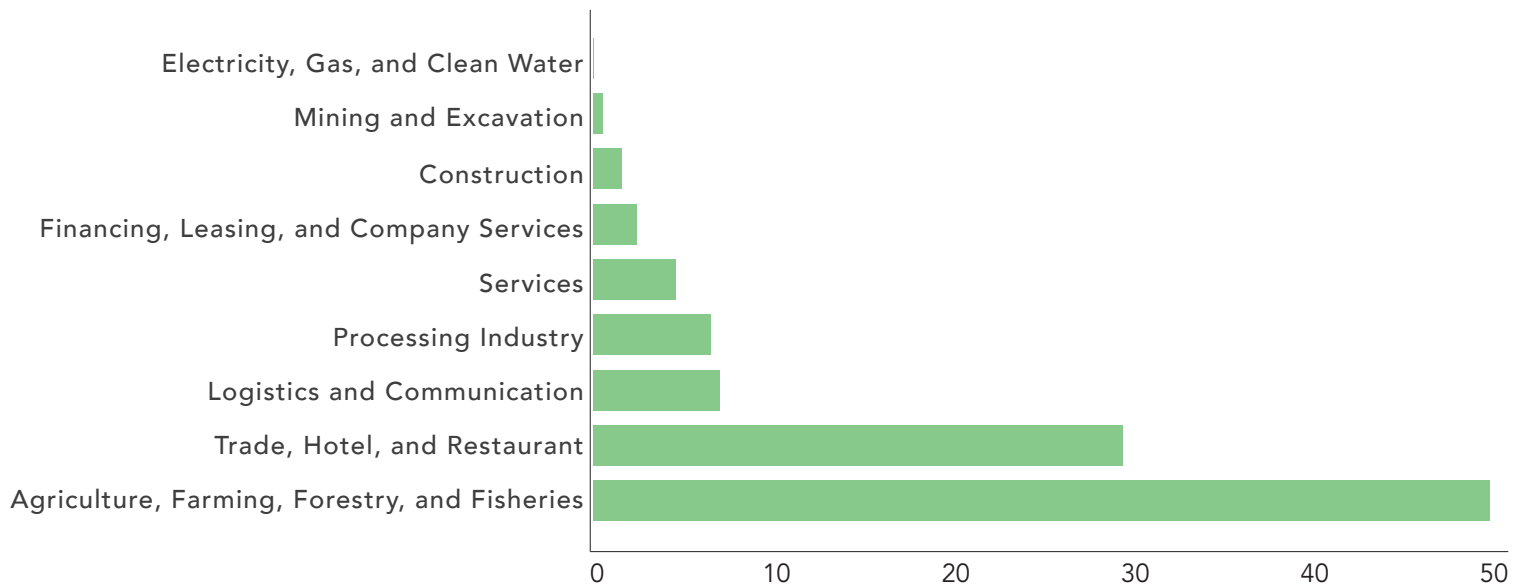
1 USD = 14,000 Indonesian Rupiah (IDR) as of May 2018



Overall GDP of Indonesia (in%) 12

¹¹ RMOL. (2015).

¹² MetroTV. (2017).



Business Sector of MSMEs (in %)13

Eighty per cent of MSMEs are in the trading sector and are not engaged in the manufacturing or fabrication of products (instead, they are involved in the buying and selling of existing products/services).

This report focuses on a small cross-section of MSMEs that provide services, perform processing or engage in the fabrication of tangible goods¹⁴.

KEY TECHNOLOGIES EMPOWERING MSMEs

In 2017, more than 60 per cent of Indonesian MSMEs were online¹⁵. According to McKinsey, the global consultancy, Indonesia's trajectory in the digital landscape is very similar to China's from 2010 to 2015, particularly in the e-commerce space¹⁶.

Four powerful forces have emerged in the digital landscape in Indonesia. They are the springboard for the technological leapfrog that is transforming Indonesia and other emerging markets. The four foundations are:

- Cloud-based tools and computing
- Social media platform and apps;
- E-commerce platforms and apps; and,
- Sharing economy platform and apps.

¹³ State Ministry for Cooperatives, Small and Medium Enterprises. (2015).

¹⁴ Bank of Indonesia. (2015)

¹⁵ Deloitte. (2015).

¹⁶ McKinsey & Company. (2018).

These digital ecosystems require robust digital infrastructure to support high-speed broadband wireless access to the internet. Indonesia, an archipelago of more than 17,000 islands, has seen uneven development of its digital infrastructure because of the challenges posed by its unique geography.

However, as the internet of things (IoT) becomes ubiquitous, mobile technology will become an exponential power multiplier for MSMEs, even beyond the major population centres of Jakarta, Surabaya and Denpasar as 5G networks are built throughout the country.

The national government has committed to rolling out 5G networks over the next three to five years¹⁷.



Cloud Computing

Cloud computing enables businesses to leverage resources and higher-level services immediately, and in real time, without building up computing infrastructure in-house. Via a digital platform, MSMEs can access search engines, computing tools, templates, critical algorithms and data analytics applications — as long as they have access to a network.

For MSMEs, this means that cloud-based platforms for basic business management — from balancing accounts payable and receivable to inventory management and invoicing — can be done inexpensively or even free, simply by accessing an online tool.

The ability to access virtually any kind of information, service or collaborative network at little or no cost is a paradigm shift for MSMEs. The critical issue, therefore, is to ensure that small business owners not only have reliable and affordable access to the cloud, but that they possess the basic knowledge and technical skills to put newly accessed tools and resources to work for the business.



Social Media

Social media enable users to interact with each other on digital platforms that are designed for community-based input, interaction, content-sharing, and collaboration. In Indonesia and other emerging markets, social media platforms serve as conduits for commercial activities with far greater frequency than in more mature markets.

Using global platforms such as Facebook, WhatsApp, YouTube, Instagram, Line, and Twitter, for example, provides MSMEs with real-time access to billions of customers, collaborators, suppliers, and other service providers on a scale unimaginable a decade ago. In 2017, social media platforms enabled more than US\$3 billion in informal buying — called social commerce — in Indonesia¹⁸.

¹⁷ Digital News Asia. (2017).

¹⁸ Deloitte. (2015).



E-Commerce

E-commerce describes all transactions made in the digital space on platforms that connect buyers, sellers, and other service providers. In Indonesia, these include local e-commerce platforms such as Bukalapak, Tokopedia and Traveloka, in addition to the big players such as Amazon.

E-commerce platforms are micro-economies and also connect extensively to social media networks in Indonesia.

At the heart of any e-commerce ecosystem is a digital wallet or payment system that is trustworthy and simple to use. The increasing use of the blockchain is also serving as a catalyst for micro-commerce. Bukalapak recently released an e-wallet called BukaDompot (with funding from China's Ant Financial and Emtek, an Indonesian media-tech conglomerate) to compete with Go-jek's digital wallet Paylater¹⁹.



Sharing Economy

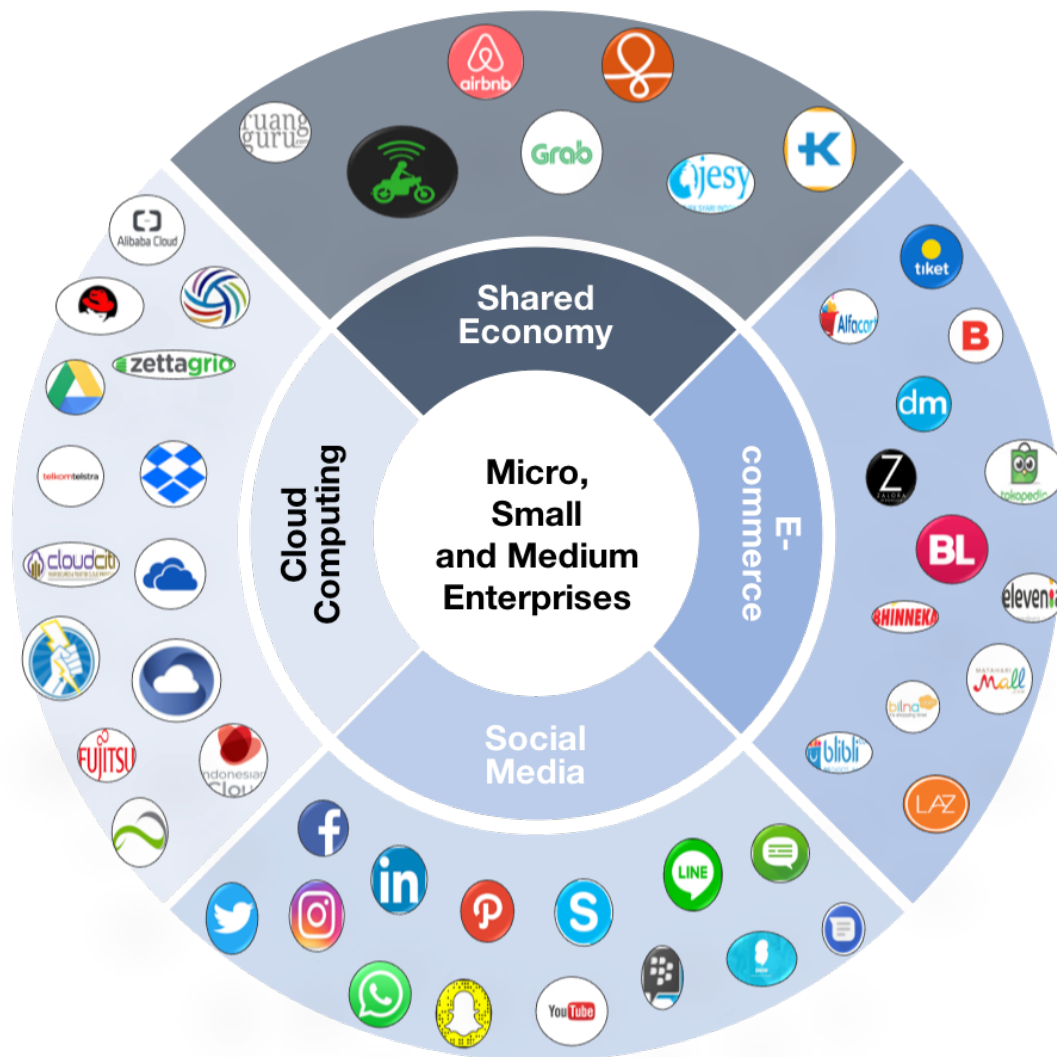
The sharing economy is an economic model that is based on collaborative sharing and using of products and services. Sometimes referred to as the “informal economy,” this type of digital ecosystem allows those with excess capacity to connect those with who need a product or service. In Indonesia, the sharing economy is revolutionizing new micro-markets beyond ride-sharing. For MSMEs, the sharing economy can eliminate costs for expensive equipment, tooling, real estate, vehicles, and other items, and allow for flexible, scalable “asset light” business models.

¹⁹ Deal Street Asia. (2018).

TECHNOLOGY LANDSCAPE

Here are some examples of platforms and apps serving MSMEs in the digital landscape of Indonesia.

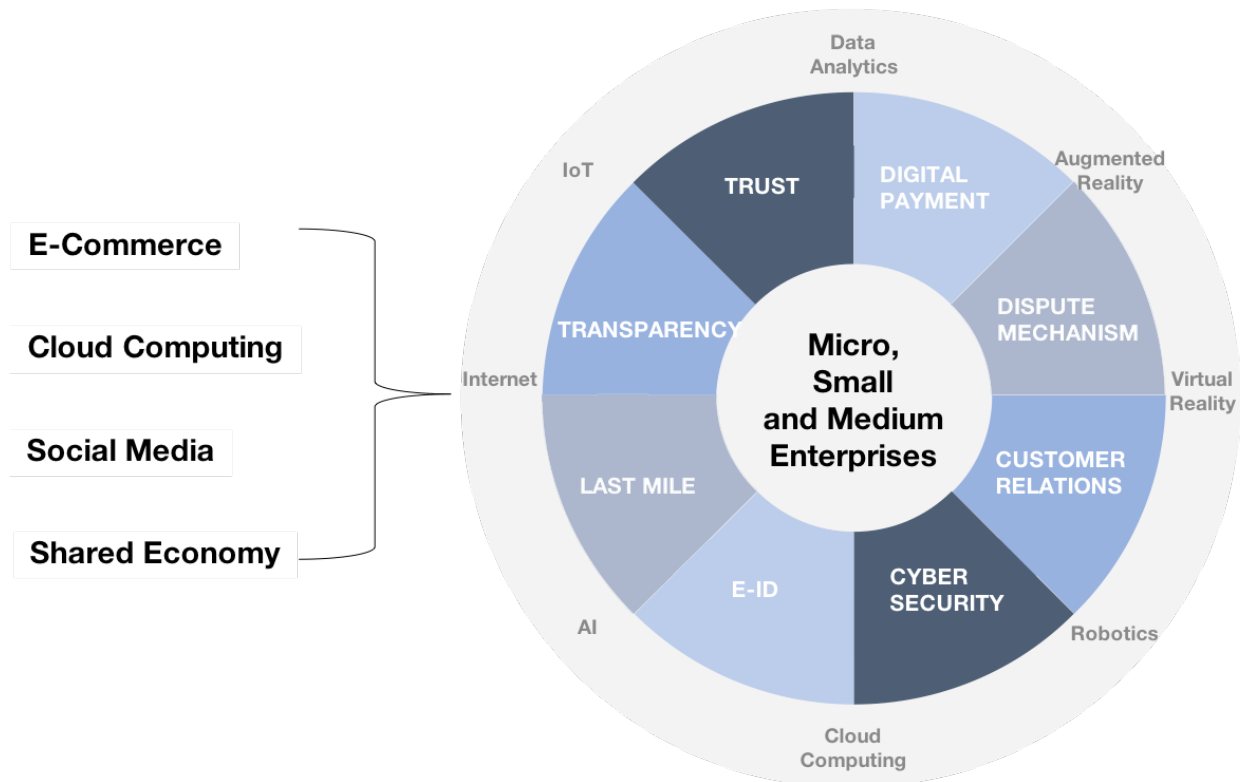
They serve as power multipliers for MSMEs and deliver access to global value chains, strategic partnerships, collaborative networks, and customers. They are portals to unlimited knowledge and information.



MSME SUCCESS DRIVERS AND CRITICAL TECHNOLOGY

MSMEs depend upon a combination of factors to succeed in the four key environments of a digital landscape:

1. MSMEs need access to technologies such as the internet, cloud computing, and artificial intelligence; and,
2. MSMEs need policy-makers to ensure an adequate framework of rules and business environments that provide transparency, trust, security, and reliability.



LITERATURE REVIEW AND ECONOMY

MAIN BODY OF RESEARCH AND GENERAL NARRATIVE

This report identified a substantial number of studies which focused on the topic of MSMEs, technology, and opportunities for economic growth in emerging markets. Some of the world's most reputable international institutions have published extensive reports on both the opportunities and challenges that exist in the quest to empower MSMEs within value chains. Private-sector firms have also published insightful studies on the topic. There are strengths and weaknesses with these studies as they pertain to Indonesia.

A literature review of studies conducted by public institutions such as the World Bank, the United Nations, OECD, the World Economic Forum, APEC, the World Trade Organization, the Asia Development Bank, and others reveals a universal narrative with the following strengths:

Public Institution Literature — Strengths

- Recent published studies illustrate how MSMEs are the key to unlocking the next wave of growth in local, regional and, thus, the global economy²⁰;
- A number of studies focus on why technology is a “game-changer” that provides MSMEs with new opportunities to access markets, knowledge, and tools²¹; and,
- Other studies have focused on how MSMEs have the potential to grow the next generation of small businesses in an ethically responsible, environmentally sustainable manner. This perspective recognizes gender equality as an integral part MSME growth²².

A broad literature review also reveals that there are universally perceived challenges to unlocking the potential of MSMEs:

- Existing literature captures how poor infrastructure and lack of access to broadband internet have marginalized populations in terms of inclusive growth²³;
- Published sources have focused on how MSMEs can overcome limited access to information, funding, training, and other capacity-building resources²⁴; and,

²⁰ OECD. (2017).

²¹ World Bank. (2015).

²² IFC. (2016).

²³ World Bank. (2014).

²⁴ McKinsey & Company. (2018).

- Similarly, over-regulation, lack of regulatory harmonization, lack of transparency and, for cross-border commerce, the prevalence of tariff and non-tariff barriers have severely stunted growth opportunities for MSMEs in Indonesia and across emerging markets²⁵.

Business Sector Publications — Strengths

Studies generated by professional consultancies and other private enterprises have focused on the digital landscape facing MSMEs in emerging markets in Asia. In the following ways:

- The technical aspects of digital infrastructure regarding broadband and wireless speed, access and costs²⁶;
- Specifics of data privacy, security issues and trust²⁷; and,
- Availability of functional digital payment platforms, digital wallets, and mobile financial services such as micro-finance and micro insurance²⁸.

Weaknesses in the Existing Body of Literature

While the existing body of work provides a comprehensive narrative that captures salient digital opportunities and challenges facing MSMEs in developing markets, the following topics are not sufficiently addressed:

- The best way to provide training and support to Indonesian MSMEs regarding the critical aspects of upskilling and the digital levelling up process required in Indonesia;
- Identifying the key challenges facing MSMEs in Indonesia when it comes to gaining access to and participating in dynamic training and learning ecosystems; and,
- Making key recommendations for Indonesian policy-makers regarding how to support and nurture MSMEs regarding training, skills development, knowledge sharing, collaborative networking.

This report, therefore, focuses primarily on the above areas that have not been sufficiently addressed in the existing body of literature.

²⁵ A.T. Kearney (2015).

²⁶ IBID

²⁷ IBID

²⁸ EY. (2018).

RESEARCH METHODOLOGY

GENERAL APPROACH

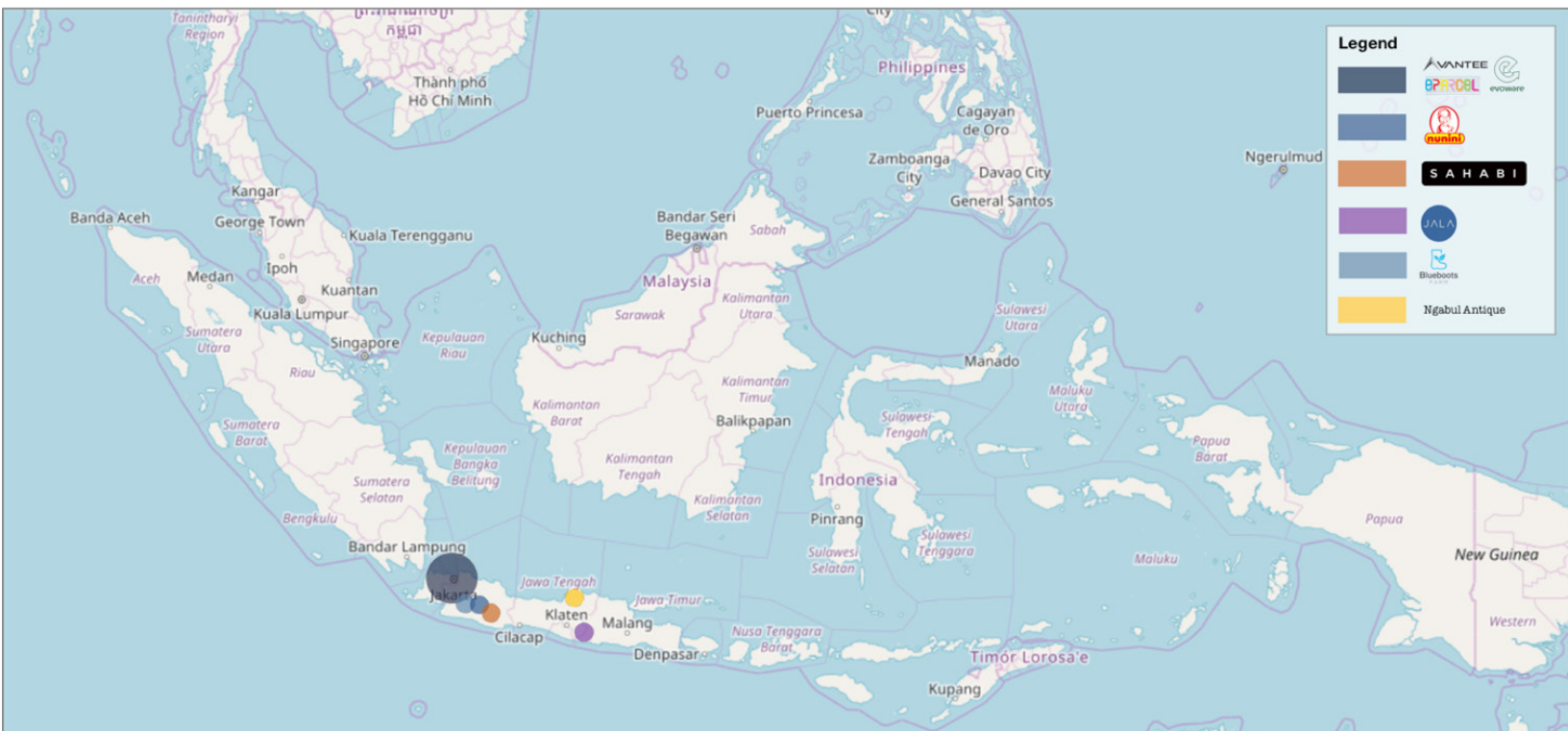
This report draws upon a variety of research methods to obtain its findings, recommendations and conclusions. These include:

- Eight Case studies, which incorporated questionnaires that targeted specific MSME owners and entrepreneurs in Indonesia. The management at these eight MSMEs answered an informal survey and engaged in discussions about the key digital issues impacting their businesses;
- Discussions with Ms. Elvira Rosa Hadiningtyas, senior representative at the Ministry of Cooperatives and SMEs, Republic of Indonesia. This government body works closely with Indonesia's Ministry of Industry, Ministry of Trade, and the Ministry of Cooperatives (Dekopin), as well as a host of other regional and local governmental offices responsible for mentoring and supporting MSMEs. All of these policy-executing bodies report to Indonesia's Coordinating Ministry for Economic Affairs;
- Analysis of public data from bodies including the World Bank, APEC, ASEAN, and the World Economic Forum;
- Secondary research from published bodies of work, all of which are mentioned in this report's literature review section and listed throughout the report's footnotes and endnotes in the appendix;
- Discussions with academic colleagues, such as Dr. Lawrence Loh, associate professor and director at the Centre for Governance Institutions and Organizations (CGIO), National University of Singapore. Prof. Loh and the CGIO conduct research on ethical capitalism and good governance with a focus on Indonesia and Southeast Asia;
- The author's discussions with MSMEs and policy-makers at a workshop, entitled "Harnessing Industry 4.0 for SMEs Participating in the Digital Economy." This three-day workshop, directed by the report's author, was sponsored by Singapore's Ministry of Foreign Affairs in partnership with Google and brought together policy-makers and MSME owners from Indonesia and across ASEAN. This formed an important frame of reference for the author's ongoing research;
- Discussion with Mr. Graham Dixie, formerly of the World Bank and now director of the NGO Grow Asia, shared valuable insights on efforts to teach smallholder farmers in Indonesia how to successfully leverage mobile technology; and,

- Interviews with managers of NGOs in Indonesia, namely, Mr. Michael O’Leary, director of the ROLE Foundation in Bali.

MSME CASE STUDIES AND INTERVIEWS








List of MSME Case Studies



Geographic Location of MSMEs that participated in case studies (Source: Open Street Map)

A total of eight MSMEs agreed to be the subjects of case studies and to engage in discussions regarding the state of technology and how it impacts their companies in Indonesia. They also shared their views about training opportunities available to them. These case studies were not intended to represent a statistically significant sample, but rather to provide anecdotal evidence that supports broader trends which were identified in another 2018 survey of 448 Indonesian entrepreneurs and MSMEs, conducted by Canada’s Asia Pacific Foundation²⁹.

²⁹ Asia Pacific Foundation of Canada. (2018).

Logo	Company	Industry	Product Description (filled out by the company itself in the survey)	Website	Location
	Avantee	Fintech	We provide a Portal that accommodates SME loans via Crowd-Funding.	www.avantee.co.id	Jakarta
	Blueboots	Food Processing	N/A	www.blueboots.farm	Bogor
	EvoWare	Manufacturing/Fabrication + Sales & Marketing	Edible cups & packaging made of seaweed. To create innovation for environment and increasing livelihood of seaweed farmers.	www.evoware.id	Jakarta
	Jala	Aquaculture	Shrimp farming management & data analysis system	www.jala.tech	Yogyakarta
	Eparcel	Logistics & Warehousing	Logistics & Warehousing	www.eparcel.co.id	Jakarta
	Nunini	Manufacturing/Fabrication	Producing farm instant food	http://nunini.id	Cianjur
	Sahabi	Retail	N/A	www.sahabi.id	Bandung
N/A	Ngabul Antique	Manufacturing/Fabrication	Furniture from teak / mahogany / sungkai	N/A	Jepara

CASE STUDY FINDINGS AND DISCOVERIES

Company Operations

The eight MSMEs that participated in this report's case studies have been in business for an average of 6.5 years and earn an approximate monthly gross revenue of US\$7,297.

Digital Awareness

All eight companies believe they are just managing to keep up with digital tech, but that they are lagging behind in key areas, particularly employee training.

Digital Infrastructure

The majority of companies were not aware that there is assistance available from government entities, NGOs, and private companies to improve their internet infrastructure, e-commerce, and digital business activities. The primary technology platforms used for the companies' operations are mobile applications.

Funding and Financial Support

Half of the companies questioned stated that they are using digital technology poorly to obtain financing and funding. The biggest challenge to raising money and getting financial support involves a lack of trust and a general lack information about where and how to obtain funding.

Regulatory Environment

The biggest challenges in Indonesia's regulatory and legal frameworks involves a lack of information about relevant regulations (for compliance purposes) as well as the lack of harmonization and coordination between government agencies.

Cross-Border Digital Readiness

For opportunities regarding cross-border business, all of the eight case study MSMEs rely on existing e-commerce platforms like Tokopedia or use a combination of social media and traditional postal and express consignment companies such as FedEx, DHL, or UPS.

Data Pooling, Collecting and Sharing

Managers from all companies stated that they would welcome free access to government data if it was useful to their businesses.

Training and Access to Knowledge

MSMEs perceive government-funded scholarships and business-sector-specific workshops as the most valuable training opportunities, specifically, to learn business management and technical skills. More publicly available information about the availability of training and upskilling opportunities would be appreciated.

CASE STUDIES: DIGITAL TECH USED TO GROW MSME BUSINESSES

TECHNOLOGY	Manufacturing fabrication, production, farming	Retail/ trade	Finance, banking, insurance, sales	Tech-related: content, apps, platforms, software, code- writing	Other services: education, hospitality, logistics, travel, consulting, legal, marketing, sales
Cloud-based computing and tools	2	0	0	1	1
Social media apps	3	2	0	1	1
Shared economy apps	1	1	1	1	1
E-commerce platforms	1	2	0	1	0
Data analytics platforms and tools	2	0	0	1	0
Advanced search engine tools	1	1	1	1	1
Digital wallets and cash	2	1	0	0	0
Blogs and open-source communities	3	1	0	0	1
On-line training platforms and skills workshops	1	0	0	0	0
Robotics and drones	1	0	0	0	0
Augmented and virtual reality	1	0	0	0	0
Crowdfunding and crowd sourcing	1	0	0	0	1

Representation of the types of technologies used by the eight different companies participating in the case studies.

MSME CASE STUDY SNAPSHOT - EVOWARE



EvoWare is a socially responsible enterprise that provides sustainable eco-solutions for plastic waste problems in Indonesia. The company’s products — which include cups, bowls, wrapping materials, packaging, and coffee and tea satchels — are eco-friendly and biodegradable. They are made from natural seaweed. All of EvoWare’s products have a two-year shelf life and are printable, sealable and EDIBLE!

Technology Used

EvoWare uses cloud-based computing and tools, social media apps, data analytics platforms and tools, sharing economy apps, digital wallets, blogs, and open-source communities.

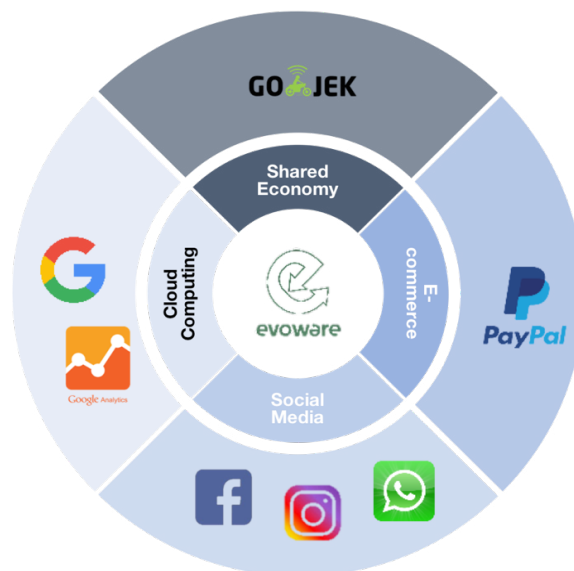
FACTS & FIGURES	
Industry	Manufacturing/Fabrication + Sales & Marketing
Product Description	Edible cups & packaging made of seaweed. To create innovation for environment and increasing livelihood of seaweed farmers.
Time Being in Business	N/A
Monthly Gross Revenue	N/A
Full-time Employees	10 to 25
Geographic Location of Operations	Local (within 1 town/village)
Website	www.evoware.id

Challenges

EvoWare faces challenges when it comes to educating its employees about digital trends and business opportunities. Management perceives the business as moderately enabled in digital business capabilities. The enterprise is lagging in key areas. EvoWare would like to expand its digital business and e-commerce across borders. Challenges involve the regulatory environment and a lack of information about legal frameworks and regulations. Harmonization and coordination between government agencies is lacking. Access to broadband wireless internet services is not available everywhere when it’s needed. EvoWare believes that the government is not doing enough to invest in digital infrastructure in their area and is not providing access to training and education.

Needs

Improve the general digital business capabilities and knowledge of existing employees. Be up-to-speed about the newest digital trends and business opportunities. Employees need access to technical training and better access to general business knowledge. The need for more information and instructions about legal frameworks and regulations is urgent. Regulatory updates are seen as very helpful. EvoWare also requires funding for training and human capital development.



RECOMMENDATIONS FOR POLICY-MAKERS

GENERAL RECOMMENDATIONS

MSMEs are making progress in Indonesia towards inclusive, sustainable and scalable growth. But, in an archipelago nation of more than 17,000 islands, this progress has been unevenly distributed. Most progress has been concentrated in the urban clusters on the islands of Java and Bali, namely, Jakarta, Bandung, Surabaya and Denpasar.

For an MSME to leverage technology in four key areas of the digital landscape (e-commerce, the sharing economy, social media, and cloud-based analytics or AI), governments must play a proactive role in enabling the right kind of business ecosystems and public private partnerships.

The Ministry of Cooperatives and SMES, the Ministry of Trade and the Indonesian Cooperation Council (DEKOPIN) have been engaged in ongoing efforts to create an environment of digital inclusion for MSMEs. These efforts are to be commended. The recommendations in this report, therefore, are intended to complement these ongoing efforts. Recommendations focus on systemic challenges regarding digital infrastructure as well as more granular areas of policy-making concerning human capital development for MSMEs.

More generally, on the matter of good governance, the underlying message that has emerged from MSMEs in this study, as well as the previously cited existing body of literature, is that government agencies and policy-makers in Indonesia must continue to improve how they interact with MSMEs in the following ways:

- Making information for MSMEs ubiquitous and easy to access;
- Simplifying and harmonizing rules for doing business;
- Being a trustworthy and reliable collaborator in multi-stakeholder ecosystems;
- Providing for increased transparency and access to government-generated data;
- Embracing bottom-up open-sourced solutions and collaboration;
- Promoting public-private partnerships on local, regional, and even global levels;
- Improving coordination between government agencies and national, regional, and local government offices.

DIGITAL INFRASTRUCTURE

Everything begins with digital infrastructure. A prime opportunity is in the offering for Indonesia to achieve a leapfrog in technology from existing 3G and 4G wireless networks to fifth generation (5G) technology.

5G technology, which is lightning fast and has vastly more bandwidth than 3G or 4G wireless, is the key to achieving growth in a world that will be driven by billions of mobile smart devices on the internet-of-things (IoT). According to the wireless technology giant Qualcomm, the global 5G economy will be valued at about US\$12.3 trillion in revenue³⁰ by 2035.

5G is particularly promising for an emerging market like Indonesia and should empower MSMEs.

Discussions with the Ministry of Cooperatives and MSMEs revealed that the lack of internet connections throughout less developed areas of Indonesia continue to pose challenges for MSMEs. As such, Indonesian policy-makers must double down on their efforts to accelerate capacity building around the adoption of 5G wireless.

To accelerate 5G development, the Indonesian government, telecom operators, and other key stakeholders will need to form strategic partnerships with foreign technology companies. While this is necessary, this could become complicated as Indonesian policy-makers are concerned about over-reliance on foreign firms and governments.

TRAINING AND HUMAN CAPITAL DEVELOPMENT

Operating a business in the digital economy requires basic skill sets. Below are key areas demanding priority policy attention and ongoing support.

Basic Business Skills Education

Even before MSMEs avail themselves of the four key areas of the digital economy, business owners must first possess basic knowledge and skills regarding how to manage a business.

The Ministry for Cooperatives and SMEs has slotted four specific areas for basic skills training:

- Cooperative management training;
- Growth and development of entrepreneurship;

³⁰ Qualcomm | The 5G Economy. (2018).

- Capacity building in specific sectors (tour guides, for example); and,
- Special training for disabled workers and ex-migrants.

This is progress, but the next step requires significant scaling up to make more training available to a broader audience regarding the fundamentals of managing a business. This should include basic topics on finances, procurement and sales, and inventory management. This training should feature the following attributes:

- Hands-on learning;
- More diverse classes designed for a broad range of business sectors and niches;
- More locally based face-to-face courses; and,
- More courses that are free of charge or subsidized by government, local business groups, associations or NGOs

A successful example of one such training organization is the Bali-based ROLE Foundation³¹ which provides basic skills training combined with awareness of environmental sustainability. ROLE works closely with local government in Bali delivering programs designed to equip women with skills for ongoing wage-earning opportunities.

Collaborative Public-Private Ecosystems

Some of the best government sources for expertise and valuable human capital reside outside of governmental institutions. Rather than pursuing top-down, hierarchical initiatives, policy-makers should seek collaborative partnerships with relevant stakeholders, including local business owners, multi-national enterprises, local government officials, NGOs, and other community organizations.

The Ministry of Cooperatives and SMEs has entered into some ground-breaking public-private partnerships aimed at assisting MSMEs. These include:

- Partnering with e-commerce platform Lazada, to curate ready-to-export products for MSMEs;
- Working with e-commerce platform Bukalapak, to showcase 2 million MSMEs and their products;
- Collaborating with PT. POS Indonesia to build MSME distribution networks;

³¹ Rolefoundation. (2018).

- Working with Blibli.com to promote and showcase MSME products in Gallery Indonesia WOW; and,
- Teaming up with Pasar Induk Nusantara (PIN) to improve agricultural supply chains for MSMEs.

These are all excellent initiatives. Again, these efforts should be scaled up so new on-line partners can join nascent ecosystems. The benefits of more public-private training initiatives will include:

- Open-sourcing of ideas and solutions;
- Avoidance of one-dimensional, short-sighted perspectives;
- Bottom-up and lateral input from key stakeholders;
- Accountability and cost-sharing amongst key stakeholders; and,
- Transparency, trust and relationship building opportunities.

The role of the Ministry of Cooperatives and SMEs in these partnerships should include a combination of facilitation, regulatory enforcement, and leadership around capacity building. But there is also a caveat: policy-makers must not grow overly dependent on the large e-commerce platforms. It is important to foster innovation on a local scale, without conceding autonomy to large platforms — particularly if those platforms will own all the data of local MSMEs.

On-line Platforms and Mobile Apps

MSMEs require fast and easy access to information regarding training and skills acquisition. One area that has seen a surge in activity is the development of online courses and learning apps.

Indonesia's national, regional, and local governmental institutions need to increase the amount of access to online educational resources regarding business management and digital skills.

These platforms and apps can include:

- Short three-to five-minute micro-courses on skills-related topics;
- Crowd-sourced apps that allow anyone to create new learning content;
- Resources from trade schools, universities, NGOs, and other on-line sources;
- Bespoke online courses developed through public-private partnerships; and,
- Partnerships with social media platforms to promote and deliver learning apps and links.

One example of a powerful mobile micro-learning app that enables the creation of crowd-sourced educational topics is gnowbe.com³². Indonesia's MSMEs will benefit greatly from a wave of new educational topics on micro-learning apps. Another example in Indonesia is ruangguru.com which provides a “digital boot camp,” an excellent platform for MSMEs to learn basic skills.

MSME FUNDING AND FINANCING

Lack of access to basic funding remains a major challenge for MSMEs in Indonesia. When it comes to providing grants or scholarships for upskilling, policy-makers need help from key stakeholders, including banks, NGOs, venture capital firms, start-up funds, and industry associations. In Indonesia, about half the adult population has no actual bank account³³.

There have been recent initiatives to change this. Bank Rakyat Indonesia, the nation's second largest bank, as well as Bank Tabungan Pensiunan Nasional, have been working with the Indonesian government to set up mechanisms for getting micro-loans to qualified MSMEs.

Meanwhile, Bank Mandiri has been accepting micro-loan applications via post offices throughout Indonesia.

Micro-Loans and Mobile Financial Services

Policy-makers in Indonesia have been struggling to enforce effective regulatory frameworks regarding micro-financing — particularly in remote parts of the archipelago where income levels are extremely low. Consequently, unscrupulous lenders and loan-sharking have thwarted the development of a legitimate, well-monitored micro-lending landscape. Lack of trust abounds.

The Ministry of Cooperatives and SMES is working with banks to tackle these challenges. Two major benchmarks for achieving a functional micro-loan environment in Indonesia involve accountability and traceability.

The Ministry of Cooperatives and SMEs has been working with banks and other financial institutions to address accountability and traceability needs by:

- Developing Integrated Business Service Centers (PLUT-Pusat Layanan Usaha Terpadu) to consolidate administrative and support functions for financing and tracing micro-loans, training programs and other services for MSMEs;
- Establishing a cooperative online data base with identification numbers (Nomor Induk Koperasi — NIK) for all MSMEs and linking these to NIK certificates regarding credit-worthiness and other criteria; and,

³³ Fintechnews Singapore. (2017).

- Linking the above to general, online micro-business permits (IUMK).

These are all encouraging developments, but there are challenges. Creating the technological infrastructure around these online frameworks have revealed that there is a shortage of resources, including a lack of expertise in both the Indonesian civil service and at Indonesian financial institutions.

Therefore, policy-makers are encouraged to focus on:

- Increasing mobile device penetration and infrastructure;
- Supporting existing and nascent e-commerce platforms with the rollout of digital wallets³⁴;
- Engaging outside subject-matter expertise and professional services firms around capacity-building efforts; and,
- Building trust by increasing dispute resolution and enforcement mechanisms.

Access to Low-Interest Loans and Grants

The following media and organizations can help policy-makers communicate with MSMEs and raise awareness regarding access to funding opportunities:

- Social media platforms;
- Traditional media, including TV;
- Crowdfunding applications (with banks as lending partners);
- Universities and trade schools;
- NGOs;
- Venture capital firms; and,
- Business incubators and accelerators

As described earlier, policy-makers can incentivize banks and other financial intermediaries to participate in such ventures, by continuing to build the relevant databases (NIK), installing credit mechanisms and integrating service centres (PLUT) to connect MSMEs to more platforms, companies, and collaborative networks. This will involve incentives, but because of increased traceability and accountability the government will be able to better enforce regulations and standards.

In order to prevent corruption and mismanagement, policy-makers will need to focus on good governance: transparency, traceability and accountability. Independent third parties will need to be contracted to audit results and measure performance.

³⁴ Asian Banking and Finance. (2018).

EMPOWERING WOMEN IN THE INDONESIAN WORKFORCE

Inclusive digital growth, in any market, means that women need to actively participate in the economy. In Indonesia, as in much of the emerging economies of APEC, women continue to be under-represented in employment numbers and continue to face an uphill struggle when it comes to competing for jobs, business, training and, in general, equal opportunities with men³⁵.

While gender issues are not intended to be the core focus of this study, it should be pointed out that the digital economy offers unprecedented opportunities for women in Indonesia. One of the reasons for this is that digital wealth creation is gender-agnostic. A customer buying a product on an e-commerce platform, or consuming information on a cloud-based app, does not know if the app or platform was designed by a man or a woman. The consumer of an on-line service, of any kind, generally would not care who owned the IP or who created the content.

As such, women in Indonesia will need to be equipped to compete and succeed in the digital landscape. Policy-makers will have to be proactive in making this happen.

The Asian Development Bank, in its Indonesia Country Report, cites some progress in this area³⁶. But for women to further boost the digital economy in Indonesia (in both the formal and informal economic sectors) policy-makers are encouraged to increase efforts to partner with key stakeholders to promote:

- Digital literacy programs for girls, starting in primary schools;
- Equal opportunity laws and employment programs targeting female students and employees;
- Collaborative partnerships with NGOs, businesses, academic institutions and governments that provide women with digital upskilling opportunities; and,
- Funding for women-owned businesses.

One success story regarding increased opportunities for women in Indonesia involves a venture capital firm called Angel Investment Network Indonesia (ANGIN)³⁷. Of the almost 3,000 projects that ANGIN has reviewed, they have facilitated more than 40 projects and funded more than 30 — many have benefited women-owned or women-run businesses.

The ANGIN success story of leveraging digital technology to build an entrepreneurial ecosystem that efficiently matches investors with recipients — on an equal-opportunity basis — needs to be expanded. Indonesian policy-makers should encourage more entities to use the ANGIN business model.

³⁵ Asia-Pacific Economic Cooperation, APEC. (2017).

³⁶ Asian Development Bank. (2010).

³⁷ Angin.ID. (2018).

PROMOTING ENVIRONMENTALLY SUSTAINABLE BUSINESSES

Indonesia, like other emerging economies, must contend with the challenges of habitat degradation, plastic waste, global warming, and a host of other environmental issues.

Policy-makers must adopt forward-looking policies that mandate sustainable business practices that provide MSMEs with the tools and training to achieve sustainable growth at the grass-roots level.

Policy-makers should double down on efforts to get MSMEs to embrace sustainable business models. Below are some ideas:

- Funding and grants based on sustainability benchmarks and best-practices;
- Sustainability training programs;
- Collaborative ecosystems around “circular economies”;
- Crowd-sourcing of apps and platforms that facilitate sustainable practices; and,
- Partnering with world-class NGOs and thought-leadership institutions.

For example, GrowAsia.org is an NGO that has been partnering successfully with local governments and MSMEs in the area of sustainable agriculture³⁸. The Grow Asia Partnership for Indonesia’s Sustainable Agriculture (PISAgro) seeks to provide an innovative, multi-stakeholder model for addressing the nation’s agricultural challenges in a sustainable manner while improving the livelihoods of smallholder farmers. Grow Asia supports 12 working groups focused on 11 crops and commodities.

Grow Asia has been successful in empowering farmers with access to mobile apps and platforms, which enables them to leverage critical real-time data, collaborative networks, micro-finance, micro-insurance, and other technologies.

³⁸ Grow Asia | A multi-stakeholder partnership platform. (2018).

CONCLUSION

The digital economy has afforded Indonesia's MSMEs unprecedented opportunities for inclusive growth within local, regional, and even global value chains. E-commerce, social media, the sharing economy, and cloud-based analytics/AI are all contributing to an MSME technological leapfrog.

But as this report has revealed, Indonesia's MSMEs face numerous challenges when it comes to successfully participating in the digital economy. Among other things, business owners need improved access to all manner of digital literacy resources, including general information and basic business education, industry-specific training and human capital development, funding, and, of course, more online access.

A common theme that has emerged from this study is the power of collaborative networks operating in digital ecosystems. In these scenarios, MSMEs can benefit from open-sourced solutions, with key stakeholders contributing to the successful dynamics of entrepreneurial ecosystems.

Another theme emerging from this study is that Indonesia's policy-makers will need to provide effective leadership, not only as facilitators, but as fair and consistent law enforcers and regulators.

This view came through very clearly in the responses of the MSMEs that participated in surveys and interviews. More generally, the MSMEs that participated in this study corroborated the same concerns of MSMEs in other studies highlighted earlier in this report.

In conclusion, the technology revolution offers great promise for Indonesian MSMEs. But this remains a work in progress, and policy-makers will have to follow a rigorous roadmap to achieve success.

APPENDIX

FOOTNOTES/REFERENCES

- A.T. Kearney. (2015). Lifting the Barriers to E-Commerce in ASEAN.
<https://www.atkearney.co.uk/documents/10192/5540871/Lifting+the+Barriers+to+E-Commerce+in+ASEAN.pdf/d977df60-3a86-42a6-8d19-1efd92010d52>
- A.T. Kearney. (2016). The ASEAN Digital Revolution.
<https://www.atkearney.com/documents/10192/6986374/ASEAN+Digital+Revolution.pdf/86c51659-c7fb-4bc5-b6e1-22be3d801ad2>
- ADB Institute. (2016). SMES in Developing Asia: New Approached to Overcoming Market Failures.
<https://www.adb.org/sites/default/files/publication/214476/adbi-smes-developing-asia.pdf>
- ANGIN.ID - Angel Investment Network Indonesia. (2018).
<https://angin.id/>
- ASEAN. (2014). SME Policy Index.
<https://www.oecd.org/globalrelations/regionalapproaches/ASEAN%20SME%20Policy%20Index%2014.pdf>
- ASEAN ICT. (2015). Master Plan Completion.
<http://www.asean.org/storage/images/2015/December/telmin/ASEAN%20ICT%20Completion%20Report.pdf>
- Asia Pacific Foundation of Canada. (2018). Survey of Entrepreneurs and MSMEs in Indonesia.
https://apfcanda-msme.ca/sites/default/files/2018-10/2018%20Survey%20of%20Entrepreneurs%20and%20MSMEs%20in%20Indonesia_0.pdf
- Asia-Pacific Economic Cooperation (APEC). (2017). The State of Women in APEC Economies.
https://www.apec.org/Press/Features/2017/0925_women
- Asian Banking and Finance. (2018). Indonesia makes headway in curbing its unbanked population.
<https://asianbankingandfinance.net/retail-banking/news/indonesia-makes-headway-in-curbing-its-unbanked-population>
- Asian Development Bank. (2010). Gender Equality Results in ADB Projects.
<https://www.adb.org/publications/series/gender-equality-results-adb-projects>

Australia Indonesia Partnership for Economic Governance. (2017). The Digital Economy in Indonesia
http://eng.kppu.go.id/newkppu/wp-content/uploads/REPORT_Digital_Economy_27-December-2017-FINAL.docx.pdf

Bank of Indonesia. (2015). PROFIL BISNIS USAHA MIKRO, KECIL DAN MENENGAH (UMKM).
<https://www.bi.go.id/id/umkm/penelitian/nasional/kajian/Documents/Profil%20Bisnis%20UMKM.pdf>

Daga, Anshuman. (2018). Google, Temasek investing in Indonesia's Go-Jek as ride-hailing rivalry deepens.
<https://www.reuters.com/article/us-go-jek-fundraising/google-temasek-investing-in-indonesias-go-jek-as-ride-hailing-rivalry-deepens-sources-idUSKBN1F70GS>

Deal Street Asia. (2018). Indonesia's Unicorns eye a bigger splash in fast-growing Fintech Market
<https://www.dealstreetasia.com/stories/gojek-bukalapak-indonesia-fintech-107558/>

Deloitte. (2015). SME's Powering Indonesia's Success.
<https://www2.deloitte.com/content/dam/Deloitte/id/Documents/finance/id-fas-sme-powering-indonesia-success-report-bahasa-noexp.pdf>

Deloitte. (2017). Economic Growth and Development in Asia: What is the Role of Digital?
<https://www2.deloitte.com/insights/us/en/economy/voice-of-asia/may-2017/digital-role-economic-growth.html>

Digital News Asia. (2017). Indonesia sets out on the road to 5G.
<https://www.digitalnewsasia.com/digital-economy/indonesia-sets-out-road-5g>

Ericson. (2016). Southeast Asia Mobility Report.
<https://www.ericsson.com/assets/local/mobility-report/documents/2016/south-east-asia-and-oceania-ericsson-mobility-report-june-2016.pdf>

EY. (2018). Driving Digital into the heart of Asia's Financial Services.
[https://www.ey.com/Publication/vwLUAssets/EY-white-paper-driving-digital-into-the-heart-of-asias-financial-services-industry-final/\\$File/EY-white-paper-driving-digital-into-the-heart-of-asias-financial-services-industry-final.pdf](https://www.ey.com/Publication/vwLUAssets/EY-white-paper-driving-digital-into-the-heart-of-asias-financial-services-industry-final/$File/EY-white-paper-driving-digital-into-the-heart-of-asias-financial-services-industry-final.pdf)

Financial Times. (2017). SMEs Can Challenge Big Beasts by Snapping up AI and Robotics.
<https://www.ft.com/content/8b053fe4-a1ca-11e7-9e4f-7f5e6a7c98a2>

Fintechnews Singapore. (2017). How the world can learn from Indonesia's microfinance scene.
<http://fintechnews.sg/10393/personalfinance/world-can-learn-indonesias-microfinance-scene/>

Foundation for Economic Education. (2017). Indonesia's Future Lies in Its Informal Sector.
<https://fee.org/articles/indonesia-s-future-lies-in-its-informal-sector/>

Global Business Guide. (2016). Indonesia SMEs: Increased Government Support to Overcome Challenges.
http://www.gbgindonesia.com/en/main/why_indonesia/2016/indonesia_smes_increased_government_support_to_overcome_challenges_11603.php

Gnowbe. (2018).
<https://www.gnowbe.com/>

Goukm. (2016). Pengertian UKM & UMKM? Bagaimana Usaha Kecil Menengah di Indonesia.
<http://goukm.id/apa-itu-ukm-umkm-startup/>

Grow Asia | Partnership. (2018).
<https://www.growasia.org/partnership>

IFC. (2016). Women Owned SMEs in Indonesia: A Golden Opportunity for Local Financial Institutions.
<https://www.ifc.org/wps/wcm/connect/b3b5756e-708a-49fc-afe3-df26cff517f1/SME+Indonesia+Final.pdf?MOD=AJPERES>

McKinsey & Company. (2018). The Digital Archipelago.
<https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Asia%20Pacific/The%20digital%20archipelago%20How%20online%20commerce%20is%20driving%20Indonesias%20economic%20development/The-digital-archipelago-Executive-summary.ashx>

MetroTv. (2017). Menaikkan Kelas UMKM Demi Perekonomian Indonesia
<http://ekonomi.metrotvnews.com/mikro/ObzWV8dk-menaikkan-kelas-umkm-demi-perekonomian-indonesia>

Next Billion. (2018). 4 ways Blockchain Can Transform MSMEs in Emerging Markets.
<https://nextbillion.net/the-distributed-economy-four-ways-blockchain-can-transform-msmes-in-emerging-markets/>

Nikkei Asian Review. (2016). Widodo promises digital economy boom for Indonesia.
<https://asia.nikkei.com/Economy/Widodo-promises-digital-economy-boom-for-Indonesia>

OECD. (2017). Small, Medium, Strong. Trends in SME performance and Business Conditions
https://www.oecd-ilibrary.org/industry-and-services/small-medium-strong-trends-in-sme-performance-and-business-conditions_9789264275683-en

Qualcomm I The 5G Economy. (2018).
<https://www.qualcomm.com/invention/5g/economy>

RMOL. (2015). 80 Persen UMKM Perdagangan Tak Menghasilkan Nilai Tambah.
<http://ekbis.rmol.co/read/2015/02/25/193172/80-Persen-UMKM-Perdagangan-Tak-Menghasilkan-Nilai-Tambah->

Rolefoundation. (2018).
<http://rolefoundation.org/>

SME Finance. (2017). Blockchain- Opportunities for Private Enterprises in Emerging Markets.
<https://www.smefinanceforum.org/post/blockchain-opportunities-for-private-enterprises-in-emerging-markets>

SME Portal Singapore. (2016). The Future of Work- Robots?
<https://www.smeportal.sg/content/smeportal/en/industries/food/2015/the-future-of-work-robots.html>

State Minister Ministry for Cooperatives, Small and Medium Enterprises. (2015). Statistical Yearbook of Indonesia 2015

Techcrunch. (2017). Tokopedia confirms US\$1.1B investment led by Alibaba.
<https://techcrunch.com/2017/08/17/alibaba-tokopedia/>

United Nations MSME Site. (MSMS Day June 27, 2018).
<http://www.un.org/en/events/smallbusinessday/background.shtm>

We are social. (2018). Digital in 2018: World's Internet Users Pass the 4 Billion Mark.
<https://wearesocial.com/blog/2018/01/global-digital-report-2018>

WEF. (2018). How Small Companies Can Change the World.
<https://www.weforum.org/agenda/2015/10/how-small-companies-can-change-the-world/>

World Bank. (2014). Report Identifies Major Clean Tech Opportunities for SMEs in Developing Countries.
<http://www.worldbank.org/en/news/feature/2014/09/24/new-report-identifies-major-clean-tech-market-opportunity-for-small-businesses-in-developing-countries>

World Bank. (2014). Rethinking SME Financing - Harnessing Technology and Innovation.
<https://blogs.worldbank.org/psd/rethinking-sme-finance-policy-harnessing-technology-and-innovation>

World Bank. (2015). SME Competitiveness Project.
<http://projects.worldbank.org/P147705?lang=en>

World Bank. (2015). SME Competitiveness Project.
<http://projects.worldbank.org/P147705?lang=en>

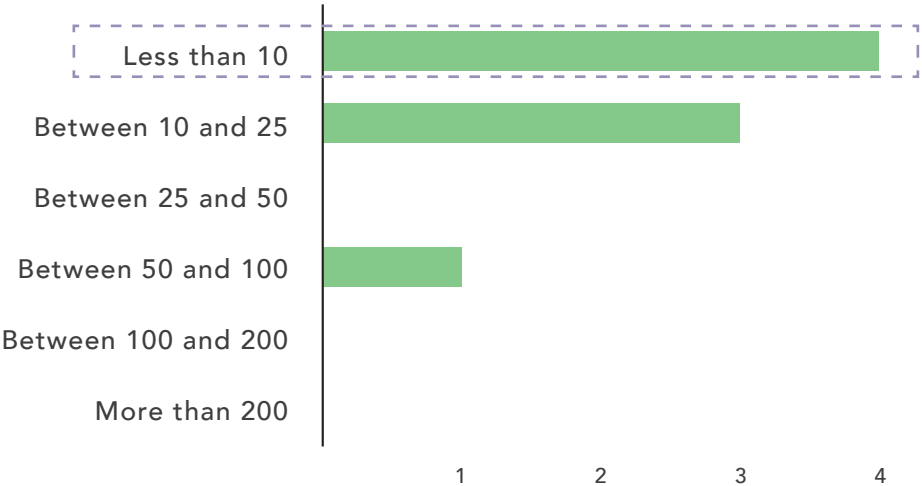
WTO. (2016). Levelling the Trading Field for SMEs.
https://www.wto.org/english/res_e/publications_e/wtr16_e.htm

SURVEY RESULTS

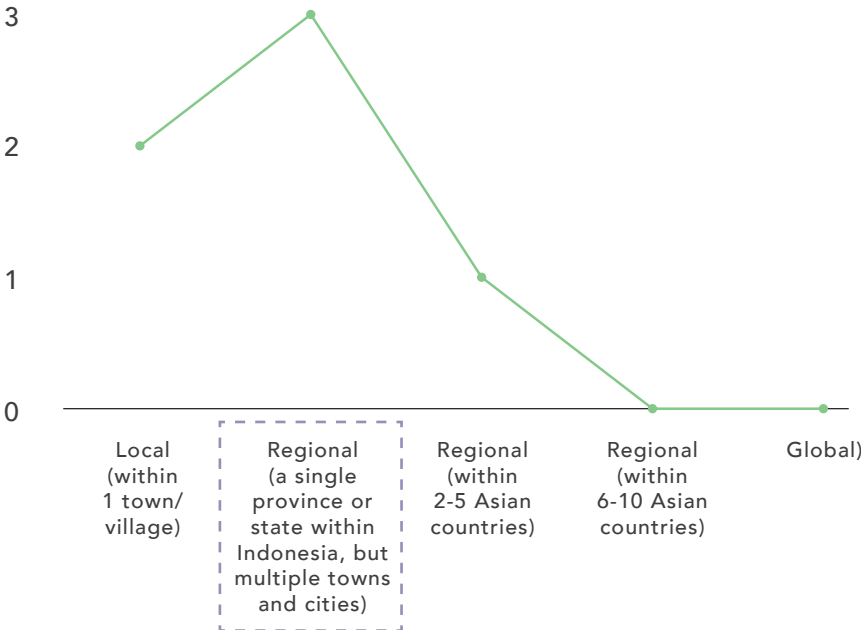
COMPANY OPERATIONS

MSMEs surveyed in this study have been in business for, on average, 6.5 years and earn an approximate monthly gross revenue of 7297 USD.

Number of full-time employees involved in the enterprise on a daily basis

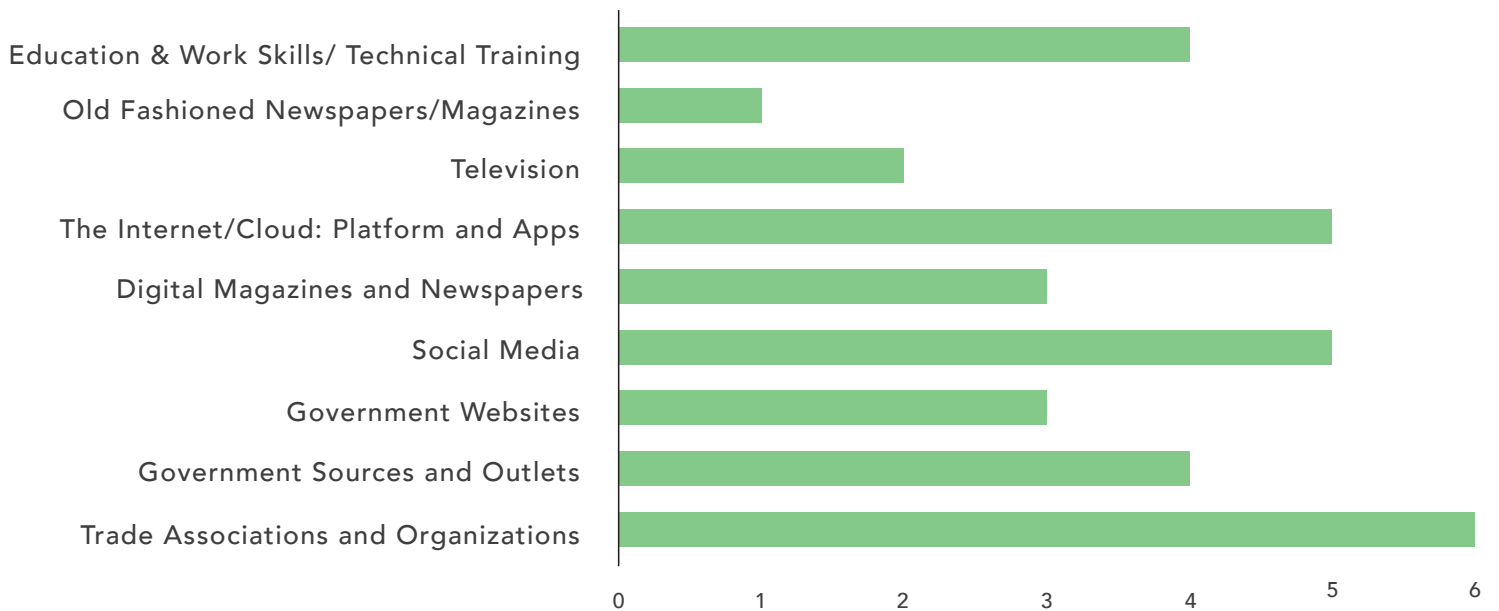


Geographic Awareness

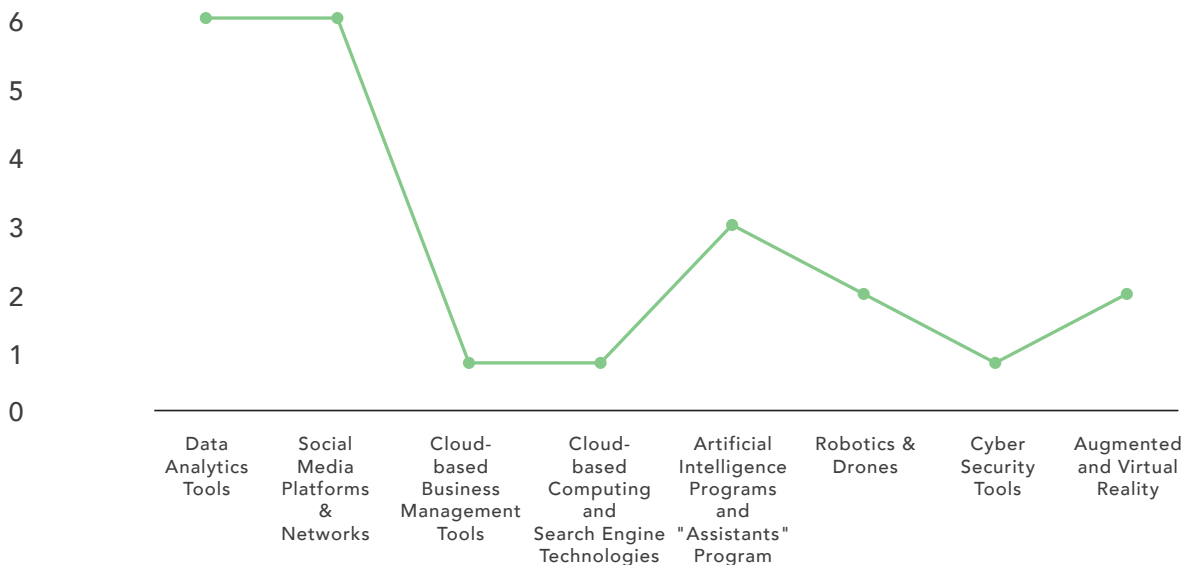


DIGITAL AWARENESS

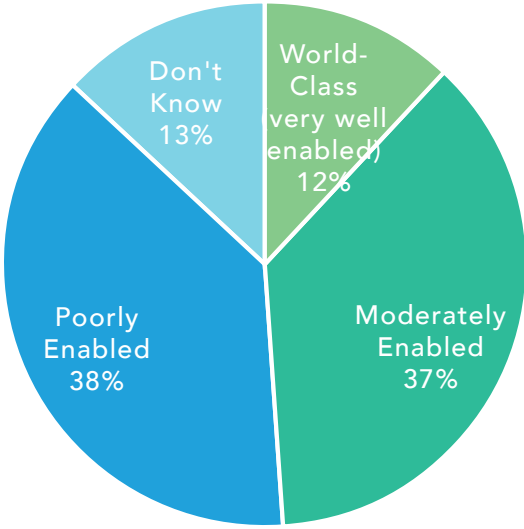
Mediums to achieve digital awareness and acquire access to up-to-date information (multiple answers possible)



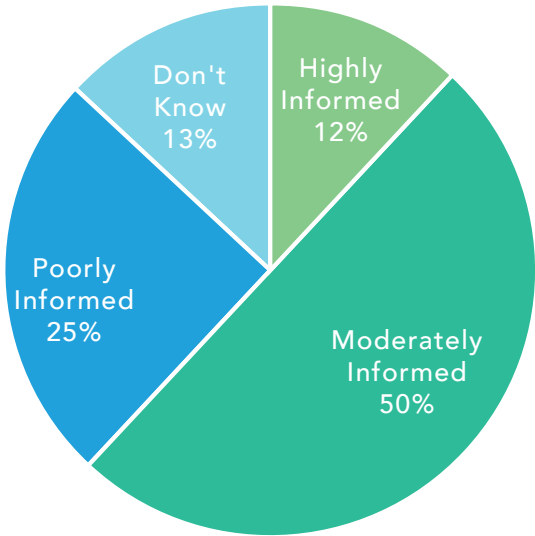
Areas providing significant opportunity for the interviewees company (multiple answers possible)



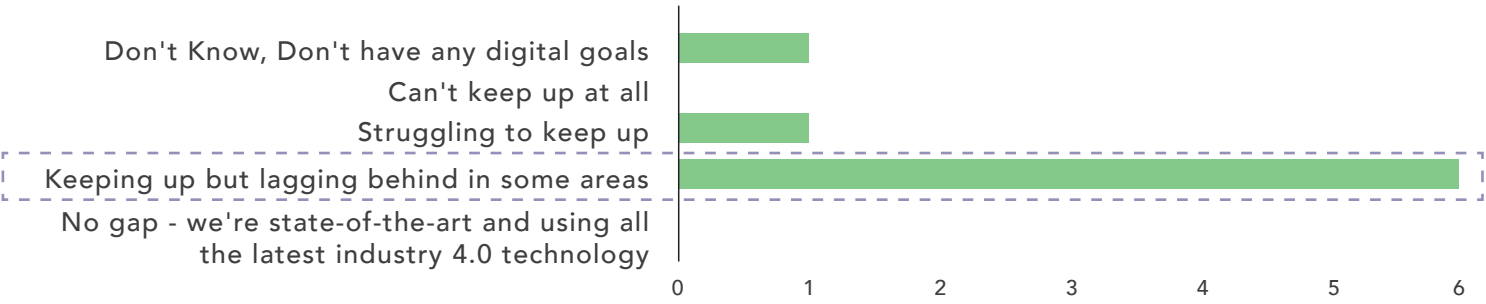
MSME's Interviewees' rating of their digital business capabilities



Perception about how well-informed and educated the MSMEs' management and employees are regarding the latest trends and business opportunities in the use of technology and the digital economy

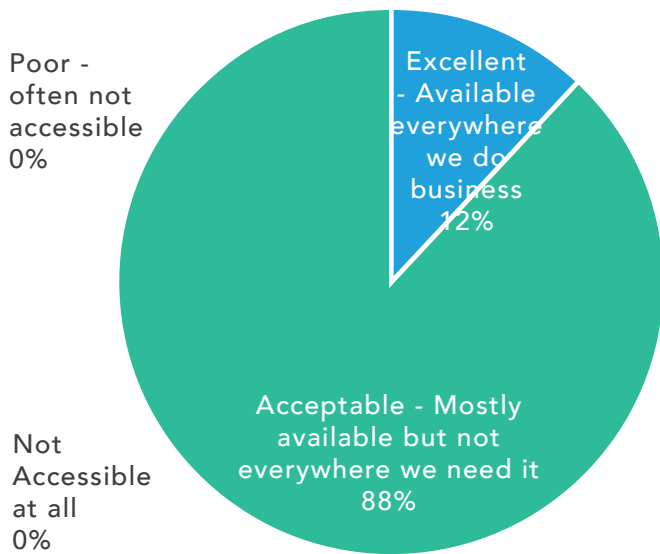


Perception about the gap between the MSME enterprise's digital goals and the reality of where the company is

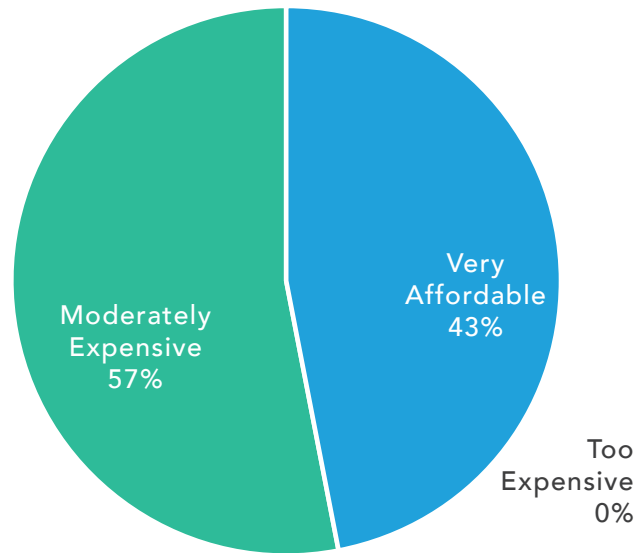


DIGITAL INFRASTRUCTURE

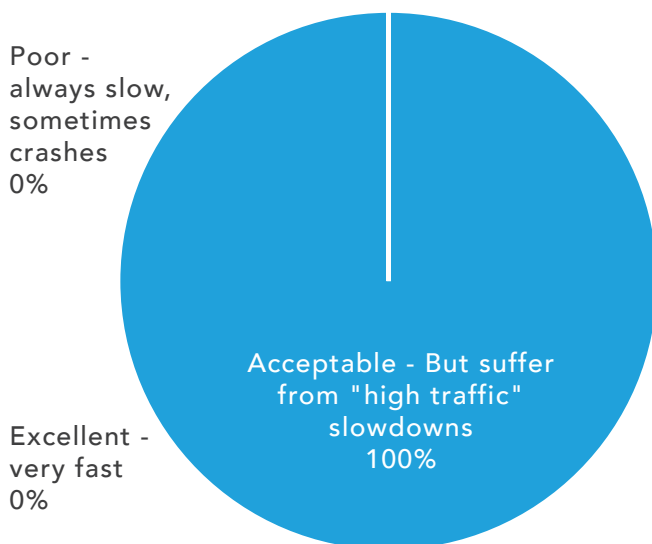
Rating of access to broadband wireless service and the internet/ cloud in the primary business location



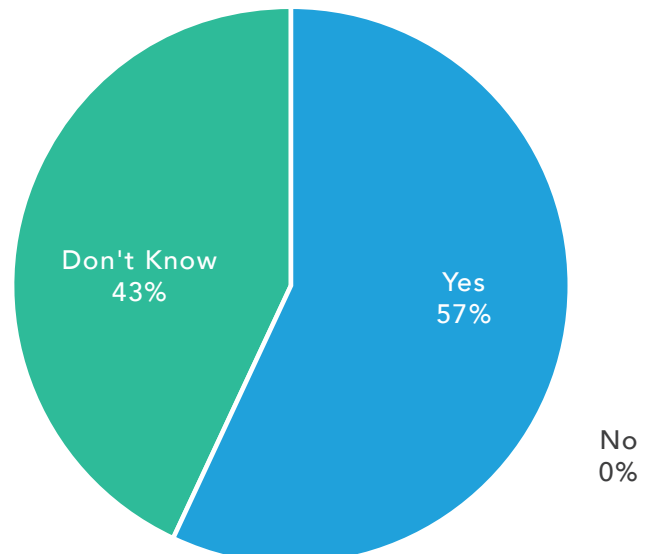
Rating of the cost of wireless and internet services



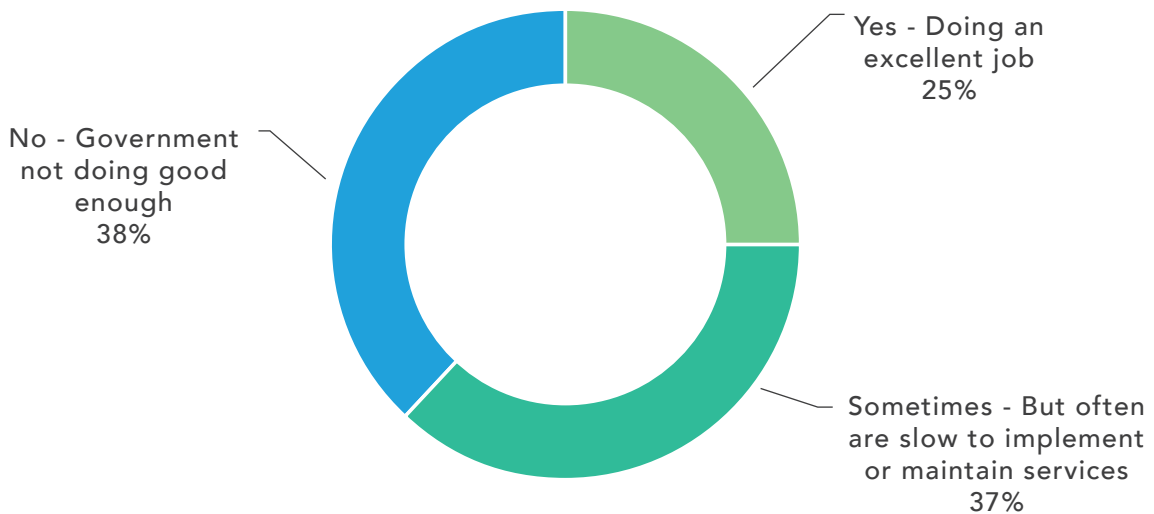
Rating of the speed of wireless and internet services



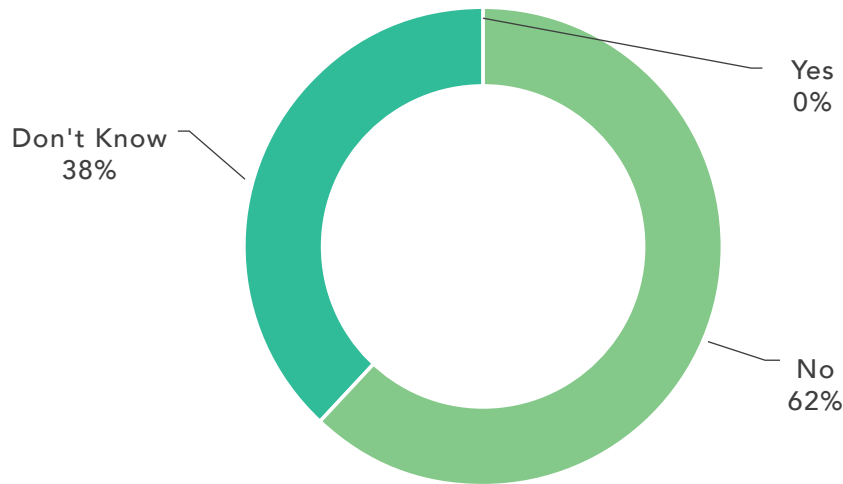
Increase in cross-border connectivity in the company's area/market in the past year



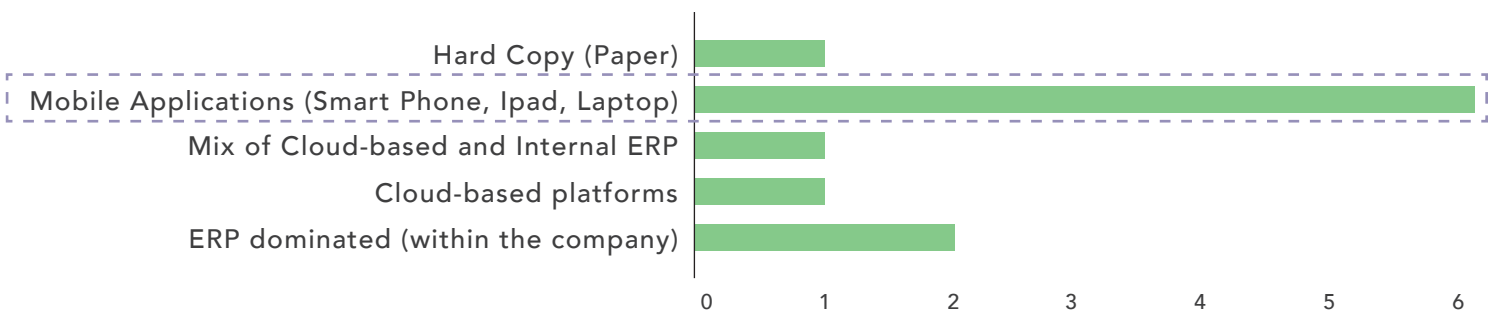
Perception if government agencies are investing enough in digital infrastructure in the interviewees' local area



Perception if aid/assistance (from government entities, NGOs and private companies) is available for increasing internet infrastructure or e-commerce and digital business activities



Primary technology platforms for the companies' operations



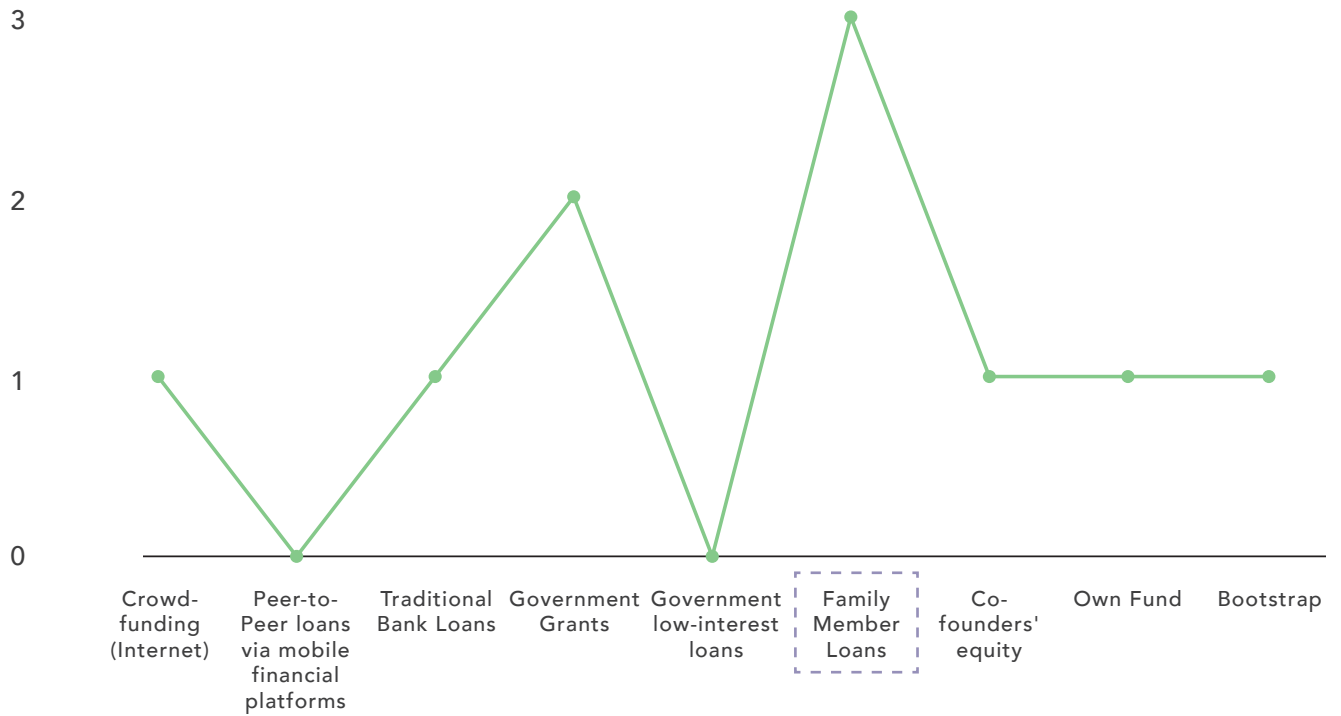
DIGITAL TECHNOLOGY USED TO GROW BUSINESS

Types of digital technology, platforms and Apps etc. used in day-to-day operations by the business (multiple answers possible)

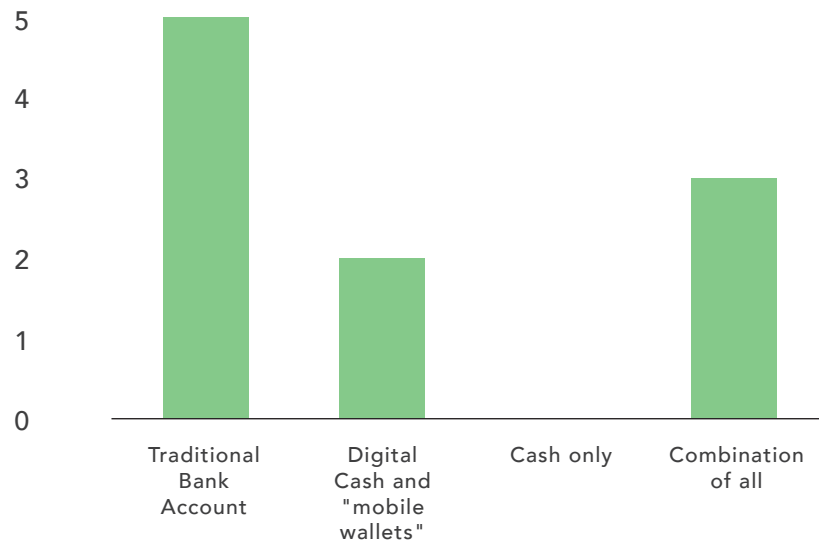
TECHNOLOGY	Manufacturing fabrication, production, farming	Retail/ trade	Finance, banking, insurance, sales	Tech-related: content, apps, platforms, software, code- writing	Other services: education, hospitality, logistics, travel, consulting, legal, marketing, sales
Cloud-based computing and tools	2	0	0	1	1
Social media apps	3	2	0	1	1
Shared economy apps	1	1	1	1	1
E-commerce platforms	1	2	0	1	0
Data analytics platforms and tools	2	0	0	1	0
Advanced search engine tools	1	1	1	1	1
Digital wallets and cash	2	1	0	0	0
Blogs and open-source communities	3	1	0	0	1
On-line training platforms and skills workshops	1	0	0	0	0
Robotics and drones	1	0	0	0	0
Augmented and virtual reality	1	0	0	0	0
Crowdfunding and crowd sourcing	1	0	0	0	1

FUNDING AND FINANCIAL SUPPORT

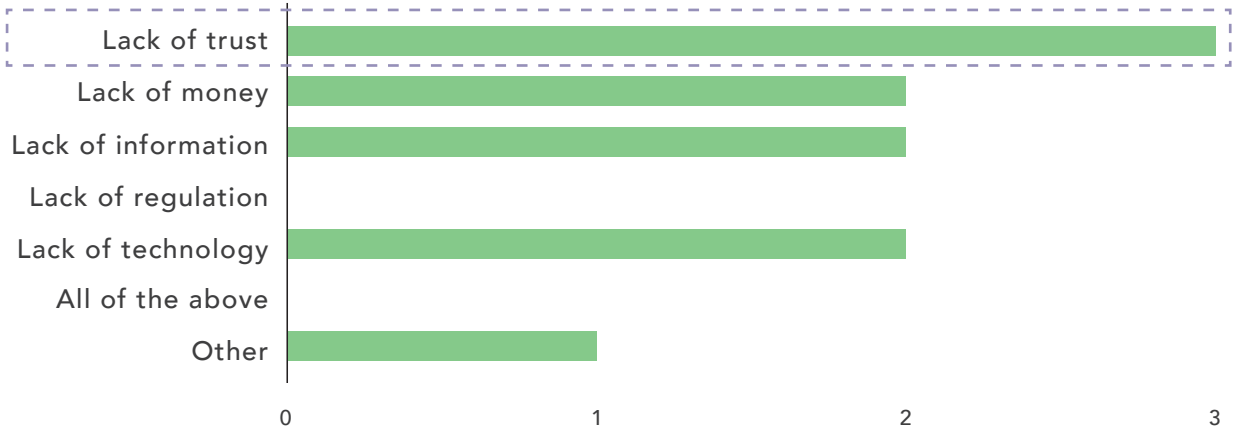
Type of funding and financing the enterprise rely upon for starting a new venture, upgrading or building a business model



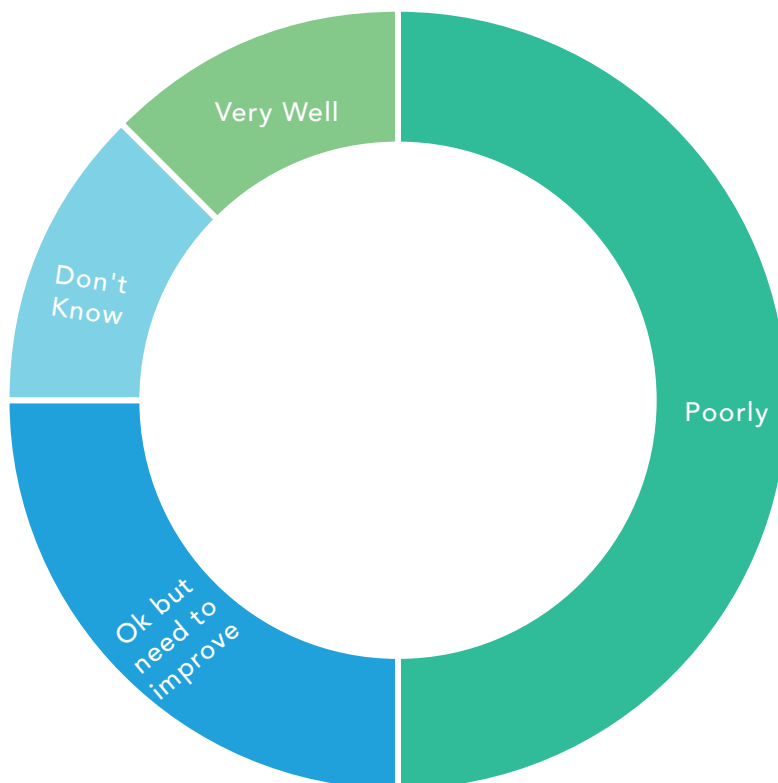
Kind of bank account the business enterprise utilizes (combination possible)



Biggest challenges in raising money and getting financial support
(multiple answers possible)

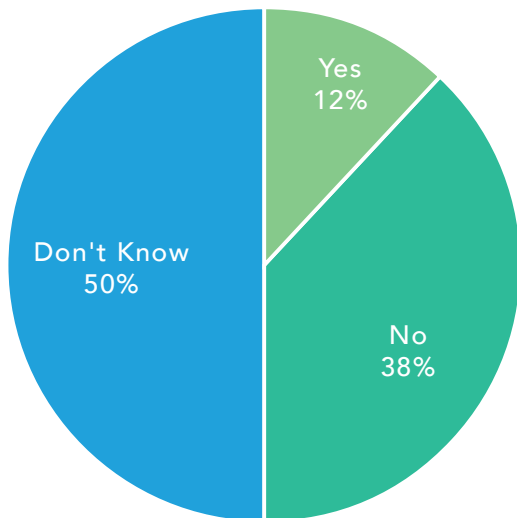


Estimation made by the company how well they think they are using
digital technology to obtain financing and funding

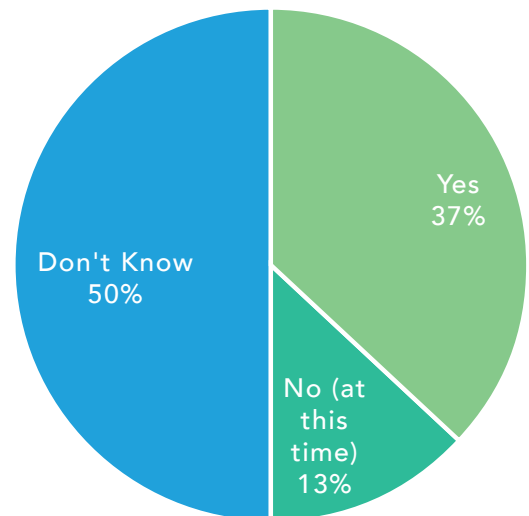


REGULATORY ENVIRONMENT

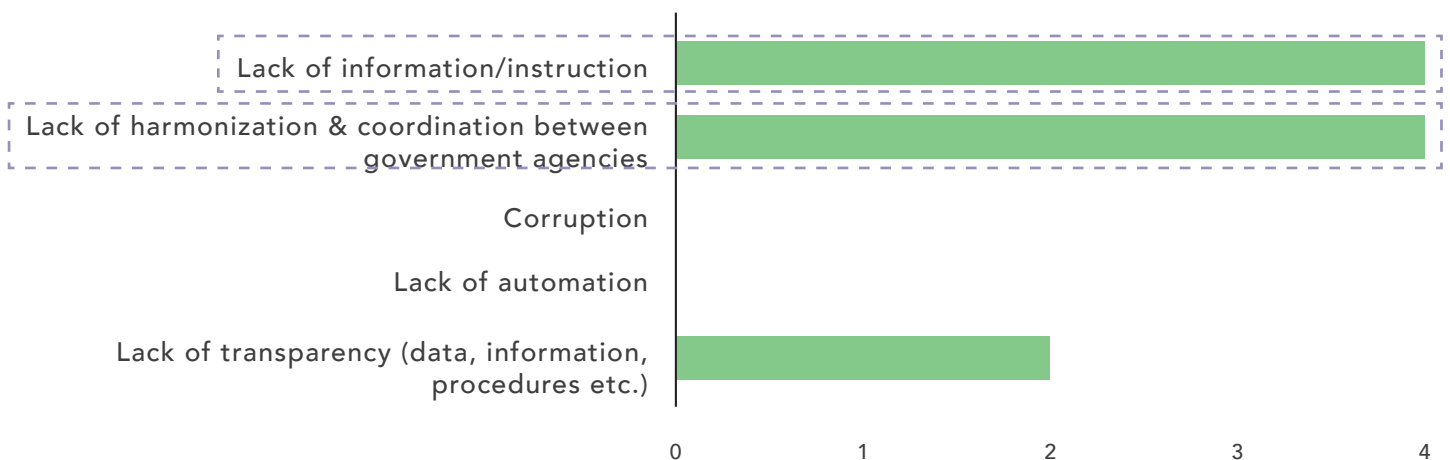
Perception of whether the government provides adequate legal and regulatory frameworks around the Digital Economy



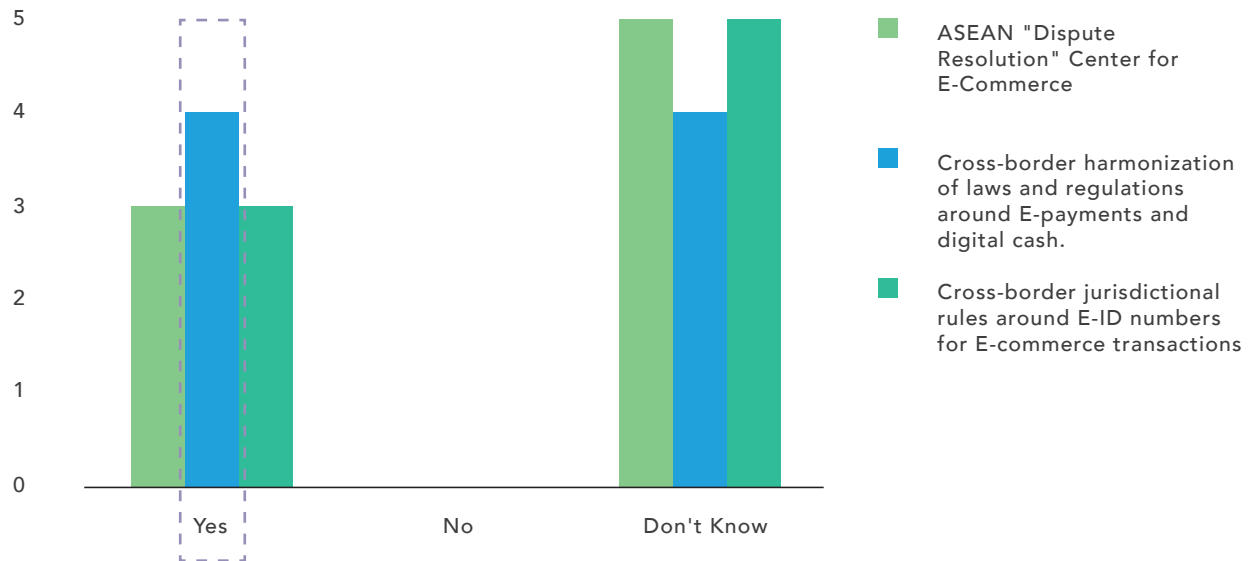
Requirement of digital business and e-commerce cross-border, cross-jurisdictional legal framework



Biggest challenges for interviewee's enterprise regarding regulations and legal frameworks in e-commerce and the digital economy



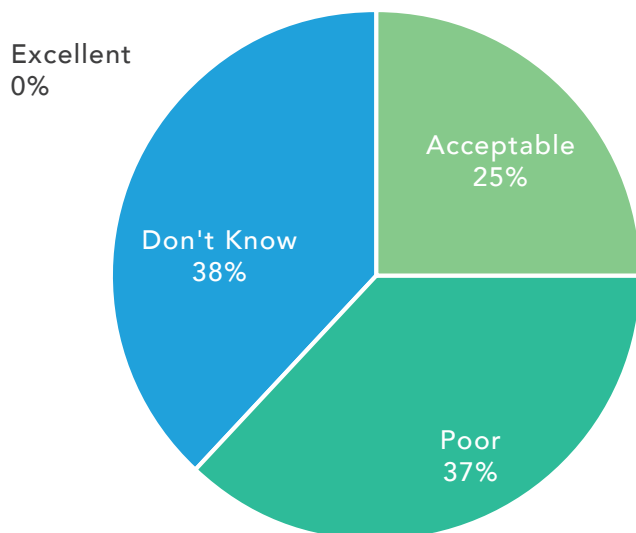
Approaches which are considered a benefit for their enterprise



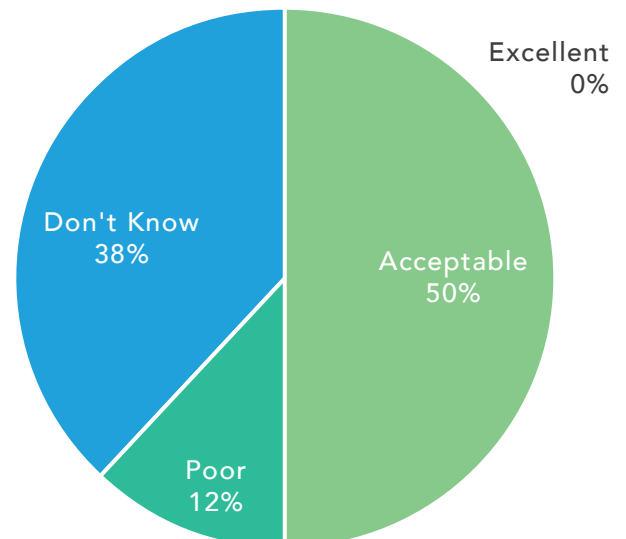
DIGITAL READINESS

Rating of the state of logistics and trade efficiency.

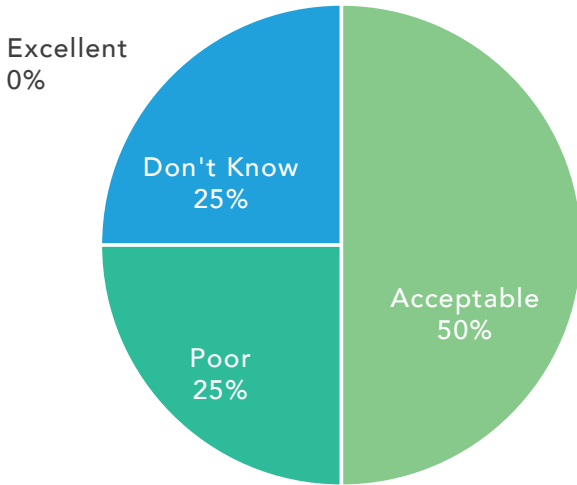
Customs Dept. Efficiency & Timelines (If applicable)



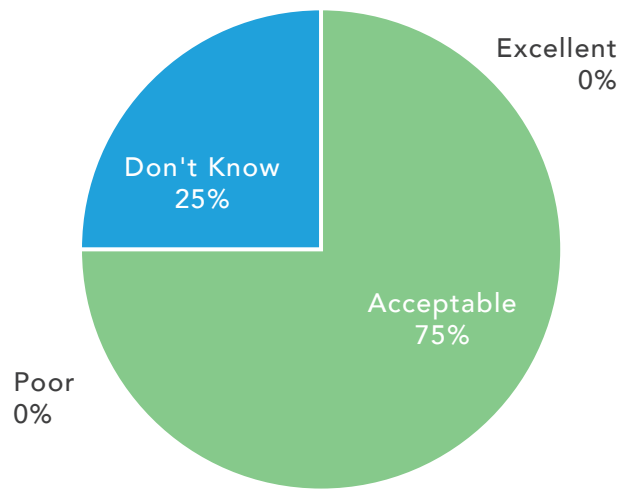
Airports



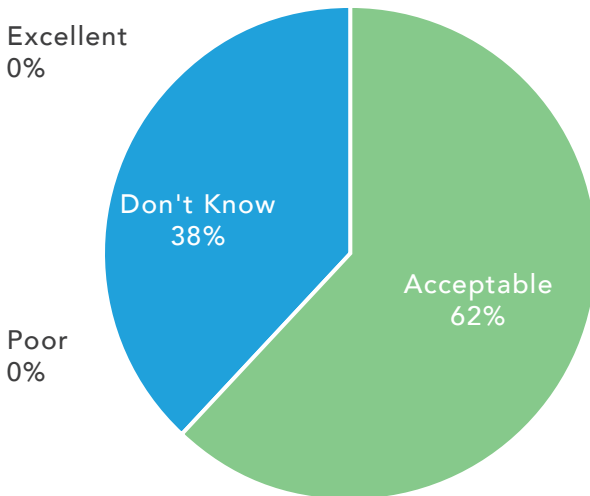
Warehouse Readiness



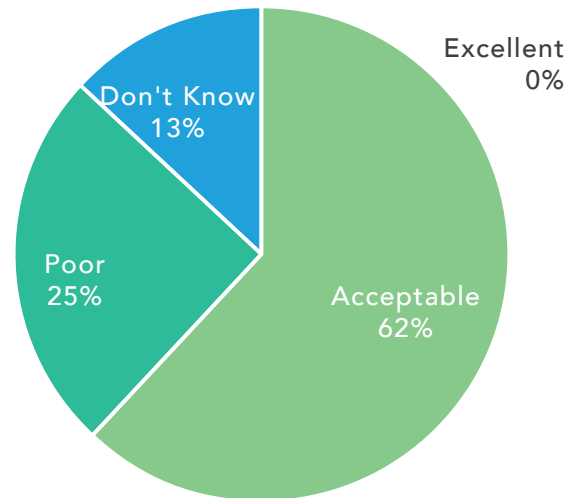
Seaports



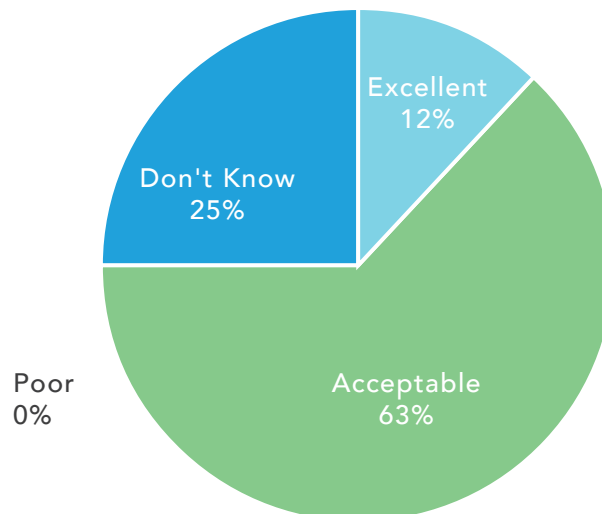
Last Mile Delivery



Roads, Bridges

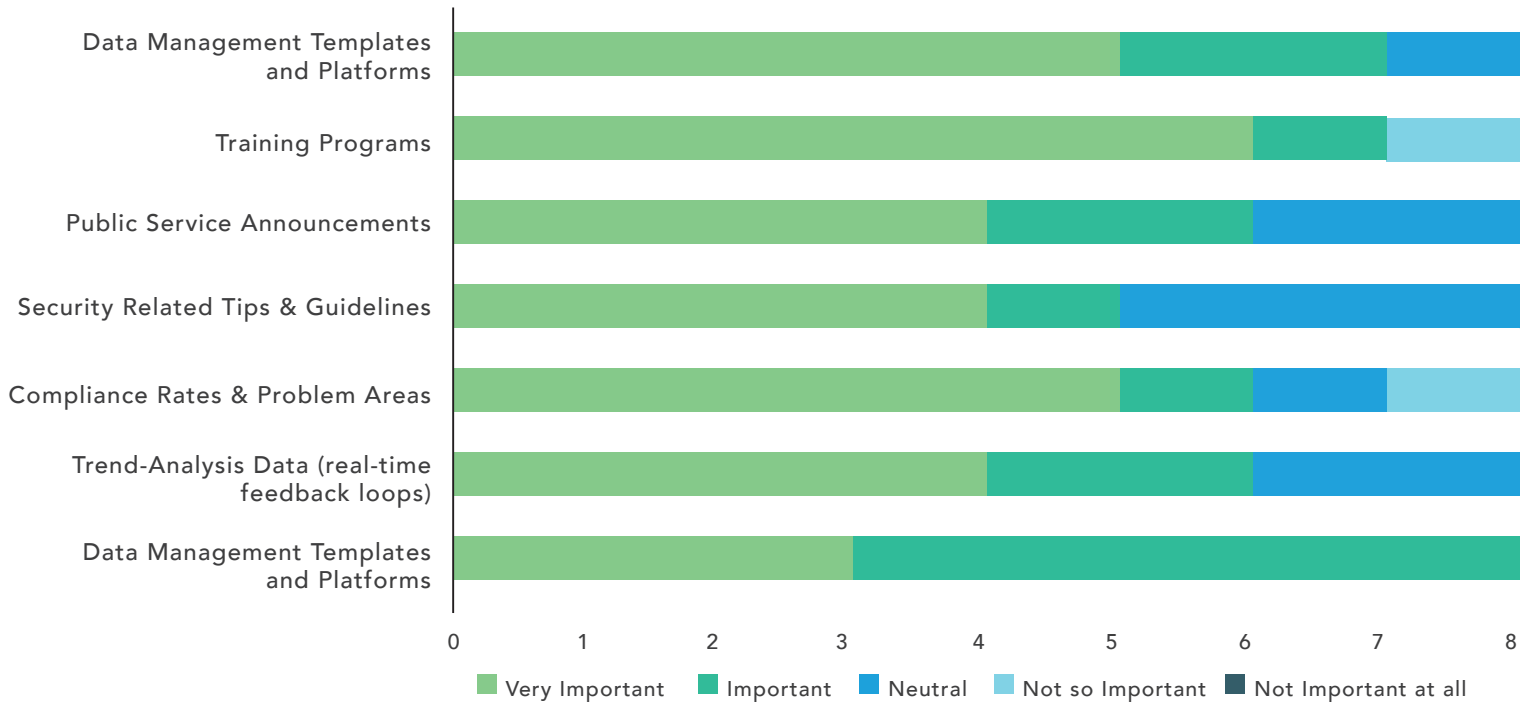


Railway Connections



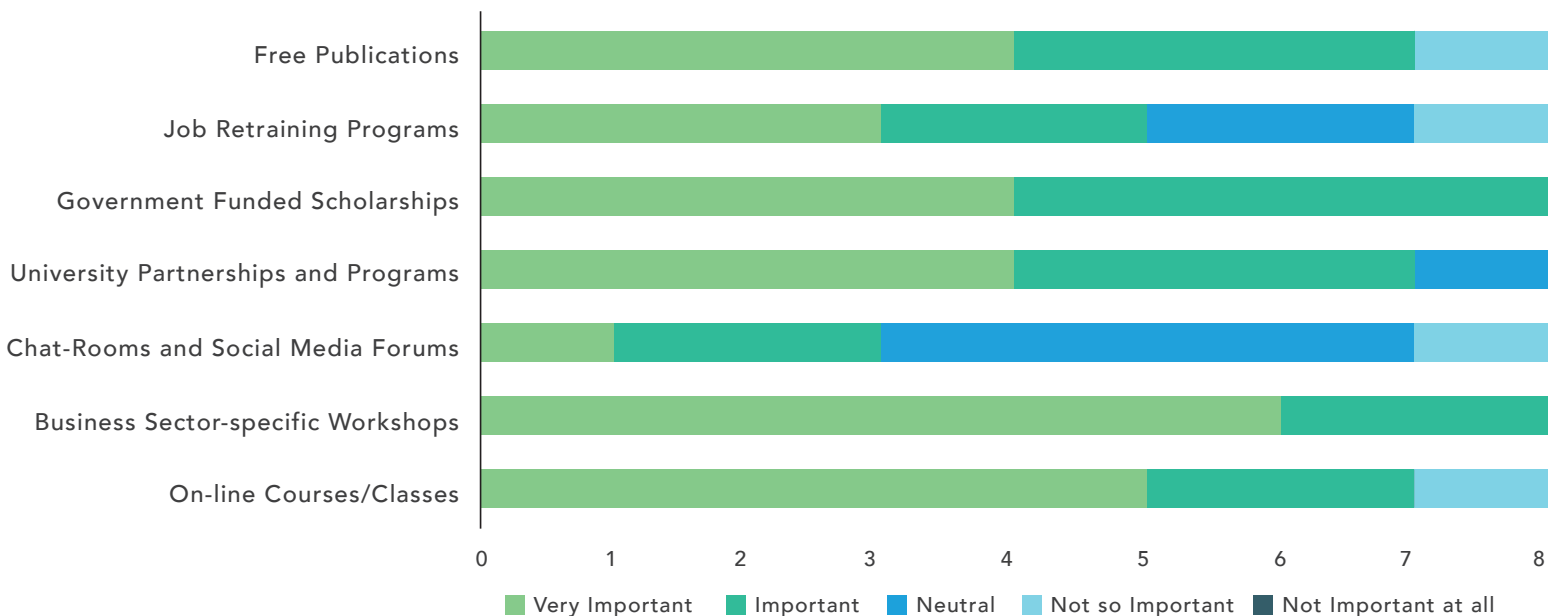
DATA POOLING, COLLECTING & SHARING

Kinds of data and information MSMEs would like the government agencies to make publicly available (in data pools and data bases).



TRAINING AND ACCESS TO KNOWLEDGE

Perception about how important the below training opportunities to learn business management skills and technical skills for the digital economy are.



MSMEs SNAPSHOTS

Company Snapshot | Avantee



Avantee is a Fintech MSME that provides micro-financing schemes for Peer-to-Peer-Lending and Crowdfunding.

Technology Used

Avantee uses Cloud-Based Computing & Tools, Social Media Apps, Data Analytics Platforms & Tools, Cloud-based Business Management Tools as well as Cyber Security Tools.

FACTS & FIGURES	
Industry	Financial Technology
Product Description	A Portal that accommodates SME loans via Crowd-Funding
Time Being in Business	6 months
Monthly Gross Revenue	N/A
Full-time Employees	10 to 25
Geographic Location of Operations	Regional (a single province or state within Indonesia, but multiple towns, cities)
Website	https://avantee.co.id/

Challenges

Avantee faces challenges in raising money and getting financial support due to lack of trust and lack of information. Management perceives the business as moderately enabled in digital business capabilities but that it is lagging behind in some key areas. Avantee would like to expand its digital business and e-commerce across-borders. The biggest challenges involve the regulatory environment and lack of harmonization and coordination between government agencies. Access to broadband wireless services and internet is seen as mostly available but not everywhere, where needed. In addition, the speed of wireless and Internet Services they have access to is rated as acceptable but suffers from “high traffic” slowdowns. Avantee believes that the government is not doing enough in investing in the digital infrastructure in their local area or providing access to training and education.

Needs

Attending business sector-specific workshops would be one of the ways Avantee could increase digital knowledge among its employees. Increased access to information and instructions about legal frameworks and regulations is critical. Regulatory updates would also be helpful. University-partnerships and government scholarships could help Avantee expand its networks and grow its business more effectively in the digital economy.



Company Snapshot | Blueboots



Founded in 2015, Blueboots Farm is an organic-agricultural MSME, located at the foot of Mount Salak in Cijeruk, Bogor. Blueboots' goal is simple: to supply wholesome, locally sourced and sustainable food products.

Technology Used

Blueboots Farm uses Data Analytics Platforms & Tools, Social Media Platforms & Networks, Robotics & Drones.

FACTS & FIGURES	
Industry	Agriculture/farming/food processing
Product Description	N/A
Time Being in Business	N/A
Monthly Gross Revenue	5,000
Full-time Employees	Less than 10
Geographic Location of Operations	Local (within 1 town/village)
Website	https://blueboots.farm/

Challenges

Blueboots faces many challenges in growing its business. The first challenge is that management and employees are poorly informed regarding new technology and the digital economy. They perceive their business as poorly enabled in digital business capabilities. The enterprise is lagging behind in some key areas. Blueboots Farm, like other MSMEs, is grappling with opaque and confusing regulations around E-payments and digital cash. Management suffers from a lack of information/instruction provided by the government. The access to broadband wireless services and internet is seen as mostly available but not everywhere, where needed. In addition, the speed of wireless and Internet services is rated as acceptable but suffers from "high traffic" slowdowns. Blueboots perceives that the government is often slow to implement or maintain digital services.

Needs

Blueboots needs to improve general digital business capabilities and knowledge. Increased access to information and instructions about legal frameworks and regulations could also help Blueboots utilize its technological capabilities to obtain funding. Governmental regulatory updates, trend analysis data and public service announcements would be very helpful. Training programs, business sector-specific programs and university-partnerships would also be helpful for Blueboots, as it looks to continue to innovate digital technology for agricultural/food production.



Company Snapshot | Jala



JALA is an MSME that is transforming the shrimp industry by offering a vastly improved management system. With data-driven farming in mind, Jala’s goal is to get farmers to make decisions based on actual real-time data. Jala’s system provides water quality monitoring and planning, as well as a reporting tools, complete with a decision support system so farmers can initiate the right treatment at the right time, based on data which has been collected and analyzed.

Technology Used

Jala uses data Analytics Platforms & Tools, Artificial Intelligence Programs and “Assistants” and Big Data.

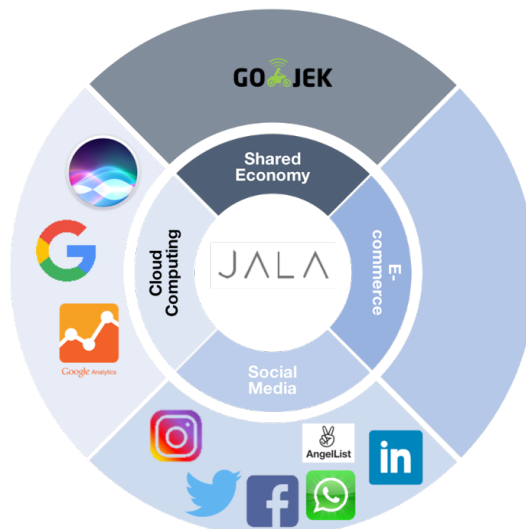
FACTS & FIGURES	
Industry	Aquaculture
Product Description	Data analytic company and online shrimp farm's assistance
Time Being in Business	N/A
Monthly Gross Revenue	N/A
Full-time Employees	Less than 10
Geographic Location of Operations	Regional (a single province or state within Indonesia, but multiple towns, cities)
Website	https://jala.tech/

Challenges

Jala faces challenges in growing its business, including lack of trust, which makes it more difficult to raise money. The company perceives its business as very well enabled (world-class) in digital business capabilities but the enterprise, overall, is still lagging behind in some key areas. The biggest challenges regarding regulations involve the lack of adequate legal frameworks around the digital economy as well as the lack of harmonization and coordination between government agencies. The access to broadband wireless services and internet is seen as mostly available but not everywhere, where needed. Also, the speed of available wireless and Internet services is rated as acceptable but suffers from “high traffic” slowdowns.

Needs

Jala can benefit significantly from an increase of data and information published by government agencies such as regulatory updates, security guidelines, and training programs. Training programs that are seen as helpful include university-partnerships and programs and government funded scholarships.



Company Snapshot | Eparcel



eParcel is an MSME logistics company that uses digital technology to offer an efficient and integrated one-stop logistics solution for its customers, no matter where they are located in Indonesia.

eParcel Indonesia serves domestic and international shipments: eCommerce delivery, Regular delivery, Premium delivery and Express delivery services.

Technology Used

Eparcel uses Data Analytics Platforms & Tools, Social Media Platforms & Networks, and the Sharing Economy.

FACTS & FIGURES	
Industry	Logistics & Warehousing
Product Description	Logistics & Warehousing
Time Being in Business	3 years
Monthly Gross Revenue	25,000
Full-time Employees	Between 50-100
Geographic Location of Operations	N/A
Website	https://www.eparcel.co.id/

Challenges

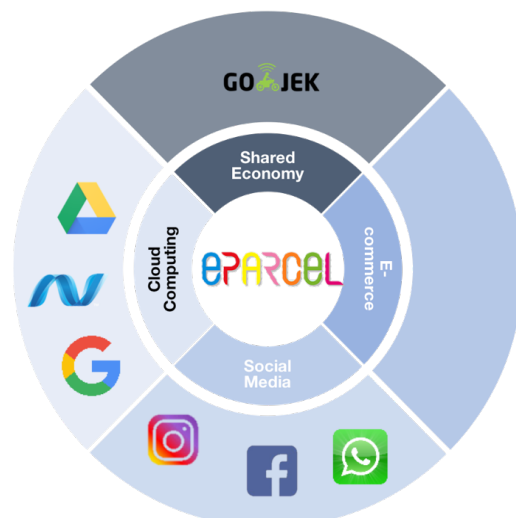
Eparcel perceives their management and employees to be moderately informed regarding digital trends and business opportunities. Similarly, they perceive their business as moderately enabled in digital business capabilities but the enterprise, overall, is still lagging behind in some key areas. The biggest challenges involve raising money and obtaining financial support. In terms of challenges regarding legal frameworks and regulatory issues, Eparcel management thinks the harmonization and coordination between Indonesian government agencies as well as the transparency of data/information are still lacking. In addition, Management thinks government is sometimes slow to implement or maintain digital infrastructure in their areas of operation. Access to broadband wireless services and internet is seen as mostly available but not everywhere where needed.

Needs

Eparcel can benefit from the improvement of general digital business capabilities and knowledge of existing employees. More transparency of data/information/procedures controlled by the government is seen as important to the expansion of the business in the digital economy.

Some of the data/information (in government data bases and web sites) that Eparcel sees as useful include compliance rates, security guidelines, public service announcements and training programs. More access is needed.

Training programs that are seen as specifically helpful are online courses, business sector-specific workshops and job-skill retraining programs.



Company Snapshot | Nunini



Nunini is a post-harvest MSME company that processes vegetables and other food products into practical, healthy, and ready-to-eat-food. The idea was inspired by the lack of value-added farmer's products and post-harvest production solutions in Indonesian markets.

Technology Used

Nunini uses Data Analytics Platforms & Tools, Cloud-based computing tools, Social Media Platforms, E-Commerce platforms, Advanced search engines & tools, etc.

FACTS & FIGURES	
Industry	Manufacturing/Fabrication
Product Description	Producing farm instant food
Time Being in Business	2 years
Monthly Gross Revenue	3,000
Full-time Employees	Less than 10
Geographic Location of Operations	Regional (within 2-5 Asian countries)
Website	https://www.nunini.id/

Challenges

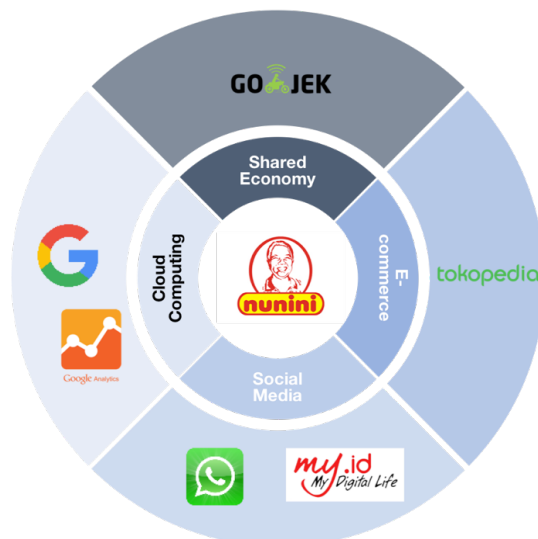
Nunini perceives its management and employees as moderately informed regarding digital trends and business opportunities. However, they perceive their business as poorly enabled in digital business capabilities as they are struggling to keep up with the latest technologies that they are hoping to integrate into their business. Nunini has not been utilizing digital technology well enough to obtain financial support to grow its business. In terms of challenges regarding access to legal frameworks and regulatory updates, Nunini management thinks the lack of information/instruction is the main issue. Access to broadband wireless services and the internet is seen as mostly available everywhere where needed and but networks suffer from “high traffic” slowdowns.

Needs

An Increase in information and instruction will likely help Nunini learn more about how they can benefit the most from government initiatives for MSMEs.

Government (and open sources) generated trend-analysis data, compliance rates, training programs and data management templates/platforms are seen as helpful in this regard.

To improve its digital business capabilities, the enterprise can benefit from training programs such as online courses, government funded scholarships, job retraining programs and free publications.



Company Snapshot | Sahabi

S A H A B I

Sahabi is a micro-enterprise that resells hand-made souvenirs and arts and crafts for sale to tourists. Products include bags made of locally-sourced garments.

Technology Used

Sahabi only uses Social Media Platforms & Networks.

FACTS & FIGURES	
Industry	Retail
Product Description	Merchandise and souvenir custom
Time Being in Business	N/A
Monthly Gross Revenue	830
Full-time Employees	Less than 10
Geographic Location of Operations	Regional (a single province or state within Indonesia, but multiple towns, cities)
Website	N/A

Challenges

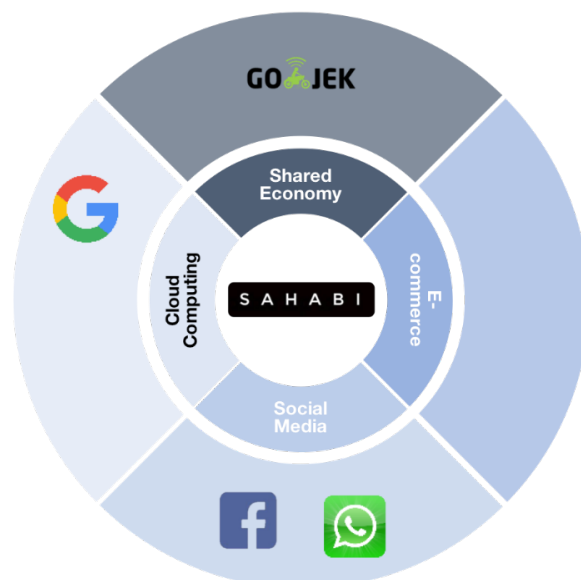
Sahabi is still a very small business compared to others. One of its main challenges is a lack of general business knowledge. Regarding digital trends and business opportunities, Sahabi is even further out of the competitive loop. The business is poorly enabled in digital business capabilities and the enterprise is far behind other MSMEs in the digital economy.

Raising money and obtaining financial support with such a lack of technology makes this endeavor very difficult. In terms of challenges regarding legal frameworks and regulatory, Sahabi is also not able to access critical information.

Needs

Sahabi urgently needs to improve fundamental business management skills. Next, it needs to upskill its people with digital business capabilities. This can be done through training programs such as face-to-face courses, business sector-specific workshops and chat rooms/social media forums for knowledge exchange.

Sahabi needs to become embedded in digital ecosystems and get connected, first, via social media, and then— as Sahabi climbs the digital learning curve—through on-line platforms updates.



Company Snapshot | Ngabul Antique

Ngabul fabricates rustic “antique-style” Indonesian furniture for both indoor and outdoor environments.

Technology Used

Ngabul Antique uses Social Media Platforms & Networks and Sharing Economy platforms.

FACTS & FIGURES	
Industry	Manufacturing/Fabrication
Product Description	Home Furniture
Time Being in Business	16 years
Monthly Gross Revenue	9,000
Full-time Employees	Between 10-25
Geographic Location of Operations	N/A
Website	N/A

Challenges

One of the main challenges Ngabul Antique is grappling with is a poorly informed and educated workforce. The company perceives the business as poorly enabled in digital business capabilities and the enterprise does not have any digital goals at the moment.

Ngabul Antique doesn’t think the government is doing enough to support business development programs and access to digital infrastructure in the area.

Needs

Training programs are needed to educate its existing management and employees on both basic business skills and the new digital trends. Both face-to-face and online courses and business sector-specific workshops are seen as especially helpful.

An increase in information programs provided by the government can also help Ngabul Antique learn more about how their business can benefit from the digital economy within the region and across borders.

