

Leveraging Digital Transformation And The SMAC Framework To Advance Sdgs

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Abstract

Purpose: To define digital capabilities for SMEs to enable urban and village SMEs to thrive in the digital age, resulting in increased profits and competitive advantage in support of SDGs implementation.

Methodology/approach: This study utilizes qualitative research methods, including literature review on digital transformation and the SMAC concept. The focus is on Micro Enterprises in the Food, Fashion, and Crafts sectors in South Sumatera.

Results/findings: The study defines the dimensions of digital capabilities for SMEs based on the concepts of Digital Transformation and the SMAC concept, namely: Business Model, Knowledge and Innovation, Process and Operation Support, Channel and Marketing and Sales, Customer and User Experience.

Limitations: The limitation of this study is the potential generalizability of the findings, as the research focuses on specific SME sectors and may not fully represent all SMEs.

Contribution: This study offers a roadmap for SMEs in both urban and rural communities with limited digital literacy, empowering them to navigate the digital age. By enhancing their digital capabilities, this research contributes to achieving Sustainable Development Goals No 8 (Decent Work and Economic Growth) by promoting equitable economic development in rural areas. It enables SMEs to leverage digital technologies and participate in the digital economy, fostering inclusive growth in underserved communities.

Novelty: The novelty of this study lies in adapting the concepts of Digital Transformation and the SMAC model to suit the context of SMEs, specifically Micro Enterprises in the Food, Fashion, and Crafts sectors. This Digital Capability concept contributes to the understanding of digital capabilities for SMEs and offers practical insights for their digital journey with some limitation such as rural area, and simplified understanding of digital capabilities application. Digital Transformation and the SMAC Framework can be powerful tools to support the implementation of SDGs. Applying digital technology and leveraging the SMAC framework intelligently can accelerate progress in achieving the proposed goals of sustainable development set forth by the SDGs.

Keywords: Digital Transformation, Digital Capability, Digital SMEs, SDGs, SMAC, Digital Trends

1. Introduction

Indonesia are preparing to Indonesia Digital Nation in 2024. Initiated by the Ministry of Communication and Information Technology (Kominfo), a strategic framework designed to support the National planning “Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024” developed into a Roadmap of Indonesia Digital Nation. In line with the national development approach, the Indonesia Digital Nation Roadmap aims to accelerate Indonesia's digital transformation by providing policy directions. Indonesia

digital transformation related to the goals of Digital Nation focuses on four strategic sectors: digital infrastructure, digital governance, digital economy, and digital society, Kementerian Komunikasi dan Informatika (2022). Related to the four strategic sectors, the Digital Economy Strategic is one of main issues for ASEAN, because it can give a huge contribution for our Nation Economic growth, Wibowo (2023). President of Indonesia also drive and Identified six directions to support and execute the roadmap of Indonesia Digital Nation, One among six direction is focusing in enhancing digital capabilities in priority sectors to strengthen geostrategic competitiveness and drive quality growth.

In the other hand, the efforts to enhance digital capabilities for a nation also discussed by Clark et al., (2022) that, Digital capabilities, technology, infrastructure, and governance are essential for achieving the SDGs. They empower individuals, enable progress across sectors, ensure equitable access, and establish effective policies for sustainable development. SDGs refer to 17 core part of the 2030 Agenda for Sustainable Development by United Nations. The SDGs provide a framework for addressing the sustainability of current development models to encompass a range of environmental, economic, and social objectives, Cordova & Celone (2019). Developing the digital capabilities play the important role to utilizing technology and making progress towards the SDGs, O'Sullivan et al., (2021). Indonesia as one of the country who participate in SDGs are focusing on their national strategies (Kementerian PPN/Bappenas, 2021) and focusing and grouping all the goals into 4 pillars, namely (1) The development pillar for social includes Goals 1, 2, 3, 4, and 5. The development pillar for economic includes Goals 7, 8, 9, 10, and 17. (3) The development pillar for environment includes Goals 6, 11, 12, 13, 14, and 15. (4) The development pillar for law and governance includes Goal 16 (Bappenas, 2018). Among the goals above, we are trying to focusing on the goals no 8, which is explain about Promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for and Economic Growth. This goal also related to our previous discussion about Digital Economy Growth in ASEAN and Indonesia Digital Nation goals as well.

The supportive program for Indonesia's digital economy also initiate and led by the Ministry of Desa (Village Ministry), which aims to strengthen digitalization at the village level. This initiative is crucial for ensuring the rapid dissemination of development-related information to empower local communities and enhance their participation in the digital economy, such as Website for Village and Digitalize Small Medium Enterprise (Suharto, 2020)(Humas Kemendes PDPT, 2022). Referring to Digital SMEs is discussed by Marko S. Hermawan, (2022) said that. SMEs in Indonesia have a significant impact on the domestic market and contribute to the country's economy. They account for over 90% of all firms and provide employment for a large portion of the workforce, particularly women and young people. SMEs, especially micro enterprises, are prevalent in rural areas, playing a crucial role in skill development and entrepreneurship. Technological innovation has been identified as a critical driver of growth in SMEs, enhancing their competitiveness in the domestic and global markets (Budianto et al., 2022).

In order to support the dominated SMEs in Indonesia Rural area, government has also initiated various infrastructure developments, including fiber optic networks, internet expansion in remote areas, and training for digital entrepreneurs and talent in remote areas 3T regions in Indonesia. (Humas Kemendes PDPT, 2020) dan (Kementerian Koordinator Bidang Perekonomian, 2021). From that condition Indonesia SMEs, especially in Rural Area are basically ready for sailing in the digital era.

Another opportunity for SMEs, besides infrastructure is their literacy or Capability. The Digital Literacy should be developed for SMes followed by their understanding about Digital Capability (Augustine Ebuka, Ngozi Nzewi, Gerald, & Mary Ezinne, 2020)The strategic support and opportunity in the digital era for Indonesia, especially in rural/village SMEs would not be enough. Based on the literature, Utilizing the opportunities in the digital era for SMEs should be started with enriching their company with the right digital capabilities. O'Eha (2011) states, that the application of digital capabilities to SMEs will be able to increase company value, such as the effectiveness of business processes, reducing

costs, increasing productivity, developing human resources, professionalism, value of excellence, and corporate profits. Meanwhile, a SME with Strong Digital Capability have better revenue. The Challenge it self for SMEs are not come easy, as we know, the characteristics of Digital Technology are Rapid. Along with that characters, companies including SME are now required to develop digital capabilities in accordance with the current situation, Oswald & Michael (2017).

The current situation of digital technology nowadays are related to Digital Trends, which nowadays well known as SMAC (Social media, Mobile, Analytics and Cloud Computing). Thus Digital Trend are become our highlight on running digitally business nowadays. The Digital Trends nowadays not only become a list of theory that written on a text book or Article, they worth more than that. A well growth company such as big corporation like Nike and so on, are applying that trends, or A Unicorn Start Up nowadays are applying those trends well. The other reference said that, the way company responds to environmental changes and the use of digital technology, according to the company's business problems, in order to be more effective in achieving competitive advantage, are called by digital transformation (Rowles & Thomas, 2017) ; (Herbert, 2017); (Bharadwaj, 2000)(Kartika & Medlimo, 2022). The benefits of digital transformation for SMEs, especially in Indonesia are (1) Increasing income by up to 80 percent, (2) One and a half times more likely to increase employment opportunities, (3) 17 times more likely to be innovative, (4) Become More Competitive Internationally, Deloitte (2019).

Through the supportive condition and the richness of theory about SMEs Digital Transformation, from the perspective of the academic scope, the writers would like to contribute a solution for Digitalize SMEs. Based on the recently year observation about Digitalize SMEs, we have not find a theory that may help SMEs to run Digitally, by leveraging Digital Capability for SMEs, especially for Micro Enterprise, which are mostly exist in rural area in Indonesia. We develop this Digital Capability based on SMAC framework (Noor, 2017) and Digital Transformation theory digital capabilities from corporation theories, which consists of Digital Layers Albanese & Brian (2016), Digital Masters Westerman et al., (2014) and Digital Disciplines Weinman (2015) also Oswald & Michael (2017) The novelty of this research, is highlighted on the adaptation and application for SMEs, where, based on the literature and data observation, until last 2022, there are no detailed Digital Capability theory for SMEs. This research also potentially developed for the measuring of digital capability as Digital Maturity Model for SMEs in the future.

This research is a qualitative research, which conducted by literature study and validation of dimensional components through interviews with experts. We conduct this research with an exploratory study, so we might take a case study and pilot test. The case study for this research was taken from SMEs in Indonesia Province. As a result, we define seven dimension of digital capability for SME, especially for Micro Enterprise.

2. Literature Review And Hypothesis/Es Development

The theories in this study will be started by defining digital capability for SMEs and followed by the Digital Maturity Model for SMEs. To form the theories, we do elaborate the theories, such as the characteristics of SME, theory of digital transformation, as the root of the creation of a digital maturity model. To Complete the overall theories, we by related the formation of the digital maturity model based on (Bruin & Ronald, 2005); (Duffy, 2001) and Schumacher et al., (2016), as well as other supporting theories, are useful as a basis for forming digital capability dimensions.

2.1. Small business

Small businesses by definition generally depend on policies that apply to a country. However, theoretically a small business is a jointly owned business or single ownership, carried out independently and the freedom of the owner. This type of small business is generally run from a home business. Concrete examples of small businesses around are

minimarkets, small shops, even services (independent lawyers, accountants, art workers) and small scale manufacturing, Byrd & Leon (2009).

2.2. Digital Transformation

Digital transformation is an effort to respond to changes in the environment and the use of digital technology precisely in accordance with the company's business problems, in order to be more effective in achieving competitive advantage, referred to as digital transformation (Rowles & Thomas, 2017) ; (Herbert, 2017); (Bharadwaj, 2000) (Sulistiobudi, Merizka, Syawie, & Paramitha, 2023; Syarif & Riza, 2022).

There are three attributes when making a digital transformation in order to achieve a digital maturity, including (1) creating value in the business world (business model), (2) creating value in the process of creating Customer Experience, (3) building the foundation of capability to support the entire structure of Operational activities (Zimmermann, 2016); (Herbert, 2017); (Albanese & Brian, 2016)(Suadun, Syarif, & Nugraha, 2020; Yahya & Yani, 2023).

2.3. Digital Capability Layers

Digital Capability Layers are used in this study because, before carrying out digital transformation, companies need to know in advance the position of digital spectrum (digital layers). the goal, so that the company knows, in which part of the company should make improvements, Albanese & Brian, (2016). Digital Masters (Capability) Digital Master is a theoretical view that says that the success of a company that is digitally mastered is determined by Digital Capability and Digital Leadership. In this study, the theory taken is the theory of digital capability only. It reveals that companies with strong Digital Capability have better income with their physical assets. Digital activities can enhance and expand the performance of physical products, Westerman et al., (2014)(Parella, 2022; Suharto Suharto & Hoti, 2023).

2.4. Digital Disciplines

Digital Disciplines is a framework that can be used as a corporate strategy in avoiding sudden defeat of opponents, due to threats or disruption of the use of technology carried out by competitors, Weinman (2015)(Pratama et al., 2023; S Suharto & Yuliansyah, 2023).

2.5. SMAC Framework

According to the latest reference in (Noor, 2017), the current axis of business transformation revolves around SMAC, which stands for (S)ocial media, (M)obile Computing, (A)nalytics/Big Data, and (C)loud Computing. SMAC is metaphorically compared to the human body, with social media as the interacting hand, mobile computing as another sense to connect with the world, analytics as the brain for operations, and cloud computing as the framework to store all these components. The convergence of SMAC is not just a mere concept; it will shape the technology business in the next decade. SMAC will serve as a driving force for the next generation in technological trends, leading to increased digitalization across various industries and business models Oswald & Michael, (2017)and Sharma & Nayaj, (2015)

Through the literature studies and interpretation of the literature, based on the above theories, we find similarities from the components of the Digital Master theory and components of the theory of Digital Disciplines. After finding similarities between the two theories, the researcher re-equates with the components of the digital layers theory. Digital layers are positioned as the main theory in forming digital capability, because digital layers are the most basic theory, which is needed to carry out digital transformation, (Kusumawardani, Susi, & Sukmasari, 2023)Albanese & Brian, (2016). The researcher also conducted an interview with the expert in the form of a preliminary interview with one of the academics who understood the study of digital transformation, with the aim of ensuring dimensional conformity and dimensional naming that was constructed from the three

theories mentioned earlier, were appropriate. The results of processing the merger of these three theories are carried out with the study of the literature concluded based on similarity

3. Methodology

In this study, two types of interviews were conducted based on John (2013) The first type aimed to confirm the dimensions of digital capability suitable for SMEs by conducting literature reviews. This helped in developing a Digital Maturity model specifically for SMEs. The qualitative data analysis involved interpreting themes and descriptions derived from the interviews to establish the digital capability dimensions. The second type of interview involved a pilot test where participants provided feedback on the model's applicability and acceptance. The analysis process included data collection, transcription, literature review, environmental data analysis, and observation. The data was then coded, categorized into themes and descriptions, and aligned with the chosen exploratory research approach. The dimensions of Digital Maturity were formed through literature interpretation, expert interviews, and validation. Subsequently, a questionnaire assessment was designed, and a formula was formulated. Finally, a pilot test was conducted to validate the accuracy of the information. Based on the in-depth interviews, it was concluded that seven dimensions suitable for Small Businesses in the Fashion, Food, and Craft industries were identified.

4. Results and discussion

The conceptual framework or research aims to produce digital capabilities as a form of digital maturity, carried out and adapted from a literature adaptation study by (Juliyanti, 2023; Onoyi, Kurniawati, Yantri, & Windayati, 2023)(Albanese & Brian, 2016; Bruin & Ronald, 2005; Duffy, 2001; Schumacher et al., 2016; Weinman, 2015; Westerman et al., 2014).

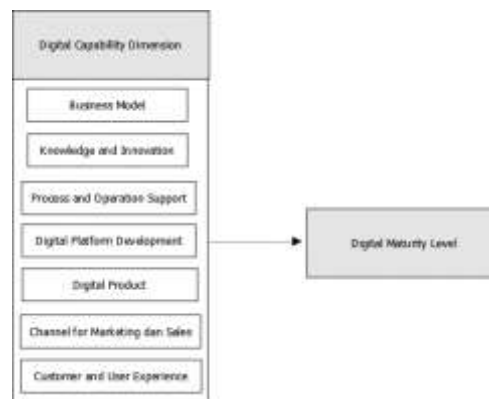


Figure 1. Conceptual Framework Research

Source : Adapted from (Albanese & Brian, 2016; Bruin & Ronald, 2005; Duffy, 2001; Schumacher et al., 2016; Weinman, 2015; Westerman et al., 2014)

In this study, it is very in line with the explanation of Bruin & Ronald (2005), that in forming the maturity model, researchers need to do some study literature to form capability dimensions. In forming the dimensions of capability, it can be done through interviews with experts, in this case taken from certain individuals or companies etc. which are called domains. The selection of domains for SME objects is certainly too broad, because the number and proportion in Indonesia is around 99.9%. Therefore, based on the background of this research, only a portion of SMEs are determined, namely small businesses in a province in Indonesia, followed by small businesses. For the type of business itself based on data from the SMEs service in a province in Indonesia, that the three highest types of businesses based on growth in numbers are fashion, food and craft. Besides being used as

a domain, this type of business is also used as a case study, where apart from being part of explorative studies, qualitative case studies are useful in solving problems encountered today, based on past experience, they are useful in understanding certain phenomena, and producing further theory for empirical testing ,Sekaran & Bougie (2016). Based on this theory, case studies are needed from small businesses themselves, with the types of businesses of fashion, food and craft.

Referring to John (2013) in this study two type of interviews were conducted. (1) First, confirm the dimensions of the digital capacity suitable for SMEs, formed based on literature studies. Next is to build a Digital Maturity model for SMEs. Based on the data analysis chart in the qualitative research above, Interpreting these themes/descriptions will be applied to the establishment or building of digital capability dimensions for SMEs. (2) Second, when the writers do the pilot test with this digital capability , where participants will be asked about how the suitability of the model can be applied, accepted, or not. The analysis begins with the collection of raw data, data transcription, literature, environmental data, observation. Process and prepare the data to be analyzed, then read the data from the whole, the data is then codified, divided into themes and descriptions. Linking these themes into the research approach, in this study, what was chosen was Exploratory Research. After that the themes or descriptions were interpreted with the data and findings made, and other supporting steps for the research. In this study, the literature for forming the dimensions of Digital Maturity was interpreted, then interviewed by experts and found appropriate dimensions for SMEs.

The next process with the next formation step are by designing a questionnaire assessment, formulating the formula. The last validation of information accuracy can be done through a pilot test. Through the results of the in-depth interview, it can be concluded through a matrix of all the tables in the previous sub-chapter, then the results of dimensions that are suitable for Small Business, the type of business of Fashion, Food and Craft are obtained. Consists of 7 dimensions, namely:

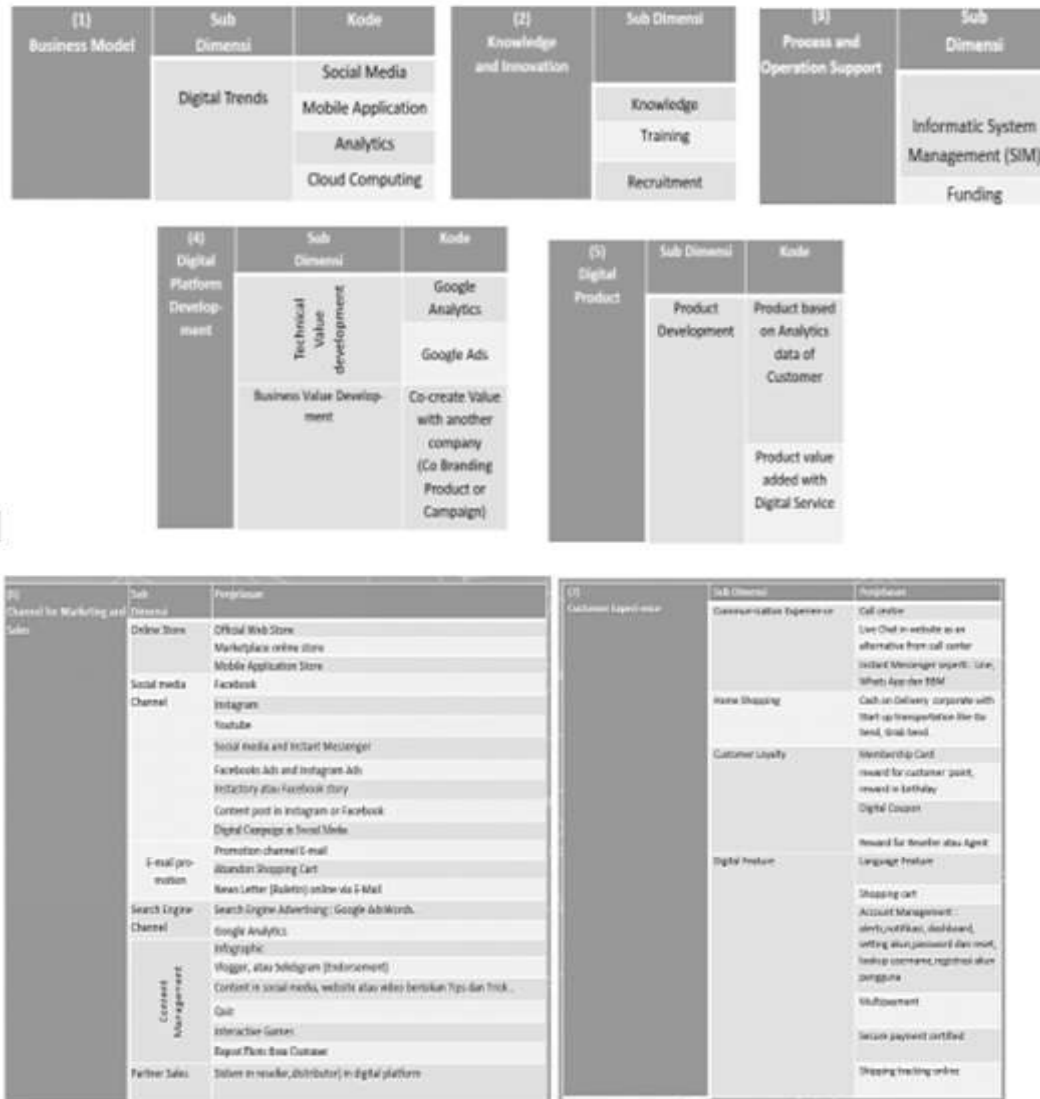


Figure 2. Digital Capability for SMEs especially for Food, Fashion and Craft
Source : Developed by Researchers

5. Conclusion

5.1. Conclusion

Digital capability dimensions for small businesses, types of fashion, food and craft have been defined. Based on literature studies of theories related to the latest digital transformation, referring to the current digital trends, namely, Social Media, Mobile, Analytics and Cloud Computing (SMAC) Oswald dan Kleinmeier, 2017 ; Sharma & Nayaj, (2015) and Nour, (2017). The main theories used to shape the dimensions of digital capability are Digital Layers (Albanese & Brian, 2016) and Digital Master from the standpoint of Digital Capability (Westerman et al., 2014) and Digital Disciplines, (Weinman, 2015) . These three theories are carried out by literature study and interpretation of definitions and components, through merging (subset) and then confirmation to academic sources, to be adjusted for name and definition, so as to produce digital pre-confirmation capability dimensions for small businesses, fashion, food and craft

The research findings have significant implications for supporting SMEs, especially those in rural areas, and leveraging their potential to contribute to the digital economy and achieve Sustainable Development Goal (SDG) number 8. By defining digital capability

dimensions for small businesses in the fashion, food, and craft sectors, this research provides valuable insights into how SMEs can navigate the digital landscape.

The Methodology of this research is a qualitative research. By conducting in-depth interviews, dimensions of Digital Capability that have been defined in the literature, the conformity and views and relevance of their needs for small businesses, the types of businesses of fashion, food and craft are confirmed again

5.2. Limitation

This study does not consider external factors, such as market dynamics, technological advancements, or regulatory changes, which could influence the digital capabilities of small businesses. Future research could explore the impact of these external factors on digital maturity and provide a more comprehensive understanding of the subject, as we already define a digital capability which became the first dimension to develop the digital maturity.

5.3. Suggestion

1. The findings of this study can be used by the Government and other stakeholders as a reference to identify the essential digital capabilities that small businesses, particularly in the Fashion, Food, and Craft sectors, should focus on as they embark on their digital transformation journey.
2. It is recommended that future research further expands upon this study by exploring the digital capability in other business types or product categories, such as services. This would help uncover additional factors that may influence the measurement of digital maturity.
3. This study represents a step towards the development of a digital maturity model as we already define digital capability point.

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