Module

12

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Edition 1

Digital Age Management

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Introduction

Digital technology is developing rapidly. This technology broadly impacts human life, from value chain networks (Nir, 2018), to the financial industry (Dorfleitner et al., 2017), social elements, and daily human life. Currently, our lives are inseparable from digital technology. Waking up in the morning, we open our smartphones, read Whatsapp or Line messages, or others. Then we open the email and open the digital newspaper. Then, we order food through an online food application. Then, go to work by using an online taxi.

What is more interesting is that the adoption of digital technology is running fast. James Watt invented the steam engine in 1774. Thirty-eight years later, the first commercially successful steam engine locomotive appeared in 1812. Personal computers began to appear in the early 1970s. 15-20 years later, practically everyone already has a personal computer. Smartphone penetration is even faster. In the 2000s, cell phones became popular. In the late 2000s, smartphones started to appear. Not more than ten years later, practically everyone has a smartphone. Digital technology also enters all levels of society. Even in China, beggars accept donations digitally. Beggars do not just accept cash donations. Contributions are made through digital technology: download the application, scan the bar code, and enter the value of the gift. Beggars accept donations through the WeChat[1] application.

These developments, as usual, will bring up opportunities and threats. For example, if a business cannot adapt to these developments, its competitiveness will be threatened. Technological developments, such as conventional taxis, printed books, or newspapers, displace many examples of businesses. On the other hand, these new developments give rise to opportunities to create added value, such as online taxis, digital books or newspapers, and others. This module discusses the development of digital technology and how businesses can use digital technology to generate added value.

This module consists of two learning activities. Learning Activity 1 discusses the digital technology environment, such as the development of digital technology, the factors that influence the development of digital technology, and digital technology in Indonesia. The rapid development of digital technology is often referred to as the fourth industrial revolution. Two factors are driving this rapid development: the rapid development of technology and the development of an increasingly dynamic society. For example, generation Z is very familiar with digital technology.

Indonesia is experiencing a digital revolution and learning Activity 2 discusses how to create added value using digital technology. To take advantage of this technology, the characteristics of digital technology need to be understood. Companies must carry out digital transformation to utilize digital technology optimally. The following discussion discusses strategies for creating value in the digital era. The last part of this

1 https://www.asiaone.com/digital/no-cash-no-problem-beggars-china-now-accept-wechat-pay, Downloaded December 18,2019.

learning activity talks about ways to create value for two popular digitization platforms, YouTube and Facebook. After studying this module, you are expected to be able to explain the following.

1. Digital technology.
2. The digital revolution.
3. Factors are supporting the digital revolution.
4. Internet of Things.
5. Generation Z
6. Indonesia's digital condition.
7. Indonesian digital sector authority.
8. E-commerce.
9. Fintech.
10. On-demand services.
11. Hyper convenience.
12. Personalization.
13. Consumer experience.
14. Creative disruption.
15. Digital transformation.
16. Scale up.
17. Digital capabilities.
18. Customer empowerment.
19. Create value through YouTube.
20. Create value through Facebook.

Learning Activity 1

Digital Environment

This learning activity discusses the digital environment as an introduction to the following discussion. The digital environment discussed includes the notion of digital technology, the digital revolution, the digital era in Indonesia, and digital-based business activities in Indonesia.

A. DIGITAL TECHNOLOGY

What is referred to as digital technology? Digital technologies are electronic tools, systems, devices, and resources that generate, store, and process data. We see many examples of these technologies, such as online games, cell phones, multimedia, the internet, websites, digital (online) banking, digital payments, and others. Here are some examples of digital technology: (1) website, (2) blogs, (2) buying and selling online, (3) smartphones, (4) digital music, (5) electronic books/e-books, (6) social media, (7) computers, (8) printers, (9) ATMs, (10) vehicles, (11) robots, (12) banking and finance.

1. *Website*

Internet-based websites. The Internet itself is a large and essential part of digital technology. The number of websites globally currently reaches around 1.5 billion as of January 2019. Websites provide much information and are now more interactive. Internet browsers such as Google, Firefox, and Internet Explorer have been developed to make it easier to find information and websites on the Internet. The Internet itself was developed starting in the 1960s, which was a United States military project. The goal of the project is to have a decentralized computer network. If there is a disaster at one storage location, the United States government or military can still access the other storage. Physically, the Internet is a collection of computers connected to each other, sending bits (computer characters) to each other using radio signals, cables, and telecommunication networks. Data is sent by breaking the data into smaller parts.

A web browser was developed to make it easier to search or surf the Internet. Browsers make it easier to find information on the Internet.

Internet penetration in Indonesia is relatively high. Currently, there are 150 million active internet users; this means that 56% of the total population of Indonesia (around 260 million) already uses the internet. For companies or institutions, the website can be

used as a window to outsiders. Companies can display information about the company, for example, products sold. Consumers can find information through the company's website.

2. Blog

Blogs are the same as websites. The first blog was created in 1994. After that, the blog proliferated. As of 2019, the number of blogs has reached more than 440 million. Websites usually contain static information and take time to change.

On the other hand, blogs usually contain changing information, sorted from the most recent information to the oldest. Blogs are also increasingly interactive and can be filled with pictures or videos. Individuals or groups usually create blogs with the same interests or goals. Blog language is usually more informal. Blogs are usually written to reflect someone's opinion or thought. Then, there is a column to accommodate comments or opinions from readers. Websites usually contain information that only changes slowly. The web is organized by page.

Currently, companies and institutions have also realized the potential of blogs. Because of this, companies have started getting into blogging. Often the company's web consists of websites and blogs. For blogs, companies can display the latest information about their products or other information. This information will constantly be updated. With this pattern, companies can establish more intensive interactions with their consumers.

3. Buying and Selling Online

Buying and selling online using internet platforms to make transactions. In traditional markets, buyers and sellers meet the market and interact directly in the physical market. In online marketplaces, buyers and sellers interact on the internet. Here are ten of the most prominent Indonesian websites (sites) for online buying and selling: (1) Tokopedia, (2) Bukalapak, (3) Kaskus Buy and Sell Forum, (4) Lazada, (5) Blibli, (6) Shopee Indonesia, (7) OLX Indonesia, (8) Elevenia Indonesia, (9) Banja, and (10) Zalora. Usually, the seller of goods will advertise the goods to be sold on the site. Then, buyers enter the site and can choose the items they like at varying prices. With this online sales site, buyers do not need to come to the market. Buyers shop from home. This pattern is very convenient (practical), so online transactions are becoming increasingly popular. This pattern makes offline markets, such as malls, lose interest.

4. Smartphone

Smartphones are revolutionizing the world through voice and writing (text) technology. Smartphones incorporate other technologies such as cameras, calculators, and maps. Nowadays, we can use smartphones to communicate and do other things, such as shopping, photos, etc. Smartphone penetration in Indonesia is quite fast.

Indonesia's total population reaches 268.2 million people, while it is known that mobile users (smartphones and tablets) reach 355.5 million. The circulation of smartphones and tablets in Indonesia is more than the total population of Indonesia.

5. Digital Music

Digital music uses digital technology to replace analog technology. The sound quality has gotten better. Digital music can be packed into MP3 or MP4 technology. Digital music accounted for 54% of total music sales of approximately $17.3 billion in 2017. Digital music growth accounted for approximately 19.4%, while physical music (such as CDs) grew by 5.4%.

6. Electronic Books (*E-book*)

If in conventional books we read books printed on paper, online books, we read books through electronic media. Electronic books are stored in a specific format (e.g., acrobat file/pdf) and then use a particular device to read the book (e.g., computer or smartphone). E-books are experiencing an increasing trend. For example, in the United States, e-book sales in 2018 totaled approximately $26 billion, comprising $22.6 billion in print books and $2.04 billion in e-books (United States Publishers Association). Other figures show that from 2010 to 2017, e-book sales grew by around 25% per year. This growth has slowed recently.

7. Social Media

Social media is showing increasing popularity. Social media usually displays user profiles, which can then incorporate technology from text, photos, videos, and more. The contents of social media are updated quite frequently. Users can interact with each other through social media platforms. Popular social media platforms are Facebook, Twitter, and Instagram. In 2019, Facebook users reached around 2.4 billion people, Instagram users reached around 1 billion people, and Twitter users reached around 330 million people.

8. Computer

Computers, especially PCs (Personal Computers), became popular in the early 1970s and became famous. Initially, computers were created in the 1950s to do complex research tasks. The advent of the PC made computers present in everyday life. Computers are becoming household items. In subsequent developments, computers are used not only to perform calculation tasks but also to carry out more varied tasks, such as entertainment, communication, and others. Computers have also become more varied, with the advent of laptops (easily portable computers), tablets, and the combination of laptops and tables (2 in 1 laptops).

9. Printers

Printers are an essential part of digital technology and have been automated in a digital technology package, although most of the storage is currently done with softcopy files. The latest printer development is the 3-dimensional printer. With a 3-dimensional printer, we can make products using the printer according to the products on the computer file. The 3-dimensional printer will print/produce products according to the specifications in the file. 3-D printers will further increase productivity. In China, ten houses per day can be built using 3-D printer technology. 3-D printers can be used for product design, lower production costs, and create medical applications and other products.

10. Banking and Finance

Digital technology is also influencing the world of banking and finance. ATM (Automated Teller Machine, or Anjungan Tunai Mandiri) was launched for the first time in 1967, and since then, it has become a part of the world's banking world. Now, the banking world is going further by launching mobile banking. With mobile banking, we can do banking transactions using our cell phones, from making payments to transferring funds. Apart from banking, financial services other than banks have also begun to emerge. For example, apart from credit cards, we can now use other services, such as PayPal, Gopay, Grab, Dana, and others, to pay for transactions. In the credit sector, businesses can now borrow through internet platforms, such as peer-to-peer lending (crowdfunding). Peer-to-peer lending uses a digital technology platform to run its business.

The examples above show that digital technology dramatically impacts human life.

B. DIGITAL REVOLUTION

1. The Digital Revolution and Other Revolutions

Many people think that the development of digital technology is a digital revolution or the third industrial revolution. In the Western world, especially in the modern era, there have been several technological revolutions.

a. Agri-finance revolution (1600–1740).
b. Industrial revolution (1780–1840).
c. The second technical revolution or industrial revolution (1870–1920).
d. Scientific technical revolution (1940–1970).
e. The telecommunications and information revolution, the digital revolution, or the third industrial revolution (1975–present).

According to other sources, the digital revolution is the fourth industrial revolution.

a. The first industrial revolution (1750-1850) was marked by the invention of steam and water-powered engines, which could replace human labor and make work more efficient.

b. The emergence of electrical innovations marked the second industrial revolution (1870-1919). With these innovations, electricity-based innovations emerged that were used in radio, television, airplanes, and others.

c. The emergence of automation innovations marked the third industrial revolution (1969-2011). Automation enables higher productivity.

d. The emergence of cyber systems or the digital revolution marks the fourth industrial revolution (2012-present). This revolution introduced innovations such as the swivel robot—light material but, more substantial, 3-D printing.

2. Factors Driving the Digital Revolution

The digital revolution is driven by the following factors, which significantly increase its impact on the global economy. In essence, the development of the digital revolution is driven by two things, namely (1) the rapid development of technology and (2) the social environment, which is becoming increasingly dynamic, which is by the development of digital technology and increasingly encouraging the development of digital technology. Further discussion of these factors can be seen below.

a. Mobile internet

The Internet provides a platform for millions of online transactions and communications that significantly contribute to the world economy. *According* to the WTO (World Trade Organization), E-commerce is defined as "the production, distribution, sale and delivery of goods and services using telecommunications technology." According to the OECD (Organization for Economic Cooperation and Development), *e-commerce* is defined as "all forms of transactions related to commercial activities including organizations and individuals based on the processing and transmission of digital data, including text, sound and visual images." Internet and telecommunications technology provide opportunities for the business world to create value through innovation: improving business processes and creating new products.

Internet penetration is made more accessible by the advent of mobile devices such as smartphones. Mobile internet has overtaken fixed-line telecommunications equipment as the gateway to the internet. About 60% of the world's internet access comes from mobile devices like smartphones. Internet connection via smartphone uses wireless technology, so no special cables or networks are needed for phones to access the internet. Currently, it is estimated that 1 billion mobile phones are sold in the world each year. A quarter of the world's cell phones are smartphones.

b. Cloud technology

Cloud technology refers to information services using computer resources that can be shared (sharing) between computer users on request. Cloud technology allows us to access files from anywhere without storing them on our computers. The data we work on or access will be stored on the internet; then, we can access it from anywhere. Using a specific password, we can open data stored in the cloud from anywhere in 2014. For the first time, data processing through the cloud has overtaken data processing through traditional IT (Information Technology) tools.

c. Internet of things (IoT)

The Internet of Things is the interconnection via the internet of computing equipment related to our daily needs that allows us to send and receive data. Examples of internet of things technology applications are turning off the lights via intelligent phones from outside the home, vending machines that can report how many bottled drinks are left in the sales machine, and temperature information on the machine via the internet. IoT is equipment connected to the internet.

In 2015, there were 18.2 billion devices connected to the internet. By 2020, this figure is expected to increase to 50 billion. Cheaper sensors, and more reliable internet connections, encourage product innovation that can connect to the internet. Driverless cars and smart homes are examples of future applications of IoT.

d. Big data analytic

In 2016, internet traffic reached one zettabyte (equivalent to 1 trillion gigabytes. Every object transmits information every second.

Computers with advanced analytical capabilities can assist decision-making, realizing the power of big data to optimize supply chains and business processes in all sectors.

e. Globalization

Globalization is often described as "the world as one village." In the village, the events at one end of the village would quickly spread so that people at the other end of the village would hear the news. The faster mobility of goods, services, and capital will encourage globalization. In addition, the development of telecommunications technology has also accelerated the flow of news worldwide. Globalization increasingly encourages more intensive communication and interaction between people and governments worldwide. Globalization will further drive the digital revolution.

f. Industry 4.0

In the industrial era 4.0, manufacturing and other business processes can be digitized. Machines are connected. The environment is also getting cleaner. Productivity will be higher. Manufacturing customization is possible so manufacturers can meet more minor, personalized product demands.

g. Artificial intelligence

Artificial intelligence studies how humans think, learn, and make decisions to solve problems, then put them into the software. Artificial intelligence does not act on the orders of programmers, but artificial intelligence learns, understands, and considers existing problems. Artificial intelligence can replace simple human jobs like stock analysts and bank tellers.

In the future, artificial intelligence will get smarter, so artificial intelligence will replace workers. Some examples of jobs that will be lost with the rise of technology: (1) drivers, (2) printers and publishers, (3) cashiers, (4) factory workers, (5) stock traders, (6) accountants and tax, and even (7) movie star. Driverless cars have been developed, and in several developed countries, these cars have been tested. Cashiers will quickly disappear because customers in supermarkets (for example) only need to go to the machine to pay for the items purchased. Robots can replace factory workers. Even movie stars can be replaced by animation technology. Pay for actors and actresses is expensive, and their behavior can be moody. Film animation can replace these actors and actresses.

h. Generation Z

Generation Z is those born between 1996-2001. This generation makes up about 25% of the world's population. This generation was born in the digital technology era and has held digital gadgets since childhood, such as smartphones and tablets. Generation Z prefers not to be individualistic, prefers online communication to verbal communication, has better digital literacy, has better access to digital technology, and has a desire to play an active role in the process and product design. With such characteristics and behavior, Generation Z will further encourage the development of digital technology.

i. Sharing economy development (sharing economy)

The sharing economy is an economic model based on peer-to-peer activities to acquire, provide, and share access to goods and services and is usually facilitated by digital or online technologies. An example of a sharing economy is lodging managed by Airbnb, RedDoorz, or online taxis such as Uber, Gojek, Grab, and others. Airbnb accommodations take advantage of vacant homes, which are then rented out. For example, suppose someone has an empty house that is not being used. The home can then be listed with Airbnb, which will advertise it using its system. For example, if a tourist comes to the city, he can rent a house as a place to live during his visit. Airbnb does not own the house, nor does it invest in buying the house.

The business concept is different from the hotel. For hotels, hotel entrepreneurs invest in hotel development. Then the hotel is rented out to balance in the city. Online taxis have a similar concept. Online taxi companies do not have taxi fleets but use their drivers' cars. Online taxis develop systems that can carry out collaboration between related parties. Several names refer to the sharing economy, such as the collaborative economy, the digital economy, the circular economy, and the peer-to-peer economy.

The sharing economy brings buyers and sellers together with the help of digital technology and can bring them together quickly and efficiently. The economic model allows consumers to become producers.

C. DIGITAL ERA IN INDONESIA

The digital era has entered Indonesia. The digital era is often referred to as the fourth industrial revolution. However, unlike previous revolutions, this digital revolution will change almost all aspects of human life, starting from changing the way decisions are made, enriching the consumer experience, creating new business models, changing the chain network, changing human behavior, and others.

The following section will discuss the digital era in Indonesia, covering the current digital conditions, descriptions, challenges, and existing regulations. The digital condition in Indonesia is often briefly described as follows. Indonesia has excellent growth potential; Indonesians are active users of internet technology, but digital technology infrastructure and facilities still need to be improved, and resources still need to support digital technology development (McKinsey, 2016).

As of January 2019, Indonesia's population reached 268.2 million. Urbanization reaches about 52%. Internet users account for around 56% of Indonesia's population, around 150 million people. The number of cellular phones is around 355.5 million, about 133% of Indonesia's population. Social media users reach around 150 million, about 56% of Indonesia's population. Social media users via cellular phones reach around 130 million, which is around 48% of the total population of Indonesia (websindo.com).

1. Conditions of Digital Technology in Indonesia

The description above shows that Indonesia is ready and has entered the digital technology era. Growth figures are also still promising. Despite the potential for digital technology development, Indonesia's preparations could have been better. Following are more detailed discussions regarding the condition of digital technology in Indonesia.

a. Digitization

Digitalization is expected to increase productivity. Using digital technologies such as remote sensors, intelligent machines, big data, and real-time communications will drive efficiency, improve product and service quality, and optimize resource allocation. Indonesia's digitization level still needs to be higher than other countries. Indonesia's digitalization level is the same as other countries, such as Thailand, the Philippines, Brazil, and India. Indonesia's productivity level is also on the same level as these countries. High levels of digitization exist in Singapore, Hong Kong, the United States, and the United Kingdom. The productivity of these countries also shows the highest figures in the world.

Internet access in Indonesia is very cheap. Access costs up to $3.4 / 500 megabytes. Only India has a lower cost than Indonesia, which is $1.6 / 500 megabytes. Compared to Thailand, the cost in Indonesia is only about 50%. The countries with the most expensive internet costs are Canada and the United States, with costs per 500 megabytes around $50 and $61, respectively. However, unfortunately, the low cost is accompanied by poor quality. Internet bandwidth in Indonesia only reaches 6.2 kb per user. Indonesia is among the two worst countries for internet bandwidth. China and India are the worst countries in terms of internet bandwidth, with 5.7 and 5.0 kb per user. The countries with the most significant internet bandwidth are Hong Kong, Singapore, and the UK, each with 3,721 kb, 616.5 kb, and 429.8 kb per user. For internet speed, Indonesia again ranks lowest, namely 3.9 Mbps.

Indonesia is still ahead of the Philippines and India, respectively 3.2 Mbps and 2.8 Mbps, respectively. The countries with the best internet speed were South Korea, Japan, and Hong Kong, with 26.7 Mbps, 17.4 Mbps, and 16.8 Mpbs.

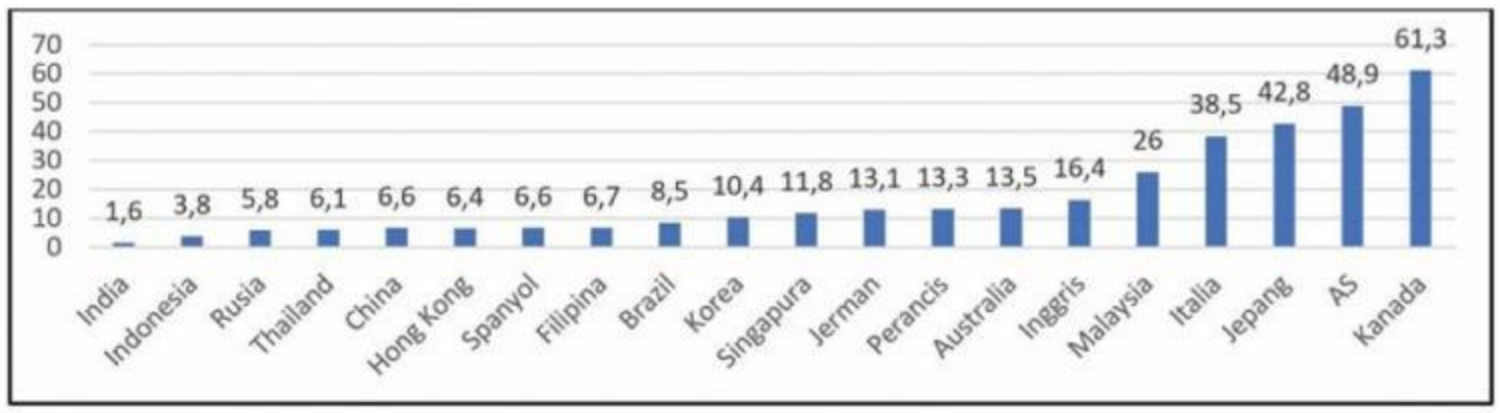


Figure 3.1
Car Broadband Prices ($/500 Megabytes)

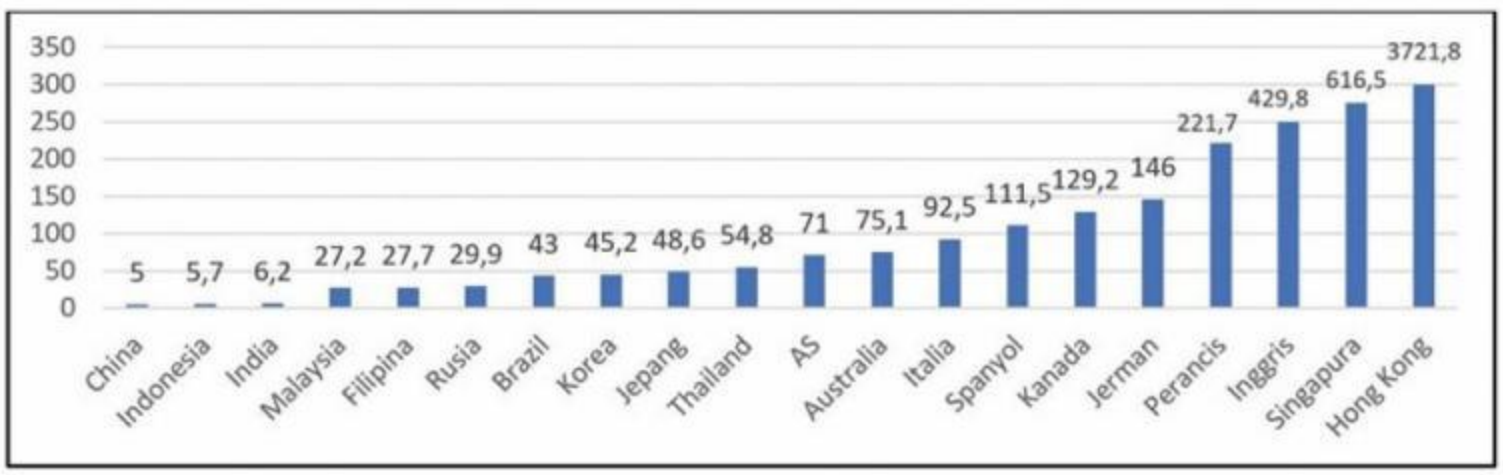
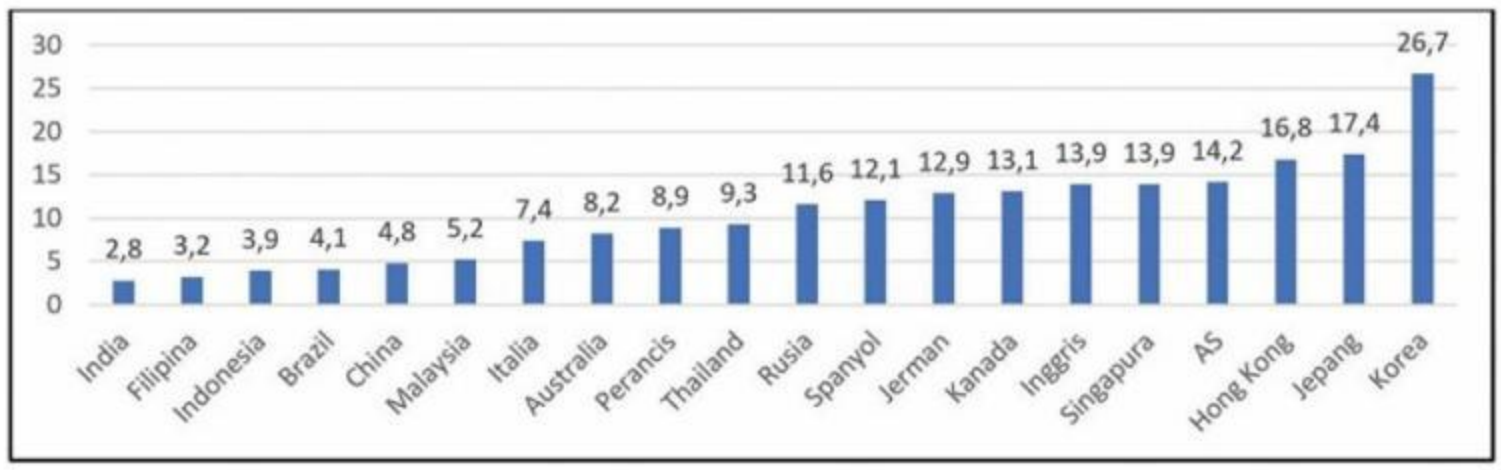


Figure 3.2
Bandwith Internet (Kb/Second/Person)



Source: McKinsey, 2017

Figure 12.3
Verage Connection Speed (Mbps)

b. IT expenses

IT spending in Indonesia is smaller than in other countries. For the industrial sector, IT spending per GDP in Indonesia reaches less than 1%, while for similar countries, spending can reach around 2%. Hong Kong has the highest IT spending of developed countries, reaching around 7% of the GDP.

The most significant IT spending in Indonesia is for the media, communications, and financial services sectors. It still needs to catch up compared to other countries.

c. Start-up culture

Even though there are obstacles, as mentioned above, start-ups are developing quite well in Indonesia. Several digital start-ups have sprung up in Indonesia, such as Tokopedia, Matahari.com, Gojek, Grab, Traveloka, KasKus, and others. In 2016, total funds disbursed to start-ups, which were reported, were around $1.7 billion. The cities of Jakarta, Surabaya, and Bandung are start-up centers.

2. Infrastructure

The Indonesian government is highly committed to encouraging digital technology development. The government provides various supports, for example, increasing the infrastructure budget for digital development, increasing the electrification ratio, building the Palapa Ring project to boost the quality of the internet network, the internet access program for villages, creating a village and regional information system (Sideka) and the Indonesia Go Digital 2020 target.

For the electrification ratio, it is hoped that by 2019, almost all regions in Indonesia will have electricity. In 2018, this ratio reached 98.3%—several government efforts to encourage the development of electricity infrastructure in Indonesia. Internet network development also needs to be developed. Currently, the contribution of internet users comes from the island of Java (58.08%); the rest is shared for areas outside Java. Internet penetration in urban areas is still higher than in rural areas (72.41% versus 48.25%). The data shows there is still high inequality in internet penetration in Indonesia (Adiningsih, 2019).

Palapa Ring is a national telecommunications backbone infrastructure development that began in 2008. Palapa Ring uses fiber optic networks to connect regencies and cities throughout Indonesia. The Indonesian government has also prepared a program/application focusing on developing villages and areas (Village and Region Information System or Sideka, Sideka. id). The outputs developed are technical reports, maps, village news, and demography. Villagers can access information and participate in developing information through the application.

3. Legal Authorities and Rules Relating to Digital Technology

Some of the authorities concerned with developing digital technologies, is:

a. ministry of Communication and Information Technology (Kemkominfo). This ministry regulates the use of information technology and electronic transactions.
b. creative Economy Agency (Bekraf). This agency is a non-ministerial government agency that regulates the creative economy, formed through Presidential Regulation of the Republic of Indonesia Number 6 of 2015 concerning the Creative Economy Agency. This agency is responsible for the development of the creative economy in Indonesia. Bekraf is tasked with assisting the president in formulating, stipulating, coordinating, and synchronizing policies in the creative economy sector.
c. coordinating Ministry for Economic Affairs. This ministry coordinated several programs, for example, a policy package regarding maps and a national electronic-based trading system (e-commerce road map), followed up with Presidential Decree 74 of 2017.
d. ministry of Trade. This ministry regulates the mechanism for reporting data on e-commerce business activities and futures trading, for example, for cryptocurrencies.
e. ministry of Transportation (Kemenhub). This ministry regulates online-based transportation.
f. Bank Indonesia. BI regulates digital-based payment systems.
g. financial Services Authority (OJK). OJK regulates the implementation of digital-based financial services.

Several regulations related to digital technology in Indonesia. The government has issued Law No. 11 of 2008 concerning Information and Electronic Transactions (UU ITE). The law becomes the legal umbrella for digital-based information technology and electronic transactions. Then, the government issued the 2016 Law concerning Amendments to Law No. 11 of 2008 concerning Information and Electronic Transactions, which is expected to provide legal certainty, ethics, and security using the internet in electronic transactions. The government also issued Government Regulation

no. 82 of 2012 concerning the Implementation of Electronic Systems and Transactions (PP PSTE), which regulates the placement of data centers and disaster recovery centers that are required to obtain electronic system eligibility certification from the relevant minister.

In 2015, the President issued Presidential Regulation No. 6 of 2015 about the Creative Economy Agency, which aims to develop the creative economy in Indonesia/ (Bekraf). Bekraf determines that there are 16 sub-sectors of the creative industry that are the focus to be managed and developed. The sixteen sub-sectors are as follows. 1. Application and game development, 2. Architecture, 3. Product design, 4. Fashion, 5. Interior design, 6. Visual communication design, 7. Performing arts, 8. The film, animation, and video, 9. Photography, 10, Crafts, 11. Culinary, 12. Music, 13. Publishing, 14. Advertising, 15. Fine arts, and 16. Television and radio. In addition to the regulations above, several ministries issue their own, more specific, regulations. Some examples of these regulations are the coordinating Ministry for the economy, which issued the XIV economic policy package in 2016; the Ministry of Finance, which issued e-commerce tax regulations; the Ministry of Trade, which issued draft government regulations regarding e-commerce.

4. Future Prospects

The number of internet users will increase. Internet users in Indonesia are still growing by around 13% annually. If the Indonesian economy grows well, by 2025, the impact of digital technology can reach $150. Added value from digital technology is obtained from several sources, such as labor participation and increased labor productivity. Digital technology can encourage increased labor participation and reduce unemployment rates. For example, Gojek can invite workers who do not have jobs to become online motorcycle taxi drivers. Homemakers who usually do not work stay at home. This personnel can be involved in their participation, for example, in the online buying and selling of a business, as housekeepers for the Airbnb model. Online technology can also speed up meetings between job seekers and companies that need work.

Online technology can also increase productivity. For example, sensors installed on specific equipment can monitor the amount of merchandise inventory, then provide information or orders when reorders need to be made. Machines can read inventory levels more accurately than humans. Online technology also provides an opportunity to create new products. New workers are needed with these new products, which will reduce the unemployment rate. Also, keep in mind that digital technology has made the conventional work sector die and increased the unemployment rate in the conventional sector. However, overall, digital technology is expected to boost the people's economy, including reducing the unemployment rate.

D. DIGITAL TECHNOLOGY BASED BUSINESS IN INDONESIA

1. E-commerce

E-commerce uses digital platforms to make buying and selling transactions. Although the history of e-commerce can be traced back to the late 1990s, the major e-commerce companies that emerged were Bukalapak and Tokopedia in 2010. E-commerce actors formed an association, namely IDEA (Indonesia E-commerce Association). Apart from these two most prominent players, there are several other players, for example, OLX Indonesia (a combination of Tokobagus and berniaga.com, Shopee. Mataharimall.com, JD.id, Lazada, Blibli.com, Blanja.com, Bhinneka.com.

With e-commerce platforms, sellers of goods will advertise their goods through e-commerce. Buyers shop online at the e-commerce. For example, if a buyer decides to buy the goods offered by the seller, the buyer will make payments to the e-commerce. E-commerce: The company then pays the goods' seller after deducting the transaction fee.

E-commerce platforms have competitors, such as buying and selling through social media (e.g., Facebook). On Facebook, sellers can post items to be sold on their Facebook accounts. Then the buyer purchases logging in to Facebook. Sales money is paid directly by the buyer to the seller.

2. Fintech

Fintech is a company that brings together surplus funds and deficit funds using digital technology. Fintech is an acronym for financial technology. The structure of the financial market can be described in Figure 12.4 below.

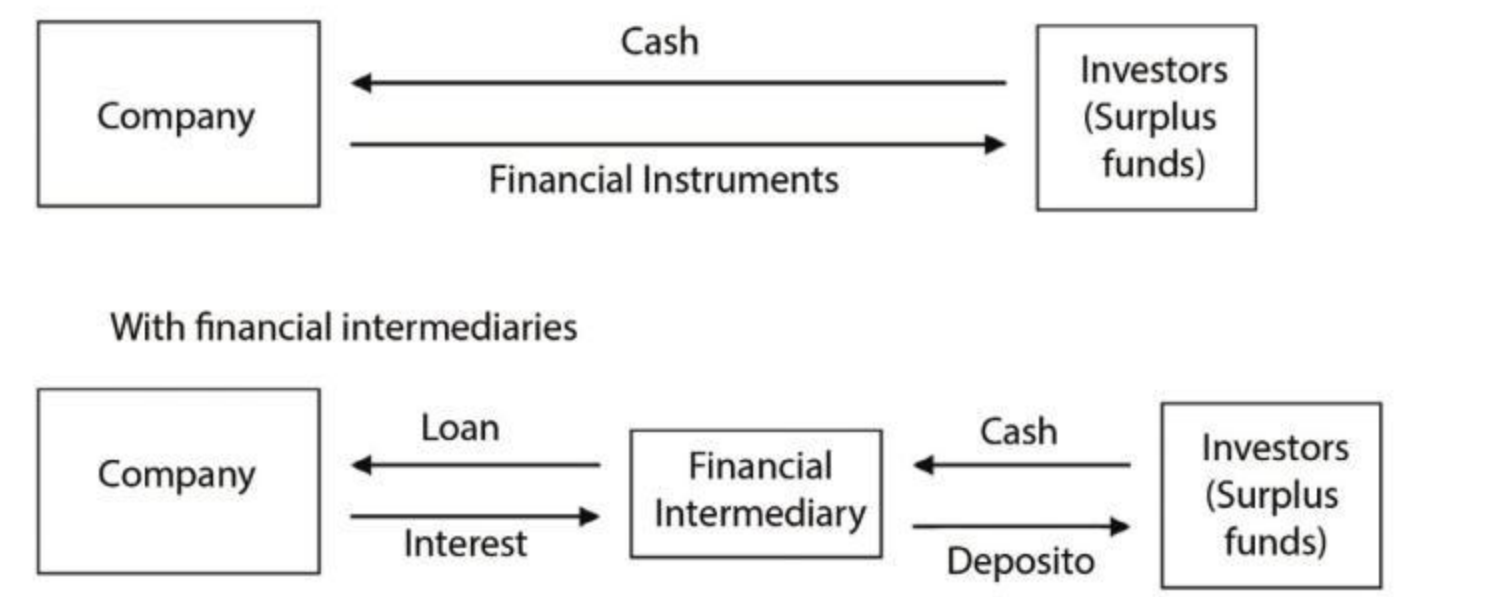


Figure 12.4
Financial Market Structure

The top figure shows the simplest financial market structure, namely, only two main actors in financial markets: those who need funds (companies or a deficit of funds) and those who have excess funds (usually households, investors, or surplus funds). Funds flow from the surplus funds to the deficit funds. In subsequent developments, financial intermediaries emerged to expedite further the flow of funds from the surplus to the deficit. Examples of financial intermediaries are banks, insurance, securities firms, brokers, dealers, and others. Financial intermediaries stand in the middle because they can carry out several functions, for example, the process of intermediary information asymmetry. For example, an investor has funds but needs to know which companies are good or bad. If he chooses the right company, then he will gain money. His investment money will be lost. The cost of obtaining and processing information is expensive, so small investors will find it challenging to analyze good and bad companies. To overcome these obstacles, banks stand in the middle. Banks with significant economies of scale can analyze well, so they know which companies are good and evil. Banks provide funding to good companies. If investors put their funds in the bank and let it do the work, their money will be safe.

With the development of the times, including the development of technology, the role of banks is becoming less and less. For example, with the development of technology, information becomes easier to obtain. The part of banks to process information is decreasing. Many companies have started to issue bonds, for example. Investors need to rely on something other than banks to process information.

The development of digital technology has enabled the further development of financial markets. It is currently developing peer-to-peer lending (sometimes called crowdfunding), lending services using digital technology. Peer-to-peer lending collects funds from many people, usually in relatively small amounts. Then Peer-to-peer lending contains a lot of funds and can provide loans to businesses in need. Note that peer-to-peer replaces the role of banking. Peer-to-peer is an example of a fintech company, a financial company that uses digital technology.

The definition of fintech itself is broad. There has yet to be an agreement on what is meant by fintech. Usually, fintech refers to companies or organizations that combine financial services with modern and innovative technology. Usually, fintech refers to financial services that use internet technology and applications. The benefits in question range from financial services such as loans to services using technology to assist with financial information.

Types of fintech are developing in Indonesia, as follows.

a. Online payment: provide payment system services. Some examples in Indonesia are Kartuku, Doku, Ipaymu, and Finnet.
b. Peer-to-Peer Lending: providing financial assistance in the form of loans. Some examples of peer-to-peer lending in Indonesia are Modalku, Amartha, Investree, and KoinWorks.
c. Insuretech: fintech engaged in insurance. An example of such fintech in Indonesia is pasarpolis.com.

d. Aggregator: fintech that collects and processes data for decision-making. Some examples of these fintechs are Cekaja, KreditGogo, Tunaiku, and Cermati.
e. Crowdfunding: fintech that provides financial assistance in the form of ownership (shares). Some examples of these fintechs are kitabisa.com and wujudkan.com.

3. *On Demand Service*

Service on demand is a service model that meets consumer needs when needed. This service model is supported by digital technology so that consumers can practically quickly obtain the goods or services they need. For example, online taxis provide on-demand services for transportation services. When consumers need transportation services, they only need to order a taxi through an application installed on their smartphone; then, the taxi picks up the consumer and takes them to their destination. Note that digital technology (applications installed on smartphones) makes such services possible.

Initially, launched the on-demand service to serve taxi services Uber. Uber develops a taxi service application using digital technology. The Uber application to taxi orders links taxi drivers. The taxi driver doesn't have to be a taxi driver. Sometimes the taxi driver is an office person who will go to the office by car. Since setting off alone, there were three seats left. Instead of the seat being idle, the person can register the vacant seat with Uber. People who depart with the same route can hitch a ride with that person. Uber helped put the person in touch with the car driver. Currently, 'uberization' (making the economy work like Uber or creating a demand-based economy) can practically be applied to various services. For example, if someone needs car wash services. The person can enter the application installed on the cell phone and order the car wash service.

Currently, in Indonesia, there are many services for on-demand services.

The following are some forms of these services based on digital technology.

a. Transportation: Gojek, Grab, Topjek, Bluejek, Bangjek, Maxim.
b. Accommodation: Airbnb, Airyroom, Reddoorz, Traveloka.
c. Food: Gofood, Grabfood, Rajamakan, Kulina.
d. Tickets: Traveloka, Tiket.com, Nusatrip, Pegipegi.
e. Other. There are many other services provided using a business model, for example, house cleaning (clean, gomaid, tukangbersih, courier), logistics (Tiki, JNE, Pos), working space (WeWork), study (Ruang Guru, Bahasa Indonesia, class). Just like the others, this service can come according to customer orders.

Exercise

To understanding of the material above, please complete the following exercise!

Currently, of course, we cannot separate some of us from the internet for work and school, so it has become a significant need besides food and clothing. What are the driving factors behind the digital revolution?

Key Ideas for Exercise Answer

You can explain based on Module 12 Learning Activities 1 in the digital revolution section.

Summary

Digital technology is developing rapidly and has a significant impact on human life. Digital technology also opens opportunities to create added value. Digital technologies are electronic tools, systems, devices, and resources that generate, store, and process data. There are many examples of the application of this technology in our daily lives, such as online games, cell phones, multimedia, internet, websites, digital (online) banking, digital payments, websites, blogs, buying and selling online, smartphones, digital music, and electronic books. / e-books, social media, and more. The rapid development of digital technology is often referred to as the fourth industrial revolution. Two factors are driving this rapid development: the rapid development of technology and the development of an increasingly dynamic society. For example, generation Z is very familiar with digital technology.

Indonesia has entered the digital era, although Indonesia's conditions still need to be improved to support the development of digital technology. Indonesia's disease can be described as follows. Indonesia's potential is great. Indonesians are included as active users of internet technology. However, digital technology infrastructure and facilities still need to be improved. Human resources still need to support the needs of digital technology development. The Indonesian government has tried to encourage the development of digital technology by developing infrastructure, strengthening the authority regulating digital technology, and issuing several regulations.

Digital technology-based businesses have developed a lot in Indonesia. These businesses include e-commerce, fintech, and demand-based services. Demand-based services started with online transportation (taxi) services, which then developed into other services, such as car washing, food, culinary, and others. Make practically all activities into a demand-based service model (on-demand services).

Formative Test 1

Choose the correct answer!

1) Writing on the internet is characterized by frequent updates, content sorted from the most recent, usually containing someone's opinion called ….
   A. website
   B. blog
   C. internet
   D. browser

2) Here is an example of a browser for the internet, is ….
   A. Google
   B. Microsoft Office
   C. Gojek
   D. Tokopedia

3) Gadgets that are connected to the internet, for example, a tool to turn off the lights using a cell phone, are referred to as ….
   A. on-demand services
   B. sharing economy
   C. artifical intelligence
   D. internet of things

4) Generation Z, which is considered to be able to drive the development of digital technology, was born in ….
   A. 1970-1980
   B. 1980 – 1985
   C. 1996-2001
   D. 2001 and above

5) Accessing the internet via a cell phone is an example ….
   A. internet mobil
   B. internet fixed line
   C. internet of things
   D. big data analytic

6) Tokopedia is a business in the field of ….
   A. fintech
   B. demand on services
   C. mobile logistic
   D. e-commerce

7) Giving loans using digital technology is called ….
   A. crowdfunding
   B. co-working space
   C. peer-to-peer lending
   D. mobile banking

8) The following are pioneers in the field of demand on services business: ….
   A. Gojek
   B. Tokopedia
   C. Uber
   D. Koinworks

Use key answers for Formative Test 1 which is located at the end of this module to determine the correctness of your answer. To make sure your mastery of the learning materials use the following formula.

$$\text{Level of mastery} \quad \frac{\text{Number of correct answers}}{\text{Number of test item}} \times 100$$

Level of master is as follows

<70%	70% - 79%	80% - 89%	90% - 100%
lower than expected	adequate	good	very good

When you attain level of mastery 80% or more, very good, you may continue to Learning Activity 2. Otherwise you have to review the material of Learning Activity 1. Pay attention to parts which you don't master yet.

Creating Value in the Digital Technology Era

Learning Activity 2

Learning Activity 2 of this module discusses business in the digital technology era. Learning activities focus on creating value in the digital age. The discussion begins by discussing the characteristics of the digital world, then how value creation can be carried out in the digital era.

The final discussion focuses on specific examples of how value can be created in the digital age.

In summary, digital technology offers new opportunities that do not exist in conventional business environments. This is a feature of technology. Today's technology allows humans to live in a very different way compared to how humans lived hundreds of years ago when technology was not as developed as it is today. In hundreds of years to come, the way of life of humans will also be very different from the way of life of humans today, when technology is much more developed. Technology revolutionized the human way of life without the need for the frenzy of these changes. Technology also provides many methods and means of creating value. In this situation, practically only human intelligence is the limit. The technological era, including digital technology, requires innovative resources. Innovative resources are the key to the competitiveness of a business in the technological age. Companies or institutions need to manage knowledge management to maintain their competitiveness of an institution.

The discussion in Learning Activity 2 begins with (1) business characteristics in the digital era, (2) digital transformation, and (3) strategies for creating value in the digital era.

A. BUSINESS CHARACTERISTICS IN THE DIGITAL ERA

Digital technology offers characteristics: high practicality, high personalization, consumer experience, high technology, and a value shift from the old business model. Here is a further description.

1. Very High Practicality (*Hyper-Convenience*)

Practicality is now starting to become an essential value for consumers. A survey in the United States of health facility services showed that 51% of customers said convenience and access to services were the most critical factors determining the choice of health facility services.

These factors include insurance coverage with a score of 46%, services from doctors/nurses (44%), brand reputation (40%), and quality of service (35%).

Surveys of global shoppers also show the importance of practicality in shopping. For example, 83% of shoppers want a quick and easy check-out. 74.4% of shoppers wish to communicate (e.g., sending promo info) to their email. About 30% of those surveyed made purchases online, then all they had to do was come to the retailer (store) to pick up the ordered goods. 51% of shoppers want a car gadget to find information on the availability of goods in stores, so consumers don't have to physically look for the items they wish to buy. The shopper's experience in stores also wants practicality. For example, 56.8% of shoppers expect to independently check-out out without the help of a cashier. 37.4% want to scan with QR codes (bar codes) in stores to get information about products and discounts quickly. 91.9% of shoppers make purchases to earn loyalty rewards.

The on-demand services business model drives practicality at a very high level. For example, if consumers need a taxi, online taxi services provide taxi services very practically. Consumers need to open the application, press the "order" button, and the taxi will arrive in front of the house in a few minutes. Pizza Hut England dares to guarantee that pizza orders will come within a maximum of 40 minutes. If the order arrives more than 40 minutes, it will be considered late, and the customer gets a bonus voucher worth £10.

High practicality is more than just a process. We need offerings that are easy to see, understand, and use to drive suitability to a high level. For example, online product offerings can be accessed from anywhere. By logging in, consumers can access the product offer. Consumers need to learn to access those accounts. Companies must be able to design transaction methods that are easy to understand and practical so that consumers can make transactions easily.

2. High Personalization

Consumers in the digital era need special attention. Digital era companies need to monitor their customers, such as where they are now, what they want, how they want to make payments, and what packages they want. Consumers will make purchases based on the recommendations of previous buyers, learning from their shopping history. By knowing in detail the desires and everything related to consumers, digital era companies can provide customization offers.

For example, Google always reads customer wants and preferences by looking at the customer's browsing history. When someone performs a search via Google, Google studies the person's search history, then presents results according to that person's preferences (which are read through the person's search history). Video search on Youtube, which is part of Google, also uses the user's search history. Youtube will display results that match our search history. Google Search or Youtube search results can differ from one person to another, depending on that person's preferences.

3. Consumer Experience

The business goal is often referred to as making a profit. However, according to Peter Drucker, the purpose of business is to create consumers. Profits will come by themselves. Digital companies offer intensive consumer experiences, shaping and designing consumer experiences. Digital technology allows for even higher human intensity.

There are several ways the consumer experience can be improved in digital business. First, digital technology allows companies to store large amounts of data and information. This data will enable investors to find information easily and quickly. For example, if someone wants to find a book title on Amazon.com, he has to write the title and can quickly find information on the book's whereabouts. Searching using a search engine reduces the need to talk to people. Some consumers prefer to speak to machines. From the company side, the company can operate more efficiently. Consumers can also track orders made, monitor the order, or cancel the order. This way, consumers can talk to company employees and follow precise procedures. Second, automation allows the same work to be done repeatedly and in a shorter time. Companies can focus on other, more complex tasks and leave everyday work to machines. Third, there is more active service customization, as mentioned earlier. With customization, customers can get services according to their preferences.

To improve the consumer experience, companies need to study consumers and collect consumer data. Companies must ask permission explicitly from consumers. This is the ethics that should be implemented. Companies must also stay focused on value-creation goals. Collecting consumer data has the primary goal of providing higher consumer satisfaction to encourage value creation—using digital technology and taking consumer data, not for other purposes, for example, because other companies are also doing the same thing. The end goal is to create value.

4. Shifting Values from the Old Business Model (Disruption of the Old Model)

The marketing principle says that human needs (needs) have existed since ancient times. These needs have stayed the same. Human desires (wants) can change or change. People need to eat to get rid of hunger. However, how to meet food needs can be different from one another. Indonesians want to eat fried rice to fulfill their hunger needs. Americans want to eat burgers to satisfy their hunger needs.

Digital technology products mostly replace ways of working in the pre-digital era. For example, online taxis replace conventional business methods, using new techniques. Netflix is replacing the old-fashioned video store. Amazon.com replaced the old model of bookstores. Google search returns the role of the librarian. However, how digital businesses fulfill consumer desires today differs from conventional business services. Digital companies can provide much more effective and faster services at a much lower cost. Traditional business models are obsolete so they will be quickly disrupted or displaced. Digital business models disrupt established models, so they are often referred to as disruptive economy or business (because it disrupts conventional business models).

Digital business models are often even referred to as self-disruption—a digital business model based on high risk-taking (risk-takers). Change is something that keeps happening. Business priorities are constantly changing, so digital businesses must continually change and be able to adapt quickly to their environment, consumer behavior, and market changes. In other words, digital companies are always self-disruptive; that is, they disrupt their businesses. This condition is very different from conventional (traditional) business models. Traditional companies tend to be run conservatively. They want to maintain their profits and maintain the current market. Listed companies (those selling shares to the public) will be even more conservative, as they are under pressure from public investors to report quarterly profits. If they say a loss or gain than expected, the investor will sell the company's stock. The company will take short-term solutions, namely cutting costs to increase profits. Companies do not want to make long-term investments, such as developing innovations. Innovation requires high fees and long-term returns.

The models used by companies with digital technology are often not small changes but big (significant) changes. Digital transformation is not only about digital marketing but more than that. New business models seek to identify and articulate new values.

5. Technological Approach

Technology has long been used in business. The old business model uses technology for specific functions, so there is an impression that technology is used in a silo model. For example, machine technology is used for production, while other functions, such as marketing, still use manual technology. With a digital business model, technology is used for operational purposes and focuses on the business to create value. Technology is also not limited to IT (information technology). IT in digital era companies has been integrated with all company operations. Technology initiatives come from top executives working with all elements of the organization.

Closely related to technology is data collection. Much data are generated from the digital world, from clicks, search history, and more. The data needs to be processed to produce relevant information. Big data analytics becomes vital in this regard. As an illustration, online taxi/ojek companies also provide on-demand services for food, car washing, and transportation. The company can record consumer activities and preferences through incoming orders. If the company wants to conduct its survey to analyze consumer activities and preferences, it will incur quite expensive costs. However, online motorcycle taxi companies can quickly obtain this data. If the information is sold, the data may be precious.

B. DIGITAL TRANSFORMATION

1. Characteristics of Digital Transformation

Digital transformation can be defined as the rearrangement of technology, business models, and processes to ensure new value for consumers and employees amidst the digital economy's continuous change and development. Digital transformation is a change in all jobs, a value creation strategy, the application of flexible management models that can compete can meet rapidly changing consumer needs, the process for digitizing company operations, supply chain, design, manufacture, marketing, product sales enterprise, and is based on data-driven management. In essence, digital transformation seeks to optimize the use of digital technology to encourage more effective and efficient value creation.

Digital transformation is not only related to the use of digital technology. More than that, digital transformation changes the mindset and behavior of all components of the organization (company). Perspectives and behaviors consistent with the digital era are perspectives that are more open-minded, flexible in adapting to the environment, and fast and agile in moving. Such behavior will encourage a new, more flexible business model. The old style business model will be lost eaten by the unique style business model.

The main obstacle in digital transformation is usually the ancient style culture that is not by the spirit of digital technology. Cultural changes, and perspectives, are essential to driving digital transformation.

Digital transformation is not only a matter of operating digitally or electronically but covers broader aspects, such as supply, manufacturing, marketing, finance, accounting, and human resources. There are at least eight dimensions covered by digital transformation, namely strategy, leadership, products, operations, culture, people, governance, and technology itself.

The readiness of each organization for digitalization also varies. There are several stages to digitization. The first stage is "organizations that are not aware of digitalization yet." In this organization, there is no strategy for digital transformation, nor is there competence for digitalization. This organization does not yet service digital products or services. The next stage is "conceptual." This organization offers a few digital products but still needs a digital strategy. The next stage is "defined," that is, organizations that can consolidate experience from several digitalization initiatives into a partial system. At this stage, digital culture begins to take root in the organization. The impact of the partial strategies and initial implementation of digitalization is being used to develop the overall digital strategy. The next stage is the stage of 'maturity or maturity. At this stage, a clear process has begun to be developed. The next stage is the "transform" stage. At this stage, the organization has implemented a strategy for all products and services offered. These stages provide an overview of the level of organizational readiness to carry out digital transformation. But remember that digitalization needs can vary from company to sector and sector to another.

Several factors are driving digital transformation. these factors as follows.

a. Company characteristics (size, business type): large companies tend to be more prepared for digital transformation than small companies.
b. Previous experience. If the company has good experience, digital transformation will be carried out more quickly.
c. Resource. If the company has good resources, digital transformation can be carried out more quickly. For example, companies with more significant sources of funds will promptly carry out digital transformation. If the company has ready human resources, digital transformation can be carried out more quickly.
d. IT Consultant. If there are many IT consultants with low costs, digital transformation can be done quickly.
e. Ecosystem. Ecosystem refers to the network of stakeholders that surrounds the company. A supportive ecosystem can accelerate digital transformation.

For example, if there are a lot of IT consultants, encouragement from regulators, pressure from consumers, or business competition, digital transformation will be carried out more quickly.

2. Stages of Digital Transformation

Digital transformation can be done through the following stages. (1) Obtain support from top management or company owners; (2) Establish a roadmap, clear goals, quite ambitious targets, and the necessary organization; (3) Start working on digital technology investments; (4) Organizing a solid team and encouraging an agile, flexible way of working; (5) Scale-up; (6) Develop digital culture; (7) Develop digital culture. The following is a further description of these stages.

a. Obtain support from top management or company owners

Any strategic initiative must have the support of top management to be successful. For small companies, strategic initiatives must have the permission of their owners. Then, top management needs to have a clear vision of digitalization and then be able to communicate this vision to all elements of the organization.

b. Establish a roadmap, clear goals, ambitious targets, and the necessary organization

Companies need to create a roadmap for digital transformation. In the next step, companies need to set clear goals and ambitious targets. These two things can be a signal about what digital technology can provide. Marks are also essential to develop; as always, good targets are high but realistic. With targets, companies can pursue high-specific challenges and goals. Benchmarking of other companies also needs to be done so that companies can learn from the outside and not get stuck in a shell.

The goals set are related to time (timeline), funding (financial), SWOT (Strength, Weakness, Opportunity, Threat) evaluation of current conditions and prospects along with threats and opportunities, competence development, development of new designs, and other related matters. Targets need to be set for items that are a source of value, such as cost savings, increased sales, and increased performance. Targets also need to be set to measure the achievement of the digitalization task.

Target setting needs to be based on an analysis of the current needs. Companies need to set targets, for example, what percentage of transactions have been automated, what percentage of communications with consumers are made via machines, how functional is the company's website, and so on. Transaction automation will increase service efficiency, which in the next stage will increase customer satisfaction. To carry out efforts to achieve these goals, companies need to establish an organizational structure and determine who is responsible and for what.

c. Start working on digital technology investments

Digital transformation is likely to require a significant investment. Investments need to be made to develop and build existing businesses. The nature of investing in digital technology is similar to investing in infrastructure. The costs are high, but the payback takes a long time. With such characteristics, a strong commitment from management and the company is required. If there is no firm commitment, such investment will quickly be eliminated.

Companies can start digital investment steps by working on pioneer projects that can continue with other projects. For example, a company could start with a customer service digitization project. If the project is successful, it can carry out related follow-up projects. In this way, the process of 'cascading' (spreading) the project occurs so that, in the end, the digitalization efforts spread to all components of the organization.

d. Organizing strong teams and encouraging agile, flexible ways of working

Organizations need to develop a strong team that can become the driving force for creating digital transformation. Then, assisted by the group, organizations can start launching initiatives to find new ways of working that align with the spirit of digitalization, namely agile and flexible. For example, layers that cause bureaucracy in decision-making can be removed. The decision-making process will be faster the slimmer the organization.

e. Scale-up

After several digitization projects have been carried out and are successful, the company has a reliable team; the next step is to scale-up. Scale-up means increasing the scope of digitalization projects initially limited to projects with a broad organizational range.

f. Develop digital culture

Digital culture needs to be developed and maintained. Recruits or new company employees, for example, those from generation Z, may already have flexible, agile, quick-to-act traits and a willingness to collaborate. The company's task is to develop and maintain this culture for the organization's benefit. The old culture can still be maintained. Usually, the old culture is the culture that makes the company successful.

However, future developments require a new culture, such as a digitalization culture. Companies must be able to combine the old culture with the new culture for the benefit of the organization.

Digital culture can adopt a learning culture. The two cultures will support each other. With a learning culture, organizations and people in it will always be learning so that many creative solutions will be found. The world and society today are changing rapidly. In this situation, human resources' creativity and innovative power are essential to support digital culture.

g. Build capabilities

The next step that needs to be taken is to build digitization capabilities once the organization is ready to take this step. Systems and skills need to be developed into company capabilities. Companies can collaborate with external parties, for example, software companies from outside. This new capability encourages and builds attitudes, behaviors, and thoughts that always want to find new ways and methods of work that are agile and fast, in line with the spirit of digital technology. Once a company has digital capabilities, the company can start adopting a new digital-based operational model comprehensively and continuously. The new operating model involves many aspects, such as technology, a new, more open perspective, and a new culture.

3. Digital Transformation Coverage

Digital transformation includes at least three things, namely (1) products and services, (2) business models, and (3) business processes. Product and service innovations aim to meet consumer needs that still need to be completed, partially met, or fulfilled but in a long way. New products or services will meet consumer needs or meet consumer needs in new ways that are more efficient and effective. Business model innovation is implemented to change the consumer experience, delivery models, and unique value propositions, which can be created with digital technology. The online taxi business model is an example of innovation by creating a new business model.

Business process innovation is carried out using digital technology to improve company operations and performance. The company is not a technology company but relies on technology to run more efficient and effective company operations. For example, a consumer goods company produces daily necessities like soap. These items are not high-tech goods. The company's operations will be significantly assisted by digital technology.

Digital technology will help operations become more efficient through production, marketing, and more.

In digital transformation, companies can become inventors, disruptors, good at learning, and all innovations. New product innovations that are carried out can be multilevel. Companies can only innovate partially unknown.

a. Inventor: a company that leads the market by simultaneously creating a new product or service. Some examples of these companies are Apple, Cisco, and Google. Cisco makes Webex software that can use for online meetings and gatherings.

b. Disruptors: companies that disrupt traditional markets by transforming new business models to serve consumers. Some examples of these companies are Amazon, Uber, Gojek, Grab, Tokopedia, and Bukalapak. Amazon sells books online. Sales of books with the old model use a long path, starting from the author-publisher-larger-small traders (bookstores)-to book buyers. Amazon cuts those long distribution lines. Then, in conventional bookstores, people will go to bookstores and browse books. With Amazon, people don't have to go to a bookstore. Book buyers only need to open the Amazon website from home and can search for book collections and make purchases from home. The conventional bookselling business model changed with the entry of Amazon.

c. Jago' Bersandar" (Lean Champion): a company that creates excellent operational backbones (excellence) using digital technology. Examples of companies like this are Walmart and Unilever. Walmart is a retail company (hypermarket) that provides a lot of merchandise. Using technology, Walmart manages operations, such as inventory (when to re-order, recording outgoing goods electronically) and others. This advanced technology is the basis for Walmart's work. Unilever is a consumer company that produces daily necessities like soap and toothpaste. The resulting product is not a technology product. But technology is used to help production become more efficient and effective.

d. All-rounders Innovation: this company innovates in all aspects. An example of this company is Tesla. Tesla makes electric cars. The presence of electric cars will disrupt conventional cars. Electric cars are also a new product. Electric car production operations use sophisticated technology as the basis for their operations.

Most digital innovations will fall into groups 2 (disruptor) and 3 (reliance on digital technology).

Digital Organization: Google

One example of a digital organization is Google. Google organizes companies into flexible, diverse, and modular units of workers, which can be reshaped quickly. To enable cross-functional collaboration, Google developed an "idea marketplace," where short descriptions of new ideas and projects are published internally. Employees can vote (choose) which tasks are the most promising and choose which projects to support and work on. Digital organization is a combination of (1) people and digital agents working together, (2) technology that can drive everything: products or services, internal operations, relationships with consumers, and others, (3) the ability of members to organize themselves, so that it can save costs related to bureaucracy, and can encourage collaborative activities.

4. Digital Transformation Applications

The following sections provide examples of digital technology applications for more specific aspects. Some examples of these particular aspects are new product development and design, payment, demand forecasting, manufacturing, sourcing, and others.

a. New product development and design

Through comments and complaints, new product or service ideas can come from consumers. New ideas can also come by exploring trends in social media, search engines, videos on the internet, and more. Using 3-dimensional printers, Computer-Aided Design (CAD) software and Computer Aided Manufacturing (CAM) can help companies.

b. Payment

Companies can use several payment alternatives, such as paying with a credit card on the website, paying with an EDS machine, or using a payment application (e.g., Gopay, Dana, and others).

c. Demand forecasting

Big data analytics can be used to predict demand. Big data analytics can also be used as "data mining" to dig up information, for example, information on consumer preferences, current trends (so companies can design appropriate services), can provide customized services, and others that can help decision making.

d. Supply and logistics

Supply and logistics can be supported with a company's membership on the B2B (business to business) web. Companies can use integrated systems that support data-sharing systems with suppliers, manufacturing execution system software, PLC (programmable logic controller), and ERP (Enterprise Resource Planning).

e. Manufacture

Companies can use robots, robot quality control, total quality management, JIT (just in time), and LM (lean manufacturing) to change work processes and encourage a culture of collaboration.

f. Human resources

The use of technology can create work schedules and cloud computing technology so that company staff can access work from anywhere and log in with an existing account and password. Companies can use CRM (Customer Relationship Management), virtual assistants to help with services, and others.

g. Marketing

Companies can dig up information about consumers by using big data analytics to find consumer preferences so that companies can provide customization services. Customer service can handle quickly and competently using existing technology. Companies can provide digital training to consumers. Companies can use many media to carry out promotions, starting from social media, YouTube, and others.

C. CREATING VALUE IN THE DIGITALIZATION ERA

Companies can create value in the digitalization era. There are four basic strategies: (1) empower customers to develop products, (2) transform customers into partners in product development and loyalty, (3) carry out joint innovation with customers to streamline production processes, and (4) improve customer experience. The following section discusses strategies for creating value for two social media platforms: YouTube and Facebook.

1. Basic Strategy for Creating Value in the Digitalization Era

a. Empower customers

Companies can engage customers and empower them to co-create new products or improve existing products. Several companies are already working on this seriously. For example, Starbucks was one of the pioneers in leveraging social media engagement. The company launched an internet/web platform, namely www.mystarbucksidea.com. The platform is designed to encourage consumer engagement and encourage them to provide feedback and ideas about the Starbucks experience. Within one year, Starbucks received more than 88,000 ideas from customers. Every time Starbucks posts

a photo, the company shares the photo on major social media platforms like Instagram, Facebook, Twitter, and Pinterest. Through the project, Starbucks is allowing customers and suppliers to voice their opinions and help improve the business model, and may even help create new products. Finally, Starbucks was awarded by Forrester Groundswell for the innovative use of social community-based branding.

Customers who collaborate with companies will feel involved and ownership and drive sales. Companies can also read customer desires and trends at a low cost by accessing customers. Survey or research to gather information from high-cost customers. Companies can obtain the same information at a lower price by communicating with customers.

Forrester Research shows that more than 60% of online consumers in the United States are willing to co-create, which can help companies design new products and improve their services. The data shows that the opportunity to involve consumers in co-creation is quite open. Such co-creation is expected to increase consumer value, boost company/brand reputation, and build brand loyalty. In the end, the company's sales will increase.

Companies can develop new products at a lower cost by involving stakeholders, such as partners, consumers, and employees. For example, P&G (Procter & Gamble) developed the Connect + Develop platform, which is an open platform that seeks to empower stakeholders to offer new product development advice. P&G estimates that around 20% of ideas, products, and technology come from outside the company (stakeholders). Currently, this figure has reached almost 50%. This way, product research, and development costs can be reduced to become cheaper. By involving customers and other parties, enormous research costs can be streamlined and provide savings to the company.

The following illustrates how online motorcycle taxis use digital technology to create value. Digital technology is disrupting the conventional taxi business model. The value created by online motorcycle taxis is the value preferred by consumers, as seen by the growth of online taxis or motorcycle taxis.

Illustration of Added Value

One example of a digital organization is Google. Google organizes companies into flexible, diverse, and modular units of workers, which can be reshaped quickly. To enable cross-functional collaboration, Google developed an "idea marketplace," where short descriptions of new ideas and projects are published internally. Employees can vote (choose) which tasks are the most promising and choose which projects to support and work on. Digital organization is a combination of (1) people and digital agents working together, (2) technology that can drive everything: products or services, internal operations, relationships with consumers, and others, (3) the ability of members to organize themselves, so that it can save costs related to bureaucracy, and can encourage collaborative activities.

b. Transform customers into partners in product development and loyalty

Co-creation will help companies maintain competitiveness. The norm nowadays is collaboration. Cooperation needs to be done if we can collaborate to produce better products. This co-creation can be done together with the customer. For example, Coca-Cola launched its "Share a Coke" initiative.[2] Through the program, Coca-Cola put people's names next to the Coca-Cola brand on Coca-Cola bottles. There are more than 1000 names that Coca-Cola has taken, for example, Kate, Tom, and others. There are also nicknames like Bro, Sidekick, and Better Half. These names come from customer suggestions collected from social media. Then the bottles are displayed in supermarkets or shops. The customer then buys a Coca-Cola bottle with the name of the friend or person they are drinking with. For example, if I want to party with Kate, I will look for a Coca-Cola bottle with Kate's name on it. Then I drank the bottle with Kate, my friend.

The "Share A Coke" initiative was the most successful market campaign of the late 2010s. Some quite significant figures are related to the marketing campaign. More than 1,000 names on Coke bottles, 988 million.

Twitter impressions, 235,000 tweets from customers using the hashtag #ShareCoke, more than 150 bottles of personalization, and more than 730,000 bottles of personalization through Coca-Cola e-commerce stores. The "Share A Coke" initiative creates a "buzz" (viral) that can drive brand loyalty. Customers feel they belong because the company is willing to put the customer's name on the company's product packaging. The cost of packaging personalization is insignificant, so the advertising campaign effectively drives sales.

c. Improve customer experience and enhance company/brand reputation

Customer experience can be enhanced by using social media platforms. Social media can remove communication barriers between consumers and companies. Companies can offer more interaction opportunities and resulting in deeper relationships. These more intense relationships can encourage co-creation, which drives better consumer value. For example, Dell uses co-creation to enhance the consumer experience through its "IdeaStorm" collaboration platform. Through this platform, Dell has collected more than 10,000 ideas from consumers, and some of these ideas have been implemented to improve customer service. Dell estimates more than 2 billion conversations with consumers through these social media and collaboration platforms. The company also launched the Social Media Listening Command Centre to improve customer service and technical support by involving consumers.

2 https://www.coca-colacompany.com/au/faqs/what-was-the-share-a-coke-campaign, diakses pada tanggal 1 Desember 2019.

2. Creating Added Value Through YouTube

YouTube is a website that displays videos over the internet. YouTube users upload videos, and internet users can access videos. YouTube is currently a huge provider. About 4 billion videos are viewed daily; YouTube is the third largest search engine in the world after Google and Facebook. One billion people visit YouTube every month. One hundred hours of video are uploaded to YouTube every 60 seconds. YouTube reaches a broader audience in the United States than cable TV.

With such a massive network, companies or organizations, tiny businesses, can use YouTube to increase sales at a lower cost. For example, online retailer ModCloth captured 4000 subscribers and 1 million views of their YouTube videos and provided additional sales. The prices spent are only 1/9 of the costs incurred for conventional promotions. If YouTube is regularly used as a marketing strategy, the results are very satisfying at a much lower price.

YouTube is a subsidiary (part) of Google. Therefore searches within YouTube will be merged with searches from the Google engine. If many people watch our YouTube videos, Google will see the search results and place them in a high position on the search engine. Some interesting facts. 60% of people who search on Google will click on the first three results on Google. 90% of all Google search searchers will click on the first ten results on Google. Thus, getting the top spot on Google search is essential, as it will generate a lot of clicks.

To take advantage of YouTube, the first step that needs to be done is to write articles and make interesting videos and upload them to YouTube. The video includes all elements, namely text, images, and audio. With complete content, viewers with different styles can be served. Some people will be happy with video viewing, some with writing, and some with sound. 65% of people are visual learners. 30% are voice learners. 5% are learners through activities/activities. Videos need to be equipped with captions (text). Videos with closed captions generate 4% more viewers and subscribers than those without captions. Videos with a personal touch tend to draw attention from viewers. People listen to advice from people they trust. Trust is built through emotion.

Then, the company needs to take the following steps. First, the company places company videos on other websites. Suppose our videos placed on other websites are clicked on and watched by people. If many websites post our videos, our video ranking will be higher on Google. Therefore, companies need to make attractive videos so that many websites will want to post our videos. Companies can also share videos on social media platforms. Social media will count in Google searches. If the company's video on social media is watched a lot, it will automatically increase its ranking in Google searches.

Second, companies can link the company's website address or name to the YouTube channel. In this way, our YouTube videos will be considered official representatives of our brand on YouTube. This way, video disbursement will be directed toward the company's business. Content already created for YouTube can be reproduced for inclusion in other media, such as blogs, podcasts, infographics, and video series.

This way, the company only works once but can be used for many media. Then, the company started to grow its audience base. Whenever possible, the target audience is global.

For this reason, the basic requirements must be fulfilled, namely, presentation in an international language, such as English. 30% of YouTube viewers are native English speakers. Next, the company can build an email network on YouTube. Using the software, videos can embed sign-up requests using email so that email lists are formed. Companies can send information to that email.

Companies can use AdWords features for videos. With this feature, companies can target audiences that are the company's target—the target consumers who are most likely to watch the company's videos. With the AdWords feature, companies only pay for engaged viewers who watch a minimum of 30 seconds. The company doesn't have to pay if a viewer watches an ad for less than 30 seconds. Another way to earn more revenue is to use AdSense for video. More than 1 million video creators worldwide earn money directly from YouTube through Google's video AdSense program. Video AdSense works as follows; YouTube viewers see the company's ads on other videos. Then click on the company ad. The company pays as part of the promotion. Then the viewer goes to the company video. Company videos feature other companies' ads. The viewer clicks on the ad video. Then the company can be paid because the company is considered to help advertise other companies. In this way, we can get paid and at the same time promote our products (although we also pay because other companies advertise our products).

3. Added Value Through Facebook

Facebook is one of the most popular social media today. Facebook is used by more than 1 billion people worldwide. Facebook can also be used as a marketing platform. The Facebook marketing model has many advantages because it can reach a broad, selected target audience at a lower cost. Here are some steps to take advantage of Facebook.

a. Create a business account using a fan page

One of the advantages of social media is the ability to create relationships between businesses and consumers through more personal interactions. This unique relationship makes consumers feel that they have found a brand/product more memorable so that they will have a special connection with the company. This connection will be more pronounced if consumers can interact with the product/brand and the people behind the product/brand. Therefore, in the Facebook view, people need to be displayed; they can be owners, ambassadors, or company representatives.

b. Build a member base

The next step is to start building a member base (audience). You can invite friends and family to be in the audience and give a "Like" on the page. Then, companies can study member behavior, whether they prefer photos, videos, or tips. Companies can ask members to share information on the company's Facebook page.

c. Maintain presence on Facebook view

Views on Facebook need to be made complete and updated regularly. A full view will display company information, product information, contact telephone numbers or e-mails, and other important information. Then, the display needs to be updated. With a complete view, the Facebook search engine will quickly find product information or company profiles.

Views on Facebook need to be filled with interesting posts that can help members. The writing does not only contain 'selling' products but is broader. The report is expected to connect companies with their target consumers through engaging, relevant content that can help Facebook members. The better the quality of the writing, the more likely it is that the report will be read, get attention, and be liked (Like), and can be shared with other Facebook users.

d. Join a group on facebook

Many groups on Facebook are dedicated to different industries, professions, and interests. If we are or are active in discussions in the group, the company will be increasingly known and can even be considered an expert in that field. However, caution is required. Comments must be neutral in tone and not lead to product sales. Words offer suggestions and thoughts on an issue or product.

e. Create your own group

If no groups match the company's wishes, a new group can be created. We can add members, write articles, start and maintain discussions, and meet with some members. Because we are the founders and administrators of the group, the company can gain the status of a leader in a particular field.

f. Makes things interesting

Companies can create exciting events encouraging Facebook users to visit company pages. For example, companies can create certain circumstances. For example, companies can create online seminars. Companies can make live (streaming) videos about specific events. The live video will drive Facebook users to the company's Facebook page. Companies may offer specific contests or quizzes. Companies can provide discounts on product prices if consumers give "Likes" or "Share" (share with other Facebook users).

g. Network development

Companies need to develop the Facebook network. Companies can ask other companies or consumers, employees, partners, friends, and family to share company posts on their Facebook pages. If the company wants to contact someone considered necessary, the company can leave a message on that person's Facebook page or give a "Like" or a positive comment, for example, "I like your work." The person may be able to reply. Network development can be done in various ways, for instance, by displaying links to other Facebook pages. If we say a tie, the possibility that the company will show the company's connection will be even greater.

Exercise

To understanding of the material above, please complete the following exercise!

Explain how the basic strategy creates value in the current digitalization era!

Key Ideas for Exercise Answer

Based on experience associated with the existing theory in Learning Activity 2, part of the essential value creation strategy, you can explain.

Summary

Digital technology offers opportunities to create value. Digital technology has several characteristics: high practicality, personalization, consumer experience, a shift in value from the old business model, and a technological approach. To optimally utilize digital technology, companies need to carry out digital transformation. Digital transformation has characteristics and significant changes that cover broad aspects, not only technology but also digital perspectives and culture. Then, companies can take more detailed steps to carry out digital transformation.

The following discussion discusses strategies for creating value in the digital era. Strategies for creating value in the digitalization era can be carried out through empowering customers, making customers partners, and improving customer experience.

This strategy focuses on consumers, such as empowering consumers, providing personalized and customized services, and enhancing the consumer experience. The last section discusses ways to create value for two of the most popular digitization platforms, YouTube and Facebook.

SOME TERMS

Digital culture
Facebook
Digital capabilities
High practicality
Consumer empowerment
Consumer experience
personalization
3D Printers
Scale Up
Stages of digital transformation
digital transformation
YouTube

Formative Test 2

Choose the correct answer!

1) The following is not a feature of the digitalization era, ie ….
   A. consumer empowerment
   B. high personalization
   C. standard service
   D. improved consumer experience

2) Processing large data into useful information is ….
   A. data analytic
   B. regression technique
   C. customization
   D. cloud computing

3) Inviting customers to jointly design products is often called ….
   A. co-branding
   B. co-creation
   C. mutual creation
   D. stakeholder's creation

4) The use of 3D printers is an example of digital technology applications for ….
   A. payment
   B. new product development and design
   C. human Resources
   D. demand forecasting

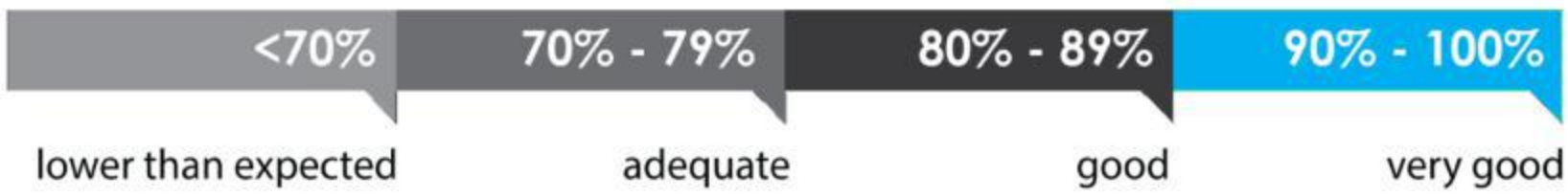
5) *Share a Coke* is a strong example of promotion with ….
   A. attractive ad display
   B. advertising by using a lucky draw
   C. promotion through the Facebook platform
   D. Product personalization

6) Earn revenue on YouTube videos, where viewers click on other companies' ads on the videos the companies use ….
   A. AdVirtual
   B. AdTube
   C. AdSense
   D. AdDigi

7) Increasing digitalization projects from a limited scope to a wider scope, covering the entire company named ….
   A. downsize
   B. upsize
   C. scale-up
   D. enterprise resource planning

Use key answers for Formative Test 2 which is located at the end of this module to determine the correctness of your answer. To make sure your mastery of the learning materials use the following formula.

Level of master is as follows



When you attain level of mastery 80% or more, very good, you may continue to Final Exams. Otherwise you have to review thematerial of Learning Activity 2. Pay attention to parts which you don't master yet.

CASE

Creating Added Value for Textbooks

Pak Hari is a lecturer at the Faculty of Economics, State University of Majapahit Indonesia (UNMI). He wrote management textbooks. The textbook is intended for first-semester students, especially at the Faculty of Economics. The Majapahit Education Foundation published the text. The book was selling well for a reader, selling around 2,000 copies in 2 years. The current price of the book is IDR 120,000 per copy. Pak Hari receives a royalty of 20% of the book price or IDR 24,000 per book. If the book sells 2,000 copies, Pak Hari's total royalties will reach IDR 48 million per two years or IDR 24 million per year.

Digital technology is growing. Pak Hari feels this technology has brought changes, including book publishing. Currently, there are fewer and fewer paper newspapers and more online newspapers. Online newspapers receive revenue from advertisements displayed on the newspaper's pages. Sales of printed newspapers are no longer reliable. The old way of creating value has shifted. A similar incident also occurred in the world of music. In ancient times, sales of cassettes or CDs were the mainstay of singers. Nowadays, people easily download song files in MP3 format and don't need to buy cassettes or CDs. Singers earn income from music concerts, create Instagram or Facebook accounts, and create views on YouTube. If millions of people follow the history, the singer can act as an endorser for a particular product, get cash in, sell space in the report for advertising, and get some money from the ad. The old way of obtaining added value has shifted.

Pak Hari feels challenged to find new added value using digital technology for his textbooks. Value-added patterns for textbooks are changing as well. In the past, sales of textbooks were in demand. One of his senior colleagues once told me that he could build a house for house tiles from the sale of textbooks he wrote. At that time, there was not much competition from other Indonesian language textbooks; there were few imported books and photocopies. But now, conditions have changed a lot. There are lots of photocopies. There are many imported books. There are also many other textbook competitors. Today, book sales take a lot of work to count on.

The text distribution path is as follows. Author → Publisher → wholesaler → small traders, → consumers (buyers). From 100% of the book price, the distribution for each party is as follows: author royalties (20%), book production costs (15%), publishers (15%), wholesalers (20%), small traders (10%), consumers (20%). The consumer part, in this case, is the potential discount offered to consumers. If consumers do not bid, then the 20% allocation for consumers will be taken by small traders. Some stores do not provide a bargaining mechanism. In this situation, the budget for consumers is carried by small traders.

Pak Hari sees that the textbook target market is relatively straightforward: students taking management courses. The decision maker is the lecturer in charge of the system. Students will look for the textbook if the supporting lecturer uses Pak Hari's

text. Under these conditions, Mr. Hari thought of just going through the lengthy book marketing route. By going through this route, Pak Hari can take over the distributor's share, which is 45% of the book price. Pak Hari's share will increase to 20% + 45% + 20% (if the consumer's share is also taken) = 85%. Pak Hari has the potential to earn IDR 204,000,000 over two years (assuming 2000 copies are sold). With this additional income, Mr. Hari is willing and planning to invest his time in making ppt (book presentation in ppt form), manuals for lecturers, question banks, and others, which can support the textbook. Various teaching aids will significantly help lecturers who use the text.

However, this alternative will add to Pak Hari's hassles. Mr. Hari must self-published the book. Pak Hari has to look for a book printing house. Then Pak Hari had to manage the marketing and finances of the book. Pak Hari's time could be consumed for these activities, while the time to write another book would be reduced.

With the development of digital technology, Mr. Hari began to think about further alternatives. Currently, pirated books, including Pak Hari's Management book, are elementary to find. Pirated books sell for only IDR 35,000, which is much cheaper. Buyers will undoubtedly be tempted to buy pirated books compared to the original text. Even the market for used pirated books has also emerged. In this market, used pirated books can be sold for as little as IDR 10,000 per copy.

Pak Hari has plans to digitize his textbooks, then give them away free of charge to readers or students. In this way, now pirated books will be affected. No one wants to buy pirated books anymore. However, Pak Hari must be able to find added value from the book's publication. Pak Hari intends to take advantage of social media, such as Facebook, Instagram, and YouTube. Pak Hari can make programs on social media. For example, Pak Hari can create a program on YouTube. If the number of viewers or subscribers is large, Pak Hari can invite advertisers to place advertisements on Pak Hari's YouTube program. Pak Hari can also market paid training or consultations based on his book. Even though the Management book is free, Mr. Hari can still get cash from other related activities.

Discussion Questions

1. Evaluate the alternatives to Pak Hari: do you stay as you are now, sell online, or use social media? Evaluate the pluses and minuses.
2. If Mr. Hari decides to give up his book for free and work on social media, evaluate the strategy and steps that must take. Explain in detail the activity plan that Mr. Hari can do!

Answer Key to Formative Test

Formative Test 1

1) B
2) A
3) D
4) C
5) A
6) D
7) C
8) C

Formative Test 2

1) C
2) A
3) B
4) B
5) D
6) C
7) C

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