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The Urgency Of Implementing 5g In Increasing Village Community Resources

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Abstract

After providing service for approximately 1 month, researchers discovered the potential for developing human resources and the economic welfare of village communities by developing internet quality from 2G, 3G and 4G to 5G. Therefore, this article aims to analyze The Urgency Of Implementing 5g In Increasing Village Community Resources. The results of this article show 1. The 5G network has advantages compared to the 2G, 3G and 4G networks that have been implemented in these villages, namely: a) Has a data transfer speed of 1 millisecond, b) Can be connected to equipment such as cars, household appliances and telephones, c) Has a more comparable speed. 2. Service members found complaints about slow internet for digital business actors in these villages when conducting initial observations. The servants discuss with village officials about implementing a 5G network and village officials agree if there are investors and funding from the government or other parties. 3. The existence of a 5G network in these villages has 3 main urgencies, namely: a) Increase digital business productivity. b) Improving Human Resources in rural communities. c) Creating new business models and expanding digital business.

Keywords: 5G, Village Community Resource, Urgency

INTRDOUCTION

At this time technology has developed very rapidly every year in the world, especially in Indonesia. Not only will the 4G network be used from now until the future, as the era continues to develop every year, there will also be many great people who will create new networks. Even though the technology that is widely used at the moment is 4G, as time goes by, 5G technology will also be widely used over time. However, to realize 5G services in Indonesia, the government still has to face many obstacles. The 5G network also definitely has faster speeds than 4G. Over the past decade or so, the rapid development of communications technology from 3G to 5G has been witnessed throughout the world. The speed resulting from 5G technology will double every year (Saragih, 2017).

The rapid development of cellular telephones is accompanied by an increase in internet users in Indonesia. Based on data from the Central Statistics Agency (BPS) , in 2018 the number of households in Indonesia that had one cellular telephone number was 88.46 percent. This figure has increased significantly compared to 2015 which only reached 88.04 percent. The internet is widely used for distance learning, video conferencing, webinars, and online election of regional leaders. The large number of users' needs for the internet requires fast data access speeds and stable network quality. This is in line with the writings of Saragih et al, people want good network quality at low costs. Network quality is also closely related to the telecommunications technology applied. Currently, countries such as South Korea, the United States, Japan, China, and several countries on the European continent have implemented 5G commercially supported by Qualcomm technology (Ariyanti, 2 C.E.).

Meanwhile, Indonesia has not launched 5G commercially. According to Johnny G. Plate, currently Indonesia uses 2G, 3G and 4G cellular technology which must be completed properly

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first. Apart from that, determining the choice of technology must pay attention to Indonesia's geostrategic position so that when implementing 5G commercially in Indonesia it can be utilized properly according to its interests. Because 5G technology is a revolution, a fundamental change in digital life. According to Ismail, Indonesia is planned to utilize frequencies of 700 MHz and 800 MHz in the Lower-band, 2.6 GHz and 3.5 GHz in the Middle-band, and 26 GHz in the Upper-band. However, it is not yet certain which frequency will be the place for 5G deployment. Cellular operators are also asked to improve their 4G networks, especially to the outermost, frontier and underdeveloped areas, so they can prepare for the 5G era (Ginting, 2017).

In addition, regulators need to find mechanisms for fair spectrum sharing for mobile operators. 5G technology is technology that will surpass 4G technology standards. There are several things that are causing the development of the 5G network. Therefore, there is an improvement in the way it works compared to the previous version or generation by activating the main core design of the CPP64 which refers to the 7nm technology end. The process has the advantages of 2nd generation technology. The 5G network or technology is the latest network development which has faster speeds than the 4G network. The 5G network will most likely only be used to upgrade the 4G LTE network. Technological developments in cellular networks are growing very quickly, because cellular is used continuously for communication. The characteristics of the frequency band channels are significantly different, especially in the higher frequency bands. In this technology documents or data will be sent using radio waves, radio waves will be divided into several frequencies. Several concepts that will be the goal of the 5G network are: a) Having a data transfer speed of 1 millisecond, b) Being able to connect to equipment such as cars, household appliances and telephones, c) Having a speed that is higher than 4G. Communication problems are faced by research institutions, universities and industry due to a lack of human and material resources needed for performance simulators and wireless verification processes. Therefore, time usage and costs increase drastically due to the complexity of the 5G communication technology network (Bender, 2016).

In the development of 5G technology, the G is referred to here is generation, so 5G is the fifth generation internet network. Abroad, many countries are using the 5G network, but in Indonesia they are still unable to implement it because the government still faces many challenges in providing higher connectivity than 4G LTE (Andalisto et al., 2022). The development of the 5G network has an impact on Indonesia, here are some of the influences of the development of 5G technology for Indonesia, namely: a) Creating new business models and industries, b) New opportunities in virtual reality (VR) and augmented reality (AR), Internet of Things (IoT) and mission-critical services, c) For Public Safety, d) Helping develop smart cities in the future, the 5G network is planned to be launched in 2020. Although several new brands have used the 4G network not long ago. Some of the advantages of 5G, although it has not yet been proven, are: a) It has a data transfer speed of 800 GB/s, so users can download videos with HD resolution in a matter of seconds. b). There is very minimal delay during the process of sending data or documents (Afriza Fahmi, 2021).

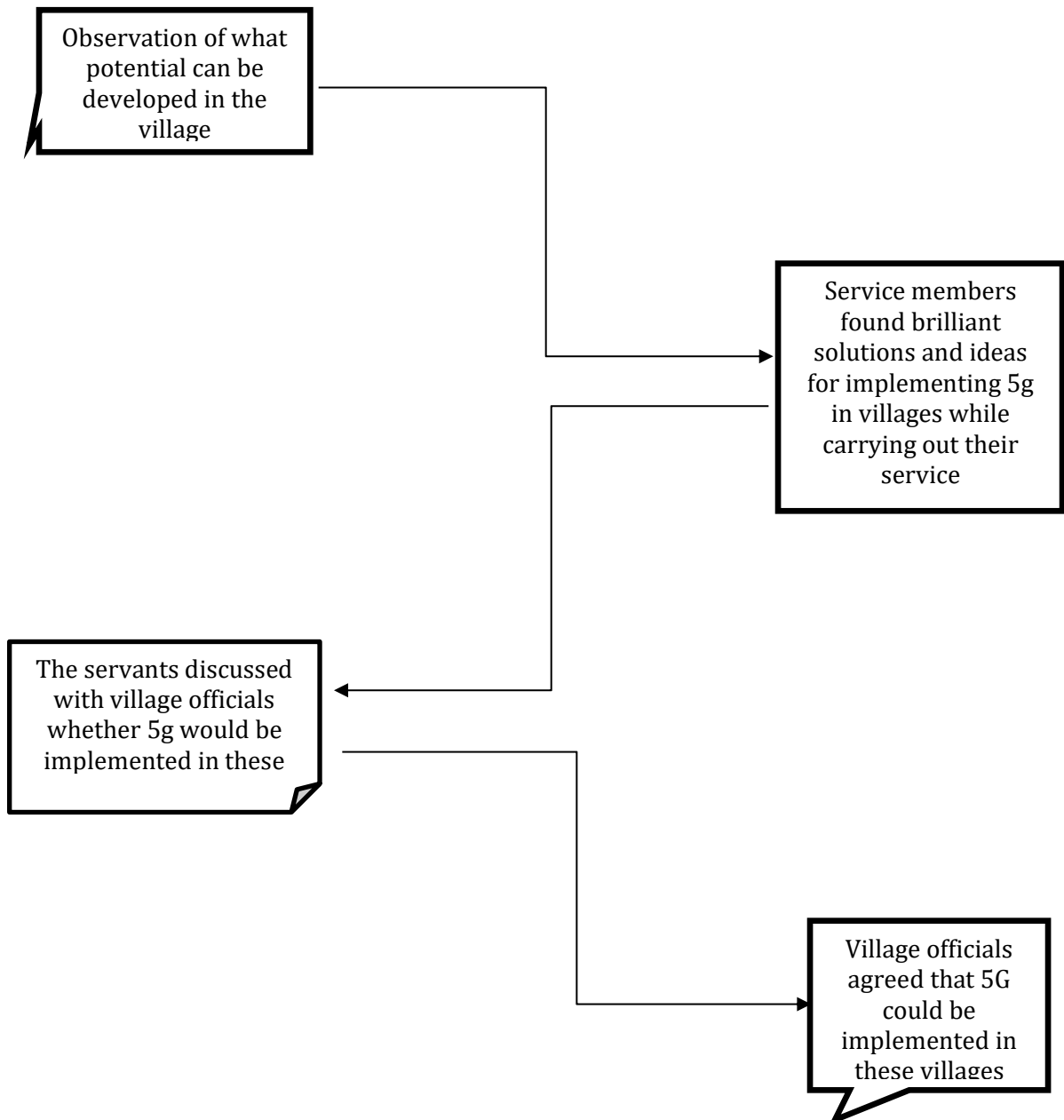
This concept is being implemented in other countries to reduce the cost of 5G. Moreover, this 5G network requires relatively high capital expenditure (Capex). Apart from high Capex, operational costs are also expensive. The unavailability of sufficient optics is also one of the reasons 5G has not been implemented in Indonesia. The application of new telecommunications technology such as 5G must be adapted to needs. What kind of areas are suitable for the application of this technology. Apart from meeting needs, the government must pay attention to the purchasing power of people in the area. The purchasing power of people in areas, especially 3T (Outermost, Frontier and Disadvantaged) will be different from the purchasing power of people in urban areas (Agboje, 2016).

Based on the explanation above, this article aims to explain the urgency of 5g in increasing village community resources. This article begins with the author's findings when carrying out service for one month in Balo village, Southeast Sulawesi, Muara Harapan Muara Enim village, and Cibeber village, Banten for one month.

METHOD

After providing service for approximately 1 month, researchers discovered the potential for developing human resources and the economic welfare of village communities by developing internet quality from 2G, 3G and 4G to 5G with the following problem discovery sch

Figure 1
Problem Discovery Scheme



RESULT AND DISCUSSION

5G Network

At this time technology has developed very rapidly every year in the world, especially in Indonesia. Not only will the 4G network be used from now until the future, as the era continues to develop every year, there will also be many great people who will create new networks. Even though the technology that is widely used at the moment is 4G, as time goes by, 5G technology will also be widely used over time. However, to realize 5G services in Indonesia, the government still has to face many obstacles. The 5G network also definitely has faster speeds than 4G. Over the past decade or so, the rapid development of communications technology from 3G to 5G has been witnessed throughout the world. The speed resulting from 5G technology will double every year (Saragih, 2017).

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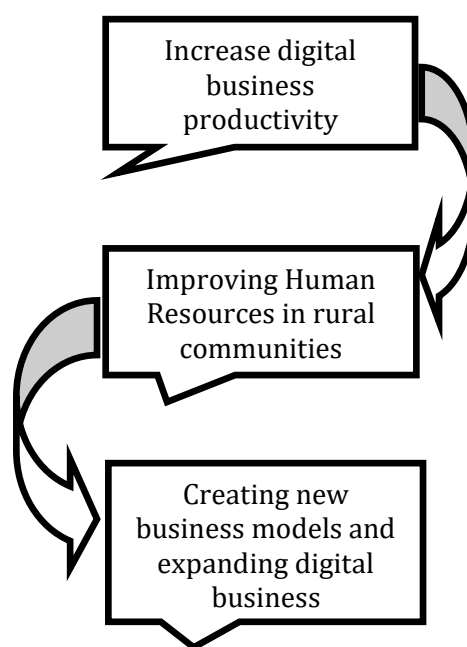
people in urban areas (Agboje, 2016).

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In line with the explanation above, the 5G network has a number of advantages: a) Has a data transfer speed of 1 millisecond, b) Can be connected to equipment such as cars, household appliances and telephones, c) Has a speed that is more comparable. Apart from that, the development of the 5G network has an impact on Indonesia. The following are some of the influences of the development of 5G technology on Indonesia in general and rural areas in particular, namely: a) Creating new business models and industries, b) New opportunities in virtual reality (VR) and augmented reality (AR), Internet of Things (IoT) and mission-critical services, c) For Public Safety, d) Helping develop smart cities in the future, 5G Network is planned to be launched in 2020 (Jiang, 2016).

Based on the advantages of the 5G network explained above, it can be concluded that some of the urgency of implementing the 5G network in the villages which are the object of service in this article are as follows:

Figure 2
The Urgency Of Implementing The 5G Network In The Villages



CONCLUSION

Based on the explanation above, it can be concluded a number of points regarding the urgency of implementing 5g food in Balo village, Southeast Sulawesi, Muara Harapan Muara Enim village, and Cibeber village, Banten as follows:

1. The 5G network has advantages compared to the 2G, 3G and 4G networks that have been implemented in these villages, namely: a) Has a data transfer speed of 1 millisecond, b) Can be connected to equipment such as cars, household appliances and telephones , c) Has a more comparable speed.
2. Service members found complaints about slow internet for digital business actors in these villages when conducting initial observations. The servants discuss with village officials about implementing a 5G network and village officials agree if there are investors and funding from the government or other parties.
3. The existence of a 5G network in these villages has 3 main urgencies, namely: a) Increase digital business productivity. b) Improving Human Resources in rural communities. c) Creating new business models and expanding digital business

EXPRESSION OF THANKING

The servant would like to express his gratitude to God who has given the servant the blessing to complete this work. The servants also thank all village officials, digital business people, and all related communities in Balo village, Southeast Sulawesi, Muara Harapan Muara Enim village, and Cibeber village who have been willing to discuss, accept the servants' input, and help the servants find inspiration so that the work can be created.

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