CELLULAR PHONE AND THE USAGE
(Problems of Cellular Phone's Usage In Blank Spot Areas of Indonesia)

TELEPON SELULER DAN PENGGUNAANNYA
(*Masalah Penggunaan Telepon Seluler di Area Blankspot Indonesia*)

KARMAN
Peneliti Bidang Studi Komunikasi dan Media pada BPPKI Jakarta, Balitbang SDM Kemenkominfo.
Alamat : Jalan Pegangsaan Timur No. 19 B Cikini Menteng, Jakarta Pusat-10320.
Telp/fax.: (021)-31922337. Email : karman[at]kominfo.go.id.

A.R. BERTO
Dinas Perhubungan, Informatika dan Komunikasi (Dishubkominfo)
Alamat : Jalan Pius Papu, Wae Kelambu, Komodo–Labuan Bajo Manggarai Barat, Provinsi NTT–86554,
Telp/Fax: (0385)-41541. Email : berto.lagi[at]gmail.com.

ABSTRAK
Telepon seluler sebagai bentuk teknologi komunikasi mudah dijangkau lapisan masyarakat Indonesia. Namun, Kondisi geografis menyebabkan akses ke daerah menjadi sulit. Padahal, di daerah banyak potensi konsumen telepon seluler namun tidak difasilitasi dengan infrastruktur telekomunikasi. Fenomena ini menarik dikaji khususnya mengenai bagaimana pola penggunaan dan fungsi telepon seluler sebagai teknologi komunikasi tereduksi oleh keterbatasan infrastruktur. Tulisan ini akan mengeksplorasi, mengidentifikasi, dan memetakan pokok-pokok permasalahan terkait dengan pemanfaatan telepon seluler di daerah blankspot di Indonesia, serta ingin mengetahui trend penelitian kedepannya. Metode penelitian ingin adalah dengan melakukan tinjauan literatur terhadap publikasi terkait masalah ini. Hasilnya menunjukkan bahwa dari ketiga aspek permasalahan di atas (masalah teknis, organisasional, dan budaya) tidak dapat diperlakukan secara terpisah, tapi kesatuan yang saling terkait. Masalah teknis pada telepon seluler berkaitan dengan masalah organisasional (pemerintah dan swasta), dan masalah budaya (lokalitas daerah). Karena keragaman budaya di Indonesia, penelitian ini menganjurkan untuk menggunakan konstruktivis untuk mengkaji penetrasi teknologi telepon seluler. Analisis dilakukan untuk mengetahui bagaimana individu/kelompok merekonstruksi teknologi komunikasi sesuai konteks sosial-budaya. Karena konteks budaya yang khas di setiap daerah, generalisasi kuantitatif harus dikesampingkan, lebih menekankan pada keragaman konstruksi dan kokonstruksi individu/kelompok.
Kata-kata Kunci: *Permasalahan Infrastruktur; Permasalahan Kultur; Penggunaan Telepon Seluler; Daerah Blankspot.*

ABSTRACT
Mobile phone as a form of communication technology is acceptable by many peoples. But geographical condition makes them difficult to access. In fact, many potential mobile-phones consumers are in rural areas. They have no enough telecommunications infrastructure. This phenomenon is interesting to study specially about how the usage and function of cell phone get reduced for bad infrastructure. This article will explore, identify, and map the problems related to mobile-phone usage in the blankspot in Indonesia. This one also wants to know future research trend. By literature review, this study shows that all three aspects of mobile phone usage (technical, organizational, and cultural issues) cannot be separated, but interrelated between one-and-among another. Technical issues on the mobile phone's usage are related to organizational (government and private) and cultural ones. Because of the diversity of cultures in Indonesia, this study recommends to use a constructivism paradigm to study mobile phone penetration. The analysis then will be conducted to know how the individual/group reconstruct and co-construct communications technology on the basis of their own socio-culture context. Because

of cultural difference in each area, researchers can set aside generalization principle and focuses more on every individual or group's construction to communication technology.

Keywords: problems of infrastructure; problems of culture; cellular phone usage; Blank spot areas.

INTRODUCTION

Background

As a archipelagoes and maritime country, Indonesia has a lot of potential that can be developed. The vast areas of Indonesia (6.279 million KM 2 of sea, 1.910 million KM 2 of land areas, and 13.466 islands) show that strength lies in the potential of marine areas (available in menkokesra.go.id, accessed on June 10, 2014). However, this potential doesn't improve community directly. This geographical constraint becomes a barrier for those in remote areas, outermost and border ones. National Agency for Border Management (BNPP or Badan Nasional Pengelola Perbatasan) records of 111 districts in 38 districts/cities the border region, the priority location both land and sea, only 70 districts was handled in 2013 (available at bnpp.go.id, accessed on 11 June 2014). In addition, the area of land topography is hilly and mountainous regions and remote areas.

The geographical conditions cause the accessibility to the provinces, districts/cities, districts, villages become difficult and hamper the development process in Indonesia. On the other hand, the construction of infrastructure such as roads, schools, bridges, etc. requires huge costs to reach these areas. Because of these limitations, the level of the economy and public knowledge decline. Information and communication technology become solutions to overcome those obstacles, particularly regarding limitations of space, time, and cost. However, on the whole, 53.18% of districts/cities are below the average national literacy index. 46.82% of districts/cities have literacy index above the national average that is above the 1.96 (Research and Development Boards of Human Resources, Ministry of Communication 2013, 75). Therefore, the acceleration of the implementation of this technology is required in order to unify the fragmented areas due to those geographical constraints to be one in unity of NKRI. Figure 1 show the number of phone cell subscribers, free wireless access (FWA), and public telephone switched network (PTSN) in Indonesia within 2010-2012.

Figure 1
Phone Cell Subscribers, *Free Wireless Access* (FWA), and *Public Telephone Switched Network* (PTSN) 2010-2012
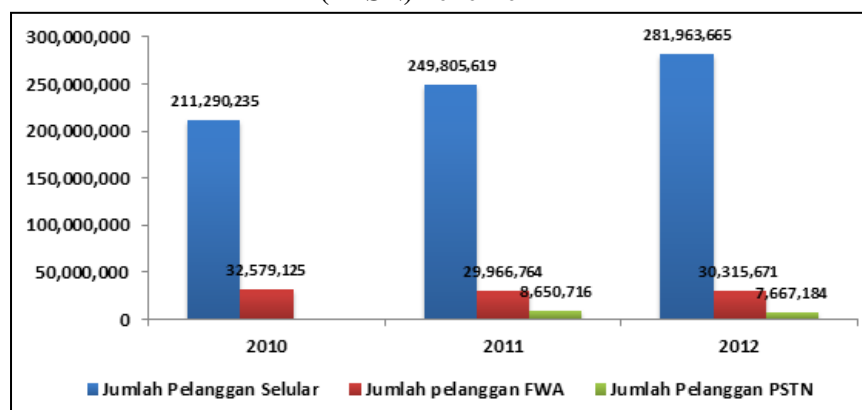
Source: ICT whitepaper of Indonesian Ministry of Communication and Information Technology (MCIT) 2013.

ICT that is easily accessible by the Indonesian community is mobile phone. Based on data of International Telecommunication Union (ITU) and the ministry of communications and information technology, the number of cellular subscribers in Indonesia in 2012 was 281.96 million. In 2010 the subscribers were 211.29 million, and kept to increase till 249.80 million ones in 2011. This increase has gone beyond the number of Indonesian population itself (around 251.85 million in 2012) (ICT White Paper 2013, 3-4). This large number of customers shows that mobile users in Indonesia use

more than one mobile card. If we compare it with the ownership of the cable telephone (home), there is an increase of almost three times from cellular phone ownership in Indonesia in 2010 than in 2005.

According to Nielsen Company based in Indonesia, wired phone devices have decreased more than 50% since 2005. The increase the number of mobile phone ownership is due to the cheapness of the cell phones and cell phone's practicality that can be taken anywhere. The data also shows that mobile phone ownership is now no longer limited to just the upper middle class, the middle

class to lower one are driving factors of the mobile phone industry in Indonesia. Because there are many potential mobile phones in Indonesia, the phenomenon of the mobile phone user's increase in Indonesia is still going to continue in the next time (the development of the mobile phone market in Indonesia from 2005 to 2010 (available at teknojurnal.com, accessed June 12, 2014).

Figure 2 shows that young peoples are at the tops and increase almost three-times from 2005 to 2010. The most fantastic growth of users is the group of the cell phone user's age of 10-14 years. They are also more and more in the year 2010. Meanwhile, for the age above 50 years old, there is not a significant development. This results from group of parents. They are still in illiteracy towards technology and prefer the old ways/orthodox (ibid).

Figure 2
Consumers of Cellular Phone in Indonesia Based on Age (Millions of Inhabitants)
2005-2010
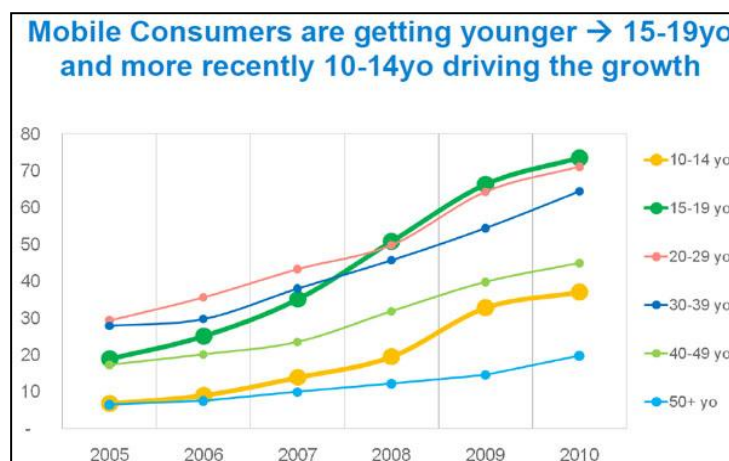
Source: www.teknojurnal.com

Figure 3 shows that the social economic status (SES) C2, D, and E have increased significantly during 2005-2010. SES is calculated based on the number of monthly expenditure. SES A has a total expenditure of more than 3 million per month. SES B has a total expenditure of 2-3 million per month. SES C1 has a total expenditure of 1.5 million-2 million per month. SES D has a total expenditure of 700.000-1000.000 per month. SES E had a total expenditure of less than 700.000 per month. Cheap mobile phones in Indonesia, both from abroad or local vendors, encourage an increase in the number of mobile phone users from lower middle class. Relatively inexpensiveness of mobile phones price and a lot of variations of cell phones makes a potential of mobile phone users easy to buy. So that, in its development, mobile phone users among blue collar workers (unskilled workers) got an increase significantly in 2010, followed by mobile phone users among students and housewives (ibid). Figure 3 shows that potentials of mobile phone users are lower middle class whom mostly living in rural areas. Because the potential number of villages in Indonesia -72.944 villages- no doubt if the telecommunications industry (manufacturers of mobile phones, telecommunication service providers, the main infrastructure, e.g. backbones infrastructure, and other related industries make consumers in rural areas as a market target. All of the conveniences offered by the mobile phone industry have stimulated interest of rural communities to have it, including communities living in the blank spot areas.

Figure 3
Users of Cell Phone in Indonesia On The Basis of SES (Millions of Inhabitants)
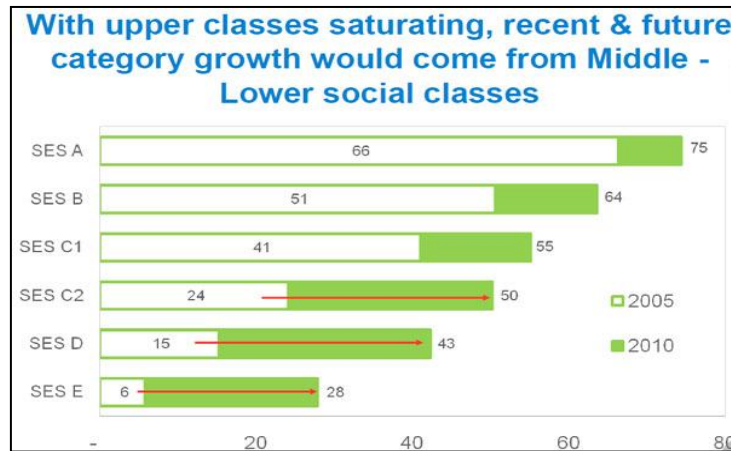
Source: www.teknojurnal.com

High public interest to have a cell phone is not accompanied with the infrastructure of telecommunications and sufficient electricity in the area. In 2012, the number of base transmission stations (BTS) of 3G qualities reached 36.525 BTS and BTS of 2G quality reached 106.544 (White Paper of Indonesia ministry of communication and information technology, 2013). Therefore, not all of mobile phone users can enjoy broadband data services (3G or 2G), especially in the blank spot area, which did not get any cellular telecommunication services. ICT infrastructure development in Indonesia is still dominated by the western area of Indonesia. It is not evenly distributed in the Indonesian region of Central and Eastern Indonesia. So, there is a BTS infrastructure development gap among the three regions. Figure 4 below shows distribution of BTS Development of 2G and 3G Quality in Indonesia within 2010-2012.

Figure 4
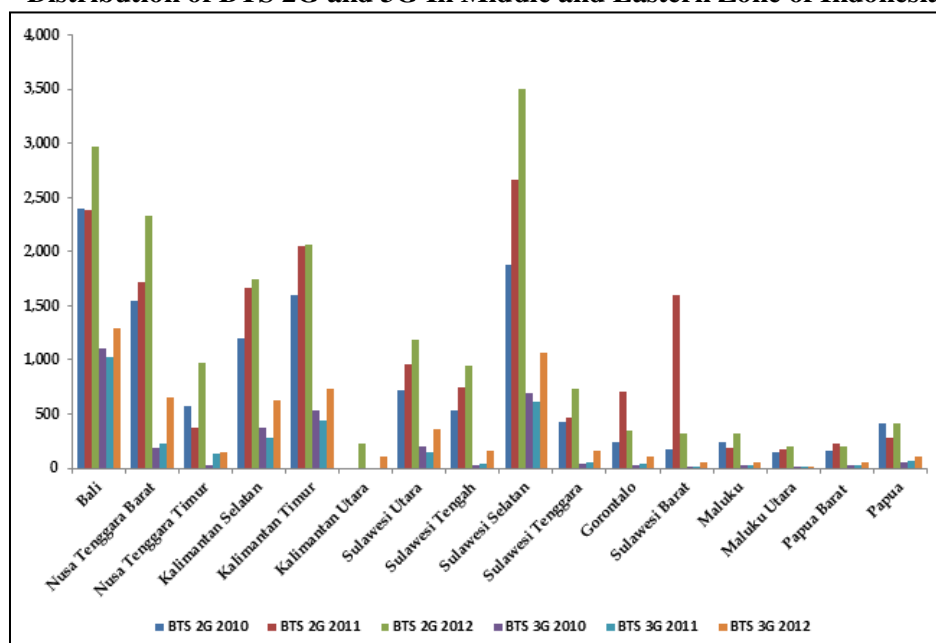**Distribution of BTS Development of 2G and 3G Quality in Indonesia (2010-2012)**
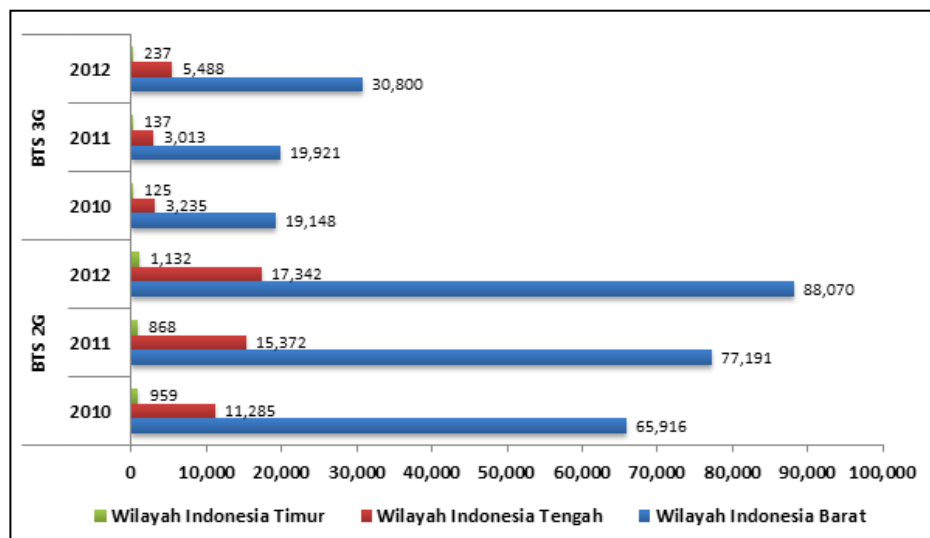
Source: ICT White Papers of Indonesian Ministry of Communication and Information Technology (MCIT) 2013.

Ministry of economy and mineral resources notes that the ratio of electrification in Indonesia in 2013 reached 80.54% and aims to be 100% in 2020 (available at kandidat.co, accessed on June 12, 2014). Obstacles encountered by state electricity company (PLN) are because many rural hilly areas in Indonesia such as the electrification in NTT is still low (54.8%), and Papua 36.4% (available in finance.detik.com, accessible at June 12, 2014). The spread of the villagers and the houses that are far apart from one another causes the cost of electrification becomes more expensive. Development of infrastructure such as poles and power cables in those areas are still inefficient. One solution offered is PLN relocate the residents who live in the hills to the administrative centre, close to places of public facilities (health centers or schools), or close to road. However, the relocation process is not as easy as imagined because of the location of rice fields of citizens are not far from their location of residents.

Since of these conditions, some telecommunications service providers compete to increase their services through BTS development in those blank spot areas. However, not all telecommunication service providers are interested in doing it because of costs and revenues considerations due to small population in the region. Therefore, the government through the ministry of communication and informatics tries to fill the digital divide by giving communication services and information in those areas that do not receive services from the private sectors, such as in rural areas, border areas, the outer islands, remote areas, and other ones to reduce the blank spot areas.

Indonesia ministry of communication and information technology (MCIT) has succeeded to do some achievement through a series of programs and activities towards Indonesia Connected according to national ICT road map in 2010-2014. Programs/activities such as telephone-facilitated rural village (Desa Berdering), BTS, PLIK & M-PLIK (mobile internet service center in sub-districts), community radio stations, groups of public information, media folk performances, mobile community access points (M-CAP), and so on. It is solely to meet the obligations of the universal service obligation (USO), a program providing access for peoples to telecommunications and information services in rural areas. It is implemented under the regulation of the Indonesian minister of communications and information technology No. 32/PER/M.KOMINFO/10/2008 regarding Telecommunications Universal Service Obligation/USO (Arifianto 2013, 347). The spread the development of 2G and 3G base transmission stations in Central and Eastern Indonesia Region can refer Figure 5.

Figure 5
Distribution of BTS 2G and 3G In Middle and Eastern Zone of Indonesia

Source: ICT white papers of Indonesian Ministry of Communication and Information Technology (MCIT) 2013

Those facilities are not used by all regions, particularly in Eastern Indonesia and center Indonesia. There are still some provinces that have not been able to use the services of cellular 2G and 3G, such as Papua, Papua Barat, Maluku Utara, Maluku, Borneo Utara, Sulawesi Tenggara and East Nusa Tenggara (NTT) and even in some areas of the province that do not get mobile telecommunication services (blank spot) due to the local topography constraints. Based on the observations of the author, several villages in the district of Nggoang Sano, Manggarai Barat regency, Nusa Tenggara Timur (NTT) showed that there are several villages in the blank spot areas in spite of having several BTS. Some locations of blank spot have a difficult topography to reach because of telecommunication signal obstruction by the hills. However, there are several specific locations that can be reached by the signal, but the strength is unstable. The signal will be strong at certain times.

Regency of Manggarai Barat gets telecommunications services from two providers: Telkomsel and Indosat. Most of the villages have not been electrified. Lighting in that area is obtained from private solar power plant (PLTS). By using storage batteries in these plants, villagers recharge their mobile phone battery even though they know that this one has potential to damage their cell phones. While the central sub-districts get an offer of electricity by harnessing generator set which is only used at night. Some wealthy families have their own electric generator Set. All of these infrastructure limitations did not reduce their interest to have cell phones. Accordingly, almost every family has more than one mobile phone.

This phenomenon is interesting to study particularly regarding the patterns of communication technology use. Because the existing limitations in the area can reduce the functions of cell phones, the use of the telephone will not be maximized. Let alone to be able to enjoy of high speed Internet services such as access to social media, making calls and sending short messages (SMS) are difficult to do. All features of the latest mobile phone technology innovation cannot be enjoyed. The main functions of the mobile phone (such as communicating via a call or receiving calls and sending or receiving short messages/SMS) are seldom used. On the contrary, additional features/functions are often used. Different construction of the communications technology use is interesting for further researches.

This paper will explore and identify main problems/issues on the use of communication technology of cellular phone in the blank spot areas of Indonesia. Previously, the authors will describe previous studies pertaining to this one. Then, the authors try to identify the existing problems and try to map out those issues. The existing problems will be grouped into categories/groups of technical, organizational, cultural issues. From the main points of these problems, the authors try to relate them to the theories of communication that can be reference for the future research. A description of research reviewed is assumption to answer these problems, including the methodology.

DISCUSSION
Results
a. Previous Researches on Cellular Phone Usage In Indonesia

From the existing literature, the researchers found no studies dealing with specifically the application of technology cellular phone communication in the blank spot area in Indonesia. Research associated with the application of communication technologies as a result of the social construction of local communities are the result of the dissertation done by Rudy Handoko about the use of communication technologies by communities on the slopes of Merapi Mountain in Middle Java. This ethnographic research conducted on social movements performed by community offline/online on the slopes of Merapi. Qualitative descriptive study was conducted on a group of residents in five (5) villages on the slopes of Merapi incorporated in PASAG Merapi (Paguyuban Siaga Gunung), and NGOs called SRI (Combine Resources Indonesia), volunteers, refugees, government agencies, as well as input from the academic and cultural experts associated with disaster management.

This study uses Social Construction of Technology (SCOT) as the main theory. Other communication theories used because it is associated with a SCOT, that is the theory of Social Construction on Reality (SCOR) and Symbolic Convergence Theory (SCT). Meanwhile the

substance of the theory used is the theory of new social movement. Communication technology is implemented through an integrated system in jalinmerapi.or.id sites that make up the online community. Offline communities merged into one through that site, with the incentive to offline and online communications to support the information on these sites, especially the latest information about the situation and condition of Merapi. Offline communication technology that is used like walkie-talkie (HT), CCTV/Closed-circuit television or also known as video surveillance, donors, community radio, mobile phone (short message service or SMS), mosque loudspeakers, and communication mouth (word of mouth/WOM). Meanwhile online communication is used like Yahoo Messenger Chat, Twitter, and Facebook. All of them are integrated and complementary in jalinmerapi.or.id site. Following is a summary review of the literature I have found.

Yovani (2013), a doctoral student of sociology, faculty of social and political sciences, University of Indonesia conducted research dissertation dealing with transfer of technology as social construction. Data collected by in-depth interviews and focus group discussion (FGD). Subjects of research at the micro level are a group of Indonesian workers in company X and a group of Japanese workers at company X. The research subjects are at the meso level, namely BPPT (Agency for Assessment and Application of Technology), GIAMM or automotive part and component industries, GAIKINDO or the association of Indonesia automotive industry, chamber of Indonesian commerce, company X as a representation of the group. Subjects of research at the macro level are the ministry of industry, Testament Indonesia Japan economic partnership agreement (JIEPA), the regulation of technology transfer (the ministerial regulations, decrees and other regulations).

Action research using soft system methodology (SSM) found as follows. First, the process of technology transfer is not just the process of moving an idea or technology innovations from one party to another party. Technology transfer process is characterized by social relations between the parties with the others on the basis of mutual thoughts (cooperation of two parties of different cultures). There are values and norms in social relations starting from the micro to the macro level through a process of participatory learning and culture-based (SSM). Second, the SSM can be used to analyze the phenomenon with a sociological perspective to the needs of theoretical or science. The stages are used to help researchers explore real world situations that rise/fall between reality and actuality. Third, the system is irrelevant because technology transfer is approached with the approach of the institution. Social construction in technology transfer is not separated from the power relationship structure. Technology transfer process can not be run on micro and macro level Because of the power structure make Indonesian workers to be in subordinate. High or low level of trust is determined by the position of the individual/group within the power structure.

The study recommends theoretically, namely:
1) Social construction of reality by Granovetter on technology transfer can be applied at the the micro, meso and macro level;
2) The social construction is a key concept in sociology that can provide humanistic justification of sociology;
3) Study of sociology in the analysis of economic institutions and other ones as a social construction, should include meso and macro structures;
4) Studies about technology transfer should start from social relations of individuals as a social construction that make-up the structure of power. This is caused by the embeddedness concept that generate trust cannot be separated from the power structure.

Meanwhile recommendations for practical action are:
1) The government invests to establish auto-technology transfer center as a place that can be accessed by the company JAC especially LC in Indonesia;
2) The Government should collaborate with education institutions (universities) to build an auto center so that individuals who have received technology transfer in Japan from government funding can be accommodated in the centers as technology experts;
3) The government is investing to build an education of initial tacit knowledge, which became the model of transfer of knowledge of the entire production process in the automotive industry;

4) Terminology of technology transfer should be replaced with the learning technology (technological learning) so that there is value to be proactive in the process of transfer/learning of certain technological knowledge from the micro to the macro level;

5) Transfer of technology as a social construction at the meso level is determined by regulation at the macro level. The government is advised to make regulations to give legitimacy to an institution to be the body that examines the technology and create a national technology transfer platform in accordance with the needs of industry.

Herman (2011) -faculty of mathematics and natural sciences, University of Indonesia- in his thesis entitles "Model Spasial Kualitas Penerimaan Layanan Sinyal Telekomunikasi di Kota Bukitinggi" dealt with spatial model quality signal reception telecommunications services in Bukitinggi. Research conducted by collecting secondary and primary data. The collection of secondary data are street maps and base maps of Bukittinggi from BAKOSURTANAL or national coordinator for surveying and mapping agency, a data on map of the base stations location from the ministry of communication and information technology, data on signal from one of the mobile operators. He determined the number of data distribution of sample locations of base station coverage, distance from BTS, BTS height and direction of the slope before using stratified sampling and grid systems. Primary data collection is by conducting field surveys as well as a revising map, measuring the strength of the signal reception with Sat Track. Data was analyzed by using Pearson correlation through statistical tests and spatial analysis to create maps using Archives 3.3 application that is using the analysis buffer. Buffer analysis was used to identify the geographic area surrounding the object features. This quantitative research discovered:

1) A strong spatial pattern of PT Telkomsel Indonesia account for 56% of the research areas. Meanwhile PT Hutchison Charoen Pokphand Telecommunication only covers 73% of the research ones. 27% of the area is the one that has a dense residential population;

2) The correlation between strong signals to BTS is inversely correlated. Distance to BTS will determine the quality of signal;

3) The correlation between the presences of strong signals to the direction of the slope is linier. The slopes at back of BTS have worse quality than the ones at the face of BTS;

4) There is not strong relationship between the signal and the altitude;

5) A strong correlation between the signals and the height of BTS is not relevant for PT Telkomsel Indonesia, but it is relevant for PT Hutchison Charoen Pokphand Telecommunication. The spatial model signal reception quality of telecommunication services in the City of Bukittinggi shows that the areas with the best-quality signal reception services are in the area close to the base stations with a flat area or the slopes overlooking the BTS. Diverse topography of Bukittinggi gives the variation in signal reception.

In thesis entitled "Effect of Telecommunications Infrastructure Against Economic Growth in Indonesia Year 2000-2009" discuss about effect of telecommunications infrastructure against economic growth in Indonesia during 2000-2009". Tamara (2011), students of the planning and public policy, faculty of economics UI, conducted that research. The study was conducted in Indonesia by taking the data from 2000 to 2009. This is because the government in this case the ministry of communications related to the field of telecommunications has just gathered technical data telecommunications since 2004.

Meanwhile, the panel data in this case cannot be used since of the differences in regional constraints imposed by each operator. Data collected by literature study, like previous studies, the BPS website, Ministry of Communication, and the annual reports of each operator. Quantitative research uses data analysis Granger Test and method of two stages least square (TSLS), where economic growth as the dependent variable (Y) and teledensity as the independent variable (X) by including the influence of telecommunications infrastructure (BTS) and also considering factors quality of human resources as users of telecommunications services. Teledensity is an indicator that shows the number of telephone lines per hundred of inhabitants. Teledensity will look picture of penetration rate of telecommunication services in the country. This study concludes as follows.

1) In Indonesia, teledensity affects the economic growth rate in one direction and not the reverse;

2) Telecommunications in Indonesia is still used mostly for activities that have not supported economic activity. They only meet the needs of communication;

3) The addition of infrastructure does not automatically increase the teledensity. Optimal utilization of infrastructure do not need to be considered by the telecommunications operator when they will increase the number of base stations, such as the location of the base stations placement.

4) Quality of human resources (HR) in Indonesia has not been able to optimize the role of infrastructure of telecommunications in activities that support economic growth. Utilization of infrastructure of telecommunications is merely for the communication fulfillment;

5) Utilization of the telecommunications infrastructure is used largely by the tertiary sector of the economy, rather than primary and secondary ones. Trade, hotels and restaurants, transportation and communications, finance, real estate and business services, as well as government services and the private sectors have optimally utilized services of telecommunications in business.

Researchers suggest (first) needs conducting further researches on this matter include the factors and characteristics in Indonesia. Such research those only uses, as much as 10 years of data will become valid data if the data observed are more numerous. The amount of data can be done by using panel data from areas throughout Indonesia or by adding period of observation. Secondly, Indonesia ministry of communication and information technology, particularly, the directorate general of post and telecommunications should establish standardized reporting work area of telecommunications providers in the division of administration. Besides considering the dynamic development of telecommunications in Indonesia, the reporting of telecommunication operator made shorter reporting period, such as every three months/semester. Thus, data of various regions in Indonesia in greater numbers will be available for observation. Limitations of this study are indicative only due to limited data on the number of observations, only for 10 years. The number of samples is too small. Therefore, the research would be more accurate if the data is examined at a long period.

The study in the title of "Pemanfaatan Fasilitas USO Sebagai Penyediaan Jasa Askes Telekomunikasi dan Informatika" deals with utilization of facilities USO for access services. This research was conducted by the research and development of human resources of Indonesia ministry of communication and information technology to evaluate various USO programs in 2010. The USO program aims to provide distribution of telecommunications services to the public, especially in rural areas, border areas, and the ones that are geographically remote ones, and economically underdeveloped ones, including in pioneering areas, suburban and rural ones. It also aims to reduce the information gap and digital divide so as to encourage the growth of lagging regions, to stimulate an increase of their economic potential, and to maintain unity of Indonesian country and to encourage the growth of the telecommunications industry (Arifianto 2013, 333). The program is in the form of telephone services and short message service (SMS) (e.g., Desa Berdering), and Internet access point (e.g. PLIK and M-PLIK), internet-facilitated villages (Desa Pinter).

Quantitative approach was conducted in data collection that was by surveying communities around the USO facility. Meanwhile the qualitative approach was conducted by interviews with managers of USO, village officials and field observations. The location of research included nine provinces, namely Sumatra Utara, Sumatra Barat, Bengkulu, Jambi, Jawa Barat, Jawa Tengah, Jawa Timur, Nusa Tenggara Timur and Kalimantan Barat. The locations were chosen purposively by considering the construction of a homogeneous USO facility in each region, which has already built Desa Pinter (villages that get facility of internet service). Population is the community around the development of telecommunications USO facility. Quota sampling is 25 respondents for each village or 100 respondents every area, it was to meet the requirements in accordance with the "handbook of quality of service and network performance" by the ITU. Samples were taken by accidental sampling because it does not know the exact number of population of the unit of analysis. So, it cannot be generalized to all regions in Indonesia. This study found the following problems.

1) The use of both USO facilities was still low. From 36 villages, which are surveyed, 35 villages (97.22%) had mobile communications services. Most of users were 27-50 years old and used the phone to keep in touch and discuss about agricultural issues and education. But that telephone is only used less than five (5) times and they are more often used by village officers rather than student;

2) The Internet's users are 15-38 year old. They are students who access Internets for academic purposes. They use Internet less than 5 (five) times because the condition of the devices in some locations is damaged and out of order. Internet speed is still very slow, and the signal is bad, and the process of download consumes much time;

3) The community use USO facility for connectivity between villages or cities through access voice/calls and SMS. Community uses it to communicate as well and find information. They do not use these facilities to improve their welfare. This is because the service applications and local wisdom based content. USO facility utilization for the purposes of the transaction (such as trade, agriculture, etc.) is done by telephone and SMS, not by the application available on the internet;

4) The location affects the use of the Internet community, especially the village public telephones. When these locations have the facility of mobile phone networks, people tend not to use it. Peoples expect these facilities help their work;

5) The driving factors using this facility is the belief that this facility can help the work, the ease of Internet use, influence of others, ICT access facilities, affordable rates, and availability of services and the level of public acceptance of internet.

6) The impeding factors are the placement of internet services that are not right because since 2009 mobile phone services (preliminary survey less accurate) are affordable, the location of placement less strategic (such as in the village chief's house). Some locations have road signs to the location but inaccurately determine distance (e.g. showing the same distance, 1 km) in spite of difference distance. Some of the tools/devices do not function properly, treat badly and some of the are damage, lack of socialization for location, benefits, and use of the facility to the public so that the understanding of human resources both officials, community, community is still low, unavailability of media literacy empowerment to the public, and the inappropriate use of SIM Card (card subscriber identity module) on the public telephone of village. That SIM CARD can be moved and use for personal's cellular phone.

Therefore, the recommendations offered were: (1) monitoring and re-evaluation of the entire territory of the telecommunications universal service; (2) creating policies and mechanisms of USO facility relocation; (3) evaluating of WPUT that has been in operation. WPUT that perform well, especially the telephone-facilitated village, can be upgraded to smart village (Internet facilitated village). Meanwhile the status of smart villages that perform well should be added to the network access and other supporting devices according to the needs of the community; (4) conducting a study rural development policy into a smart village by considering the readiness of village employees and managers of the USO, the public interest in using the Internet, the content needs of the community; (5) mapping remote areas.

These groups have different interpretations in seeing the ways used to anticipate a disaster due to the different locations, the rituals related to culture, and access to information. The amount of this difference encourages these groups to create a way that can be done together in order to provide a better solution. The agreement formed is driven by the similarity of cultural values. KINGS cultural values are expected also to explain the causes of a social movement, politics' appearance-disappearance. Social movements on the slopes of Merapi are included into the category of new social movements because it does not involve a class struggle, revolution or removal of the existing system, but more oriented to the improvement of quality of life and the environment.

The elements of the theory of social construction of technology or SCOT theory can explain the anticipation of disaster by local communities. Definition of technology by Merapi Slope communities is different from most peoples who identify technologies with a limited meaning in the form of technical aspects. Indonesian dictionary (KBBI) defines technology as "technical capabilities based on the exact sciences and based on a technical process". The struggle idealism makes communicating channel regarding disaster anticipation such as community radio keep surviving in the obstacles and barriers of operating costs from other parties that do not believe in the villager ability in manage information. There is still a mystical belief in disaster warning, which is not ruled out by the community because of effectiveness in solving some problems. The way communities dealing with the refugee are often better than government.

Community online/offline can initiate the formation of a social movement. The linkage of local values, social movements, community, and social construction of technology can be explained through the concept of value-movement-community and technology. Cultural values are still believed firmly by Merapi Slope.

Future studies need to conduct a more comprehensive study of: Science, Technology, and Society (STS), especially the use of the theory of social shaping of technology that focuses on the individual and the group. Both were instrumental in the face of the invasion of technology. Practically, it needs to replicate a study of local cultural values, particularly in disaster mitigation. In addition, the need for government support for the efforts of community to anticipate natural disasters. Dialogue and cooperation between governments, local communities, and local leaders in disaster management needs to be done for instance, the use of sirens need considering because this can cause panic resulting in casualties. Local communities need to be involved because they know more about their own area. Education of the peoples of the volcano should be done in the long term, not in the form of short time training as is done through the existing community radio.

Thesis - conducted by Mahmudanil (2008)- titled "Signal Quality Telkom Flexi in Depok and Jakarta Selatan".. The research object is six base stations in Depok and Jakarta Selatan, namely: Komplek Timah, BTS Kampus UI, BTS Juanda Depok, BTS Depok STO, BTS Curug Agung, and BTS Beiji Timur. The study area includes 28 villages, 24 villages located in Depok, and 4 villages located in Jakarta Selatan. The independent variable is the distance from the base stations, building density and land use while the dependent variable is the quality of the signal.

In addition, secondary data collected from various sources such as tabular data of cellular signal point and base stations from Telkom Flexi, the map data administration of the department of city and building management of Depok City and Indonesian national land agency or BPN, a map of land use and road network of BPN, and building density data from Google Earth, 2008. Analysis of the data is conducted by using spatial analysis (spatial) and statistical analysis through Chi Square. This study found that the generally quality of the six BTS is strong signal because the signal quality of successful call, while the quality of forward link signal is small. Quality bad coverage signal does not exist in this study. Based on the spatial and statistical analysis, signal quality relationship with a distance of BTS exist in contained in Kompleks Timah, BTS UI, BTS Juanda Depok, Depok STO BTS, and BTS Curug Agung. The distance of BTS with the signal quality does not have correlation. in BTS Beiji Timur, Distance signal point from the BTS greatly affects the quality of the signal transmitted to the receiver or mobile BTS station. The farther the distance from the BTS receiver is, the weaker the signal. Relationship building density with signal quality occurs in all base stations. In the category of a high building density, the higher the quality of the signal is, the more points of successful call location). While the relationship of the land uses signal and the signal quality occurred only in BTS Komplek Timah, BTS Kampus UI, and BTS Juanda Depok, dan BTS Curug Agung. At BTS, Sentra Automated Telephone of Depok City and BTS Beiji Timur do not shows indication of a relationship between the use of land with the quality of the signal because dominance of land use and dense residents, farmland and green open space. This relationship is seen from the location of the signal points with the function of land use and direction in front of BTS

Thesis titled "Analysis of Production Efficiency in Indonesia Cellular Telecommunications Industry" Sari (2007). Assumption of this research is to increase the company's efficiency as the high competition in the mobile telecommunications industry in Indonesia. This competition encourages the industry to improve the efficiency of its work through the various inputs and output increase in competition. This study analyzes the decision making unit (DMU) or value relative efficiency. The unit of analysis is the productivity or efficiency. DMU that will be analyzed in this study are Telkomsel, Indosat, Excelcomindo, Mobile-8 and Bakrie Telecom 2001-2006. Output variables analyzed are net revenue, subscribers, and earnings before interest, tax, depreciation, and amortization (EBITDA). While the input variables analyzed are capital of expenditure and employee expense.

This study evaluated the efficiency of the company with the data envelopment analysis (DES) with the assumption of constant returns to scale (CRS) by maximizing output. Hence, the cellular industry in Indonesia as a whole has not been operating efficiently, especially the old

operators (Telkomsel, Indosat and Excelcomindo). However, along with increasing competition, the performance of each operator is getting better, the efficiency increases, especially since 2004, that is, when the introduction of new operators in Indonesia. In fact, the efficiency of a wide range of new operators is higher than incumbent operators such as Indosat and Excelcomindo, whereas their market shares smaller. This proves that there is not always a positive correlation between the compositions of market share to the level of efficiency of the company.

These efficiency improvements accompany the cheapness of cellular service rates and the increasing number of users of cellular services in Indonesia. This study suggests that the government may regulate the establishment and use of BTS. This is due to the high capital expenditure that hampers increased efficiency. This is because the cost of network expansion by building a large enough base stations but do not give satisfied results, the service, the maximum range. The government can apply the settings of the base stations that can be used by the four mobile operators with a rental system. In addition, the government can regulate and uniform retribution in areas where base stations constructed in order that operators can obtain certainty and relief in the development of the network so that it can extend the reach of telecommunication access, especially in remote areas.

Thesis titled "review aspects of the regulation of cellular mobile telecommunication network in Indonesia" (Saira, 2006). This study analyzed the functions and role of government in overseeing the competition cellular mobile telecommunication industry in Indonesia in order to create a competitive, fair, and transparent climate. The study also analyzed the legal or regulatory aspects of the regulatory framework cellular telecommunications network and the problems that occur around those issues. This study used normative juridical approach, which refers to the analysis of legislation related to researching library materials/literatures or secondary data. Regulations studied were:

1) Act No. 36 of 1999 on Telecommunication;
2) Act No 8 of 1999 on the protection of consumers;
3) Government Regulation No. 52 of 2000 on Provision of Telecommunication;
4) Government Regulation No. 53 of 2000 on the Use of Radio Frequency Spectrum and Satellite Orbit;
5) Minister of Transportation Decree No of 2001 on the Determination Km.4 Fundamentals of National Technical Plan of 2000, as amended by the Decree of the Minister of Communications No. KM. 28 of 2004 and Regulation of the Minister of Communication and Information Technology No. 6 of 2005;
6) Minister of Transportation Decree No. KM. 20 of 2001 on Provision of Telecommunication Network, as amended by the Decree of the Minister of Communications No. KM. 29 of 2004;
7) Minister of Transportation Decree No. KM. 21 of 2001 on Provision of Telecommunication Services, as amended by the Decree of the Minister of Communications No. KM.30 Year 2004;
8) Transportation decree minister No. KM. 23 of 2002 on telephony Internet public interest, as amended by Transportation decree minister no. KM. 32 of 2004 and decree of minister of communication and information technology No. 7 of 2005;
9) Minister of Transportation Decree No. KM. 31 of 2003 On Establishment of Indonesian Telecommunication Regulatory Body, as amended by Regulation of the Minister of Communication and Information Technology No. 25/P/M.Kominfo /11/2005;
10) Minister of Transportation Decree No. KM. 33 of 2004 on the Control of Fair Competition in the Fixed Network and Basic Telephony Services;
11) Regulation of the Minister of Communication and Information Technology No.8/Per/M.Kominfo/02/2006 of 2006 on Interconnection.

The conclusion is the (first) government in establishing various regulations in the telecommunications sector do not give serious attention. It is shown from the various issues happened, both in terms of devices and instruments in the regulation (sanctions, rights and obligations, and so on), weak monitoring of the implementation of the regulation practices, as well as the law enforcement aspect. Second, the convergence of telecommunications with information technology forces the government takes immediate steps adjustment of existing regulations.

Various products of existing regulations require accelerating the fulfillment of infrastructure and supporting infrastructure of telecommunications that require large budgets. Third, the practice of telecommunications operation in Indonesia is still monopolistic. Government as regulator is still difficult to manage and monitor it. Government's stake in the telecommunications operator that is occupying a dominant position, triggers ambivalence government in enforcing existing regulations, thus weakening the role and function of government.

This study suggests that regulation of telecommunication products should follow the development and advancement of technology and informatics if the adjustment is not done, this will impact on the effectiveness of monitoring and law enforcement. Inclusion of a variety of telecommunications licensing requirements should not be described in detail so as to be able to accommodate all the developments in technology and informatics. The government does not only play a technical role, providing technical permits but also focus on supervision and enforcement of the law on the practice of law violations and crimes. Telecommunications regulation should be socialized more intensively for law enforcement officers and other concerning parties to create legal certainty and to avoid the negative impact of weak law enforcement. Related regulatory transformation as a result of convergence, this should be done in a variety of relevant institutions. In addition, this needs socializing regulation and empowerment of human resources in government circles to understand the impact of this convergence in order to create effectiveness and efficiency in government.

Rosadi (2005), students of Bachelor Electro, FT UI conducted research for his thesis entitled "Solutions In Building Coverage System for CDMA Mobile-8". This research was conducted. This study was a review of static data and retrieval of dynamic data in the field to know the signal strength of CDMA Mobile-8 in the building ITC Fatmawati, Wisma GKBI, and Menara Kebon Sirih on every floor, make the concept of the design basis for the placement location of the transmitting station and antenna in each floor, as well as calculating the efficient power of great use coaxial cable, cable length, connector and antenna splitter for distribution on each floor of the building. Conclusion of the study is that a weak signal CDMA Mobile-8 in all three buildings could be overcome by providing solutions in Building Coverage System, which consists of base stations, indoor antenna distributed on each floor and a cable line that connects the base stations to the respective indoor antenna, using coaxial cables, splitters, and jumper cables. If the signal attenuation can be overcome, it will obtain good coverage in the multi-storey building and have a positive effect on duration of mobile phones battery. The smaller the received signal is, the greater the power output of mobile phones is. It is because of wasteful use of energetic battery. The probability of making a call or communicate (the active time) becomes small. This will impact the losses for mobile operators because of lack of calls made.

Second, the data retrieval process in the three buildings studied is a strong data signal of initial conditions obtained by writing the strong value of the received signal (Rx) in the CDMA cellular telephone, which has a special function. Third, the effective calculation of the percentage coverage obtained for each building is ITC Fatmawati (82%), Pensions GKBI (93%), and Menara Kebon Sirih (93%). Fourth, the efficiency of the investment costs can be obtained from the planning and use of radio frequency (RF) effective material, which has a percentage fee of 45% for Pensions GKBI and 41% for Menara Kebon Sirih, of the total investment cost. Fifth, the cost efficiency of the material is done with the use of RF coaxial cables 1/2 "than 7/8" at the ITC Fatmawati building that can save up to 43% of the purchase cost of the cable.

Adinoto (1997) in his thesis dealt with the optical fiber communication system planning between Jakarta-Semarang". Adinoto (1997), a student of Bachelor of Electrical of UI, analyzed the planning of optical fiber communication transmission line between Jakarta-Semarang which includes technical analysis in the form of wavelength selection, a photo detector (receiver circuit at each end of the fiber optic transmission channel to interpret the information contained in the optical signals into electrical signals), the optical source, the type of fiber used, and multiplexing (combining several different channels and then sent through a channel together, by connecting each channel to the channel for a certain time interval). The maximum transmission distance calculations based on the losses-losses formula of channel and calculation of bit rate limits due to the influence disperse well done. The conclusion from this research is:

1) According to analysis calculations, the maximum transmission distance that can be achieved by system without repeating (repeater, as a signal amplifier to resend) is 98 km. This distance farther than the distance between substations passed through so that the placement of the repeater must pay attention to required substation. This calculation is based on the analysis, the required number of repeater can be determined, 6 repeater along the trajectory;

2) There are differences in the placement of repeater spacing between the results of the calculation (98 km) and the data in the field (+/- 72 km) due to the results of calculations using the data, which are limited only technical characteristics alone. While the data in the field is influenced by other characteristics such as the state of the network, quality fiber cable and the installation of the network. In addition, the data in the field is not a straight line between Jakarta-Semarang because at every point-to-point being applied is less than the maximum transmission distance that required a lot of terminals optical source and photo detector along the track;

3) By looking at the data rate by widening the pulse system that occurs, it is obtained according to the bit rate calculation analysis of 261.19 Mbit/s, while the needs of communication channels required between substations of PLN of maximum bit rate of 140 Mbit/s. If you pay attention to this, it can be stated that the widening of the pulse system that occurs does not affect the bit rate required for this communication system.

b. Main issues of Mobile Phones Uses in Indonesia

Based on some of the literature review above, some of the main problems that often occur in the use of mobile phone technology in the blank spot areas in Indonesia can be mapped. Because of the uniqueness of Indonesia in topography and geography, these issues are important issue to present and assess. The problems occur not only due to the technical conditions (infrastructure, hardware/tools, and so on) of the application and placement of these technologies to overcome existing blank spot areas. Apparently, these technical problems are related to the social and cultural conditions of local communities and the policy or strategy of the institutions of government and the telecommunications industry related. Those are intertwined with each other and cannot be separated partially in analyzing the existing problems. This is consistent with the definition of the concept of technology expressed by Arnold Pacey (2000) in his work "the culture of technology".

According to Pacey, technology is often defined in the technical aspects, such as technical knowledge, skills and techniques, tools, machinery, chemicals, resources (including human beings as users or Live Ware), products and wastes. Although this definition is only a small part of the general definition of technology, in which cultural and organizational aspects have a relationship with and influence to the application of the technology itself. Cultural aspects are the results/objectives, codes of ethics and values, and a belief in progress, consciousness and creativity. While, the organizational aspects are such as economic and industrial, professional activities, users and consumers, and labor unions. By these three aspects, the definition of technology in general is not value free and neutral, especially in its application. Likewise when it wants to prevent or cope with the effects/influence or impact of the technology, we must also consider these three aspects. He formulated these three aspects in the form of inverted following diagram (Pacey 2000, 6). See figure 6, diagram of technology definition according to Pacey

Figure 6
**Technology Definition by Pacey**
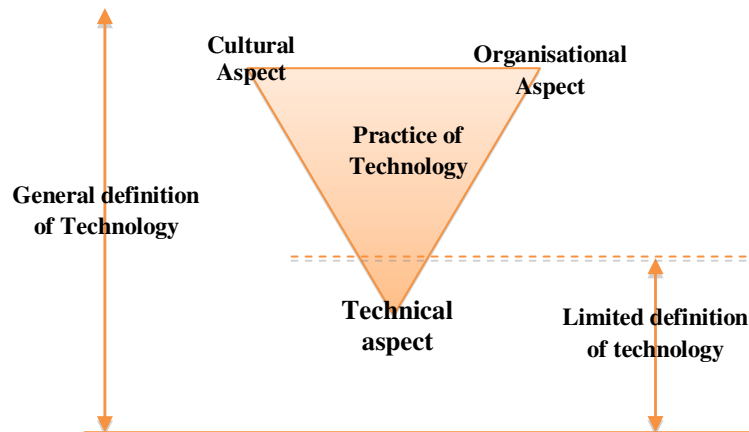
Source: The Culture of Technology 2000, 6

Like the findings and recommendations of some previous studies, technical problems of mobile phone technology more frequently appear through practices technology, rather than other aspects. Yet, when this technology is applied, the humans as the user have directly relationship to those technologies. Therefore, Pacey reject this misperception, particularly in view of technological determinism. He argued that human as technology users can determine their own use of the technology itself. As in the study by Rudy Handoko (2008), various communities concerned to Merapi, which utilized various online technologies/offline ones to form jalinmerapi.or.id. This was the social aspects of organizational culture that taking a role for the environment and individuals, as a personal and as an expert.

Pacey mapped the problem, which is viewed from the side of the technology user activity (user's sphere) and the activities of technology experts (expert sphere). Expert sphere is more relevant to know the details of the technology because the technology understands the three aspects (technical, cultural, and organizational). Meanwhile, more users are outside the industry, which operate and consume technology. Users sphere only understanding from the aspect of the culture and organization. Activities undertaken by expert sphere such as the techniques and skills, hardware, Live Ware, technical knowledge, design and planning, specialization, ethics, values, factories, maintenance, industrial activity, professional culture, rediscovery and new discoveries, creativity, faith in progress, etc. While the sphere user activities are community and family, individual, personal values, the user experience, the maintenance activity, user activity, awareness, creativity, faith in progress, and so on. But there are also users who understand some of the scope of the activities of the expert because of his experience culturally and organizationally (Pacey 2000, 48-51).

Figure 7
Schema of Technology by Pacey
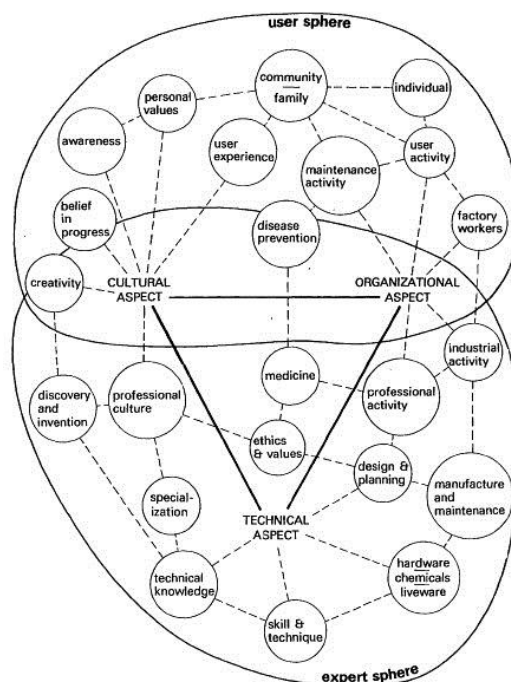
Source: *The Culture of Technology 2000,* 48

Therefore, in outline, the problems can be grouped into 3 (three): technical, organization, and culture issue.

1. Technical Issue

Technical problems encountered in some previous literature review are about the quality of the cellular phone signal reception. The influences are geographical and topographical aspects, knowledge (media literacy), individual, application, and contents, as well as the technology itself. The author tries to formulate it as follows. Land use (such as residential, agricultural land, and green and open space, and so on affects the quality of signal reception/delivery of the message. The denser a residential or building density (number of cell phone users) is the weaker quality of the received signal is. Distance, conditions in the field, and location of the transmitter to the receiver affects the transmission of messages/information. The further someplace with BTS, the quality of the resulting signal will be weaker. Distance point signal from the BTS greatly affect the quality of the signal transmitted to the BTS receiver or a mobile station (MS). In the optical fiber communication, the transmission distance between substations greatly affects signal quality, so it takes repeater (repeater, as a signal amplifier to resend back). Location and distance repeater placement must also be considered in order not to weaken the existing signal transmission. Conditions in the field such as the state of the network, the quality of fiber optic cable, network installation process, the shape of the trajectory path, and the width of the field conductor, affect the transmission of communication signals. Indoor antenna installation in buildings (in building coverage system) can increase the signal strength of cellular reception.

The number and height of the transmitter/receiver on the slope/hill/ obstacle (obstacles) affect the transmission/reception of messages. Slope at the face of BTS transmitter signal has a better signal quality than the slope at the back to the BTS transmitter signal. The quantity and deployment of base stations influence height of base stations with strong signals. Meanwhile altitude of locations does not affect the signal strength. From the economic side, the addition of infrastructure does not automatically increase the teledensity. Teledensity is an indicator that shows the number of telephone lines per hundred inhabitants. Through

teledensity will look picture penetration rate of telecommunication services in the country. Transmission/reception of messages affects a person's relationship closeness. Weak cellular signal reception can affect the lifespan and battery life of mobile phones. The probability of making a call or communicate (the current time) becomes small. It make the mobile operator incur loses.

The selection and placement location of the device, appliance communication greatly affects the desire to utilize. Accuracy of location placement in relief device/phone communication tools needs to consider whether the area has been reached by cellular telecommunications service or not. If having been served such assistance, it would be futile because people prefer to use personal cell phones. Thus, the need for regional mapping blank spot in Indonesia, which is always updated every time by coordinating with, related telecommunication industries. Location of device/instrument must be strategic, and communication should be in the middle of town or village easily accessible by citizens should not place as desired by manager or head of the village. Sign road of locations for device/communication tools are placed at the exact location according to the distance specified in the instructions (1 km) because it affects the interest of the citizens to come.

These issues can be assessed by reference to various existing communication theories, particularly those related to technological determinism. Information theory proposed by Shannon and Weaver was able to explain the technical aspects of communications technology better. In terms of disturbance/noise in communication, Shannon put more emphasis on human functioning as source and destination information. Good communication is the message can be received either by destination. By using the principles of thermodynamics, the higher the level of uncertainty in a process of communication, the amount of information is less and cannot be predicted. It causes a lot of information needs to be predictable. This condition is called entropy. The actual ratio of the maximum entropy called relative entropy. Redundancy is the meaning of the message (decoding) by predicting the information that appears in the order or sequence of fixed patterns. The less information obtained, the higher the ability to predict through redundancy (Shannon & Weaver 1964, 12-13).

Weaver confirms the communication problems in three levels: technical, semantic, and effectiveness. Technical issues dealt with how accurate symbols can be transmitted by communication. Semantic problem regarding how precisely the transmitted symbols convey the desired meaning and effectiveness issues concerning the effectiveness of accepted meaning if it can affect the action as desired. Weaver focuses on the problem of semantics (the message). According to him, the communication concerning the accuracy and message appropriateness transmitted by the source of the information received by the destination. Starting measuring is whether the meaning of the message received appropriate destination as desired by the source of information. Human function as manager of information is decoding and encoding messages through the channel and eliminates noise (distortion, static, transmission errors, and so on) that can change the existing signal. Technology can help human's function in the communication process (Shannon & Weaver 1964, 4-5).

Meanwhile, according to McLuhan (1994, 45), the technology is an extension or self-amputation of the physical human body. Therefore, the body needs a new balance between the organs and extensions of the body (the extension of man). In other words, cell phone technology is an extension of human functions such as actions speak and listen to the message communication. Cellular phone technology transmits analog communication messages for later digitally altered and forwarded through technological devices, and digital message is then converted back to analog to be heard by the recipient, and vice versa.

The latest technology (innovation, discovery, and so on) is able to overcome communication barriers (time, volume, speed, interactivity, etc.) increasingly complex over time. Physical barriers can be overcome through hard technology (physical technologies), which processes the information and transmits the message. The non-physical barriers can be overcome through soft technology (non-physical technologies). Communication theory has limitations to explain the inter‑relationship between society and technology. Thesis

determination technology McLuhan stated that even communication technologies shaping media. The media form a society, more than the content of communication (the media is the message, the medium is the massage). McLuhan's thesis about the technology (media) as an extension of man has become more complex and evolves. Technology (media) was not just being an extension of the five human senses to communicate individually, but also an extension of a wider communication messages (interaction, experience, environment, group, and so on). They are now no longer limited to mass media alone; it is more developed in the individual media such as smart phones (Dahlan 2010).

2. Organizational Issue

Organizational problems encountered in some previous literature review are related to the strategy and policy of the government and the telecommunications industry (companies) in addressing blank spot area in Indonesia. Organization here is the individual/group as stakeholders in the telecommunications industry in Indonesia starting from the level micro, meso, and up-to-the macro. The Government through a series of programs/activities and the issuance of rules caused new problems for the utilization of the existing telecommunications technologies, both positive and negative impacts. On the other hand, the existing competition in the telecommunications industry has also triggered the presence of a number of related issues. The author tries to formulate it as follows.

The Government through the Ministry of Communication needs to perform monitoring and re-evaluation of the programs and activities of the existing USO. This is done in all areas of the telecommunications universal service, mainly telephone-facilitated villages associated with placement locations, prioritizing disaster-prone areas and border regions. WPUT that perform well can be upgraded by taking into account the readiness and needs of the community. Indonesia ministry of communication and information technology needs to relocate to an area that is really not reachable by mobile telecommunications services (local blank spot). This study mapped the opportunities in the regulation of the telecommunications law that are prone to violated. The results could be used as a recommendation for the government to make a regulations, supervision, development, and enforcement of the rules applicable telecommunications. Readiness of village officials and USO program managers is still weak. So it is necessary to develop human resource policies so as to be compatible with the needs of local communities. Simple training was needed rather than complex one.

The convergence of information technology and communications (especially mobile phones) Influences and gives impact of for adjustment of existing telecommunications regulations, as well as the effect on the development of telecommunication infrastructure in Indonesia. Rapid ICT developments require the government to carry out various adjustments to existing telecommunications regulations. However, on the one hand, the development of our telecommunications infrastructure is still far behind. Regulation is always far behind rapidly with the development of existing technologies. Accordingly, violations in the area of technology often play this vacuum of legal. Whether the existing rules in particular that related to the licensing, should be made on details and need to be changed according to time development, or they are made generally to anticipate developments? So, the government does not waste energy to deal with technical licensing, but focus on supervision and enforcement of law. It is more important.

Lack of socialization to the public especially to law enforcement officials on telecommunications regulation, legal uncertainty because of differences interpretation to those regulations get included organizational problems. Another problem is the rules having been socialized needs changing because it does not fit with the existing ICT developments. Foreign ownership in the telecommunications industry in Indonesia is still weak. Foreign ownership in the telecommunications industry is dominant even dominated big players of the industry. So the implementation is prone to be monopolistic practices by big corporations. On the one hand, the government takes a role in enforcing the rules. But on the other hand, the government has a stake in the existing telecommunications industry. In addition, a strategy for strengthening the domestic telecommunications industry needs to be studied by re-buy vital stocks, which had been sold to a foreign company.

Competition gives benefit to consumers because the company's efficiency strategy causes the service to consumers keep to rise. However, on the other hand, it raises numerous violations of the telecommunications practice. Previous studies revealed that the efficiency value of the new operator is higher than the efficiency value of existing incumbent operators, but their market share is smaller. This proves that there is no positive correlation between the compositions of market share to the level of efficiency of the company.

There is no regulation governing the use of the BTS rental system by the various operators. Use of one BTS to one provider causes the appearance of unfair competition, in which the player with large capital controls construction of various existing base stations. In addition, there is no uniformity in BTS in every region. It results in high cost of network development due to the lack of certainty in the collection of retribution and it has potential of illegal charge. Thus it obstructs the development of telecommunications coverage in various regions, particularly in blank spot and remote areas.

Telecommunications infrastructure has not been used by the whole industry. This facility is used by the tertiary sector, instead of the primary and secondary sectors. Trade, hotels and restaurants, transport and communications, finance, real estate and business services, as well as government services and the private sector has been more optimally utilize telecommunication services. There is no standardization of reporting of the working area of telecommunications operators by region administration. The Government through the Ministry of Communication, in particular the Directorate General of Post and Telecommunication needs to establish standardization. Due to the dynamic development of telecommunications in Indonesia, the reporting of a telecommunications operator can be made more practical as the reporting period made per quarter or per semester. The influence of the structure of power (social and political) in a social institution greatly affects the use of cell phones. Cell phone serves as a symbol of social status that shape the social classes that exist in the local community.

Special body reviewing and making a new technology-learning platform (e.g. cellular phones) nationally has been established yet. Any regulation at the micro level is influenced regulation at the meso level, as well as so on. Therefore, we need uniform regulation of the learning process/technology transfer to the micro level so that the use of technology can be maximized. For example, the far location of residence of citizens that is difficult to reach and covered, hillside / slope need relocation. Therefore, we need a national learning related to good residential locations.

These problems can be assessed by reference to various existing communication theories; particularly those related to social communication functions Laswell who later developed by Wilbur Schramm. For Laswell, communication is treated as a process of persuasion, which aims to influence the receiver. Messages are assumed to have an effect. This model considers the effects of the message have a great impact as in mass communication. This is because the interest in analyzing propaganda and political communication. The use of mobile phone technologies is as a means of communication. If the terms of the social communication functions Laswell (Schramm 1971, 19), the technology can run three (3) function: (1) as an observation (surveillance) on the environment or the community; (2) as a place of exchange, and (3) sharing of information/knowledge in society.

Most of the people use mobile phones to share information on trade, agriculture, education, and so on. As dissemination or transmission of the social heritage, the mobile phone is used as a medium for dissemination on issues that support the daily activities of citizens. Schramm adds one more function of social communication, namely entertainment (1971, 47). The use of mobile phones in the area blank spot more widely used for entertainment through music and video players, rather than communication functions (call / receiver telephone or SMS). Government institutions and private parties as well as other stakeholders in the telecommunications industry can implement various policies and communications strategies by considering four communication functions according to the needs and desires of the users of this technology.

3. Cultural Issue

Cultural issues in previous studies outline relating to how the values of local (indigenous) are able to construct the utilization and usage of communications technology. Previous studies Handoko (2008) and Yovani (2013) have shown that the technologies not only form individuals/groups (technological determinism), but also individuals or groups also have an important role in its use. Individual/local grouped construct technology functions in accordance with the values they profess. This is particularly relevant to the conditions in Indonesia, which is multicultural and multiethnic, where local knowledge, and local culture can serve as a fortress retaining technological determinism. But on the other hand, this technological determinism even destructs the values and norms of the local culture. Author defined it in several problems as follows.

Local norms and values affect the formation process of technology transfer through social relations from the level micro, meso, up to the macro. From micro to macro level, it takes a process-based participatory learning on the basis of culture to build collective thinking. The diversity of the local culture in Indonesia provides an opportunity for a lot of research to study the values and norms they believe because every culture has a significant difference. For example *silahturahmi* (Arabic term for social relationship/companionship) is paramount in several regions in Indonesia. Analyzing the phenomenon of learning and social construction on the interpretation of difference of mobile phone the use needs multi-methodology approaches, multi-spaces, and multi-perspectives. So, it takes multi-disciplinary and interdisciplinary approaches, particularly related to social cross-cultural communication.

The social construction of the local community is strongly influenced by existing power structures in the region (social and political). The level of trust of person on the benefits of communications technology is determined by the dominant structure of power in the formation of values and norms in society, such as traditional leaders, religious leaders, and so on. Level of education and knowledge of individuals/groups affect the absorption process of learning technology. The learning process and cultivation of values on the benefits of the technology is done through long-term training. Local content and applications are needed to facilitate the public to learn the technology. Most of the local residents is more fluently using local language than the Indonesian one, for example, the use of local languages in the manual of how to use cell phones or sign road of USO location. The agreement is necessary to motivate individuals/groups in the mobile phone use. Local communities need information of agriculture, animal husbandry, education, or trade. Packaging of information is made simply. Cooperation with local communities is needed because they are more aware of the region.

Various cultural issues can be examined by reviewing the research by referring to various existing communication theory. One of them is the theory of social construction of technology (social construction on technology -SCOT), which was introduced by Trevor Pinch, a sociologist of science and Bijker, a sociologist technology. They argue that social group giving meaning to the technology and the problems defined in the context of the significance placed by a social group or combination of groups. They saw that the social environment form the technical characteristics of the technology artifacts. With their emphasis on the formation of social, Pinch and Bijker reject technological determinism (Bijker, Hughes, and Pinch1987, 12).

According to Mackenzie and Wajcman (1985), there are three levels of meaning of the word technology that are interconnected and difficult to separate one another, namely: (1) Level of physical objects or artifacts; (2) Level of activity or the manufacturing process; and (3) Level of knowledge of man. A technological artifact in this study is a pioneer of rural transport that is used by local villagers. If having not constructivist view of socio-technical development and emphasizing the choice of technology, Bijker argues that most people lose the opportunity to participate in decision-making. Eventually, the technology will be difficult to control (Bijker 1995a, 281). Pinch and Bijker contribution to the study of science and technology is uncovering the mystery of the idea of the inventor who sometimes creates something difficult to control by inventor/community. They developed a multi-linear model that technology shape society, society also shape technology. The elements of SCOT are:

1. Relevant Social Groups

This is a group that shaped the institution, organization, either in the form of a collection of individuals who organized or not. The main keys are all members of the social group. In determining which social groups are relevant, it must be asked about the significance of the artifacts on all members who are in observation. Relevant social groups in this study is a community of mobile phone users in blank spot which do not get the services of mobile communication as well as a source of electrical power. This community will construct meaning from technological artifacts that will bring a variety of problems.

2. Interpretative Flexibility

SCOT eliminates differences in the social relations of power. The portrayal of power and economic power are done only when it's relevant. SCOT only discusses shared meaning and understands the social construction of technology; it's necessary for the shared meaning artifacts. In SCOT, technology artifacts are constructed and interpreted culturally. Flexibility of interpretation of technology artifacts must be in existence, flexibility in thinking or interpretation of artifacts, flexibility in meaning artifact design. Different social groups may have different interpretations of the same artifacts (Pinch et.al). The flexibility of interpretation tries to find solutions to the problems that occur in the development of artifacts. Each family, group or individual in village communities has different interpretations of a technology artifact.

3. Closure

When all relevant groups reach an agreement through negotiation and social interaction as an artifact no longer requires the design and further development that is where the technology won the stabilization and closure (Martinez, 2010). Closure involves the stabilization of an artifact and loss of issues. To cover the controversy in technology, problems that occur must be solved first. Social groups decide how to settle these problems, whether with rhetoric or by redefining the technology. A process of negotiation between the groups to design and develop these technologies is happening so the rhetoric plays an important role in the stabilization these artifacts. Pinch and Bijker identifies two types of the use: (1) When a group frame issues for users and groups to persuade others to accept their views; and (2) redefining the problem, that the group can use a solution of a specific problem to other ones.

4. Wider Context

SCOT proves that the negotiations that occur between different groups are often used in constructing an artifact. SCOT illustrates the need to include socio-political context when analyzing technology (Martinez, 2010). Its task is to connect the content of technological artifacts in a wider context in the socio-political field. Political and socio-cultural situation of a social group that forms the norms and values affect the significance placed on an artifact.

Figure 8
Conceptual Framework of Social Construction of Technology (SCOT)

Source: result of writer's analysis
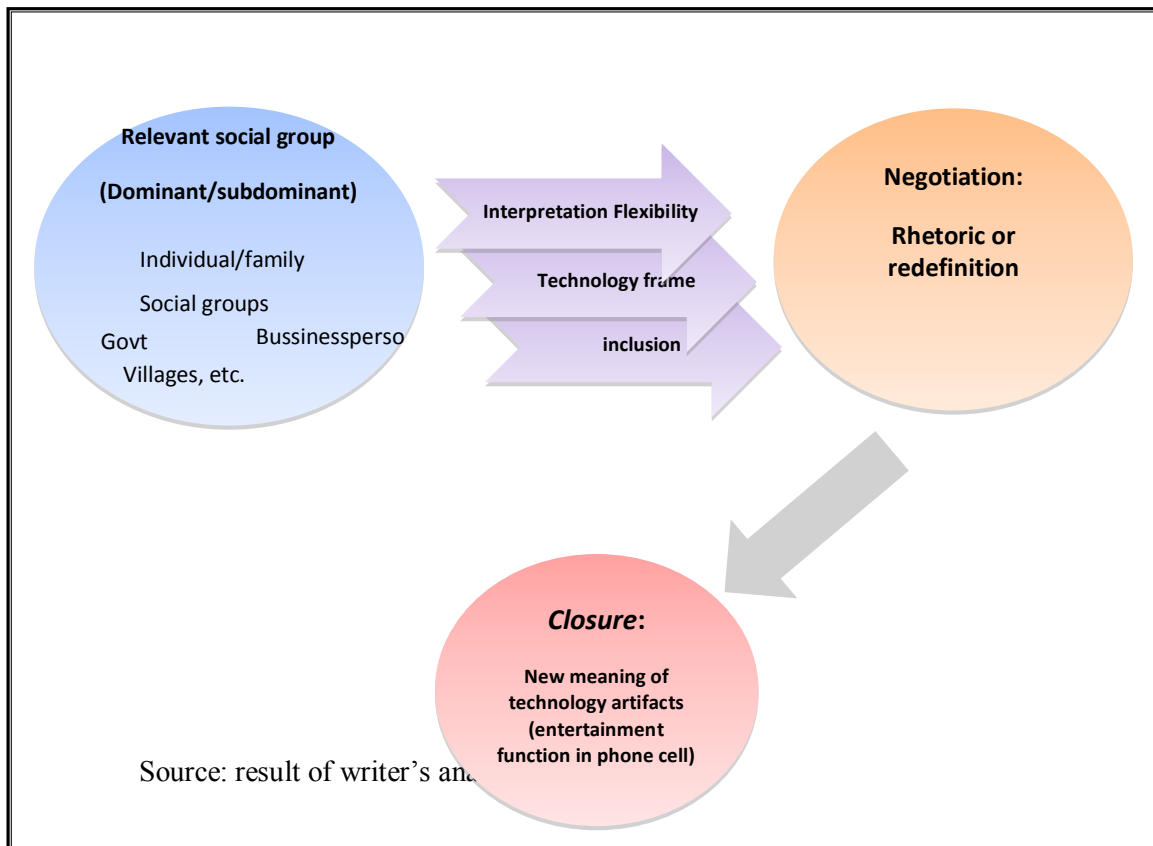
5. User's involvement in Technology Framework

Bijker developed the model by adding SCOT technology framework and inclusion. Model framework of this technology by Bijker guide interactions as well as thinking (thinking) that occurs between different groups when developing technology (Bijker 1995b in Martinez 2010). Technology framework describes how the social environment in structuring a design artifact and describes how existing technology in structuring social environment. Technology framework does not structure the interaction of social groups as a whole, because the actor holding the inclusion of different levels and be situated in more than one technology framework.

Three different configurations in the framework of the technology and groups are: (1) When there is no dominant framework, groups can develop different innovations and encourage others to achieve the success of certain innovations; (2) When a frame becomes dominant, it opens an opportunity to frame the predominant group to define the problem and the solution, this occurs when the level of inclusion plays an important role; and (3) When there are two or more frameworks, different groups of arguments and rhetoric became important before reaching closure.

6. Users as Agent of change

Pinch and Kline describe the role of users as agents of technological change in the social construction of technology. Both take into account various criticisms of the weaknesses of SCOT that are considered unsuccessful in explaining social structures and power relations. Both respond by showing the advantages of SCOT in analyzing technological agent of change. Both claimed that although manufacturing/manufacturer put specific meaning in artifacts, but they cannot control how the use of artifacts from the artifact falls into the hands of users. The consumer that really becomes users can put new meaning to technology.

This indicated that the closure of a technology could be changed when it is used. This condition occurs when users begin to share about the new meaning of the artifacts that were not designed by the technology designer. Pinch and Kline analyze how users in the form of artifacts and finally affect technology users (Martinez 2010). Mobile phone functions as a mean of communication can be changed according to the wishes and needs of its users. Condition of telecommunication signal absence and electricity power resources cause mobile phone users cannot use the main functions; communicate (calling/receiving telephone and SMS). Supporting functions such as music and video player to entertainment became the main functions in accompanying their daily activities, such as farming, trade, and so on. This is the new meanings on the artifacts of technology has occurred, in which the supporting functions of the mobile phone has replaced the primary function.

7. Users as artifact Designers

Pinch and Oudshoom (2003) seeks to understand the role of different perspectives and try to explain how consumers consume, modify, design, reconfigure, and refuse technology. They oppose that individuals and technology are mutual form (co-constructed). This view rejects the linear model of innovation and technology diffusion.

Review

The research findings revealed that the issue of providing access to information (e.g., establishment of base transmission stations to address the issues blank spot) is not only technical problems, but also the organization, and culture. Technical constraints encompass infrastructure, devices, tools, and so on regarding the implementation and deployment of that technology to address existing blank spot areas. Technical problems are the quality of cellular phone signal reception. It gets influenced by the geographical and topographical aspects, knowledge (media literacy) of individuals, application, and content, as well as the technology itself. Technical problems are related to the socio-cultural conditions of local communities, policy or strategy of the government institutions and the telecommunications industry. This is related to the strategy and policy of the government and the telecommunications industry (companies) in addressing the region blank spot in Indonesia.

Cultural aspects and organization gives greater influence to the application of technology rather than the technical aspect does. Cultural aspects include the goals of technology usage, code of conducts, values, belief towards development, awareness, and creativity. This study shows that the problems found in previous studies are related to values of locality (local wisdom). This value becomes basic to construct the utilization and use of communications technology. Cultural issues affect the process of technology transfer through social relationships, from the micro, meso, till macro level.

The diversity of the local cultures in Indonesia provides an understanding of the importance to view the issue of technology diffusion and acceptance from the perspective of culture. Every culture has a significant difference. Dominant power in social structure determine the the level of trust a person towards the relative advantage or benefits of communications technology. The power -such as traditional leaders, religious leaders, and so on- determine also the formation of values and norms existing in society. The need to look at the phenomenon of communication technology acceptance leads us to a theoretical idea, the social construction on technology - SCOT This theory was introduced by Trevor Pinch (sociologists of science) and Wiebe Bijker (sociologist of technology). In SCOT, technological artifacts are culturally constructed and interpreted. Interpretation flexibility is varied because of different interpretations because of different cultures. Indonesia is one of countries that have a diversity of cultures.

Flexibility is not only in the way of thinking or interpretation of artifacts, but also in artifact design. Different social groups may have different interpretations of the same artifacts. The flexibility of interpretation tries to find a solution to the problems occurring in the development artifacts. Each family, group, or individual in a rural community has a different interpretation of the technology artifact. Differences interpretation/construction of each individual gives an opportunity for negotiations, dialogue in social relations between dominant and predominant group to define the problem acceptance and adoption. Thus, SCOTT helps us understand the role of the recipient or user of technology from different perspectives according to their own cultures. SCOT seeks to explain how

individuals consume, modify, design, reconfigure, and refuse technology. So, SCOT rejected the linear model of innovation and diffusion of innovation.

CONCLUSION

Those three problems (technique, organization, and culture) must be seen as one entity because they are intertwined one another. A technical problem on mobile phones is strongly associated with organizational issues (public and private), and cultural issues (locality area), so any other problems. This categorization is only to make it easier to analyze, not to separate them.

Future researches should be more flexible in using a variety of methodologies, not stuck on certain methodology. In the context of Indonesia, which has a wealth of diverse nature and culture, constructivist paradigm can be more widely applied to deal with penetration of cell phone technology. This paradigm views social science as a systematic analysis towards socially meaningful action Analysis is done by direct observation on social behavior that creates the management of the social world (Hidayat 2003, 3). How individuals/groups to reconstruct a cell phone technology in daily activities will vary according to the socio-cultural context. Quantitative and qualitative research can be applied simultaneously to determine a variety of perspectives that exist in society. Quantitative data can be used as a basis of reference for qualitative research. Due to unique cultural context in each region, the quantitative generalizations should be set aside, and emphasis on the construction of the diversity of individual/group.

Therefore, future studies should use ethnographic research strategy that combine with other strategies. Ethnography in communication seeks to apply ethnographic methods in-group communication patterns. A researcher tries to understand the forms of communication used or cultural group members (Patton, 2002, 81). Ethnography as a qualitative study describes and interprets the patterns learned from values, attitudes, beliefs, and language of cultural sharing groups (Harris 1968 in Creswell 2007). Madden (2010) explains that ethnography is a qualitative social science that tries to understand human groups (society, culture or institutions) on which researchers are in the same social space to the participants studied. So the picture of the future research focuses on the exploration of the diversity of individual construction/local group as cell phone users. The future one conducted in various locus of research in Indonesia to fortify its local culture of exposure to technology. There are many previous studies related to the use of mobile phones in the blank spot areas of Indonesia from various perspectives have not studied so that the identification of these issues is still limited. Next research should enrich this paper. Communication theories presented here are the basic theories in communication to deal with the information technology and communications in general.

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Lain-Lain

Lampiran I Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 18 Tahun 2013 tentang Kode dan Data Wilayah Administrasi Pemerintahan.

PROSES PRODUKSI BERITA DAN AGENDA MEDIA
PADA www.bangkapos.com [1]

Dari hasil analisa data bisa dijelaskan proses produksi berita mengikuti alur bagan di bawah ini. Proses *upload* berita Penanggung jawab Operasional (Wartawan Online dan Redaktur Online) ke Situs **www.bangkapos.com** dan Persda Network.
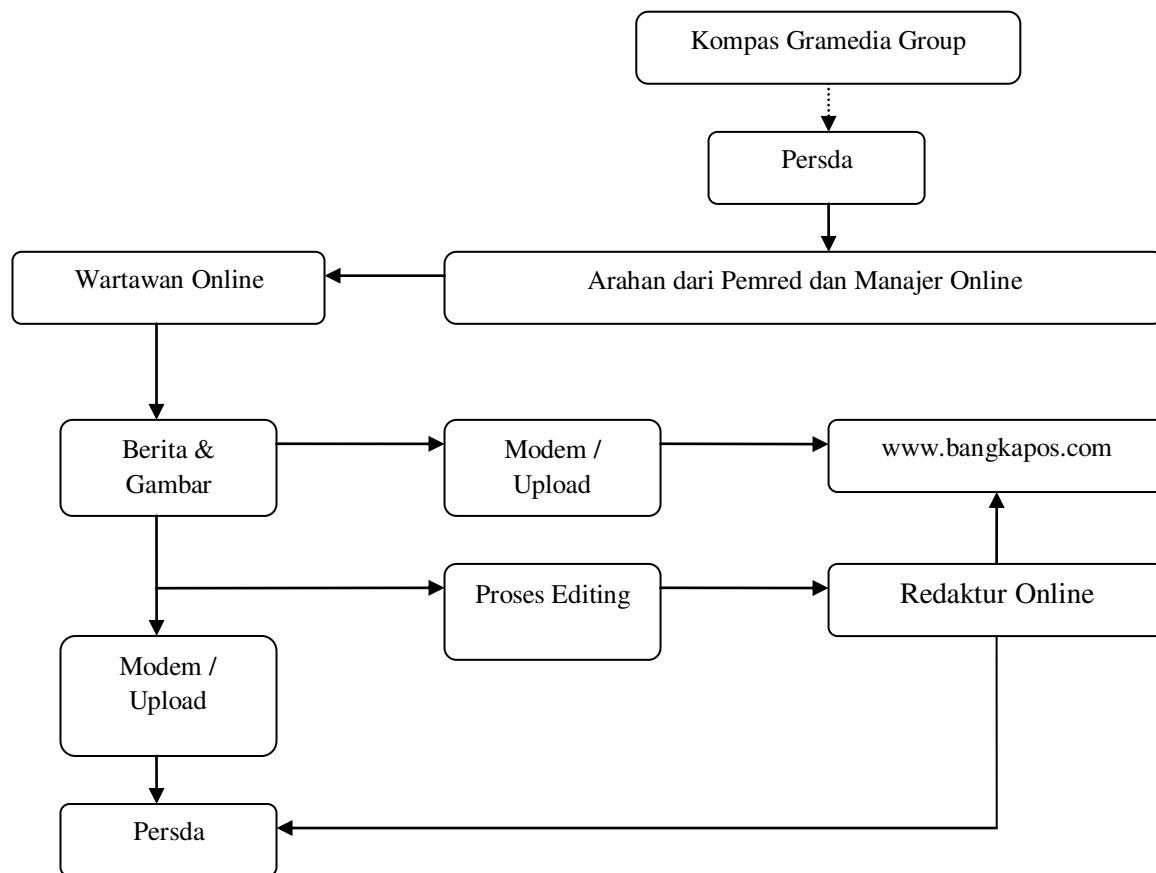

Diagram di atas menjelaskan bahwa berita yang ditampilkan adalah hasil liputan langsung wartawan *online*. Berdasarkan wawancara kepada narasumber, sekitar 40% dari berita yang disajikan merupakan hasil *upload* para wartawan *online*. Proses *upload* berita diawali arahan Pemimpin Redaksi serta Manajer *Online* pada saat rapat redaksi. Wartawan cetak maupun wartawan *online* mendapatkan arahan yang sama. Yang membedakan hanyalah wartawan *online* harus lebih *update* dalam mempublikasikan berita yang diperolehnya, sedangkan wartawan cetak fokus untuk meliput berita untuk terbitan Bangka Pos cetak keesokan harinya. Mereka diberikan independensi untuk meliput dan menyajikan berita yang aktual dan bermanfaat untuk masyarakat.

Setelah wartawan *online* mendapatkan berita, mereka bisa langsung menguploadnya ke situs www.bangkapos.com dan Persda, karena mereka sudah diberikan *user name* serta *password* khusus agar bisa langsung masuk ke situs tersebut. Namun, apabila mereka berhalangan, mereka bisa mengirimkan berita yang mereka peroleh lewat SMS ke Redaksi Online. Redaksi online pula yang akan mengirim berita tersebut secara otomatis ke Persda.

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[1] Dicuplik dari hasil penelitian STUDI AGENDA MEDIA PADA MEDIA ONLINEdilakasnakan BPPKI Jakarta pada tahun 2010.