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Bridging Digital Divide in South Sumatera Province

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Abstract: According to decentralization policy, information and communication is one of regional government obligation. Based on empirical research this study want to analyze how does regional government in South Sumatera Province play its roles, especially to bridging digital divide in their area. Research was focused on five variables, that is: money, policy and program, human resources and regulation. We conclude that regional government does not have commitment and specific program to solving digital divide. Not all government has been created government agency to manage information and communication affairs. If they have it, it is focused on development of e-Government. Local governments tend to collaborate with central government and private corporation (telecommunication service provider) to give internet access for their people.

Key words: Digital divide, public policy, local government, communication, human resources

INTRODUCTION

According to Government Regulation No. 38/2007, Article 7, Paragraph 2, information and communication is one of regional government's obligatory affairs. Based on this regulation, regional government has obligation to respond problem of digital divide in their region. However, regional government authority does not involving directly in production Information and Communications (ICT) goods and services. In contrast, the production process is wholly owned by non-governmental organizations, particularly private/public corporations at global and national levels. The question is how does regional government playing its roles, particularly to reduce digital divide in this circumstances? This study is dedicated to answer this question.

Internet produced digital divide issue in 1995 when the National Telecommunications and Information Agency (NTIA) published their report on telephone and internet access of USA residents. In 1996, Steve Lohr was composed an article on digital divides and became New York Times headline. The 2 years later, NTIA still used digital divide as a sub-title of their report. Since, 1999, digital divide is identical issues of access (Monore, 2004). The digital divide is like the gulf that separates population to access, operate and gain from using information and communication technology (Fink and Kenny, 2003; Harris, 2008; Schaefer, 2008; Thomas, 2009; Dwight, 2009).

Several researchers developing "haves" and "have not" framework to explain digital divide the phenomenon (Cullen, 2001; Tipton, 2002; Lengsfeld, 2011). In this framework, the analysis focused on to explain the group who has access to ICT (have) and the group who do not has access to ICT (have not). For Fink and Kenny (2003), digital divide is not just a difference in accessing information and communication technology but it's include the ability, the real use and the ICT impact on individuals and social groups in social life. It is similar to Valades and Duran (2007). Argument that see digital divide could be affected by physical access, actual use and social consequences of ICTs usage.

Zhao and Elesh (2007) proposed different framework to understanding digital divide. According to them, digital divide does not only have two categories but four categories. They argues that there are two types of digital divide that is equal and fair internet access is not necessarily produce equality of access to social resources on the internet; access to valuable social networks in cyberspace is unequal among individuals. This inequality condition is a reflection of social injustice in real life (offline world).

Meanwhile, Stevenson (2009) reveals that the term of digital divide intentionally produced by the United States government to legitimize a series of deregulation policies rooted in neoliberalism. For 7 years, beginning in 1990, the United States government builds opinion that responsibility of social and economic failure/success in the era of information-based global economy is on the individual level, not at the system level. These views are consistent with the United States government

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tendency to left John Maynard Keynes (welfare state) and adopted Adam Smith (neoliberalism). Then, Stevenson (2009) said, digital divide is not merely technical and administrative issues but the class struggle.

While Warschauer (2003, 2004) starting from case studies in Egypt, seeks to reveal the weakness of framework "haves" and "have not" framework embraced in some literature. According to her there is several misunderstanding in this framework that is first, the term implies dichotomous division between "have" and "have not", connected versus disconnected. Yet, the fact that connectivity is a continuum, rather than a dichotomous separation. Second, it is reflects digital divide as injustice phenomenon. In fact, injustice is not only digital but also manifested in social life. It is mean that social, economic, political and cultural factor will sharpen the meaning of internet in social life. Third, digital divide framework reflects determination of technology in the logic. The presence and absence of technology will affect the behavior and social life.

Hilbert (2011) is also proposed new framework to understanding digital divide. According to her, digital divide is not just dichotomy of "haves" and "have not" but related to who (individuals, countries, etc.) which kind of characters (for example, age, income, residence) how to connect (limited access or effectively adopt) and which kind of device (cellular phones, internet, digital TV, etc.). If these variables are addressed and described by a matrix then there are many options to define digital divide.

Government has a vital role to bridging digital divide because of its ability to produce technology policy. Per definition, technology policy can be defined as whatever governments choose to do or not do which affect the provision and use of technology (Chary and Aikins, 2010). Technology policy can influence service providers (tax, regulation, infrastructure, etc.) and users (lack of education, lack of access and skills, etc.). One of the most influential technology policies on access and ICT usage is tariff structure (Hawkins and Hawkins, 2003).

Similar arguments presented by Mistry (2005) who distinguishes government role to respond digital divide into two forms, namely: Direct and indirect role. In the form of a direct role, government provides resources and support specific program or sector directly. While indirect role is realize through a series of policies to create respectable environment for ICT development of ICT industry. It is including a set of government policy to intervening broader social structures (education, labor force, agriculture, industry) (Warschauer, 2004).

The role of government was affected by theirs point of view to define and interpret digital divide concept (Epstein *et al*., 2011). Government also does not standing alone in this sector. ICT sector has many players (business people, information worker, non-Government organization and user). It is forces government collaborating with many actors in bridging digital divide because some of non-government actor has intermediaries function (Sein and Furrholt, 2012). The experiments of several countries suggest that collaboration is prerequisite to bridging digital divide effectively. For examples, Wired Community @Collingwood programs in Australia (Broadbent and Papadopoulos, 2013), Community Technology Center (CTC) program in the United States (Kaiser, 2005) or the experiment of Seattle City in the United States who successfully institutionalize efforts to bridging digital divide (Servon, 2002) or the European Union experiences on the Digital Local Agenda (DLA) (Walterova and Tveit, 2012).

In developing countries, bridging digital divide is not easy. Some are successful and others are not successful. In Egypt, the government succeeded in bridging digital divide because their treatment to five variables, namely, physical resources, digital resources, human resources and social resources (Warschauer, 2003). In Thailand, government is difficult to bridging digital divide due to several constraints that is: high price of telecommunication product because of state-owned enterprises monopoly in ICT sector produces high price of telecommunication product, the lack of human resources in ICT and language barrier (Mephokee, 2004).

In Latin America, government effort to bridging digital divide encounters problems that is: income disparity between populations has produced low penetration, lack of basic infrastructure (electricity networks and telephone network), state enterprises monopoly and high cost of interconnectivity (Kagami *et al*., 2004).

MATERIALS AND METHODS

We are doing this research for 2 years. In the 1st year, we use quantitative approach and applied survey design. We collect data from 150 household members who living in Palembang City, Lubuklinggau City and Ogan Komering Ulu District. We use multistage random sampling technique to select 150 household members as research respondent. Survey data was analyzed with SPSS software. The 1st year research was aimed to mapping digital divide in research location. In the 2nd year, the researchers apply a qualitative approach. We use snowball technique to select informant research. The first informant interviewed is civil servants who have the authority to manage information and communication affairs at district level. We used Framework method to analyze qualitative data (Ritchie and Spencer, 1994).

RESULTS AND DISCUSSION

Digital divide in south sumatera: In South Sumatera Province, we explain digital divide phenomenon by several indicators, namely: ICT device ownership, type of device used to accessing internet, type of location used to accessing internet, type of website pages that most frequently visited and type of social media that most frequently used.

In the view of ICT devices ownership, respondents lives in Palembang City dominating possession computers, cellular phones and Android phones. In contrast, respondent's stays in Lubuklinggau City have fewer computers, fixed telephones, cellular phones and Android phones. Furthermore, respondents in Lubuklinggau City have largest proportion in the category of "does not have computer" and "do not have cellular phone". Respondents stay in Ogan Komering Ulu District has largest proportion in the category of "does not have fixed telephone" and "Android phone". In Lubuklinggau City and Ogan Komering Ulu District, we still found respondents who do not have cellular phone. There are no respondents in Palembang City who did not have cellular phone (Fig. 1).

Majority respondent in Lubuklinggau City is using computer and cellular phone to access internet. There is no respondent in this city accessing internet using cellular phone as a modem and Android phone. In Palembang City and Ogan Komering Ulu District, respondents connected to internet via computers, fixed telephone, cellular phones and Android phones. In Ogan Komering Ulu, respondents who access internet through computer much more than respondents who access it via fixed telephone, cellular phone and Android phones (Fig. 2).

Respondent used their home, workplace, schools, internet cafes, public places that has facilitated free Wi-Fi and MPLIK car as location to accessing internet. For respondent, home and internet cafe is still a favorite place to connect internet. MPLIK car a program launched by Ministry of Information and Communication, Republic of Indonesia to improve internet accessibility of Indonesian people used fewer respondents. Based on district/city, respondents in Lubuklinggau City has accessing internet from home, workplace, schools, internet cafe and MPLIK car. Respondent in this city is rarely accessing internet from public space (free Wi-Fi area). In Palembang City and Ogan Komering Ulu District, respondent has access internet from home, workplace, schools, internet cafe, MPLIK car and public space (free Wi-Fi area). The largest proportion of respondents in Ogan Komering Ulu, Lubuklinggau City and Palembang City has accessing internet from home (Fig. 3).

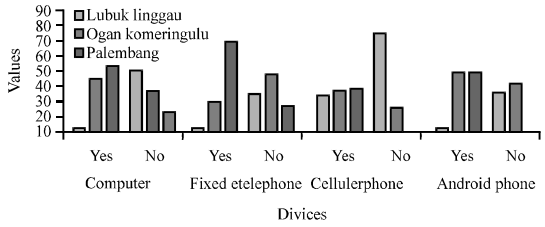

Fig. 1: Computer and telephone ownership

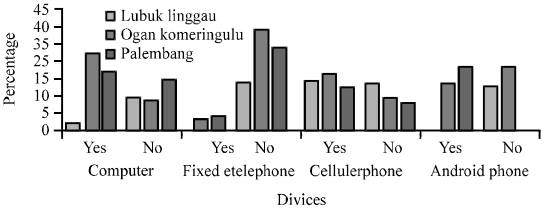

Fig. 2: The device used by respondent to access internet

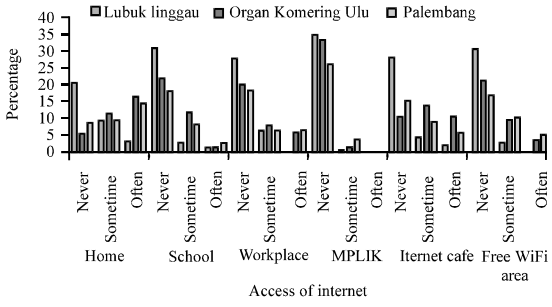

Fig. 3: Where is respondent accesing internet?

Facebook is the best social networking website that most visited by respondents in Palembang City, Linggaulinggau City and Ogan Komering Ulu District. The second position is Google (the search engine's website). The third position is Yahoo! (search engine website). The fourth place is Twitter (social networking website) and the fifth place is Youtube (free video repository website) (Table 1). Furthermore, the data show that Facebook users in Palembang City, Lubuklinggau City and Ogan Komering Ulu much more than Twitter, MySpace and Google+users. In contrast, LinkedIn has little users in Palembang City only and Friendster has users in Ogan Komering Ulu only (Fig. 4). When connected to internet, respondents do variety of activities. We are grouping these activities as follows: Searching information/news; Using social media; Upload/download document; Upload/download picture; Upload/download video; Upload/download song; Chatting; Receive/sending email; Online shopping; Online selling; Online marketing; Deploying social activities invitation; Deploying personal activities invitation.

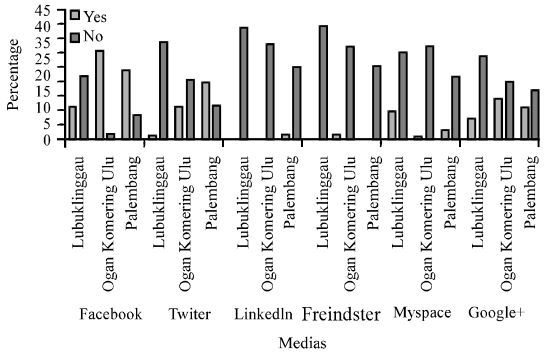

Fig. 4: Social media are the most frequently used

Table 1: Type of website page visited by respondent based on district/city

	District/city (%)			
Websites	Lubuklinggau	Ogan Komering Ulu	Palembang	Percentage
Facebook.com	1	29	20	49
Google.com	5	19	17	41
Yahoo.com	2	15	12	29
Twitter.com	0	9	12	21
Youtube.com	1	15	1	17
Vivanews.com	0	5	1	6
Tokobagus.com	0	1	4	5
Gmail.com	0	2	3	5
Detik.com	1	2	2	4
Kompas.com	0	3	1	4
Unsri.ac.id	0	0	4	4
Gameschool.com	0	1	2	3
Gameonline.com	1	2	0	2
Menjelma.com	0	2	0	2
Tribun.news.com	0	0	2	2
Eramuslim.com	0	2	0	2
Dewatogel.com	0	2	0	2
Kaskus.com	0	1	1	2
Okezone.com	0	1	1	2
Islamedia.com	0	1	0	1

In Lubukinggau City, respondent ever do all kinds of activity on the above, excluding for spread invitation of social and personal activities. The largest proportion of respondents in Lubuklinggau City connects to internet for using social networking and play online gaming. There is no difference between internet user in Lubuklinggau City and Ogan Komering Ulu District. In Ogan Komering Ulu District, the largest proportion of respondents connect internet to use social networking, chatting and searching news/information. Similar to these regions, proportion of respondents in Palembang City who use social networking and searching news/information much more than the proportion of respondents in the other categories (Table 2).

In Ogan Komering Ulu and Palembang City, proportion of respondents use internet to online shopping, online selling, online marketing, spread social and personal activities invitation, receive and sending email is larger than Lubuklinggau City. This fact shows that internet has begun to trigger productive activity among respondents in Palembang City and Ogan Komering Ulu District (Table 2-4).

Bridging digital divide: Although Law No. 32/2004 on Regional Government asserts that one of the obligatory affairs of regional government under decentralization policy is information and communication but not all districts/cities has allocate public fund for this affairs (Fig. 5). As shown in Fig. 1 in 2009-2013 periods, Government of Lubuklinggau City did not allocated fund in public budget for information and

Table 2: Type of respondent activity in virtual world based on district/city

	Searching information/news			Using social media			Upload/download document			Upload/download picture			Upload/download video		
District/City	N	S	O	N	S	O	N	S	O	N	S	O	N	S	O
Lubuklinggau	21.3	10.0	2.0	27.5	2.7	2.7	29.3	2.7	0.7	28.6	2.7	1.4	30.3	2.1	0.7
Ogan Komering Ulu	2.7	12.7	18.0	2.7	4.7	26.2	8.2	13.6	11.6	4.1	15.6	13.6	7.6	18.6	6.2
Palembang	8.0	9.3	16.0	9.4	4.0	20.1	15.0	11.6	7.5	14.3	9.5	10.2	20.7	3.4	10.3

Table 3: Type of respondent activity in virtual world based on district/city (accprding to upload)

	Upload/download song			Chatting			Receive/sending email			Online shopping		
District/City	N	S	O	N	S	O	N	S	O	N	S	O
Lubuklinggau	29.5	1.4	2.1	25.7	6.1	0.7	29.1	2.7	0.7	30.8	2.1	0.0
Ogan Komering Ulu	6.2	15.8	11.0	5.4	9.5	18.9	10.1	16.9	6.8	19.9	11.0	2.7
Palembang	15.1	8.2	11.0	10.1	9.5	14.2	11.5	10.1	12.2	20.5	12.3	0.7

Table 4: Type of respondent activity in virtual world based on district/city (accprding to online selling)

	Online selling			Online marketing			Deploying social activities invitation			Deploying personal activities invitation			Online gaming		
District/City	N	S	O	N	S	O	N	S	O	N	S	O	N	S	O
Lubuklinggau	32.4	0.7	0.0	32.0	0.7	0.0	32.7	0.0	0.0	32.7	0.0	0.0	27.2	2.7	2.7
Ogan Komering Ulu	28.4	3.4	1.4	28.6	4.1	0.7	25.9	6.1	1.4	25.9	6.8	0.7	17.7	7.5	8.2
Palembang	31.1	2.7	0.0	29.3	4.8	0.0	23.1	7.5	3.4	25.9	5.4	2.7	23.1	4.8	6.1

N: (Never); S: (Sometime); O: (Often)

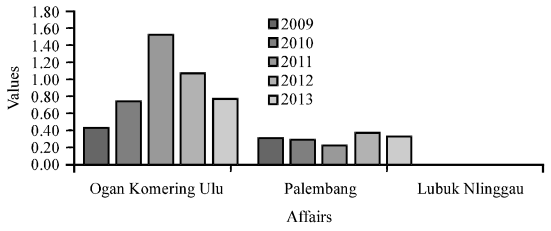

Fig. 5: Budget allocation for information and communication affairs 2009-2013; figures created by writer based on secondary data

communication affairs. Government of Ogan Komering Ulu District and Government of Palembang City had allocated 1% funds from their total budget for information and communication affairs. The lack of budget funds for information and communication affairs is indicator that regional government has low political commitment to address digital divide in their region.

In Ogan Komering Ulu District, said Eko Sungkono (member of Ogan Komering Ulu House of Local Representative, Prosperous Justice Party politician), "public budget for Department of Information and Coomunication is not small. We give them Rp5 billion to financing e-government program. We support Sukses FM (radio stations that owned by Government of Ogan Komering Ulu District). There is also similar budget for media spending in Division of Public Relations", (interview, 8 Augustus 2014).

There has been no allocation public budget expressly intended to address digital divide directly. Palembang City has many free Wi-Fi area but this facility is not financing by Government of Palembang City. In Palembang City, free Wi-Fi area was built by Province Government of South Sumatra which promote private corporation to make free Wi-Fi area as a form of their corporate social responsibility.

The lack of district government budget allocated to information and communication sector cannot be separated from the perception of political and bureaucratic elite in interpreting legislation and digital divide. In terms of rules, Law No. 32/2004, Article 14, Paragraph confirms that the district government has 16 (sixteen) obligatory affairs. However, Law No. 32/2004, Article 14 and Paragraph do not explicitly mention information and communication affairs as obligatory affairs of district government. Affirmation of information and communication affairs as obligatory affair can be found in Government Regulation No. 38/2007, Article 7 and Paragraph which is a derivative from Law No. 32/2004, Article 14 and Paragraph.

Based on Government Regulation No. 38/2007 on Division of Obligatory between central government, province government and district government, district government passed a law on organization structure of district government that refer to Government Regulation No. 41/2007 on Guideline for Regional government (Province Government and District Government). Government Regulation No. 41/2007 is guidelines for regional government (province and district government) to ensure that organization structure of regional government congruence with "poor structure, rich function" principle. According to this guideline, structure of regional government has four type of bureaucracy that is, dinas (department), kantor (office), badan (agencies), sekretariat daerah (regional secretariat).

In Palembang City and Ogan Komering Ulu District, Department Information and Communication is managing communication and information affair. In Palembang City, this decision based on Regional Government Regulation No. 9/2009 on Establishment, Structure and Government Administration of Palembang City. In Ogan Komering Ulu District, it is based on Regional Government Regulation No. 11/2008 on Establishment, Structure and Government Administration of Ogan Komering Ulu District.

In contrast to Palembang City and Ogan Komering Ulu District, Lubuklinggau City does not establish special agency to managing information and communication affairs. Under Regional Government Regulation No. 1/2008 on structure of organization, work procedure of government regional secretariat of Lubuklinggau City, information and communication affair maintain by Government Regional Secretariat of Lubuklinggau.

Institutional format that manages information and communication affairs as shown in the above has serious implications for development of information and communication sector. First, as shown in Fig. 1, the absence of institutions that are explicitly assigned to manage information and communication affairs led to this sector do not get budget allocations. As a result, government officials cannot make a set of intervention to development information and communication sector. Second, issue of authority. Managing information and communication affair through special department as shown in Palembang City and Ogan Komering Ulu District makes policymaker gets more room for planning and organizing program to bridging digital divide. Regional government who make special department to manage information and communication could get additional program/budget from Central Government, especially from Ministry of Information and Communication or Province

Government based on medebewind principle. Third, human resources issue. When regional government creates Department of Information and Communication in their organization structure then they can recruit new civil servant who has education background on information technology.

Although, regional government thas institutionalized organization for information and communication affairs, unless Lubuklinggau City but budget allocations is still small. Political elite and bureaucracy involved in the budget process does not see any serious problems in development of information and communication sector. Although, they believe that information and communication are important but digital divide phenomenon is not regard as a serious issue for political elite and bureaucracy at local level. In Palembang City although, almost all regions had covered with cellular signal but digital divide was still considered by Department of Information and Communication, Government of Palembang as private affair. "Using internet depends on the person. How do they using internet, if they are still using cellular phone to make calls and send SMS only", said Sobari, Secretary of Department Information and Communication, Government of Palembang (interview, 14 August 2014). Implicitly, this statement shows how bureaucrat views the digital divide as skill problem and not an access problem.

In Ogan Komering Ulu District, not all regions was covered by cellular phone signals. Poor signal make internet access is also low. "During this time, we tried to optimize the presence of seven MPLIK (Mobil Pusat Layanan Internet Kecamatan/Mobile Center for Sub-district Internet Services) car to provide internet access for the entire of Ogan Komering Ulu population. We also propose to central government to give more MPLIK car so that every sub-district will served by one MPLIK car", said andang, secretary of Department Information and Communication, Ogan Komering Ulu District (interview, 19 August 2014).

MPLIK (Mobile Center for Sub-district Internet Services) is one of program under Ministry of Information and Communication, Republic of Indonesia (Fig. 6). It aims to serve the territory of district which do not have internet facilities. Mobile Center for Sub-district internet services (M-PLIK) is mandated by regulation of minister information and communication No. 48/PER/M.KOMINFO/11/2009, especially Article 5.

It is not easy to make cooperation with service provider at regional level. According to Andang, officer of Department of Information and Communication, Ogan Komering Ulu District, "It needed a long time and a long process to realize cooperation with private sector that has signal, network and ICT technology. Almost their regional office does not have decision-making authority. The proposal has sent to central or branch office" (interview, 19 Agustus 2014).

Fig. 6: MPLIK car; primary data

Even if Lubuklinggau City does not allocated fund to financing ICT program but it had succeeded to collaborate with service provider. Government of Lubuklinggai and Telkomsel (the leading internet service provider in Indonesia) had been successfully built two point of free Wi-Fi area that is: Regional Library of Lubuklinggau and Lapangan Meredeka (city garden). The first point is in Regional Library of Lubuklinggau. It is show that lack of public fund is not a reason for regional government to provide better internet access for their people.

Furthermore, Government of Ogan Komering Ulu District spent their budget to operated Success FM radio and public information dissemination program. They are starting build integrated e-Government system. Under this system, all government units in Ogan Komering Ulu District will connect through internet. Unfortunately, until now, Government of Ogan Komering Ulu District does not have an official website.

In Palembang City, all government units already covered by Wi-Fi signal. Government of Palembang City is also developing digital media such as www.ePalembang.com and www.bulletinmetropolis.com.

Government of Palembang City is also developing numerous free Wi-Fi areas such as airport, train station, school, city parks, supermarket and campus. Similar with Ogan Komering Ulu District, government of palembang city focused on its efforts to develop e-Government systems. "We still managing permit authority, especially permit for build new telecommunication tower. In the future, it will be gives to the Office of Integrated Licensing Service. We want to make paperless government. We believe ICT will make the government more efficient, effective and productive", said Sobari, Secretary of Department Information and Communication, government of palembang city (interview, 14 August 2014).

Until 2014, in terms of regulation, there is only Government of Lubuklinggau that does not produce regional regulation related to information and communications affairs. Meanwhile, Government of Palembang City and Government of Ogan Komering Ulu District already have regulation on information and communication affairs.

Ogan Komering Ulu District has Regional Regulation No. 9/2012 on implementation of information and communication affairs. The ultimate goal of this regulation is "to realize an information society through facilitation, coordination, controlling and supervision based on the authorities of regional government" (Regional Regulation of Ogan Komering Ulu District No. 9/2012, Article 3). This regulation is also a legal foundation for Government of Ogan Komering Ulu District to construct integrated e-government system. Although, this regulation provides Government of Ogan Komering Ulu District to "managing, giving permits, supervise, developing and provide sanctions" but it does not authorized regional government for bridging digital divide seriously. In this regulation for example there is no specific study that give obligation for Government of OKU District to taking structured, systematic and massive action in order to bridging digital divide.

Meanwhile, government of palembang city has regional regulation No. 4/2011 on retribution of telecommunications tower. It is a legal foundation for government of Palembang city to collect retribution from construction of telecommunications tower. As a capital city of South Sumatera Province, Palembang city has many telecommunication towers. "We must control construction of new telecommunication tower so that its spread covered all area. Telecommunication tower is often disturbing people who stay in it closely. Therefore, its construction must also fulfill the standards set by government so that it is secure for people and environment", said Sobari, Secretary of Department of Information and Communication, Government of Palembang City (interview, 14 August 2014).

In terms of human resources, Government of OKU District has 7.399 civil servants. From this total, civil servants who have educational background on computer science only eight people. In Government of Palembang City, particularly in Department of Information and Communication there are civil servants who have post-graduated education on computer science. It is indicates that regional government does not lack human resources to managing information and communication affairs. In South Sumatera Province there are many university (public and private) has computer sciences program. It is primary source of skill and educated labor on computer sciences.

Availability of human resources, budget, authority and technology would be meaningless without leadership. "The leadership is important for any organization. However, since regional autonomy, agency heads are always changing every 1 year. How do we achieve organization mission if the organization leader is just spending his time to learn vision and mission of organization? When he began understanding it, he "resign" suddenly based on mayor decision. It is serious problem in decentralization era", said Sobari, Secretary of Department Information and Communication, government of palembang city (interview, 14 August 2014).

CONCLUSION

Digital divide is a new issue for regional government. It is appears when ICT penetrate region using market mechanism. However, because of information and communication is one of regional government obligatory affairs then regional government must be pro-actively to managing various issues in development of information and communication sector including digital divide.

Indeed, regional government cannot produce ICT's goods and services directly. It is mean that regional government must be collaborate with others actor to bridging digital divide, especially telecommunication corporation. Collaboration can be starting from government itself that is they must reconstruct their perception on law, regulations, ICT and regional government authority. Growth of ICT's sector is very past. It cannot be counted year by year but second by second. It is implies that government must be adaptive to new demands form people that directed to government organization.

The biggest challenge to realizing this collaboration is how to align diverse differences owned between regional governments and private corporations. In one side, regional governments in the name of public service mandated by legislation must promote public interest even if it is means losing money. On the other side,

private corporations was born to make profit. The ability to balancing these values will be critical factor for bridging digital divide in this region.

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