

RECENT DEVELOPMENT ON INFORMATION AND COMMUNICATION TECHNOLOGY IN INDONESIA¹

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1. INTRODUCTION

Economic change throughout the world coupled with the advance in telecommunication and information technology has significantly brought new development to the structure of information and communication technology (ICT) in many countries. Waves of deregulation, liberalization and privatization started in 1980's have affected regulators and decision makers in setting up their industries. Several ASEAN countries have already declared their vision to anticipate the development in ICT sector. For instance, Singapore has set up the *Singapore One*, while Malaysia has been well known for its *Malaysia Super Corridor*.

Indonesia also experienced the similar waves. Privatization and deregulation, especially in telecommunication sector, has started in early 1990s. After the effectiveness of the new Telecommunication Law No.36 of 1999, the market for telecommunication sector that had been solely dominated by PT. Telkom for domestic and PT. Indosat for International service has now become available for other entries. The number for Internet Service Provider (ISP) on the other hand, is also growing at a significant rate every year.

Despite the economic crisis that is still hanging around Indonesia, work is currently underway to establish National Strategy and Policy on ICT development. In 1998 Indonesia once launched *Nusantara 21* as national vision for ICT. Yet the implementation of this vision faces some difficulties, for example: lack of high level

¹ Country paper, presented in The 3rd Joint Promotion Program (JPP) Seminar/Workshop on "Regional Cooperation on Digital Divide and Opportunity, 21-23 November 2001, in Hanoi-Vietnam.

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political will and commitment, low telephone penetration, and relatively high cost tariff structures.

This paper portrays recent development on ICT in Indonesia. Part two present some latest figure for Indonesian economy and ICT. The telecommunication sector reform that is fundamental for the development of ICT is then described in part three. Part 4 of this paper explores policies and recent issues on ICT development in Indonesia. While the last two parts highlight some other related problems and draws lesson from the development of ICT in Indonesia.

2. INDONESIA AT A GLANCE

For more than three decades, Indonesia has experienced a robust economic growth that is followed by significant improvement on social sectors. However, the economic crisis in the middle of 1997 has hampered the sustainability of the national development. Real GDP growth plummeted from 7.6 % in average for the period 1991-1996 to -13.2 % in 1998 (*Bappenas*, 1999). While per capita GDP dropped from US Dollar 1,110.0 in 1997 to only US Dollar 640.0 in 1998. This figure has even worsened to only US Dollar 580.0 for 1999 fiscal year (*World Bank*, 2000). As a result, crisis has also deteriorated the standard of living and quality of life to many Indonesian, the worst has ever happened since the 1960s.

Until 1999, continuous expansion of total telephone lines had essentially removed what used to be shortage of telephone services. This constant expansion of telecommunication network involved an enormous investment, and was only possible in respect to the open policy for multiple channel of investment carried out by the Government of Indonesia. However, for the last two years, new investment in the fixed line has declined to a fraction of previous level and effectively remains stalled at his time. Penetration of telephone services in 1997 was 2.5 per 100 people. This number in 1999 increased to 3.03 and just slightly improved to 3.2 for the first Quarter of 2001. The total line in service now is 6.7 millions. Meanwhile for the first quarter of 2001, the number of Internet subscriber has reached 500.000 and 2 millions for Internet users. Yet the cellular telephone steadily increases to have 4.2 million subscribers.

After implementing a series of stabilization and economic reform policies, guided by International Monetary Fund (IMF), some basic macroeconomic indicators have shown improvement in the late 1998. For the fiscal year of 1999, economic growth had a positive figure. The exchange rate of Rupiah, national currency, once strengthened to a level of 7,000.0 for a dollar and inflation rate has been brought back to a manageable rate. However, turmoil in political forum has turned economic and national development into a *cloudy* future. Recently, Rupiah has depreciated to a level of 10,500.0 for a dollar.

The development of ICT in Indonesia, therefore, faces critical challenges to lift up country's economy back to the prosperous economic era in the 1980s and early 1990s.

3. TELECOMMUNICATION SECTOR REFORM

Objectives

Specific objective of telecommunication sector reforms are to: (a) improve sector performance; (b) transform telecommunication structure from monopoly to pro-competitive environment; (c) facilitate more job creation and income generation; (d) optimally gain national income from privatized state-owned telecommunication companies; (e) increase and accelerate international private sector partnership; (f) provide public access to telecommunications; and (g) to increase transparency of the regulations in order to restore investor confidence.

Guiding Principles

The guiding principles of telecommunication sector reform are derived from the national reform principles of the People's Consultative Assembly (MPR) decrees. Lesson from the current economic crisis, political reform agenda, and a series of economic recovery programs have also been a very useful to guide the implementation of telecommunication sector reform.

Main Reform Policies and Programs

In setting up main steps toward a better telecommunication sector and to prepare readiness of Indonesian telecommunication market for a global trend, the Government of Indonesia has issued The Blue Print on Indonesian

Telecommunication Sector Policy on July 1999. This step was followed one year later by the effectiveness of the new Telecommunication Law No. 36 of 1999 started from September 2000. Main reform policies and programs are: (a) to reform Indonesian telecommunication at macro level; (b) to restructure regulatory framework; (c) to restructure telecommunication industry; and (d) to liberalize business environment in telecommunication sector.

The main policies are implemented through the following programs. *First*, reforming Indonesian telecommunication sector at macro level is carried out by: abolishing the monopoly; eliminating discrimination and restriction for private sector from participating in provision of telecommunication network and services; and redefining the role of the government.

Regulatory framework on the other hand is a prerequisite for a better telecommunication practice. The new telecommunication law No.36 of 1999 underlines several programs to restructure regulatory framework. Among others are: setting up a pro-competitive telecommunication business environment; separating telecommunication operation from policy making and regulatory functions; improving licensing process; avoiding discrimination based on the ownership; restructuring tariff based on cost estimation and market mechanism; establishing the interconnection mechanism among operators; preparing the universal service; assuring the operators to provide equal access; reassuring the international standard and technologically neutral for the equipment; and providing guarantee for consumer protection.

Third, to restructure telecommunication industry the following steps are taken: to stop the separation between basic and non-basic services in telecommunication; to terminate the exclusivity right of the existing operator (local, long distance, and international services) earlier; and to conduct a full competition atmosphere in many services after 2010.

Finally, liberalizing business environment is focused on three main aspects: opening telecommunication market; removing the entire barrier to the market entry; and abolishing discrimination based on government ownership by restructuring all state-owned companies in telecommunication sector.

4. POLICY ISSUES ON ICT IN INDONESIA

Regarding ICT Development, through Presidential Decree No. 30 in 1997, the Government of Indonesia established the **Coordinating Team for ICT Development in Indonesia** (TKTI). The development plan of ICT in Indonesia was documented in “**Gambaran Umum Pembangunan Telematika Indonesia**” issued by TKTI in 1998. It comprises three main components: (a) ICT Infrastructure; (b) ICT Application; and (c) ICT Resources, including industrial support, standardization, human resources, laws and regulations, and ICT culture.

The main objectives of ICT infrastructure are: (a) to implement archipelago super highway; (b) to establish 10 multimedia cities by 2004; and (c) to build *Nusantara* Multimedia Community Access Center. All of the provincial cities are connected to back bone transmission system through optical fiber communication system, digital microwave communication system, satellite communication system, and submarine system.

Meanwhile, IT application is prepared: (a) to support the empowerment of states apparatus and bureaucracy; (b) to increase standard of living; (c) to support national competitiveness in business and industry; (d) to support the development of basic information system. Some applications are now available. For example: SISKOMDAGRI-the management information system of Ministry of Home Affairs; Electronic Data Interchange (EDI) under Ministry of Finance (Custom); KADIN-net by Indonesian Chamber of Commerce; and Electronic Banking by states and private banks.

The development policies of ICT resources on the other hand, are focused to support domestic industry and export-oriented sectors, and also to promote a promising investment atmosphere. Recently, the structure and members of TKTI has been renewed through Presidential Decree No. 50/2000, which is chaired by Vice President of the Republic of Indonesia.

In February 2001 Bappenas has completed the National IT Framework (NITF), the project funded by the World Bank, and submitted the final report to the TKTI. This report underlines that ICT development is recently prioritized on five strategic

sectors: (a) e-government for good governance; (b) e-commerce to support sustainable economics; (c) IT-based community; (d) IT for education; and (e) e-democracy. NITF also set up the detail step of implementation for each strategy including the target years.

In April 2001 government issued the presidential instructions (Inpres) No.6 consisting several guidelines for the development and empowerment of ICT in the society. This Inpres is implemented through the action plan comprising of 75 programs. These programs are classified into 4 categories i.e. policy and legal framework; human capacity building; infrastructures; and application both for the government and private sector. The objective the action plan is to provide donors and local investors with more prioritized programs. Among 75 programs, 17 are already on going, 22 are urgent and 36 are important programs.

In the meantime, the Directorate General of Posts and Telecommunications (DG Postel) has already identified potential users of ICT in Indonesia, they are: 150,000 telephone/internet café; 1,600 universities; 4,000 specialized high school; 10,000 regular high school; 10,000 *pesantren*³; regular business and share resources. I total DG Postel predicted that potential Internet users would be 61 millions or about 30 % population (DG Postel, 2000). DG Postel has also planned an implementation steps, among others: to expand infrastructure to the remote area; to develop community telecommunication centers; to increase the number of internet and telecommunication kiosks; and to add more telephone line and cellular capacity. Additionally, DG Postel has prepared the draft for Cyber Law in corporation with some well-known universities.

The National-ICT development plans, policies, and action plans are prepared as a part of National Development Programs for 2000-2004, what so called *Program Pembangunan Nasional* (Propenas). Propenas is now effective as the Law No.25 of 2000 providing the guidelines on national development programs.

5. SOME OTHER RELATED ISSUES

³ Pesantren is an Islamic boarding school starting from elementary level to high school.

There are some other related issues could affect ICT development in Indonesia. As mentioned in Chapter 2, the penetration of fixed and cellular telephone lines is far below the market demand. Another related problem is unresolved Joint Operation Scheme (*Kerja Sama Operasi* - KSO) between PT. Telkom and its KSO⁴ partners.

Restructuring telecommunication tariff is also an important issue. For many users and associations in this field, tariff for the telephone and Internet access should be lowered. They consider tariff is too expensive and just satisfying telecommunication operator. While for the operators, existing tariff is considered to be economically not viable. This dilemma has put the government in a difficult situation.

As Telkom provides the Internet access, then it is apparent that there exists a conflict of interest. There was a time that APJII (ISP's Association) jammed the Internet traffic made from and to Telkomnet (Telkom's ISP). A number of ISPs have also complained about getting lines from Telkom. Therefore, the level playing field is still one of the important problems to settle down. Even though the issue of universal access has become popular for the stakeholders, the concrete policy on this issue has been long awaited.

Despite some pending matters, several key activities have been implemented without delay. Some local government, hundred miles away from Jakarta, have established and operated their integrated electronic services to improve public services to the society. To name a few, they are Takalar online (www.takalar.go.id), and Kutai Timur online (www.kutaitimur.go.id). Through online service, local government has been able to integrate scattered services into an integrated one. Steps to improve local research center and human resources have been also established under private initiatives, for example Bali Camp (www.balicamp.com) as the brainchild of Sigma groups that has invested about US\$ 3 million in the project and the establishment of Bandung High Tech Valley.

⁴ KSO is established in 1996 to construct originally 2.1 millions new telephone lines and operate existing network out of Jakarta and Surabaya areas.

6. CONCLUSION

Understanding the macroeconomic situation, telecommunication sector reform and recent policies on ICT in Indonesia, we can draw some lessons as the following:

- Telecommunication sector reform has been already in place to promote full competition in ICT sectors both for network and service provider;
- High level political will and commitment is particularly needed to accelerate the development of ICT in Indonesia;
- ICT development in Indonesia for the early stage is focused to e-government for the good governance, e-commerce to support economy, IT-based community, IT for education and e-democracy.
- Assessments on tariff policy considering people purchasing power and activity based cost for the industries have to be done carefully. This aspect then would resolve KSO dead lock and tariff problems for development of ICT sectors.
- The action plans on ICT have to be regularly monitored, discussed and updated due to the very fast changes in the technology and application.

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