THE DEVELOPMENT STRATEGY OF
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
HUMAN RESOURCES IN INDONESIA

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The development strategy of human resources in Information and Communication Technology (ICT) sector is a part of ICT empowerment in the development process. The target of ICT development depends on ICT infrastructure condition and the level of ICT literacy, also refers to the mainstream of the world trend in ICT empowerment in all aspect of life whether in government, private sector and public community. One of the references is the decision of World Conference of Information Society in 2003, which drafted 2015 as the year of realization target of the Information Society, with several indicators such as people literacy, ICT infrastructure availability and ICT empowerment in government and public sectors.

The Indonesian government also planned that the year of 2015 as the year of the Indonesia Information Society, where ICT will become the effective tool in the implementation of government, business sector and public and also the social stratum communication or ICT for all. In order to achieve this aim during 2010, it is hoped that the achievement of ICT development reach 70% of the targets of the Information Society, increase national competitiveness, carry out bureaucracy reformation, and achieve technopreneurship.

In order to prepare the human resources, we have compiled the development blueprint of human resources in ICT sector. National vision that related to the development of human resources in the ICT sector is: "IMPLEMENT LONGLIFE LEARNING PARADIGM". In order to increase the level of life quality, in which ICT is positioned in this context as a resource to achieve "MAKE ICT AS THE TOOL TO ACHIEVE LONGLIFE LEARNING PARADIGM".

In line with results of the WSIS meeting (World Summit on Information Society), there are 3 (three) goals in the HR-ICT development, respectively:
1. Connect at least 50% of primary and secondary schools, academies and universities with ICT;
2. Connect at least 50% of educational institutions and research centers that are spread in all regions of Indonesia with ICT;
3. Compile and adapt educational curriculum that refers to the formation of

knowledge-based society development.

Building HR capacity refers to the human resources qualifications as formulated by United Nation (UN) classified HR-ICT into two kinds; there are (i) ICT worker and (ii) ICT-enabled worker. ICT workers, also known as ICT professionals, are the workers or individuals who make a living as experts in ICT.

First, based on managerial level, ICT workers are classified from CIO (Chief Information Officer) to staff. Secondly, based on types of work, ICT workers are classified to 4 (four) types, respectively: administration, application, technical support, and operational work.

Based on statistical data, the largest population (65.8%) is that in productive age (from secondary school graduates to the age of pension). While the age of school occupies the second place (28.8%), and the age of pension occupies the last place (5.4%). In other words, Indonesian population can be simply divided into 3 (three) categories:

1. The age of school – ranges from the age in the period of compulsory education to the age of secondary school
2. Productive Age – as ideal and legal age range to work, whether in private sector or government.
3. Elderly – also often mentioned as retired age or pension age.

By considering aspects that have been explained beforehand, this is significant that for approximately 10 (ten) years, Indonesia has target to increase people e-literacy in total of 200 million population, whether in the government, private sector/industry, educational institutions, and in organization circles.

In order to make the initiative moving naturally, continuously and consistency, we must develop a potential Public Private Partnership (PPP) model. This model should be developed in such a way, so all the parties involved will benefit some added values that can be enjoyed in short-term, middle-term or long-term.

The development of human resources is focused on the target group of government, education institutions, industry and communities, as follows:

Four Domains in The Golden Triangle

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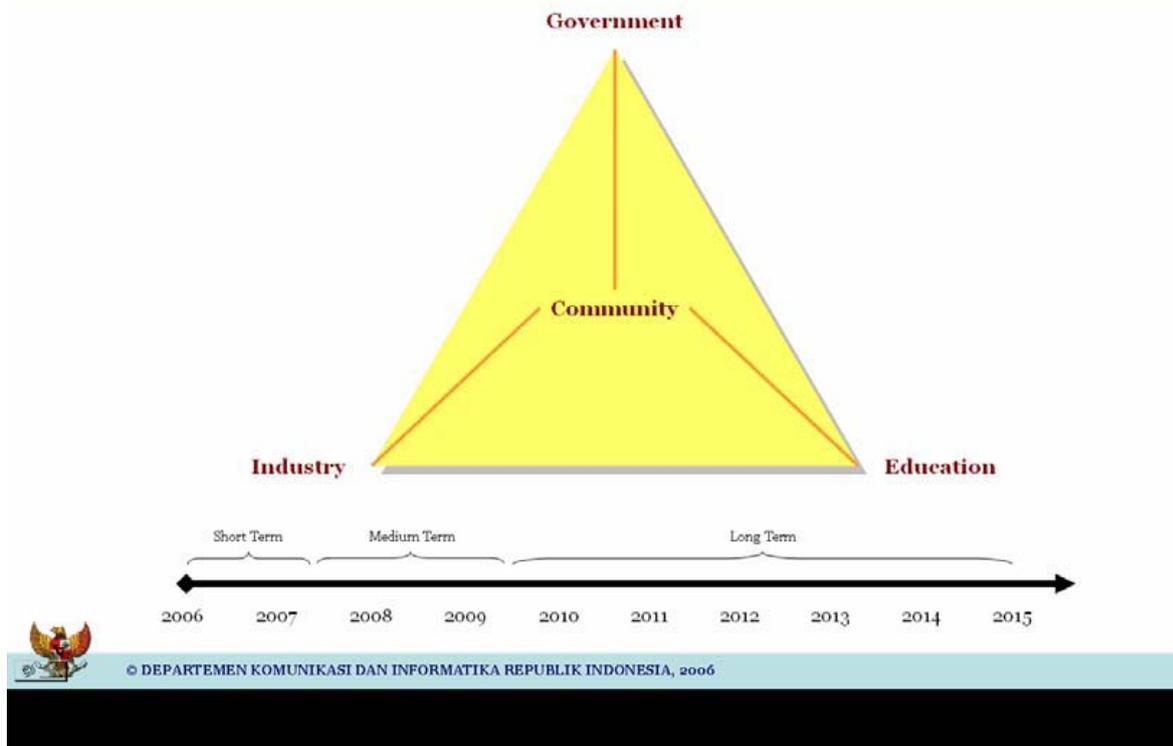
GOVERNMENT

As for the programs that must be undertaken with the main target the individual in the government offices are as follow:

a. Training and workshop
1. Increase ICT officer's and management's competency in central and district government;
2. Introduce good knowledge governance concept in government institutions;
3. Restructure e-government project initiative portfolio;
4. Enhance public service quality with ICT application.

b. Research and development
1. Enhance and empower the capability of training centers;
2. Map government ICT human resources' capabilities;
3. Define government competency standards;
4. Study the maturity level of knowledge-based society in Indonesia.

c. Constructing and implementation
   1. Enhance and empower ICT capability of training centers that are owned by government;
   2. Increase HR capabilities by applying shared-knowledge concept;
   3. Develop e-government learning gateway; and
   4. Conduct ICT implementation audit for education.

d. Advisory and consultancy
   1. Conduct multi-initiatives ICT development coordination in an intact and comprehensive framework;
   2. Develop "National ICT Learning Nexus" concept;
   3. Create national organization that is responsible for e-government reformation; and
   4. Develop knowledge-based society in government environment.

EDUCATION

As for the programs that must be undertaken with the main target the individual in the education institutions are as follow:

a. Training and workshop
   1. Empower teachers and school management to use ICT as education tools;
   2. Conduct special program for owners of ICT-based educational centers of excellence;
   3. Transfer knowledge, competency and skill of how to develop and manage ICT centers of excellence; and
   4. Give education about managing strategic partnership with industry.

b. Research and development
   1. Measure maturity level of making use of ICT in schools in Indonesia;
   2. Study the readiness level of education institutions in applying e-education and e-learning;
   3. Share knowledge to education institutions in e-education and e-learning concept implementation; and
   4. Develop the blueprint of ICT development for education.

INDUSTRY

As for the programs that must be undertaken with the main target the individual in the industry are as follow:

a. Training and workshop
   1. Introduce national strategy architecture in HR ICT sector;

2. Give education in managing shared service based ICT centers of excellence;
3. Develop ICT based curriculum;
4. Study about ICT based multi centers of excellence integration.

b. Research and development
1. Study the requirements of human resources capacity in ICT for industry;
2. Develop the link and match framework program between industry and education institutions;
3. Map the readiness level of industry in running ICT shared-service architecture; and
4. Study the need of industry to develop knowledge-based society.

c. Constructing and implementation
1. Develop ICT incubator centers in industry;
2. Declare organization of ICT profession certification;
3. Empower ICT centers and HR development; and
4. Develop and operate national system of shared-service.

d. Advisory and consultancy
1. Develop career development system for ICT human resources;
2. Empower SME (Small Medium Enterprise) through ICT implementation of large enterprise;
3. Form national workgroup to develop ICT profession; and
4. Help ICT and business development center to operate in national scale.

COMMUNITY

As for the programs that must be undertaken with the main target the individual in the community's circles are as follow:

a. Training and workshop
1. Hold roadshow to empower ICT-based people communities.
2. Empower the communities that already have centers of excellence through ICT implementation;
3. Conduct "Training for Trainers" program for selected people or public figure; and
4. Increase individual and people literacy through various training programs.

b. Research and development
1. Analyze the needs of Indonesian people for ICT in accordance to the context;
2. Map the ICT capability and skill of the Indonesian people;
3. Measure the gap of ICT human resources in supply and demand, qualitatively and quantitatively; and

4. Study the national framework for building human resource capacity in holistic and comprehensive way.

c. Constructing and implementation
1. Empower various public information centers and agencies;
2. Improve the infrastructure of special technology to support the e-community activity;
3. Connect various information centers in national networks; and
4. Socialize knowledge-based society concept and pilot projects in communities.

d. Advisory and consultancy
1. Arrange national strategy to replicate successful ICT initiative;
2. Empower ICT centers of excellence in order to have perpetual and continuous programs;
3. Assist the composing of strategic partnership in ICT implementation for certain communities;
4. Have benchmarking program among successful centers of excellence to get the best role model.

PROGRAM IMPLEMENTATION

Indonesia as archipelago state, with the population of approximately 238 millions, has presidential government system. The central government institutions consist of 39 ministries and departments. District governments consist of 33 province governments and 471 regencies.

NICT-HRD, in cooperation with KOICA (Korea International Cooperation Agency)

In the national scope, we have established cooperation by founding NICT-HRD that aimed to increase people and government official's capability in utilizing ICT, promoting advanced technology as the empowerment of the community and the alleviation of poverty, reinforcing the cooperation among the government agency and private sector in the development and the ICT utilization, as well as formulating the cooperation in the field of broad research and development of ICT. This project will provide training centre, ICT service centre, data center, dormitory and other supporting means. In 2008, this project was established in the Syarif Hidayatulah Islamic State University and the Jababeka Industry Complex, with the soft loan funded by Korean Government.

ICT Training Center

Towards the development of human resources, Ministry of Communication and information Technology has facilitated the ICT establishment of training centers for the district government officials that are centered in four locations, they are Makasar, Banjarmasin, Padang and Semarang. The role of Ministry of Communication and Information Technology are to provide computer facilities and instructors. The operational duty was carried out together with the District Government.

Joint study in ICT research

We have established joint study and research with Korean Information Society Development Institute (KISDI). During 2008, we had study visit to Seoul, Korea, as some part of the 2nd joint study. The joint study was established by MCIT's Research and Development Agency together with KISDI and SK Telecom. The Study visit was aimed to sharpen report material produced by the study, and also to study Korean experiences in the making and the application of the policy in the competitive telecommunications business and the development of the ICT industry, in accordance with the topic of the policy research that was carried out, which are "Future Telecommunication Competition Policy" and "ICT Industrial Policy".

CIO Graduates Scholarship Program

This scholarship program is one of the priority programs conducting by MCIT to increase the ICT capabilities of government official, in order to accelerate implementation and development of e-government in Indonesia. This program have started since 2007 in collaboration with University of Gadjah Mada (UGM) and Institute of Technology Bandung (ITB) for Information Technology Graduates Program in Chief Information Officer (CIO) specialization. This program provides scholarship for 55 government officials in central and district government each year. In 2008, we have established collaboration with Institute of Technology Sepuluh Nopember (ITS) to provide graduate program in Telematics. This program provides scholarship from MCIT for 25 government officials.

ICT Curriculum Composing for ICT Training Center

In the efforts to support training and workshop in ICT sector, we have compile competency standards for :
1. Computer operator;
2. Computer programmer;
3. Computer Technical Support;
4. Computer Network and System Administrator;
5. Multimedia Service;

6.   Public Relation;
7.   Telecommunication Satelite Technician.

Furthermore, we are in the preparation stage of composing ICT curriculum for Basic and Advance Level for ICT training and workshop in Indonesia, especially in e-government, IT network, and IT Database.

In addition, we are also in the final stage of composing competency standar for Chief Information Officer (CIO) and have been followed up by the composing the CIO curriculum.