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ICT Development Strategies

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LIST OF ACRONYMS

3G:	Third-generation
APEC:	Asian Pacific Economic Cooperation
ASEAN:	Association of Southeast Asian Nations
BCN:	Broadband Convergence Network
CAGR:	Compound Annual Growth Rate
CCP:	Chinese Communist Party
CID:	Center for International Development
CNIC:	China Network Information Center
CRM:	Customer Relationship Management
DER:	Digital Economy Rankings
EBS:	Educational Broadcast System
EIU:	European Information Union
ERI:	E-Readiness Index
ERP:	Enterprise Resource Planning
FDI:	Foreign direct investment
FWB:	Fixed (wired) broadband
FWBS:	Fixed (wired) broadband subscription
GAPP:	General Administration of Press and Publication
GDP:	Gross Domestic Product
GNI:	Gross National Income
ICT:	Information and Communication Technology
IDI:	ICT Development Index
IETF:	Internet Engineering Task Force
IPR:	Intellectual Property Right
ISPs:	Internet Service Providers
ITIO:	Information Technology and Innovation Foundation

ITU:	International Telecommunication Union
KADO:	South Korea Agency for Digital Opportunity
KII:	Korean Information Infrastructure Initiative
KISA:	Korea Information Security Agency
KONEPS:	Korea Online E-Procurement System
KOREAN:	Korea Advances Research Network
KOSEF:	Korea Science & Engineering Foundation
KRF:	Korea Research Foundation
M2M:	Machine to Machine
MB:	Mobile broadband
MBS:	Mobile broadband subscription
MEST:	Ministry of Education, Science and Technology
MIIT:	Ministry of Industry and Information Technology
MKE:	Ministry of Knowledge Economy
MNC:	Multinational Corporation
NDRC:	National Development and Reform Commission
NGHCN:	Next Generation high Credibility Network
NIA:	National Information Society Agency
NIDA:	National Internet Development Agency
NRI:	Networked Readiness Index
NSTC:	National S&T Council
PCT:	Patent Cooperation Treaty
PPP:	Purchasing Power Parity
S&T:	Science and Technology
SACI:	Southeast Asia Competitive Initiative
SCM:	Supply Chain Management
SK:	South Korea

UNDESA: United Nations Department of Economic and Social Affairs

USAID: U.S. Agency for International Development

VNCI: Vietnam Competitiveness Initiative

WCIT: World Congress Information Technology

WIPO: World Intellectual Property Organization

WTO: World Trade Organization

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Introduction

With the growing speed of internet, wide spread of smart phones, the gaining importance of wireless data transfer, all life areas and all industries are affected gravely by information and technology. Not just in economy, but also in other basic areas such as government and education, the using of computers, internet is no longer strange. The ICT development will not stop at where it is right now. Instead, it is improving faster than we have forecasted in the last decade. Considering the movement of the ICT industry particularly, we can observe a lot of milestones achieved in the computer science, broadband speed and wireless telephony. However, the developed countries are better and earlier equipped with technology than the developing countries or new-industrialized countries. Since the internet was first invented in USA, Canada and Europe followed and joined the growing process. After a decade, internet now reaches the Asian region as well as African countries intensively while USA, Canada and Europe are focusing newer inventions. Within the Asian region it exists considerably another technological gap among countries. The countries with higher income such as Japan, Singapore, South Korea has succeeded in implementing ICT in all social and economic areas. The rest of the countries, including China, Malaysia, Thailand, Indonesia, Philippines, Vietnam, Laos, Cambodia, are far behind in information technology. Nevertheless, it´s necessary for all nations, weather developed or developing, to keep on nurturing ICT development to be a part of connected world. The question is how a nation can successfully adopt ICT and benefit from all advantages at best. Unfortunately, there is no common guideline for all countries. Without identifying specific factors of each country and a lot of effort made by government, no country can achieve high ICT performance in the long run.

The purpose of this paper is three-fold:

To identify the characteristics and political options of a country, that would affect the success of its ICT adoption.

To identify clusters of nations upon the international ICT indices and GNI per capita

To provide an overall guideline that incorporates these nations toward developing higher ICT indices.

This paper shows income level and social background can play very important roles in country´s ICT development. Within Asian region, South Korea represents the developed group, China and Vietnam characterize the developing group. China and Vietnam have similar political structure but the first is much bigger than the latter. Therefore, ICT implementation is different between these 2 countries. This paper is organized as follow, first, short overviews of ICT development as well as the advantages of ICT. Second, 3 countries (South Korea, China and Vietnam) are described in details in both national characteristics and ICT performance. In this section, the ICT industry and development of each country are analyzed in terms of what they have done to adopt ICT as well as how much progress has been made. In section 4, the information about popular ICT ranking indices are given. The three chosen indices are Networked Readiness Index, Digital Economy Ranking and ICT Development

Index. The empirical research of cluster building for 12 selected countries is presented in Section 5. In the final section, the guidelines for better ICT adoption are presented. In particularly, Vietnam and China are discussed in more details and their political recommendation is drawn.

The data used in this paper are mostly from World Bank, Information Technology Union. The indicators and indexes provided are for 2010 or 2011. Because the crisis from 2007-2009 could affect negatively in the world economy and ICT particularly, GNI per capita and GDP growth rate of 2010 present relatively better research result.