Development of a Policy on National Information Infrastructure for Disabilities in Thailand: Perspectives of Policy Makers and Disability Leaders

ปัทมากร เนตรวิจิตร[1]

กุลธิดา ท้วมสุข[1]

กันยารัตน์ เควียเซ่น[1]

Pathamakorn Netayawijit

Kulthida Tuamsuk

Kanyarat Kwiecien

Abstract

This research article is part of the study that offers guidelines for the development of a policy on National Information Infrastructure (NII) for the disabilities in Thailand. It aims to investigate the policy development process as well as its components and factors concerning the NII for disabilities from the viewpoints of policy makers and disability leaders. The methodology employed is qualitative research using in-depth interviews with policy makers of national information technology and disability's livelihood and disability leaders who are the chairs and members of committee of organization and associations concerned with persons with disability. The results of the research reveal that policy development process consist of: 1) examination into the current situation of the disability, law, regulations,

guidelines, and that of 'Assistive Technology' (AT); 2) brainstorming among the persons working with disability through focus group; 3) stakeholder seminar workshop to promote the participation and exchange of ideas towards policy framework and operational guidelines; 4) formulation of policy framework and policy guidelines; 5) seminars to disseminate knowledge and understanding in the light of state regulations; and 6) establishment of media channels to extend the knowledge, the news, and information concerning the ministry's activities. The components of policy include: 1) persons with disability (consumers) which is the vital component of the policy; 2) organizations/units (service deliverer) consist of public and private organizations whose works directly and indirectly concern with people with disability; 3) information technology, communications, and AT equipment for the disability; 4) information delivery services and other related operations; and 5) budget which is the significant component which will help push through the operations of policy framework that would meet the projected plan and objectives. Other related and important policy factors which will impact the development of policy are the formulation of policy development vision which will be in accord with the life quality development plan for disability and analysis of external and internal environments.

Keywords: National Information Infrastructure, NII, Disabilities, Policy development, Policy process

1. INTRODUCTION

Achievement of National economic and social development depends heavily on efficiency in development of human capital in respect to equality and betterment of living conditions. Therefore, people of developed countries are normally perceived with healthiness of physical, mental and intellectual conditions.

In fact, no matter how much countries are developed in the society there are still some groups of people with disabilities of bodies, mental state or intelligence known as '*People with Disabilities*'. However, these disabilities do not undermine their competencies and values as human beings. If these people are treated properly as well as provided sufficient necessary services and care, they are ultimately able to become treasured human capital for national social and economic development. In the 8th National Social and Economic Development Plan, human capital was the centrality of the holistic development program through which human capabilities and healthiness of social environment were underscored in order to achieve efficiently development. The government therefore was aware of importance of human resource development and has then enacted the Rehabilitation Act of 1991, whereby people with disabilities were also entitled as important members of the society. Since the disabilities have caused many troubles for living conditions, e.g. working and studying, it is necessary to provide disabled people with opportunities for living and working in society as normally as ordinary people. The Act entitles disabled people to access to required help, development and needed rehabilitation through medical services, education, occupation opportunities as well as stimulates the holistic mechanism of public awareness and actions in regards to rehabilitation for people with disabilities (Committee on Rehabilitation, 2007). Internationally, the UN Secretariat for the Convention on the Rights of Persons with Disabilities (SCRPD) has promoted the rights of person with disability through works regarding economic and social development while the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) has been functioning in development of person with disability at the regional level by prioritizing the access to information and communication technology and development of fundamental facilities for disability as the most important thing to be handled (National Plan for Development of Quality of Life for Disability no. 3- 2007-2011, 2001).

The 10th National Economic and Social Development Plan (2007-2011) has profoundly directed the way in which Thailand has been developed and improved by focusing on 'people-centered development' approach. Human capital and social development has been conducted with the aim for the transition to a knowledge-based society and economy. With this plan, the access to public information among Thai people, including person with disability, is of essence. All considered, the introduction of the framework of development of infrastructure is instrumental in allowing disabled people to evolve to the highest level of their potential, to be self-reliant, and to live equally with others within a barrier-free society (United Nations, 2003). Usage of information and communication technology (ICT) among Thais is still at low level and with no full coverage. Most Thais receive news and information via conventional access such as television and radio rather than modern technology; especially people living in remote area, elderly groups, and person with disabilities are hardly able to access to such information technology (Second Thailand ICT, Master Plan (2009-2012), 2009). The survey on usage of Internet among 8,000 people with disabilities from 4 regions and 39 provinces nationwide reveals that handicap with disability of seeing is using Internet the most. The interesting point is that the home-access Internet rate among people with disabilities is greater than that of overall country at 12% to 9% respectively. The particular problem for Internet usage is that web accessibility does not support the needs of disability. This issue has been raised as the national concern for telecommunication enhancement. The asymmetry of access to information technology, so called '*Digital divide*, is caused by problems with information infrastructure, namely expansion of computer usage and Internet usage. These problems also lead to inability to eliminate poorness and to push forward sustainable economic development (Charoen, 2009). This digital divide has aligned with the findings of the assessment of strength, weakness, and threat for information technology development of the 1stMaster Plan for Thailand ICT

Pathamakorn Netayawijit, et al.

Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

development (2001-2009). Even though the backbone network in Thailand has been strongly developed and advanced to facilitate more efficient information transfer to provide users with better services quality, in fact, the digital divide remains and causes difficulties to access to information among people living in remote area and disabled persons. Thus, it is necessary to improve information infrastructure and related facilities that allow expansion and increase in services quality of information technology, especially the enhancement of last mile access that connect users and the backbone network.

The fact that the opportunity and ability for access to information technology of disabled people is the strategic theme highlighted in the ICT Master Scheme 2020 as well as the failure to reach goals of the development of information infrastructure for disabilities people, as mentioned above, make highly essential for appropriate policy suggestions on the information infrastructure. Besides, policy suggestions on this matter should be systematically arranged and organized with information-oriented basis retrieved from authorities that directly engage with disabilities people concerns, disabilities people, as the key stakeholders, as well as organizations and its members working for benefits of the disabilities group. The study is basically ground within the conceptual framework of 'National Information Infrastructure: NII', Thailand Information Infrastructure, and those information infrastructure available for disabilities groups. The method is based on the analysis and theoretical standpoint of 'Information Behavior', by Wilson, through which policy suggestions on information infrastructure for disabilities people are constructed.

This article is a part (phase 1) of a policy research on the Development of a Policy on National Information Infrastructure (NII) for Disabilities in Thailand. The research objective is to study the policy development process as well as its components and factors concerning the NII for disabilities focusing on the perspectives of national policy makers and leaders of the disabilities in Thailand.

2. LITERATURE REVIEWS

This research paper which is a part of a study on the development of a policy on NII for disabilities in Thailand is using a policy research approach as a conceptual framework of the study. It aims specifically at building the 'information bridge' between the policy makers and its citizens. The analysis and presentation of the information will be employed in proposing resolutions to the basic issues regarding policy, which would be of great benefits to the enhancement of the society and the nation (Majchrzak, 1984).

Policy research is the discipline of which development has been rapidly taking place. This was due to the needs of those who are in the management levels in using the results for decision making and operations related to human resources management. The definition 'interdisciplinary policy research' includes policy analysis which is a study that evaluates and predicts the impacts of certain policies through comparison study. The methodology of the research includes the following steps. First, the researcher identifies problem(s) of the study or emerging issues in the society. During this step, the review of the related literature should lead to the identification relationship between independent variable found retrieved from policy and dependent variable from emerging issues in the society to form a hypothesis that reveals the impact from the implementation of the proposed policy. The next step is collecting data, analyzing data, and interpretation of the data. The last step is to summarize and offer recommendations for those in the management levels including consumers. Nevertheless, the researcher is to possess knowledge and expertise in using the following techniques: economics, public finance, organization behavior, communications and media, including system and statistic analysis (Wiratchai, 1995).

Information Infrastructure refers to basic infrastructure concerning information technology services to be administered to people in general. The services cover 'Administrative Structure and System', Information and Communication Technology',

Pathamakorn Netayawijit, et al.

Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

'Human Resources', and 'Services' (Information Infrastructure Task Force, 1993). Major developed countries have structurally set policy or regulations regarding information infrastructure called 'National Information Infrastructure' (NII). The first country to operated NII—set policy concerning telecommunications—was the United States of America in 1991 during the reign of President Bill Clinton with Vice President Al Gore as an overseer. Its objectives were to develop telecommunications network, delivering services in regard to communications including hardware and software. Other developed countries which have progressed or breakthrough in terms of information and communication technology have also purposively developed basic national information infrastructure. For instance, Japan as well as Korea which place first priority in developing 'Super Highway' telecommunications network with the aim of being leader in the realm of software and network. Other than advancing 'Super Highway' telecommunications network, at the same time Korea has developed information technology service deliverance as well. Like many countries in Asia, Singapore has set the policy in modernizing national information infrastructure with intention to leverage itself to be the 'business hub' of Asia (Cordeiro & Al-Hawamdeh, 2001).

Other issues include: 1) inequality in the access to information which not only experienced by people in general but also disabled persons whose physical difficulties contribute to obstacle in accessing to the information; 2) lack of skills, knowledge, understanding on the use of technology—the policy should take into consideration the ability of the technology users; 3) lack of good information management, including the validity or reliability of the obtained information; 4) the issue of whether the information if up-to-date or not; and 5) understanding towards the context in the society in order to set a policy that most responds to the target group e.g. students, academician, as well as people with disabilities who need different kinds of information (Lievrouw & Farb, 2003)

As for Thailand, set within the national constitution is the key principle in using information infrastructure that would maximize the benefits of the development of the country as asserted in article 78 "The state is to empower the local by decentralizing its power". Such power given should allow the local to be autonomous, be able to execute its own decision making in different operations, in developing the local economic and public health system including enhancing its basic information technology infrastructure that cover all areas—locally and nationally. The province(s) with sufficient potential is then to be elevated as a big local administrative office which focuses on the people's needs or intentions". Thailand, per se, has not yet set policy that wholly concerns with national information technology infrastructure, but rather established only a plan that deals with the information technology and communication.

In the study of 'development of a policy on NII for disabilities in Thailand', the researchers have modified different conceptual frameworks and theories from the previous researches and come up with the following the study's conceptual framework which compose of four main elements: 1) related policies, laws, and information for the disabilities, 2) information infrastructure, 3) information behaviors of disabilities and 4) policy research techniques. The said elements will be used in order to develop a guideline for policy development on NII for the disabilities in Thailand. Within this policy research, details of each main element can be seen as demonstrated in Figure 1.
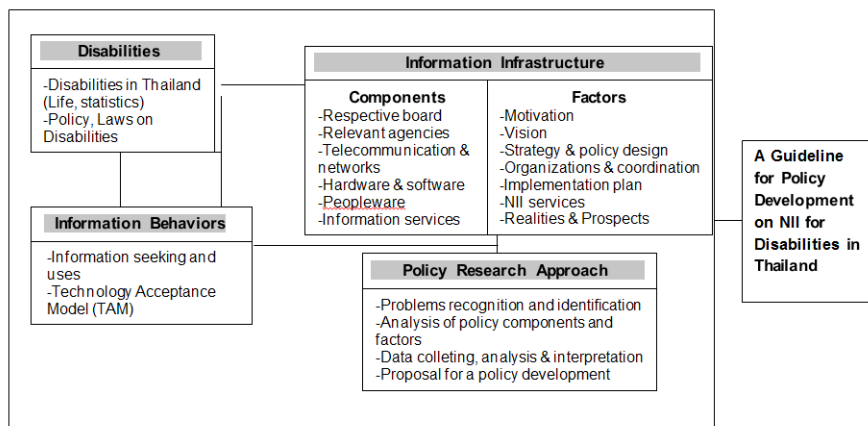
Pathamakorn Netayawijit, et al.

Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

Figure 1 A Research Conceptual Framework

3. RESEARCH METHODOLOGY

The first phase of the study is where policy process, components, and factors concerning NII development for disabilities will be examined from the perspectives of 'policy makers' and 'disability leaders' by using qualitative research. The populations and samples of the study are:

1. **Policy makers** refer to six president or vice president or the members of the national committees involving with information infrastructure planning and disabilities policy planning - two members from three sets of the committees—which are:

1.1) A Working Committee on Policy Development of Thailand ICT2020 Framework,

1.2) A Steering Committee on Policy Development of Thailand ICT2020 Framework, and

1.3) A Planning Committee on the 4th National Plan for Development of Quality of Life of Disabilities of Thailand, B.E. 2555-2559.

2) **Disability leaders** refer to persons who play the roles of leaders or are famous in help empowering and developing people with disabilities in Thailand. The mentioned people include a total of eight heads and representatives from 4 disabilities-related associations—two samples were taken from each association. The four associations are:

    2.1) Association of Persons with Physical Disability International (APDI),

    2.2) Association of the Physically Handicapped of Thailand,

    2.3) Thailand Association of the Blind, and

    2.4) The National Association of the Deaf, Thailand.

Instrumentations employed in this study were semi-structured interview. The data were collected using in-depth interview during January – March 2013. The preliminary collected data were then analyzed and presented to be used in the next research processes.

4. FINDINGS AND DISCUSSIONS

1. In regard to policy development process, the results of the study found that policy makers have operated in accord to the following stages:

1.1 Study the current status and situation of persons with disabilities, law, regulations, guidelines, including the current situation of 'Assistive Technology' (AT). Additionally, the researcher also looked into data which relates to handicap as well as conducted interviews with related organizations such as 'National Office for Empowerment of Persons with Disabilities (NEP)', 'National Statistical of Thailand', AND 'Ministry of Education'. The study also looked into the needs towards ICT and AT of the persons with disabilities and related organizations or associations in order to use the collected information as preliminary data in implementing the policy development project operation.

1.2 Brainstorming of among those whose works are related to persons with disabilities by using 'focus group'. For example, focus groups were conducted

Pathamakorn Netayawijit, et al.

Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

10 times with experts, associations/organizations that work closely with the handicap. Each time, the focus groups were categorized based on related data, organizations and types of disabilities. The objectives in conducting the focus group are to bring about the persons with disabilities access to and benefits of the information which would lead to the promotion and empowerment of the handicaps. The results from the focus group will be analyzed together with the findings in 1.1 and proposed as policy implication as well as guidelines in developing the policy. The guideline will then be used as the ministry's pilot operation.

1.3 Two 'stakeholder workshops' - Its aims are to strengthen the participation and exchange of ideas between stakeholders towards the drafted policy framework and guidelines which incorporated the results from the focus group as well as the government's plan and that of the related private organizations. The comments and recommendations for the development and promotion of ICT and AT provided by participants who joined the workshop has rendered a complete and applicable guideline in the promotion and empowerment of the disabled. A Total of 100 people participated in the workshops.

1.4 Conduct a policy framework and a policy guideline which were the results of the focus group and the workshop.

1.5 Organize seminars in order to share knowledge concerning state regulations. The seminar was conducted in Bangkok and surrounding areas 1 time and 3 regional seminars were conducted in Chiangmai and Songkhla Provinces. The aims of the seminars are to render understanding and awareness of the importance of ICT and AT among the persons with disabilities, including prompting the related agencies in handling the technology, as well as informing the related persons of the operation of Ministry of ICT which will be the mean in developing the quality of life of the disabled in respect to ICT and AT to be implemented in the future.

1.6 Finding the different channels in order to disseminate the information/ knowledge/news concerning state regulations, including implement the activities of

the Ministry of ICT through various forms of media. For instance, banners to be posted in at least 100 the government's websites to publicize the state regulations; books to be produced in both regular text books and those published in Braille text; brochures or posters; other websites that are accessible to general citizen; and various kinds of channels which are suitable to persons with different types of disabilities.

When analyzed the processes in developing the policy of major organizations which involve in the designation of NII in comparison to policy process of Dukeshire & Thurlow (2002), Majchrzak (1984), and Wiratchai (1995), the study found that Thai policy makers has put much emphasis on studying related law, regulations, and guidelines. It can be said that the promotion and development of the life quality of disability B.E. 2550 in article 20 (6) and 45 focus on the life quality in terms of disability's rights in attaining access to and benefits of ICT. In addition, the policy also stresses on limiting bias towards disability to diminish economic and social disparity that would bring forth the handicapped access to and benefits from state's public facilities, welfare, and assistance in the respect to information, communication services, and information technology. Such are to be delivered equally and sustainably that would lead to substantial guidelines (Ministry of ICT, 2012).

From the view points of the disability, legally, Thailand has appropriately prioritized on the life quality of persons with disability. Nevertheless, the designation of NII policy for disability is considered vague compared to other countries, such as Japan and Singapore. Also, disability leaders show no possession of knowledge or understanding in regard to policy development process. Moreover, though floors were open for the disabled to share ideas, very few participated in the determination of the policy. The mentioned findings are consistent with the research conducted by Saengphet (2011) which noted on the issues of Thai law in relation to the disability's access to information technology.

Pathamakorn Netayawijit, et al.
Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

2.   In regard to the essence of NII for the disability project, policy makers and disability leaders agreed on the following—the state is to: 1) promote and support disability's access to and benefits of ICT and AT that is suitable to persons with different types of disability, 2) encourage that positive awareness and attitude in access to and benefits of ICT and AT be built in the society, 3) integrate information and services concerning ICT and AT from both public and private sectors, 4) enhance the ability of the disability and associated network to develop the life quality of the disabled in regard to education and professions, 5) strive for the determination of a just and internationally accepted standard in delivering services of information, news, telecommunications, public media, and communication assistive technology, 6) promote the disability's access to and benefits of information, news, communications, telecommunications services, ICT, communication technology facilities, and public media services, and 7) ensure that disability receive equal opportunity and equipment which will be used to gain access to information, news, telecommunication services, ICT, AT, and public media services when compared to that of other countries, such as Japan, Singapore, Korea, and The United States. It is found that the essence of the NII policy in such countries clearly aims at developing telecommunication network, transportations services including the development of hardware and software (Cordeiro & Al-Hawamdeh, 2001).

3.   In the light of components of policy development, it was found that in setting NII policy, the Ministry is required to take into consideration the following components: 1) Persons with disabilities' (information receivers) is an important component for it is the component that provides an inputs or requirements in supporting and promoting persons with disabilities, which is the main objective of the operation. Studied areas covers the current needs towards the use of technology information and facilities found in persons with disabilities. 2) Organizations/Units (information provider) consist of both public and private sectors whose works are either directly or indirectly related to the disabled as well as other organizations or

associations working with persons with disabilities. The related organizations can be categorized by sectors as followed: organizations of which task concerns with plan and policy, services, or research and development of ICT and facilities. Nevertheless, those working in the service sector are required to meet the minimum standard, meaning the organization is to suitably meet the needs of persons with abilities in terms of access to information. 3) ICT equipment and tools including telecommunications technology facilities are the vital components that enhance and support persons with disabilities to gain access to and benefits of information services. Aside from that, the mentioned tools are also made access of the following possible: communications facilities, public media for handicap, standardized technology information. Presently, there are numbers of domestic and international research institutions and public service units including private sectors who work to develop such technology. 4) Related guidelines of the operation and service deliverance is the element which determine the mechanism and the operational process of the project that render the handicaps effective access to information from both public and private sectors. Additionally, the determined guideline is required to be consistent with the ministry's strategy and operational plan. 5.) 'Budget' is an important element that makes the operation under the determined guideline possible and completed in accord to the set objectives. The Budget that was allocated to promote and support the life quality of the persons with disabilities is approximately 10 percent of the national budget in one fiscal year. The promotion of the handicap life quality covers health, livelihood, including ICT. Nevertheless, it seems that the budget allocated to promote the life in terms of ICT and facilities could not sufficiently cover the needs of the people with disabilities. Because of such limited budget, the determination of the project's framework and budget have to be clearly stated and are to be applicable to the actual operation.

Consequently, from the research results, it can be concluded that the main components in developing policy of the Ministry of ICT which are similar to that of Cardeiro & Hawamdeh (2001) and Kraemer & Dedrick (1996) covers 2 respects: 1) 'Responsible Units'—This includes policy makers; those who oversee the policy setting; and 2) 'Telecommunications Network and Technology', computer equipment, computer program, and services. The elements that are inconsistent to the emphasis of the ministry cover 3 areas: 1) stakeholders—persons with disabilities, 2) Policy development process (which has already been determined by the ministry), and 3) allotted budget to be used in the policy development. As per the concept proposed by Jaeger (2006), technology information use of people with disability can be summarized as in the following: 1) the promotion of access to technology information in people with disability deemed unsuccessful because of limited allocated budget; 2) limitations in terms of bureaucratic procedure, either in the light of its system, regulations, or operations; 3) limitation from the legal perspective; and 4) the unit's management system. The further study in developing the policy should be made in light of 'in what way' the access of information for disabilities should be shaped to make the access most suitable for people with different disability. The monitoring and evaluation of whether or not the access to information is achievable should also be included in the study.

4. In respect to factors affecting policy making, policy makers have set its vision of policy making based on the 'Promotion of Disability Life Quality Plan' and analysis of external and internal environment. The said factors have posed impacts the development of information technology policy. It can be seen from the policy analysis that following indicators are influential to the projected impacts of ICT for disability: 1) Inconsistency of the Policy—This might due to committee responsible for the policy making that was changed regularly; 2) Technological Skills & Knowledge of the Disabled Persons—This problem has posed some gaps between different users; and 3.) 'Budget' allocated to the development of policy for

persons with disabilities in Thailand which is accounted for only 10 percent of the national budget. The said amount of budget devoted to the promotion of the disabled is considerably less that those allotted for the development in other areas.

In formulate or develop policy in which people with disability are involved, following dimensions are to be taken into consideration: 1) analysis of the definition of 'from the perspective of disability; 2) the analysis on political and economic factors affecting the policy development; 3) management in access to technology information for disability, including related services provided for people with deviated disabilities; and 3) monitoring and following-up with the results if the policy is achieved as well as the operation made in line with the policy (Jaeger, 2006)

5. RECOMMENDATIONS

The results the first phase of the research is a study of which data were collected through interviews with policy makers and disability leaders. The gain perspective towards the policy development of NII for disabilities in Thailand were provided in the areas of policy making procedure, essence of the policy, components, and factors affecting the development of the policy. The study, however, still have not covered the examination into the needs and behavioral patterns of the disabilities who would be the one who receive the direct influence from the policy; this part of the study will be conducted the 2nd phase of the research. The results retrieved from both phases will then be analyzed and used as policy implications to be disseminated to related stakeholders.

6. REFERENCES

Charoen, D. (2009). Inequity in access to technology (Digital Divide): Problems and solution. Available online at http://www.bcoms.net/article/detail.asp?id=479. (accessed on 20 January 2014).

Pathamakorn Netayawijit, et al.

Development of a Policy on National Information Infrastructure for Disabilities
in Thailand: Perspectives of Policy Makers and Disability Leaders

Committee on Rehabilitation. Ministry of Social Development and Human Security. (2007). Persons with Disabilities, National Development Plan No. 3. Available online at http://www.oppd.opp.go.th. (accessed on 20 April 2014).

Cordeiro, C.M. and Al-Hawamdeh, S. (2001). National information infrastructure and the realization of Singapore IT2000 Initiative, **Information research**, **6**(2), Available online at: http://InformationR.net/ir/6-2/paper96.html. (accessed on 20 April 2014)

Dukeshire, S. and Thurlow, J. (2002). Understanding the link between research and policy: Rural communities impacting policy project. Available online at http://www.raralnovacotia.ca. (accessed on 20 Jan 2014).

Information Infrastructure Task Force. (1993). **The national information infrastructure: Agenda for action.** Washington, D.C.: Information infrastructure Task Force.

Jaeger, P. T. (2006). Telecommunications policy and individuals with disabilities: Issues of accessibility and social inclusion in the policy and research agenda **Telecommunications Policy**, **30**(2),112-124.

Kraemer, L. and Dedrick, J. (1996). National information infrastructure: A cross country comparison. Center for Research on Information Technology and Organization. Available online at http://escholarship.org/uc/item/8h01s255. (accessed on 20 April 2014).

Lievrouw, L. A. and Farb, S. E. (2003). Information and equity. **Annual Review of Information Science and Technology**, 37(1), 499-540.

Majchrzak, A. (1984). **Methods for Policy Research**. New York: SAGE Publication.

Ministry of ICT (Thailand). (2012). ICT and assistive technology for all disabilities: Final report. Bangkok: The Ministry.

National Plan for Development of Quality of Life for Disability no. 3- 2007-2011. (2001). Bangkok: A Committee on National Plan.

Saengphet, W. (2012). Thai legal issues and access to telecommunications of
disability**.** Master's Thesis of Laws, Thammasart University, Thailand.

United Nations. (2003). The promotion of access to information, communication
and information technology facilities for people with disabilities. Available
online at http://www.mict.go.th/download/ICT_masterplan/01_ICTMP_ES_
revised_v3.doc(1). pdf. (accessed on 20 Jan 2014).

Wiratchai, N. (1995). **Advanced research and statistics methodology.** Bangkok:
Chulalongkorn University Printing House.