UNIVERSAL DESIGN FOR BUILDING AN INCLUSIVE SOCIETY IN THAILAND: COMMUNITY-BASED SOCIAL MARKETING

Siripan Krasaesan

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy (Communication Arts and Innovation) The Graduate School of Communication Arts and Management Innovation National Institute of Development Administration 2016
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World population is changing to become an aging society in regions such as Europe and North America. Thailand too is becoming an aging society. The data from the national statistics office forecasts that in the next 10 years Thailand will become a complete aging society. It is time to address this situation, which not only concerns the income or health of the elderly, but also about how they can live comfortably in an aging society. Universal design principles could help them to live better. It can aid accessibility to all places and allow them to use facilities safely, and aid their participation in their communities.

Normally we are concerned with issues that affect the economy and their impact on the environment, but now the population structure has changed. We should consider how to improve living conditions for all people in the society. Architects and students in architecture are the key persons to design such improvements and encourage the owners or developers to be concerned about equal living conditions by promoting Universal design to create designs for all.

This research began with interviews with the campaigner who had direct responsibility for creating each project to understand its objective, the process of universal design, and evaluate the outcome. Moreover the campaigner is the key person who had direct contact with the community to gather information from users—that is, the elderly and persons with disabilities—from the beginning until the end of the project.
The Community-Based Social Marketing tools utilized to change behavior in this research were the use of communication and incentives. Communication in Community-Based Social Marketing has the same characteristic as promotion in social commercial marketing. The incentives used in Community-Based Social Marketing are also the same as in social and commercial marketing based on price. Tools are tactics used to remove barriers in Community-Based Social Marketing in areas such as communication, commitment, incentive, and norms.

The best way to remove knowledge barriers about universal design in community renovations was found to be communication. These let target groups have a better understanding of universal design concepts. The target groups were architecture students and users (this includes related persons such as family members and those living in the same community). Specialists were spokespersons who helped students to better understand universal design concepts in practice. The change agent was the person who was involved with the user to understand the physical environment.

Finally, the outcome of this project only impacted behavior change in a small number of people. In future, universal design should also be allowed to influence policy. Policy makers and relevant government agencies need to become part of future projects for universal design concepts to have a long term impact.
ACKNOWLEDGEMENTS

A study in Universal Design for Building an Inclusive Society in Thailand: Community-Based Social Marketing started from the opportunity to work with an architect. Further research in the universal design led to a design that can help the society move forward. Upon a more thorough inspection, it was found out that our society is made up with various groups of people including persons with disabilities and elderly, both of which are also found in the author’s family.

This dissertation would not be possible had there been no support from everyone, including all the teachers from The Graduate School of Communication Arts and Management Innovation, especially Associate Professor Ousa Biggins (Ph.D.) an invaluable advisor. Her guidance and ideas helped correct any flaws in the research since the first brainstorm of the UD until the final draft. I would also like to thank Assistant Professor Asawin Nedpogaeo (Ph.D.) and Assistant Professor Nitta Roonkaseam (Ph.D.) for evaluating my performance, and every interviewee who gave up their precious time in order to submit their opinions which were very useful for this research. These include Yodyiam Theptaranon, Assistant Professor Antika Sawadsri (Ph.D.), Assistant Professor Rittirong Chutaprittikorn (Ph.D.), POL.LT.COL. Bundit Pradabsook (Ph.D.) and Krisana Lalai that not only did they gave their permissions to be interviewed but they also gave important data and were excellent advisor. There are more interviewees that were not mentioned but they also played a part in this research in fulfilling the much needed data. Last and not lease, I would like to say thank you to Professor Glen Lewis (Ph.D.) to help and support me.

Lastly I would like to thank my family for the constant and unwavering support also all my friends who are beside me until the very end.

Siripan Krasaesan
August 2016
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<td>Americans with Disabilities Act</td>
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<tr>
<td>ASA</td>
<td>Association of Siamese Architects under Royal Patronage</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<td>ATBCB</td>
<td>Architectural and Transportation Barriers Compliance Board</td>
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<td>CBSM</td>
<td>Community-Based Social Marketing</td>
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<td>CDAST</td>
<td>Council of Deans of Architecture Schools of Thailand</td>
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<td>CPD</td>
<td>Continuing Professional Development</td>
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<td>DDA</td>
<td>Disability Discrimination Act</td>
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<td>DEPD</td>
<td>Department of Empowerment of Persons with Disabilities</td>
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<td>GACC</td>
<td>Ghana Anti-Corruption Coalition</td>
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<td>GNCRC</td>
<td>Ghana National Coalition on the Rights of the Child</td>
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<td>GNECC</td>
<td>Ghana National Education Campaign Coalition</td>
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<td>GPF</td>
<td>Growth &amp; Poverty Forum</td>
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<tr>
<td>ICF</td>
<td>International Classification of Functioning, Disability and Health</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>KMITL</td>
<td>King Mongkut’s Institute of Technology Ladkrabang</td>
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<tr>
<td>KMUTT</td>
<td>King Mongkut’s University of Technology Thonburi</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>NCAP</td>
<td>National Coalition Against the Privatisation of Water</td>
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<td>NCSU</td>
<td>North Carolina State University</td>
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<td>NESDB</td>
<td>National Economic and Social Development Board</td>
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<tr>
<td>RCCAB</td>
<td>Research and Creative Center for Architecture and Built Environment</td>
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<td>TAT</td>
<td>Tourism Authority of Thailand</td>
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<tr>
<td>THPF</td>
<td>Thai Health Promotion Foundation</td>
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<td>UD</td>
<td>Universal Design</td>
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<tr>
<td>UN</td>
<td>United Nation</td>
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<td>UNESCAP</td>
<td>United Nations Economic and Social Commission for Asia and the Pacific</td>
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<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<td>WHO</td>
<td>World Health Organization</td>
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CHAPTER 1

INTRODUCTION

Today, one of the most important goals for all countries is to create an inclusive society. An inclusive society is a society where the researcher works to improve the standard of living for all people. Thailand is a country that has the capability to offer such improvements to their population.

Universal Design (UD) could be the solution to create this hoped for inclusive society. Universal Design can ameliorate every aspect of our way of life, from products and services to our environment and programs. Some recent research proves that UD is appreciated by every member of society. They think that UD progress is really important for health and wellness. Also, people prefer to have buildings with outdoor areas, transportation with good accessibility, and clear explanations for their users. With the evolution of medical technology, people can live longer than before. At the beginning of the 20th century, the lifespan was only 47 years. Now it’s 76.

Also, UD can help Thailand to support demographic changes. Data from the Institute for Population and Social Research from the National Statistics Office showed that Thailand is becoming an aging society. An aging society is a society where elderly people over 60 years will represent more than 10% of the total population of the country. The proportion of the elderly in Thailand will increase to 12.9 million in 2025 and exceed 20 million in 2050. Meanwhile, persons with disabilities or users of wheelchairs will rapidly increase too (United Nations Population Fund, 2006).

Some studies about UD prove that some different sectors can be areas for improvement: The government sector, the private sector, the education sector and also NGOs can apply UD concepts. With this result, they can develop community-based social marketing campaigns to encourage people to change their behavior and create better living conditions for the elderly.
The contents of this chapter are below:

1.1 Research question
1.2 Objective
1.3 Statement of problem
1.4 Justification of the study
1.5 Inclusive society
1.6 Summary of the direction of the eleventh national development plan
1.7 A brief history of universal design
1.8 U.S. Regulation relate to universal design
1.9 Thailand Regulation relate to universal design
1.10 Human abilities and design
1.11 Universal design of the built environment
1.12 Target group of universal design
1.13 The concept of community based social marketing
1.14 Community-based social marketing could apply in universal design concept
1.15 Conclusion
1.16 Operation definition

1.1 Research Question

1) What are the processes of universal design campaigns in Thailand?
2) What are the strategies of community-based social marketing for universal design used in Thailand to create an inclusive society?
3) What constitutes the output of the strategies of community-based social marketing for universal design in Thailand?
1.2 Objective

1) To study the process of universal design campaign in Thailand.
2) To analyze the strategies of community-based social marketing for universal design used in Thailand to create an inclusive society.
3) To analyze the output of the strategies of community-based social marketing for universal design in Thailand

1.3 Statement of the Problem

Community-based social marketing (CBSM) has been used to understand behavior change in several areas such as health promotion and environmental concerns. However, in Thailand, many studies were done by selecting case studies from government sector, private sector, the education sector and also Non-government Organization (NGO). All these studies will be useful to improve the behavior of the population. Also, results may help to find better ways to create a more inclusive society in Thailand.

Finally the researcher found that research in Thailand normally has considered universal design only as a part of social marketing but there seems to have been no previous research combining the concepts of social marketing with UD. Therefore this study may provide an opportunity to involve the community in UD reform campaigns.

1.4 Justification of the Study

UD, a term coined in the 1980s, refers to the design and composition of an environment or any product, service or building in that environment. Its purpose is to ensure that it meets the needs of as many people as possible, regardless of size, age or ability (Centre for Ageing Research and Development in Ireland, 2011) The demographic, legislative, economic, and social changes that brought us to this point are increasing the momentum that will propel us into a 21st century that will need to
be more accommodating of individual differences. UD can provide a blueprint for the maximum inclusion of all people.

The focus of this dissertation is to address the process of design solution through the concept of Universal Design, which can be defined strategic and outputs under the CBSM.

This dissertation applied CBSM techniques to persuade people in their communities to participate in Universal Design projects to renovate the homes and spaces of the elderly and the disabled, as CBSM has been used previously in health issues, and in environmental and social issues, to foster sustainable change through policy.

1.5 Inclusive Society

Inclusive society was defined by the World Summit as a “society for all in which every individual, each with rights and responsibilities, has an active role to play”. An inclusive society needs to be based on different principles: respect for all human rights and fundamental freedoms, cultural and religious diversity, social justice and the special needs of vulnerable and disadvantaged groups, democratic participation and the rule of law. All these criteria have to be included in social policies that seek to reduce inequality and create flexible and tolerant societies that embrace all people. One of the most important key outcomes from the World Summit pledged to make the eradication of poverty, full employment and social integration overriding objectives of development (The United Nations Department of Economic and Social Affairs, 2009).

An inclusive society is a society that over-rides differences of race, gender, class, generation, and geography, and ensures inclusion, equality of opportunity as well as the capability of all members of the society to determine an agreed set of social institutions that govern social interaction (Expert Group Meeting on Promoting Social Integration, Helsinki, July 2008 as cited in United Nations, Department of Economic and Social Affairs. (2009). In addition, the Winchester District Strategic Partnership has identified an Inclusive Society as one of its key outcomes in its Community Strategy. They believe that people should be able to access services,
information, and housing that meet their needs, and people should be active in their communities. However, for the inclusive society to happen, legal, regulatory and policy frameworks must be formulated, upheld and promoted in all areas, so that equal access to ensure basic education, public space, facilities and information diversity and cultural pluralism are respected and accommodated (Winchester District Strategic Partnership, 2006).

“A society for all”, a concept created after the World Summit for Social Development (March 1995), is considered as one of the key goals for social development. This Summit promoted social integration and the participation of all people, including vulnerable and disadvantaged groups of persons, to which all member states have made commitments. (The United Nations Department of Economic and Social Affairs, 2009).

1) Create an economic, political, social, cultural and legal environment that will enable people to achieve social development.

2) Eradicating poverty in the world, with national actions and international cooperation.

3) One of the basic priorities for the members is to promote the goal of full employment with economic and social policies, and to allow all men and women to attain secure and sustainable livelihoods.

4) Members have to promote social integration and the protection of all human rights (non-discrimination, tolerance and respect for diversity, solidarity, security and participation of all people including disadvantaged and vulnerable groups of people).

5) Woman need to have an important role in UD. All countries need to encourage equality between men and women, in companies (salary, number of men/women and etc.) but also in politics, economics and social life. States have to enhance the leadership roles of women.

6) Also, states commit to give access to quality education to all, without distinction as race, national origin, gender, age or disability. They have to contribute to the full development of human resources and to social development.

7) Commitment to accelerating the economic, social and human resource development of Africa and the least developed countries.
8) Commitment to ensuring that when structural adjustment programs are agreed to they include social development goals, in particular eradicating poverty, promoting full and productive employment, and enhancing social integration.

9) Members have to utilize more efficiently the resources (financial, material and etc.) allocated for social development. They should not be misused and try to achieve the goals of the Summit as fast as possible.

10) Commitment to an improved and strengthened framework for international, regional and sub-regional cooperation for social development, in a spirit of partnership, through the United Nations and other multilateral institutions.

These commitments help strengthen human hope and fulfil the expectations of the inclusive society concept. Furthermore, developing an inclusive society is a key priority for governments in many countries, Asian or European.

To build an inclusive society, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) recommend that people with disabilities should have more opportunities. They should have access to basic services, education and financial support, and the ability to access the physical environment, public transportation facilities, knowledge, information and communication. With all those facilities, people with disability will feel integrated in the society as normal members. After the ESCAP conference in Incheon, Korea, Government of Asia and Pacific implemented the "Incheon Strategy to Make the Right Real for Persons with Disabilities in Asia and the Pacific". This strategy aimed to improve the situation of disabled people in economic, social and political life, and also enhance access to their physical and ICT environments, and reduce poverty (United Nations, Economic and Social Commission for Asia and the Pacific, 2012).

In Singapore, the government aims to achieve a stronger and more equal Singapore by helping the elderly to live well, and provide strong support for Singaporeans with disabilities. Singapore found that its population would age quickly over the next two decades. To build a fair and inclusive society they aim to create more opportunities for lower and middle income Singaporeans and also help senior citizens to live long, live well (Government of Singapore, 2012).
As the speech of Singapore Prime Minister,
What is an inclusive society? It is one where everybody benefits from the progress of the nation. It is one where everyone has a say, a stake and a sense of belonging. And it is one where everyone aspires to do better through their own efforts and feels that he or she has a real chance to move up.

The Prime Minister Lee Hsien Loong of Singapore speech at the Opening of Parliament, October 2011

In China, for people with disabilities and their families, they see a harmonious society as being part of an inclusive society. The Chinese Communist Party sees this as a shift from focusing purely on economic development to a more holistic goal of balance in society for people with disabilities and their families. A harmonious society would more specifically mean an inclusive society (Hussey, 2013).

An another example, in Europe, where Irish policies have provided sufficient financial support for middle and lower classes to assure their social welfare. Also, they promise access to education, health and housing for children and young people to break the cycle of disadvantage and exclusion experienced by poorer children. By focusing on this age group, the Irish government seeks to anticipate a better future. Moreover, Ireland has made available adequate heating systems in all local authority rented dwellings. With this important decision, Irish policies showed the way to improve the way of life of the elderly population, reduce inequality and support older people to live independently (Ministry of Social, Community and Family Affairs, 2002).

In India, Ekta Khetan created a plan for “Inclusive Society for the Differently Abled”. He suggested several ways to create a more inclusive society in India (Numerounity, 2013).

1) Preventive care and major improvement via early intervention-Like nutritional interventions for mother and child, better road and workplace safety.

2) Education for all-High end coordination with ministries of Human Resource Department, Social justice and empowerment, general teacher training and rehabilitation needed to be improved and more customized. Children and scholars with disabilities should be encouraged to become more educated. This also includes
creating awareness about the aids available to persons with disabilities and ensuring “what’s been created” should be “made available” as well.

3) Creating job opportunities.

4) Better Infrastructure to enable and improve access (highly doable)-
Designing and building ergonomically inclusive building, roads, footpaths etc.

5) Research and Rehabilitation-Arming the disabled with better equipment, and the right medications to lead almost normal lives. This could be further improved by lowering the import duties on artificial prosthesis and providing high end prosthesis at lower cost as in the USA.

Figure 1.1 Building an Inclusive Society for Differently Able
Source: Numerounity, 2013.

In Ghana, Africa, the government also plans to promote an inclusive society. Also, they incorporated the concept in their national economic development program. Their objectives were to develop a positive partnership between Public and Private Entities to accelerate the growth of the country. They also focus on facilitating social inclusion, one of the keys to the success of the project (United Nations Development Programme, 2007).
Table 1.1 Promoting an Inclusive Society in Ghana

<table>
<thead>
<tr>
<th>Network/ Coalition</th>
<th>Area of Concern</th>
<th>Target Social Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Coalition on Domestic Violence Legislation</td>
<td>Domestic Violence</td>
<td>Men, Women, Children, domestic workers</td>
</tr>
<tr>
<td>Women Manifesto Coalition</td>
<td>Woman’s Development Needs</td>
<td>Women</td>
</tr>
<tr>
<td>Network for Women’s rights</td>
<td>Women’s right</td>
<td>Women</td>
</tr>
<tr>
<td>National Coalition Against the Privatisation of Water (NCAP)</td>
<td>Privatisation of water and other Basic services</td>
<td>Urban/rural poor</td>
</tr>
<tr>
<td>Coalition of NGOs Against Surface Mining</td>
<td>Environmental Degradation</td>
<td>Mining communities</td>
</tr>
<tr>
<td>Media Foundation West Africa</td>
<td>Press freedom &amp; rights to information</td>
<td>Journalist &amp; media Information practitioners</td>
</tr>
<tr>
<td>Growth &amp; Poverty Forum (GPF)</td>
<td>Poverty reduction &amp; pro-poor communities</td>
<td>Poor groups &amp; poor policies</td>
</tr>
<tr>
<td>Ghana National Coalition on the Rights of the Child (GNCRC)</td>
<td>Children welfare &amp; rights</td>
<td>Children</td>
</tr>
<tr>
<td>Ghana Anti-Corruption Coalition (GACC)</td>
<td>Corruption, transparency &amp; accountability, good governance</td>
<td>Public officials &amp; state agencies</td>
</tr>
<tr>
<td>Ghana National Education Campaign Coalition (GNECC)</td>
<td>Education and access; educational policy</td>
<td>School-going children</td>
</tr>
</tbody>
</table>


Another example of the progress towards promoting an inclusive society is the project Light for the World, promoted by the European Confederation of National Development. This international project focused on disability and development
organizations who want to encompass everybody so no one would be left behind. These objectives were similar to other projects: The confederation wants to improve the quality of life, make participation in active life possible for people with disabilities, provide school program for everybody and advocate for the rights of persons with disabilities in the underprivileged parts of our world. Government needs to become the guarantor of the health care of population. However, some buildings are still built with no accessibility facilities and school programs have still not been adapted for all (Light for the world, 2013).

From the definition of inclusive study is “society for all in which every individual, each with rights and responsibilities, has an active role to play”. Ireland is a good example that demonstrates a successful inclusive society program. And, from the above study will show that the target group for an inclusive society are persons who lack opportunity for access in general facility and financial support. The primary group is the elderly and persons with disabilities.

In Thailand, another key element of social integration is providing access in a universal manner for public infrastructure and facilities (such as community centers, recreational facilities, public libraries, resource centers with Internet facilities, well maintained public schools, clinics, water supplies and sanitation). These are basic services for buildings to meet the standards of UD. As long as disadvantaged people have access to benefits from public amenities, they may feel less disadvantaged. Reducing the differences in their social and economic status may relieve the feeling of being excluded.

The declaration of social development at the world summit in 1995 showed that people were the center of our concerns and would be the target group for promoting an inclusive society. When people want to promote sustainable development and provide a healthy and productive life in harmony with the environment, people will feel more useful. From research conducted by the National Housing Authority and Chulalongkorn University Academic Service Center at the Research Unit on Appropriate Environment for Elderly and Persons with Disabilities, Faculty of Architecture, it was shown that Thailand would become an Aging society in 2025, i.e. Quantity of elderly will increase to be 14% of total population and the number of persons with disabilities will increase as well. (i.e., 10% of increased
quantity of elderly are persons with disabilities). These projections indicate that it is necessary to take UD very seriously (National Housing Authority, 2012, p. 7).

When the term UD is mentioned, many people believe it means whatever kinds of design for convenience and environment are for persons with disabilities only. In fact, UD means design for all genders and ages including males, females, pregnant women, children, elderly, and persons with disabilities. UD is composed of several elements and all countries, as well as Thailand, have to take it seriously. UD is the design concept for environment, facilities, equipment, tools, furniture, etc., with facilities for convenience, safety, and adapted for people of all ages and genders without any special or specific modification for any group of people.

1.6 Summary of the Direction of the Eleventh National Development Plan

Since Thailand’s First national development Plan (1961-1966) to the Tenth Plan (2007-2011), Thailand has become a more developed country. Since this time, and taking into account the internal and external situations, Thailand has had the opportunity to promote national development, and also deal with threats. During those 50 years, all these plans have propelled Thailand to become a more developed country. Indicators do not lie. Higher income, improvement in the quality of life, longevity of inhabitants, and also education for all have demonstrated the evolution of the country. The Philosophy of Sufficiency Economy, promoted by His Majesty the King in 1974, helped Thailand to resist several different crises. The Three Pillars of this concept are: Moderation (in economy), Reasonableness and Risk Management. With those principles, Thailand survived two important crises, the Asian financial crisis in 1997 and the 2008 global subprime crisis (external problems), but also the national disaster caused by Tsunami in 2004 (internal problem).

The Eleventh Plan for 2011-2015 by the Office of the National Economic and Social Development Board (NESDB) can be considered as a medium term national development plan. The main objective of this program was to form ‘a happy society with equity, fairness and resilience’. Thai people have to live in a peaceful country, and be prepared for future changes. Also, to achieve those goals, Thailand has to
consolidate its social foundations, foster sustainable development by protecting its natural resources, and maintain stable economic growth and good governance.

One major global challenge Thailand must face is its own aging society. During the Eleventh Plan, elderly people all over the world will increase by 81.86 million. And this increase will affect many parameters in many countries, especially international migration. The structure of production will pass from labor-intensive traditional structure towards a knowledge-technology intensive structure. Due to the increasing numbers of the elderly, government will have to invest more in public health at the expense of other sectors. For Thailand, these major internal change will be exactly the same. It will be more concerned about the changing demographics of its population structure. Aging society increase will create an imbalance between supply and demand in the labor market. Labor force will decrease as the number of work positions available will grow. Also, lack of qualified workforce is a decisive concern. Then public health will be the first (and the most important financially) investment center (National Economic and Social Development Board, 2011).

1.7 A Brief History of Universal Design

The number of elderly people is increasing constantly as mentioned above and disabled people are a part of society. The Government of Thailand and those around the world have realized the importance of this situation. Therefore, campaign continues for everyone to recognize, understand and expand the care of population in other age groups. There are many way to help them have a quality of life the same as other members of society. UD is a relevant concept for creating a better society.

The concept of UD was pioneered by Mr. Ronald L. Mace, a Professor at the University of North Carolina, USA. He began with designs for his own personal use before developing products designed for others. After that, he created products with facility usage for other people. His work helped to reduce alienation and individual differentiation in social life. ‘UD’ is a combination word of universal and design and refers broadly to ideas such as building construction, product design and also environment facility for older people, for people with disabilities and even those without disabilities ("Universal Design," 2015).
The definition of UD coined by Mace in 1985 refers to the design of products and environments which can be usable by everybody, to the greatest extent possible, without the need for adaptation or specialized design. UD could be interpreted as deriving from a positivist paradigm (D’souza, 2004). UD is the concept of design, production and environments usable by all people without the need to be adapted or specialized for some people. The approach of UD is based on the concept of a simple life for every one that incorporates products as well as building features and elements. The target concept of UD for all people of all age, sizes, and abilities is applied to all buildings and also needs to be common, convenient, and profitable (The Center for Universal Design, 2000). Components of UD can be used by everyone regardless of their level of ability and disability. The concept is also called inclusive design, design-for-all, lifespan design or human-centered design. The message is the same: if it works well for people across a spectrum of functional abilities, it works better for everyone.

To understand where UD come from, we have to go back to the 1950s and a movement called The Barrier-free Movement. This movement was created to meet the needs of veterans and advocates for people with disabilities. The first needs of veterans and the disabled was about work and educational opportunities, rather than their health care and maintenance. With the hard work of different organizations like Veterans’ Administration, the President’s Committee on Employment of the Handicapped and the National Easter Seals Society, buildings called “barrier-free” were created. Also, in the 1960’s, the Civil Rights Movement was a precursor of Disability Rights movements. These movements inspired future laws in the 1970s, 1980s and 1990s. These laws were created with the aim of reducing discrimination towards people with disabilities. Along the way, other laws aimed to create opportunities in education, better building facilities, health care, and maintenance. All physical barriers for disabled people were considered as a significant hindrance to people with mobility impairments.

How to make a good living is a basic question that everyone needs to find the answer to. In 2012 Norway hosted the largest conference on UD held in Europe until that time. The conference gathered researchers, students, users, planners, public officers and other practitioners from 44 countries. More than 150 different lectures
were given. The main topics presented at the conference were UD in planning, legislation, politics, education, buildings, outdoor areas, information and communications technologies and public transport. By nurturing theoretical discussions and bringing forward concrete examples of UD projects, the Delta Centre was working for an inclusive society for a diverse population (The Delta Centre, 2013). Not only did this conference in Europe show that UD is a part of inclusive society, but also in Thailand a similar conference was held on 2 April 2013 by the National Science and Technology Development Agency. This considered the topic ‘Inclusive Society by Universal Design: New Challenge in Asian Economics Community’ (AEC) and found that equity, discrimination, accessibility and utilization were the factors necessary to create an inclusive society by combining Assistive Technology and UD (Supaporn, 2013).

Persons with disabilities cannot accessible. It could be one major problem facing society for today. Fletcher says that UD is a concept which will help people to obtain a more equal society. It is important to focus on the needs of disabled people, to understand these needs and to act in an appropriate way to propose practical solutions. Actually, UD has spread to many parts of the World, including Europe and also the USA and Japan. Yet the ancestry of UD was the Barrier-Free movement created in the 1950s. This aimed to remove obstacles in the built environment for people with disabilities. Barrier-free design addressed the special needs of a segregated population of individuals, those with physical limitations and mobility impairments (Fletcher, 2002).

1.7.1 Principle of Universal Design

UD is simple in theory and easily understand the principal concepts, but in practice it is more difficult to implement. Simply to define the term is not enough (Christophersen, 2002).

1.7.1.1 Equitable Use

The design is useful and marketable to people with diverse abilities by make the design appealing to all users. The design accommodates a wide range of individual preferences and abilities.
1) Provide the same means of use for all users: identical whenever possible, equivalent when not.

2) Avoid segregating or stigmatizing any users.

3) Make provisions for privacy, security, and safety equally available to all users.

4) Make the design appealing to all users.

Figure 1.2 Equitable Use Sample Picture from Osaka, Japan

1.7.1.2 Flexibility in Use
Provide choice in methods of use. The design accommodates a wide range of individual preferences and abilities.

1) Provide choice in methods of use.
2) Accommodate right- or left-handed access and use.
3) Facilitate the user's accuracy and precision.
4) Provide adaptability to the user's pace.
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Figure 1.3 Flexibility in Use Sample Picture from Singapore

1.7.1.3 Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level by eliminating unnecessary complexity.

1) Eliminate unnecessary complexity.
2) Be consistent with user expectations and intuition.
3) Accommodate a wide range of literacy and language skills.
4) Arrange information consistent with its importance.
5) Provide effective prompting and feedback during and after task completion.
1.7.1.4 Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.

1) Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.

2) Maximize "legibility" of essential information.

3) Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).

4) Provide compatibility with a variety of techniques or devices used by people with sensory limitations.
1.7.1.5 Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

1) Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.

2) Provide warnings of hazards and errors.
3) Provide fail safe features.
4) Discourage unconscious action in tasks that require vigilance.
1.7.1.6 Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

1) Allow user to maintain a neutral body position.
2) Use reasonable operating forces.
3) Minimize repetitive actions.
4) Minimize sustained physical effort.
1.7.1.7 Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility.

1) Provide a clear line of sight to important elements for any seated or standing user.

2) Make reach to all components comfortable for any seated or standing user.

3) Accommodate variations in hand and grip size.

4) Provide adequate space for the use of assistive devices or personal assistance.
When UD is mentioned, it seems to be a concept mostly and commonly referred to in the private and public sectors concerning the architectural and construction fields of society. The concept is based on matters related to construction and design that aims to support all groups of people without any special or specific modifications for any group of people, gender, and age. Since some persons with disabilities have to encounter difficulties with living due to their handicap (National Disability Authority, n.d.a). UD is considered a way to providing fairness to all people, leading them to live together happily and based on better design of the environment, public areas, residences, and even objects aiming to provide extensive utilization to all. As a result, it could be said that UD was originally created for
underprivileged people in society (e.g., persons with disabilities or the elderly) with the aim of enabling them to have equal access to facilities as persons without disabilities ("Push up A Ra Ya Satha Pat: Support CSR in Organization," 2014).

For Thailand, in the past, a few groups of people pioneered UD. They were people who were concerned about others in society besides themselves, without neglecting any elderly, patients in rehabilitation, border police and soldiers, persons with disabilities, pregnant women, and children. These main groups could be called wheelchair users. However, some people always consider themselves first and may violate other people’s rights, for example, some persons without disabilities who inconsiderately park their cars at the parking areas for wheelchairs provided by department stores or gas stations. These people deprive disabled people of their rights, reflecting that this problems requires to be solved in Thailand in order to act in line with other developed countries. As a result, an International Wheelchair Users or “Wheelchair Users Rights Protection” group was established to campaign for protecting the rights of wheelchair users. This may be expanded to legal rights for achieving the goal of Thailand being the center of UD in the ASEAN Community.

On December 26th, 2012, there was another good sign, when new ministerial regulations of Ministry of were enacted stating that the public sector shall enforce all public buildings and places to have UD. In the event that any building of any organization violates these ministerial regulations, such organizations shall be within the scope of nonfeasance according to section 157. Moreover, policy makers were also alert about this matter. The Thai government under Prime Minister Yingluck Shinawatra held an event called ‘First Kickoff Thailand for UD towards ASEAN Community’ on February 21st, at Thai Khu Fah Building, Government House. This was in order to consult with Ministers and administrators of the Ministry of Social Development and Human Security and representatives of Network of Persons with Disabilities on strategies and guidelines for developing UD in Thailand held on March 20th, at Capitol Building, Government House. It aimed to improve understanding with representatives from 19 ministries and two authorities (i.e., Office of the Prime Minister and Royal Thai Police Headquarters) on guidelines operated by Thai government for the country’s improvement on “Universal Design” towards to ASEAN Community before 2015. The concern of this event was to solve the problems on
disabilities and the environment by using laws and ministerial regulations for enforcement and practical effects, for improving disabilities environment (e.g., buildings or public places with unfair design for all without any facility for elderly and persons with disabilities, etc.). An Memorandum of Understanding (MOU) was signed by ministers from 16 ministries and two authorities for cooperation on the renovation of public buildings and locations for providing at least five facilities to elderly and persons with disabilities including: 1) Parking lots 2) ramps, 3) toilets, 4) signs, and 5) information and news services ("Prime minister Yingluck kick off universal design in Thailand," 2013)

An example of some architecture in Thailand utilizing UD was the new parliament building with its architectural concepts emphasizing nationalism and “universal and fair design”. That is, it emphasized harmony with Thainess, for example, by its selection of local materials, colors of floor patterns, and handrails made of wood. Importantly, the new parliament building would be a real symbol of equality of all groups of people. Its design was to be placed in a highly visible location with facilities for all people, symbolizing the equality of all Thais. Moreover, several occupational organizations were also alert about the new emphasis on UD. Formerly, The Association of Siamese Architects under the Royal Patronage of His Majesty the King held a “Universal Design” Logo Competition and the winner was Mr. Pongsathorn Cholitkul using the concept of “One Heart”, conveying that UD meant making equally friendly buildings for all people. The designer used various forms of graphics to express friendliness (e.g., heart, smile, etc.) (Thai Disabled Development Foundation , 2013).

In addition, the Association of Siamese Architects under the Royal Patronage of His Majesty the King also provided a manual for designing environment and facilities for all people under the “Universal Design” Project to the Prime Minister of Thailand. They contributed to a charity fund began by the King for the Celebration on the Auspicious Occasion of His Majesty the King’s 7th Cycle Birthday Anniversary. In addition, a UD Competition was also held and emphasized designs providing convenience to children, the elderly, persons with disabilities, and pregnant women. The buildings classified as UD must be constructed or renovated for the convenience of all people in Thai society (for example, with a ramp for wheelchairs, elevators with
buttons for persons with disabilities, or the use of special materials for convenience of visually impaired persons). Currently, the Bangkok Metropolitan Administration has begun to use the concept of UD to comply with ministerial regulations regarding facilities for persons with disabilities and elderly since 2005.

Accessibility is related to the building design of the architects. Besides persons with disabilities, this kind of design also needs to consider pregnant women and the elderly. As people live longer, it is expected that the proportion of elderly will be some 30% of the total population in 2025, yet that is a major problem as there has been insufficient preparation of facilities and transportation in Thailand. At the same time, some other countries, especially western countries and developed countries, have already provided these facilities to persons with disabilities and the elderly. As a result, Thais should change their public attitude from sympathy to equality which is the principle of Accessible Design. In Europe, the term “Design for All” is preferred while the term “Universal Design” is preferred in U.S.A. These two terms also refer to design for all people. We use the term “A-ra-ya-satha-pat” in Thailand in order to obtain the same understanding. It is the design based on seven universal principles that are not for persons with disabilities and elderly or buildings only, but they are also provided for all products used in daily life (ASTV Manager Online, 2014).

However, the concept of UD should be more applied to Thai society in order to enable all members of all sectors to live together and better accept one another. There is a basic belief that all humans are the same and equal. A civil society must be responsible for taking care of its members to be happy and be parts of the community and society equally. This concept could be realized if the main related parties cooperated to make such society to be equal without discrimination by considering accessibility and utilization consisting of the following three elements:

1) Design must be accessed and utilized by most groups of people without any modification or amendment or with least modification or amendment or without any specific technique.

2) Adaptation of facilities by using the principles of addition for appropriateness that is different from primary UD. UD is able to be combined appropriately with each other.
3) Reasonable accommodation, the provider is able to provide without losing any benefit and the receiver losses no dignity.

These principles and practices reflect thinking about the needs of other people by providing better ways for living together. It is also a way for building knowledge and understanding for improving construction design to build a better future for the country. It must begin with architects who can design user-friendly architecture for all projects, as well as general persons who have the opportunities, such as the project owners, users, or related persons. Consequently, a TV Program called Muang Jai Dee was broadcast in order to respond to these demands. “Muang Jai Dee” TV program was a reality show broadcast every Monday during 08.20 p.m. to 09.20 p.m. via ThaiPBS channel with Mr. Wiwat Wongpattarathiti, from Superjeew Company Limited, as producer volunteered to build inspiration according to the principles of UD emphasizing design for all people in society. This program was created to emphasize on building knowledge, understanding, and inspiration on adapting the built environment to facilitate the needs of various people in society. In addition, it was also a quality TV Program, the winner of Nataraja Award in the Documentary Field. Moreover, Muang Jai Dee TV Program also received the Media Award for Building Dhammacratic Society 2012, “the Fourth Estate Golden Prize” for the Excellent TV Program, on June 9th, 2013. Although this TV Program has now ended, there is a fan page for Muang Jai Dee published along with program broadcasts available on Facebook. This fan page still publishes useful news and information as well as video clips of the program regularly. As a result, the program is currently considered a 24 hour program.

As explained previously, UD is simple in theory but hard in practice. With the new generation, also with baby boomers who are becoming older, with the augmentation of our lifespan, with new technologies and new medicine, people live longer. The potential market for the elderly and people with disabilities has rapidly increased. Also, even someone who does not need some specific aids for now, may in their future. UD, with the aid of the law, a favourable economic situation, and appropriate government policies can help the country to be a more inclusive society. Nobody needs to be forgotten.
1.8 U.S. Regulation Relate to Universal Design

In 1961, the American National Standards Institute, or Ansi, created the first standard titled “A 117.1–Making Buildings Accessible to and Usable by the Physically Handicapped.” In 1966, 30 States adopted this standard and 49 in 1973. All federal agencies must try to provide minimum access for people with Disabilities.

What follows is a summary of all the U.S. Laws and Regulations from 1960:

1) The Architectural Barriers Act of 1968: Before this act, authors tried to understand what the main obstacles for employment of people with disabilities were. They focused on the physical design of building and facilities for work. After this act, all building had to be built with a design adapted for disabled workers. Or, leased with federal funds to be made accessible.

2) Section 504 of the Rehabilitation Act of 1973: This act was the first civil rights law for people with disabilities. It would become illegal to discriminate against someone because of their disability. Also, they asked all establishments that received public, or federal funds (University, Federal contractors) to adapt their building. After some protests because of arguments about who was responsible for the verification of the application of the law, the law was finally accepted in 1977.

3) The Fair Housing Amendments Act of 1988: This law expanded the coverage of the Civil Rights Act of 1968. The goal was to include in the act families with children and people with disabilities. The Act required accessible units be created in all new multi-family housing with four or more units, both public and private, not just those that received federal funds. Accessibility Guidelines were issued by the U.S. Department of Housing and Urban Development in 1991 to facilitate compliance.

4) The Americans with Disabilities Act of 1990 (ADA): The ADA act had the goal to stop discrimination in different sectors: Employment, access to places of public accommodation, services, programs, public transportation and telecommunication. The Architectural and Transportation Barriers Compliance Board (ATBCB) issued Accessibility Guidelines for accessible design in 1991. These guidelines were adopted with modifications by the U.S. Department of Justice and became the enforceable ADA Standards for Accessible Design.
5) The Telecommunications Act of 1996: Telecommunications Act asked telecommunication services and equipment makers to provide equipment which were designed, developed and fabricated in way to facilitate their use for people with disabilities. It applies to all types of telecommunications devices and services, from telephones to television programming to computers (Case, 2003).

Advocate and Veterans of Barrier Free tried to provide facilities for people with disabilities. Advocate was the precursor of UD. They recognized the legal, economic and social power of a concept which is for people with and without disabilities. But, when architects tried to follow instructions, the constructions were ugly and more expensive.

Also, we saw that a lot of environmental changes was usual for people with or without disabilities. Recognition that many such features could be commonly provided and thus less expensive, unlabeled, attractive, and even marketable, laid the foundation for the universal design movement. The difference between barrier free and universal design is shown below:

<table>
<thead>
<tr>
<th>Table 1.2 The Difference between Barrier Free and Universal Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barrier Free</strong></td>
</tr>
<tr>
<td>Created for people with Disabilities</td>
</tr>
<tr>
<td>With goals to remove barrier and discrimination</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

1.9 Thailand Regulation Relate to Universal Design

Thailand has enacted some laws to support this issue since 1997, i.e., section 55 of Constitutional Law for Thai Political Reform stated that ‘persons with disabilities shall be entitled to receive public facilities and other assistances from government as defined by laws.’ Subsequently, Thai persons with disabilities started to claim their rights until the first ministerial regulation on this issue was enacted and
certified by Constitutional Law in 2010. There are ministerial regulations of the Ministry of Interior stipulating all public and private buildings should add UD to their design. All buildings shall include ramps and there should be Braille letters in elevators as well as some toilets for wheelchair users. In addition, there were also the Persons with Disabilities Quality Development and Promotion in 2007, Thai Cabinet Resolution in 2009, Building Control Act in 1992, Rehabilitation Act in 1991. Recently, there is a ministerial regulation of the Ministry of Social Development and Human Security stipulating all public and private buildings should have UD otherwise it shall be deemed as nonfeasance according to section 157. UD is concerned for human rights, especially, for public buildings utilized by many people, including banks, department stores, hotels, restaurants, hospitals, and gas stations. Currently, Association of Southeast Asian Nations (ASEAN) countries are not greatly concerned about this issue therefore Thailand aims to be the leader on this field in ASEAN. After participating in ASEAN Community next year, Thailand will gain advantages, especially in tourism. For related laws, there should be an improvement in order to be consistent with rules of developed countries.

Thailand made ministerial regulations regarding the installation of building facilities for person with disabilities and elderly citizens in 2005 (Ministerial regulation on Facility in Building for Persons with Disability and Elderly B.E. 2548). The regulation requires that parts of buildings and equipment that are annexed internally or externally must facilitate the utilization of disabled and elderly citizens. This regulation played a role in pushing forward the implementation of UD in Thailand. Buildings that are required to follow the ministerial regulation include hospitals, nursing facilities, medical service centers, public health centers, government buildings, state-enterprise buildings, educational buildings, libraries, government museums, public transportation buildings such as airports, train stations, bus stations, or piers in which their public areas are larger than 300 square meters, office buildings, theatres, cinemas, convention halls, stadiums, shopping malls, department stores in which their public areas are larger than 2,000 square meters. Those buildings must be equipped with signs indicating facilities for the disabled and elderly citizens, and provide slope ways, elevators, parking spaces, building
entrances, walking and connecting pathway between buildings, doors, toilets, and special surfaces to serve persons with disabilities and elderly citizens.

Theaters, convention halls, and hotels are subjected to additional requirements in which theatres and convention halls must install at least one special seat for every 100 seats. Hotels must provide at least a room that is equipped with facilities for disabled or elderly citizen for every 100 rooms. Additionally, each building category is subjected to specific requirements on size, range, and quantity for the implementation of the project owner (Ministerial regulation on Facility in Building for Persons with Disability and Elderly B.E. 2548).

The aim of this ministerial regulation was to promote equal opportunities for the disabled and elderly to participate in social functions and share the public benefits.

From the detail above, the ministerial regulations seem to play an important role with the UD. However, a number of laws, ministerial regulations, acts, and cabinet resolutions also influence the UD namely:

1) Building Control Act B.E. 2522,
2) The Ministerial Regulation No. 4 (B.E. 2542),
3) Article 11 of the Elderly Citizen Act B.E. 2546,
4) The Ministry of Transport Announcement on the stipulation of regulations, protocols, and conditions for the protection, promotion, and support of elderly citizens with respect to public transportations by its departments B.E. 2547,
5) The Ministry of Tourism and Sports Announcement on the stipulation of regulations, protocols, and conditions with respect to the facilitation of services for elderly citizens in tourist attractions and recreation activities B.E. 2547,
6) The Ministry of Social Development and Human Security on the stipulation of regulations, protocols, and conditions with respect to the facilitation of services and safety for elderly citizens in other public services B.E. 2548,
7) The Ministerial Regulation that stipulates characteristics and the availability of equipment, facilities or services in buildings or other public services for the disabled B.E. 2555,
8) The Act to promote and improve the quality of life for person with disabilities B.E. 2550 and its second amendment B.E. 2556,
9) The Ministerial Regulation that stipulates characteristics and the availability of equipment, facilities or services in buildings, places, vehicles, and transportation services for the disabled B.E. 2556.
1.10 Human Abilities and Design

In “Guidelines for standards developers to address the needs of the elderly and persons with disabilities”, they affirm that the capabilities of people differ from one person to another. Physical, mental and sensory capabilities change when people become older. Designers have to take into account all kinds of disabilities (National Disability Authority, Centre for Excellence in Universal Design, n.d.).

1.10.1 Physical Abilities

Physical abilities include every kind of movement that people need to do to for moving, such as walking, pulling, pushing, or lifting. These actions can be individual (only walking) or combined (walking + pushing button). Those which can be perceived as simple things for some people, can be difficult for others. For example, people who lack physical strength can have difficulty walking on the level. So, designers have to think about installing handrails or seats at intervals to allow people to take a break or to catch breath. Sign language is also important, with the objective to make understanding easier for people.

Balance: People who suffer from balance limitations need help for movement control. Handrails and regular seating can be tools for assist them.

Handling: For people who have restricted use of one or both hands, for left-handed, or when elderly people begin to have lack of strengths, designers should imagine systems which are easy to use. Handling includes pushing, grasping and manipulation of doors, or buttons. Designers have to think about everything, such as the circumference of objects, or the opening direction. Different options are possible to make it easier, such as using a clenched fist, or another part of the body such as feet or elbows.

Strength and endurance: When people have long distances to travel, or use stairways or slopes, they need to have strength and endurance. To make it easier, designers have to understand that opening a door can be difficult after long-term effort. Also, it has been proven that people prefer to push rather than pull, especially when it is a heavy component, or for people with wheelchairs. Automatic door or
door which open by pushing a button are better for people who lack strength. For endurance, designers have to make frequent resting places.

Lifting: Lifting operations, such as opening a ceiling window, must be easy to open with minimal force use.

Reaching: Reaching capability can be influenced by numerous anthropometric characteristics such as body size and joint range of motion, and environmental characteristics. Despite subsequent changes in the demographics of people who use wheeled mobility devices and the characteristics of their equipment, the technical requirements for the most part have remained unchanged.

1.10.2 Sensory Abilities

Speech: people can have speech problems (elderly or disabilities). Designers have to optimize space and insulation to minimize barriers to hearing for people who speak softly.

Hearing: For those of us with all five senses intact, navigating through daily life can be difficult enough. Who hasn't unexpectedly tripped on a sidewalk crack or missed a step and fallen? Now imagine if you could not see or hear. People who have hearing disabilities are more conscious of the many subtleties of variation in lighting and visual sightlines, so proper lighting and barrier-free design are critical to enhancing the visual means of interaction for hearing-impaired constituencies. But, also for people who do not suffer hearing problems, hearing quality is important. For anticipating danger, for example the fall of a material, or for hearing the alarm of a smoke detector, buildings need to have a high acoustic insulation performance. To provide help, a vibration system should be considered.

Sight: Vision allows us to take care of objects, to find the right direction or to have information about the size of all components. If you are blind, or suffer from visual disabilities, you need to have help in buildings to allow you to move easily, to locate you geographically in the building, or to be informed about danger. Many tools are available to provide facilities for visually impaired people. Designers have to help them by considering their other senses, such as hearing, feeling, or touching. So, for example in stairs, we can play with colors and feeling sensations. Designers should provide neon colors on each step, and also provide tactile strips before the first and
after the last step to help them understand where to begin and end the stairs. Acoustic warnings can also be placed in hazardous locations to avoid injury. Also, to facilitate orientation, tactile strips or sound indicators should be used. For visually impaired people, colors contrast should be used to help them identify critical locations, such as glass or windows, or elevator entrances.

Touch: Designer must select surfaces, such as handrails, doors, handles or button which are ‘safe’. By safe, we have to understand that those materials need to avoid injury (e.g., poorly-cut steel) but also need to provide materials which will not create allergies, or material which does not react to temperature changes. Material should be free of abrasions.

1.10.3 Mental Abilities

Every human-being is different, also in their mental abilities. Mental abilities include many different intrinsic abilities, such as knowledge, the ability to reason, thinking skills, capability to understand, and capability to interpret information available.

We know that all of those mental abilities change with time. Who says something that he would never do, yet changes his version a few years later with a slight smile? In taking account of age, ways of thinking, education level, we know that people have different modes of mental competency. Environments should be designed to be easily and promptly understood, from the youngest to the oldest, for people with disabilities or not, for women or men. Some aged people have more difficulty in remembering new information, or begin to loss their memory. So, if you need to effect changes to an existing environment, you should carefully think about the way to change the best way and not to shock or confuse older users.

In caring about mental abilities designers must provide simple and clear messages, easily understood, and which have an immediate impact. People should not have to think about the meaning of the message, just to look and readily understand. Figures, symbols or simple words are the most effective way to provide clear messages. Symbols or figures have to represent activities in everyday life, with simple explanations well organized, and should not be too numerous.
For easily finding way around buildings, tools such as tactile strips, graphics, or maps easy to follow could be used. Signs have to be clear, large, colors can be used, and explain where people can find building or facilities.

1.10.4 Age and Size

Promote the developing child: Designer are multi-tasked, and need to think about many things, from choosing materials to design thinking. But also they can help children to monitor their development by providing safe components, useable for children. Also, learning to recognize risks is essential for a child’s development.

Accommodating ageing adults: Lifetimes have increased all around the world. With medical progress, evolution of living standards, easier access to health-care, people live longer. Also, some elderly people are afraid to stay alone and want more social relations, public or private. But, they cannot fight against the decline of some faculties, such as their mobility, stamina, strength, memory, and hearing. Designers need to make them feel they are in a friendly environment, and also make their surroundings familiar.

Diversity of size: Size and height are different for everybody, from children to adults, from one country to another. Building components must have easy access to satisfy everyone. Care of weight has also become a priority, with the increase in physical obesity.

1.11 Universal Design of the Built Environment

UD refers to the design and composition of any product, service or building in an environment. Its purpose is to ensure that design meets the needs of as many people as possible, regardless of size, age or ability (Centre for Ageing Research and Development in Ireland, 2011). In this study, the researcher focuses on the built environment by UD. UD concerns not only buildings or their physical access. People interact regularly with their environment, and use all of their senses to use all of facilities available. Therefore, designers should care not only about design, but also about how people use their senses. They have to think about how we see, how we
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hear, how we feel, how we touch, how we think, and how we reason. (Narional Disability Authority, 2012)

UD of the Built Environment should consider (Narional Disability Authority, 2012):

1) The building as a whole.
2) Each unit within a building, such as a room, hallway, corridor or stairwell.
3) Every design feature of that building or unit, including the floor, ceiling, walls, doors and windows.
4) Every piece of furniture — both fixed and loose — that is installed within a building.
5) The location of each unit, in relation to the rest of the units (e.g. the distance to the toilet facilities).
6) The entrance to the building.
7) The approach to the building including the route from a road, entrance or car park to the building.
8) The car parking facilities.
9) Temporary buildings and facilities — prefabs, camping sites.
10) Public transport vehicles — buses, trains, coaches, airplanes, boats.
11) Outdoor or open air facilities — train platforms, bus shelters, sports grounds, concert facilities, camping sites.
12) The protection of construction sites — scaffolding near a public walkway, parts of public walkways that are removed or dug up.
13) Lighting, heating, ventilation and air conditioning
14) Water supply, including drinking water
15) Fire safety — alarms, emergency evacuation procedure, fire doors
16) Management of the building — how often facilities are serviced, how long it takes to replace or repair facilities if broken or malfunctioning. Issues such as locked doors, items being left in otherwise accessible hallways or rooms, the use of accessible toilets for storage.
1.12 Target Group of Universal Design

1.12.1 Elderly

The elderly are people aged from 60 years old. For the World Health Organization (WHO), age is not a criteria and they prefer to not define elderly. In fact, they tell us that many criteria need to be taken into account. The country, the culture, the age of retirement, or the condition of the body (disease age): they need to focus on three markers: Social, cultural and functional. In addition, some developed countries define the elderly by their physical condition: 45-55 years old for women, 55-75 years old for men. For word also, even though the term ‘elderly’ is used by The UN and the WHO, they prefer to use the term old people (Puangthong Kraipiboon, 2014).

Aging society can be categorized into three groups:

1) Aging society: refers to the society in which over ten percent of its total population aged over 60 years old, or over seven percent of the total population aged over 65 years old.

2) Aged society when populations over 60 years reach 20% of population or population over 65 year reach 14% of population.

3) Super-aged society is society has population over 65 years or around 20% of total population.
In Thailand, elderly people are considered persons over 60 years old. Thailand became an Aging society in 2004-2005. In fact, the percentage of people over 60 years old passed the 10% mark, with 10.2-10.4% of total population of the country. In 2024-2025, the country will become a complete Aged Society (United Nations Population Fund, 2006).

Because of a lack of fertility and a reduction of mortality, aging populations are occurring in every part of the world. This process will bring a situation where there will be less children and more people who work and who will become elderly. If analyse UN data, it can see that the elderly population grew from 9.2% in 1990 to 11.7% in 2013. Also, the total elderly population will continue to grow, reaching 21.1% in 2050 (1/5 of the inhabitants of the world will be considered as elderly). People who reach 60 years in 2015 can expect live 20 years more. This data depends also on which part of the world they live in. In developed countries, people can expect to live 23 years more, conversely, in less developed countries people can expect only between 17 and 19 years more (United Nations, 2013).
Therefore, the number of elderly (aged 60 years and above) worldwide 841 million people in 2013 is forecast to increase to double to more than 2 billion people in 2050. Around 2047, there will be more elderly than children for the first time. About two-thirds of the world's older people will live in developing countries as the
Aging population in less developed regions is growing more rapidly than in the developed regions. According to figure 3, from the number of older people 841 million, which is four times that of the people alive in 1950. The graph illustrates the higher degree of certainty than younger age group. The fast growth of the older population is found in the less developed regions. The size of the older people in that region is five times higher than in 1950 (108 million) to 554 million in 2013. The greater change is not only found in less developing country but also in more developed regions. It tripled from the year 1950 (94 million) to become 287 million in 2013 and is estimated to reach 417 million in 2050.

In fact, many elderly people still have to work, especially in developing countries. In 2010 it was found that the labor force participation of persons aged 65 years and older is estimated at 31 percent in developed areas and less than 8 percent in more developed areas. Considering the picture of total labor force among older, men were the largest group. Elderly men working are a lower proportion in less developed areas but are increasing in the developed areas.

**Figure 1.11** Population Aged 60 Years or Over by Development Region, 1950-2050

**Source:** United Nations, 2013, p. 11.
Currently, in Thailand, the proportion of older persons in the total population will increase to 14.0 per cent in 2015, 19.8 per cent in 2025 and nearly 30 per cent by 2050. The population of elderly persons will increase from the current 6.4 million to 9.0 million in 2015, 12.9 million in 2025 and exceed 20 million in 2050. As shown in figure 1.13:

**Figure 1.12** Thailand's Population is Rapidly Aging  
**Source:** United Nations Population Fund Thailand (UNFPA), 2006, p. 2.

Data from the National Statistics Office. The data represents the elderly population since 2537 until the year 2557 as the fifth survey was collected from a sample population of 83,880 households across the country, both in municipal and non-municipal areas. All areas outside the municipality are known as the village (National Statistical Office, 2014).

The definition of elderly people over the age of 60 years refers to the number of seniors. A survey at all five times in 2537, 2545, 2550, 2554 and 2557 showed that the aging population in the year 2537 amounted to 4,011,854, representing 6.8 percent of the population, in 2545 the number of elderly 5,969,030 percent. 9.4 of the
country's population in 2550, with the number of seniors 7,020,959, representing 10.7 percent of the country's population in 2554 had a population of elderly 8,266,304, representing 12.2 percent of the population, and in 2557 had a population of elderly 10,014,705. 14.9 per cent of the country's population.

![Number of Elderly](image)

**Figure 1.13** Number of Elderly in Thailand  
**Source:** The National Statistical Office, 2014.

The elderly population in the age group between 60-69 years old accounted for 56.5 percent of all older adults. The age range of the elderly can be divided into three phases: between the ages of 60-69 years, the age range of 70-79 years, the middle-aged, and seniors aged 80 years and over.

The numbers of elderly people who live alone, being the only one in the household, is likely higher. Up from 3.6 percent in 2537 to 8.7 percent in 2557 for the elderly. Those who do not live alone in the household also declined sequentially from 96.4 in 2537 to 91.3 years in 2557, as detailed in the chart.
The elderly are prone to accidents, often from falling. The data showed that 11.6% of the elderly had experienced falling during the six months prior to the interview. ‘Falling’ can mean that the elderly person falls from a standing/falling from bed, or fall from height. This excludes falls caused by a person, an animal or collisions with objects or bumps. The proportion of people who fell for such reasons in 2557 was as follows.

**Figure 1.14 Living Style of Elderly**

**Source:** The National Statistical Office, 2014.
Reasons for the elderly falling can be divided into six main causes. 39.0 percent of tripping obstacles. Caused by a slip 34.4 percent from 11.2 percent Heat stroke caused by ground-level 9.5 percent due to a crash landing. Finally, other causes included weakness, and falls from beds 4 percent.

**Figure 1.15** Accident Rate of Elderly in Thailand  
**Source:** The National Statistical Office, 2014.

**Figure 1.16** Cause of Accidents Among the Elderly in Thailand  
**Source:** The National Statistical Office, 2014.
The statistics show that elderly people often fall in three main areas. Outside the house 37.0 percent, followed by 35.7 percent inside the house, and in the house 27.3 percent.

![Falling area chart]

**Figure 1.17** Accident Areas of the Elderly in Thailand

**Source:** The National Statistical Office, 2014.

Thailand has a rapidly growing elderly population so it should have policies to guard against such accidents. The policy should encourage people to become self-reliant and have a positive lifestyle, such as arranging equipment and improving the physical environment to allow the elderly to continue their own lives.

The potential of the elderly is an important starting point for future national development. They might empower the society to rely increasingly on their skills, and to acknowledge their experience and wisdom, and not just to take the lead of elderly improvement, but also to join actively in that of the society as a whole.

**1.12.2 Person with Disabilities**

The definition of disability also changed during this last decade. The WHO decided to create a new international classification system: the International
Classification of Functioning, Disability and Health (ICF). This new system, for the first time, define a classification of the degree of disability. Also, this classification system includes everybody, not only people with acknowledged disabilities diagnostically categorized. The ICF classification advocates the elimination of distinctions between mental conditions and physical conditions. ICF analyzes if capacity is greater than performance, then they can identify facilitators to plug the gap. UD is considered a central concept by WHO and ICF to identify facilitators that can be useful for all people (Institute for Human Centered Design, 2015).

Over 650 million people worldwide are living with some form of disability. The present disabilities will be focused on three main areas of impairment: bodily functions and structures, activities, and participation. In addition, the determination of disability includes not just anatomical structures but also dismemberment, lost processes both physical and mental which have an impact on their normal lives, such as studying, working and joining the society and community (Zheng et al., 2011). At the same time, ICF, disability and health, which is the WHO’s framework for disability, identifies the impairment by functioning at the level of the body or body parts, and the whole person in a social context. The disability could involve any of these impairments, limitations on activity and participation restrictions. ICF provides the definition of impairment as below (World Health Organization, 2002, p. 10).

Formal definitions of components of ICF are

1) Body functions are physiological functions of body system (including psychological functions).
2) Body structures are anatomical parts of the body, such as organs, limbs and their components.
3) Impairments are problems in body functions or structures such as a significant deviation or loss.
4) Activity is the execution of a task or action by an individual.
5) Participation is involvement in a life situation.
6) Activity limitations are difficulties an individual may have in executing activities.
7) Participation restrictions are problems an individual may experience in involvement in a life situations.
8) Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives.

Disability may come from effects on an organ or body parts and may affect a person’s social life. It refers to individual functions, such as physical impairment, sensory impairment, cognitive impairment, intellectual impairment or mental illness, and various types of chronic disease (Disability information, 2014). For these reasons, persons with a disability become limited in performing activities of daily life or engaging in social involvement. This may be due to impaired sight, hearing, mobility, communication; or mental, emotional, behavioral, intellectual and learning or other disabilities, so that it is necessary to get extra help in order to be able to perform daily life activities. The dictionaries of the Royal institute 1999 define a “disability” means a physical loss from the original state of arms or legs, and results in a lower capacity to engage normally (The Royal Institute, 2014). For person with disabilities, United Nations as cited in Abang (1988) defines the term as “Any person unable to ensure by himself or herself wholly or partly the necessities of a normal individual and/or social life as a result of a deficiency either congenital or not in him or her physical or mental capabilities”

Also, there are two other terms for persons with disabilities: Impairment and handicapped. ‘Handicapped’ can be defined as a disadvantage for anyone which makes life harder. In English, a handicap refers to obstacles which people on wheelchair cannot do but persons without disabilities can. To explain the term in horse racing, horses with more weights have a higher “handicap” than other horses. Similarly, people with wheelchairs have more handicaps than persons without disabilities. If they wish to go upstairs, they need someone to lift their wheelchair or a special slope for access. ‘Impairment’ means a loss or temporary abnormality or permanent physiological or mental problems. This may include organ disabilities, loss of organs but also mental disabilities such as blurry vision on one side, loss of hearing, or psychological symptoms.

In Thailand, a definition of disabled people is given in the Rehabilitation ACT for Person with Disabilities edited in 1991 (Section 4). The definition is: Persons with disabilities means a person with a physical, intellectual, mental disorder or disability (Sawadsri, 2010).
There are five categories:

1) Visual disability.
2) Hearing or communication disability.
3) Physical or mobility disability.
4) Mental or behavioral disability.
5) Intellectual or learning disability.

Thai disability laws have been influenced by legislation in forerunner countries such as the UK’s Disability Discrimination Act 1995 (DDA) and the Americans Disabilities Act 1990 (ADA).

An Act to make it unlawful to discriminate against disabled persons in connection with employment, the provision of goods, facilities and services or the disposal or management of premises; to make provision about the employment of disabled persons; and to establish a National Disability Council.

The difference between the ADA and Thailand’s disability legislation is that ADA legislation is based on Human Rights, whereas Thailand’s legislation is based on a medical and regulatory approach. In Thai society, disability still is seen as an individual problem capable of charitable resolution. The Thai law enforcement process is based on common ground definitions of the word ‘persons with disabilities’ (Sawadsri, 2010).

Furthermore, this also relates to provisions in the Thai constitution of 2007 which defines all Thai citizens as equal. Also, there is a statute to encourage and improve the quality of life for seniors. In 2007, there was public support for the equality of disabled citizens who are discriminated against by the society. One of these rights is accessing and using a considerable amount of public facilities (The Department of Economic and Social Affairs (UN-DESA), the Office of the United Nations High Commissioner for Human Rights (OHCHR) and the Inter Parliamentary Union (IPU)., 2007). These could be offset by the improvement of the environment, finding techniques to remove barriers, or providing a helper. Disability means a condition caused by the inability to act. Therefore, disabilities in some categories may
not be an indication that all is disadvantageous, but depend on the occasion, circumstances and the environment.

There was a report about the situation of persons with disabilities in Thailand between Y2002 and Y2007 based on the raw data of the disability survey of the National Statistics Office. This survey was based on the meaning of disability: impairment, activity limitation and participation restrictions. The situation of persons with disabilities in Thailand did not change greatly between the two periods of time Y2002 and 2007. In addition, this survey found that more than half of persons with disabilities were elderly and this was tending to increase. Forty percent were people in the labor force and only three percent were children (Ministry of Public Health, International Health Policy Program, 2013). Moreover, then elderly will experience a disability more than any other age group. This suggests a need to support both the elderly and the disabled for the purposes of UD.

In Y2002, Thailand had a population of persons with disabilities of around 1.74 million people. This was a small increase from the year 2007. The total number of persons with disabilities population was found in 2007 to be the same percentage as in 2002. That is equal to 2.7 percentage of the total population. This survey was based on the meant of disability: impairment, activity limitation and participation restrictions.
Disability is not limited to any age group, religion, gender and even social status. It can happen to anyone, anytime and at any place. Some are expected to have
an opportunity to use their strengths to increase our efficiency but some are threats that must have negative effects on the quality of life of persons with disabilities. Thus, it is necessary to assess and follow up the changes that will affect their quality of life and achieve equality by protecting their rights. The global policies for developing disabled persons influence the developmental concept of the government of Thailand in many ways. In 1975 (2518) the United Nations declared on the rights of persons with disabilities by verifying their citizenship and their political rights as well as the general public. They have the right to education, professional training, and job placement services. Moreover they have a right to acquire and maintain their employment or participation in careers that are beneficial to the productivity of the economy by getting compensation. This declaration stated that people with disabilities must receive all such rights without discrimination.

1.13 The Concept of Community-Based Social Marketing

Social marketing is the core concept of this research. According to Kotler and Zaltmann (1971), social marketing is the use of marketing principles to facilitate the acceptability of social ideas. Recently, Andreasen (1995) explained that social marketing is a method to influence the voluntary behavior of target audiences. Social Marketing was created in 1970. Kotler and Zaltman found that they can use the same marketing concepts to sell products than to sell ideas. Selling ideas has the goal of changing behavior and attitudes of people. Social marketing differs from classic marketing. The goal of commercial marketing is to satisfy marketers and to realize objectives planned in advance. Social marketing has to satisfy the general society (Kotler & Zaltman, 1971). Mahesh (2007) explains that social marketing uses the same concepts as commercial marketing to target populations to achieve the goal of positive social change, not to sell products or services. To understand who people are, what they desire, but at the same time meet the needs of society and solve social problems. Social marketing can be an important tool. Social marketing uses marketing principles and techniques to promote social change (Smith, 2006).

The difference between social marketing and commercial marketing can be explained thus: the primary aim of social marketing is to improve the social situation,
this objective can be called ‘social good’. In commercial marketing, the unique aim is financial. They need to convince people to buy their products and not the product of competitors. For example, commercial marketing will influence people in choosing their brand of toothpaste. The aim is to sell as much as possible of toothpaste, whether the customer will use it or not. In social marketing, they need to influence or increase the frequency of teeth cleaning. They don’t try to influence the choice of the product but about the way of life of customer, to improve their habits and reduce teeth problems. Commercial marketing can also make a contribution to a social good but that is not its primary aim (Mahesh, 2007).

Social marketing is the application of commercial marketing technologies to analysis, planning, execution and evaluation of programs designed to influence the voluntary behavior of target audiences in order to improve their personal welfare and that of society (Andreasen, 1995).

Social marketing has been underused in relationship marketing, explains Kotler, even social marketers were pioneers on population behavior change (Kotler, 1971). Also, social marketing helps to change the perception of behavior change theories, for example the trans-theoretical stages of change model, the social cognitive theory and the health belief model. Social marketing revolutionized behavior change theories (Lefebvre, 2001). To define social marketing, and take into account other elements than ‘change individual behavior for social good’, social marketing harnesses the power of markets, improves well-being, saves lives, optimizes well-being, and develops marketing systems. Our emphasis on these endpoints, rather than behavior change, expands the value propositions we can offer to society—we are more than behavior change technicians (Lefebvre, 2012, p. 3).

Promoting sustainable behavior is the key to the future health of the planet Andreasen (1995) writes that many social marketers are doing something other than just social marketing. Exchange between two parties is a critical process for social marketing, which is guided by a set of criteria, guidelines and methods. According to Lefebvre (2012), social marketing was used specifically by public health practitioners (Teeth care, Smoking, and Alcohol.) but not sufficiently in the environmental field, which will be an important future sector for social marketing. Social marketing can be
used efficiently for environmental applications: a specific type of social marketing was created for this purpose and called Community-Based Social Marketing (CBSM). CBSM provides many case studies from the environmental field, and some writers have proposed a CBSM framework and set of tools for agents of change.

A common definition of social marketing is: To improve personal welfare of population and the society in which they are a part, social marketers adapt their technologies from commercial marketing to influence the behavior of target audiences.

CBSM was created from social marketing. The limits to social marketing appear when marketers have to propose appropriate solutions after they have found a problem, especially a complex problem. (Kennedy, 2010, p. 1142).

To surpass the limits of social marketing CBSM was created. They decided to rely on mass mediated messages to impact the environmental behaviors of populations. Using social psychology research, social marketers can prove that is more efficient to promote behavior change by using direct contact with people. They understand that using mass media exclusively can help people to create awareness and understand the issues related, but they do not learn how to change their behavior (McKenzie-Mohr, 2011).

When campaigns are directly created on a community level and focus on direct contact with audiences, the CBSM model creates more facilities for behavioral change. The limits of the change can be explained by: a) People are unaware of the activity, b) they perceive significant barriers to adopting a particular behavior, c) they think that their current behavior is more beneficial than if they changed their behavior. We can also find two types of barriers which can explain why targets do not apply the correct behavior: Internal and external barriers. An internal barrier is, for example, someone who doesn’t know that he has to recycle products. This is a problem of personal knowledge. An external barrier, to use the same example, is someone who does not have recycling facilities in his community. CBSM aims to delete those barrier by changing the audience’s perception and encourages the target to improve their behavior (McKenzie-Mohr, 2011).

Removing external barriers has a cost. It makes it more difficult to change behaviors because of the inconvenience and the technical challenge. It is more
difficult to change behavior simply by changing attitudes. Information campaigns are useful only when it is an internal barrier. To lead a good campaign, requires intense work before. First, we have to select which tools we will use to obtain the best results. Where we will meet our targets, in school, or at home? How we will diffuse our message? Is mass media the best choice? Or community leaders opinions? Also, we need feedback to see if our campaign was exactly how we thought. Those techniques were used in Canada and the USA, about environmental behavior at home, school, or at work. The subjects were transportation, recycling, water use and recycling purchases (Mckenzie-Mohr & Smith, 1999).

In Thailand, the major foundation which uses social marketing and create campaign for each community is Thai Health Promotion Foundation. During 10 years, since its creation, Thai Health Promotion Foundation has been affected by the country’s socio-economic environment, including national policies and politics. Factors such as political change and unrest, decentralization policies, demographic shifts, globalization, and the digital revolution have had a major impact on Thai Health Promotion Foundation’s development. As the development of Thai Health Promotion Foundation’s plans and programs progressed over its first 10 years, so too did its contribution to the development of health promotion globally and in individual countries. Its emphasis on decentralization and capacity building has influenced present day health promotion practice. Thai Health Promotion Foundation’s utilises social marketing and developed more goals for mobilizing the community to act in ways conducive to health by changing society’s preparedness to accept, and also advocate for major policy reform to promote health. With this goal in mind Thai Health Promotion Foundation has used social marketing as a primary tool to achieve numerous health promotion policies it has advocated over the 10 years of its existence. Extending the concept of social marketing as a health promotion method even further, Thai Health Promotion Foundation has been involved in developing a reading culture and has contributed to tackling illiteracy among disadvantaged communities. This work is necessary because literacy and reading are major social determinants of health. Community development is the companion method of social marketing: it provides a cost-effective, relatively cheap method of changing culture and developing healthy supportive environments at the local level for future and
existing generations. Social marketing has itself been adapted to a community development approach by Thai Health Promotion Foundation, operating at the local level addressing issues, including messages, selected by local communities as being relevant to them (Thai Health Promotion Foundation, 2011, p. 86).

1.14 Community-based Social Marketing can Apply in Universal Design Concept

Social marketing has been used successfully in the past to address a number of public health issues. Social marketing helps customers to meet their wants and needs. Social marketing needs people to adopt new behaviors. CBSM is applied social marketing but it is different in that it requires direct contact among community members. So, UD becomes relevant to health issues as it can apply CBSM to achieve sustainable changes in behavior.

CBSM applies the original concept from commercial marketing but does not focus on maximizing profits but on behavior change and fostering sustainable behavior change. Further, CSBM principles do not focus on the mass market but on the small group and the community to encourage community members to participate in the program. This can ensure that the benefits for the target group meet their needs as well as the aims of the campaigner.

CBSM concepts can be used to change motivations in a variety of campaigns: for instance, recycling, paper reduction, and purchasing of environmentally preferable products that relate to creating a better environment (Cole, 2007).

Thailand has also used CBSM concepts for environmental issues, for example “Guideline on Promotion of People Participation in Increasing of Green Areas in Urban Communities to Lessen Global Warming” by eliminating barriers and promoting the participation of people in the community to increase desired behaviors. This technique persuaded people to be more concerned with tree planting for increasing green areas (Sunee Mulikamal & Prawpannarai Mulikamal, 2012). This technique proved to be useful to increase environmental benefits and remove barriers not only internationally but also in Thailand. This suggests that CBSM cannot only be
limited to environmental issues but also could create better living conditions for persons with disabilities and the elderly.

1.15 Conclusion

UD is considered a central concept for providing fairness to all people, normal or impaired, leading them to live together equally. UD is based on the design of environment, public areas, residences, or even objects aiming to provide extensive utilization to the people. It appears that UD links with the concept of building the society and supporting the lifestyle of all groups of people with equal rights and dignity in order to become an inclusive society. As a result, it could be said that UD was originally created for underprivileged people in society (e.g., persons with disabilities or the elderly) with the aim to enable them to be able to access services or buildings equally ("Push up A Ra Ya Satha Pat: Support CSR in Organization," 2014).

However, although UD seems to be a concept most commonly mentioned in private and public sectors, architecture and construction fields in Thai society, it appears that the concept is used specifically for the people with impairment, rather than on the foundation of construction and design for all groups of people, including persons with disabilities, children, adults, elderly, males, and females. Therefore, instead of emphasizing UD, it highlights the differences between persons with disabilities and ability.

Even though Thailand has several laws protecting and supporting the rights of persons with disabilities, the design for fairness is not practical. Most of these designs and constructions are unable to support all people properly because most facilities and buildings with “universal support” seem to be built for the sake of the law and not the users. Consequently, it becomes exploited by persons without disabilities and deprives the actual persons in need. Facility owners often times refuse or fail to take action against violators. Even worse, law enforcement fails to penalize those facility owners.

Community-Based Social Marketing (CBSM) is considered an attractive concept using data as the foundation for campaigning. The campaigning is based on
social science research emphasizing on reducing obstacles to the campaign. Simultaneously, it also represents the benefits of all activities with the highest efficiency of CBSM, that is, behavioral change performed through related projects and communities (McKenzie-Mohr, 2011). CBSM is considered a very important strategy for the application of UD. Several projects that utilized CBSM showed successful outcomes (Thackeray, 2000; Sunee Mullikamarn & Prawpannarai Mullikamarn, 2012).

For UD, persons with disabilities and elderly are used as the mainstay to motivate local people to see its importance as well as to develop society and improve living standards starting from the small groups of society to create change (a little can make a difference). The operation of community-based social marketing starts from the target group then their perception is expanded to adjust their attitudes by using personal media to motivate and expand the network’s operation and perception leading to the main objective of behavior modification. Community-Based Social Marketing is an option to change the behavior. The campaign used to change behavior may be different and based on the nature of the community: developer, designer and people in a community. Government projects, Thai Health Promotion Foundation and some NGOs, such as The Association of Siamese Architects under Royal Patronage (ASA) and Krisana Lalai, are good examples of how to investigate the idea and strategies used for each program related to UD. Therefore, this study proposes to integrate the principles of social marketing with the target community on UD. The outcome of this study shall provide strategies and tools that are best for developing for creating an inclusive society.
1.16 Operational Definition

A-ra-ya-satha-pat Ambassadors: It is not only selecting new generations as the representatives for communicating UD to new generations, people in general and organizations, but these A-ra-ya-satha-pat Ambassadors are also responsible for monitoring which place should be developed and improved for universal accessibility and use using the UD principles.

Change agent: An individual, organization or alliance that attempts to bring about a social change--that embodies the social change campaign. The change agent in this dissertation refer to students from the architecture faculty and architects.

Campaigner: The organizer or persons who create the activities for students, architects and people relate to the UD topic. The main activities are teaching, demonstrating, and create awareness of UD.

Commitment: The commitment tool is utilized by asking a person to make a commitment by using a verbal or written agreement to change behavior.

Communication: Communication comes in many different ways, such as messages, foot maps, mass media, and door to door visits, to increase the awareness of and remove knowledge barriers to the implementation of UD principles.

Community: Community refers to groups of people or people who share values and have power in their locality or space. The communities in this research depend on the campaigner or leader of the group involved. In this research ‘community’ can be defined as a living place in the “Muang Jai Dee” project, belonging to the Association of Siamese Architects under Royal Patronage (ASA) and King Mongkut’s Institute of Technology Ladkrabang (KMITL), physician as the project that belong to Yodyiam Theptaranon and young people and persons with disability in the A-ra-ya-satha-pat project in Thailand.

Community-Based Social Marketing: Community-based social marketing refers to the appropriate solutions for society used in communities as the design basis in order to influence the behaviors of targeted audiences contributing sustainable behaviors for improving the living of people in society by using the media, messaging, and an organized set of communication activities to generate specific
outcomes in a large number of individuals over a specified period of time. The aim is to maximize the chances of success.

Community-Based Social Marketing Tools: Community-Based Social Marketing tools is the technique that refers to anything used with the intention to perform an already existing behavior that aims to create the motivation for sustainable behavior. It is the strategy that aims to change desired behaviors via communication, commitment, convenience, incentives, norms and prompts.

Convenience: Convenience can be defined as a way to facilitate access to services or products with the aim of changing behaviour.

Elderly: Elderly refers to people aged over 60.

Incentive: Incentives are a tool used to motivate a person to continue performing a desired behavior, or to change from an undesirable to a desirable one.

Inclusive Society: An inclusive society provides all people with some opportunities to fulfill their abilities equally in order to build a harmonious society mutually. The ultimate goals may include healthier individuals, families, and communities.

Norms: Norms guide how a person behaves because they seek for clues on how to respond. Behavioral norms influence change through techniques such as “modeling” desired behavior.

Output: Output is the return obtained from a strategic management process by using tools to motivate and develop understanding of the behavior of target groups—especially the elderly and the disabled—according to the principles of CBSM. These outputs need to be consistent with the indicators of three major strategies—planning for UD including knowledge and database development, policies and regulations, and campaigns for implementation.

Persons with Disabilities: Persons with disability means a person who is limited in performing activities of daily life or social involvement. Due to impaired sight, hearing, mobility, communication, mental, emotional, behavioral, intellectual and learning or other disabilities.

Process: Process is a methodical series of steps that were used in creating UD to make the environment more accessible for the elderly, persons with disabilities,
students, women and others. The process included identifying the problems, site surveys, analysis and conceptual design.

Prompt: Prompt is visual or auditory aids that remind a person to carry out an activity that they might otherwise forget.

Social Change: A social change campaign is an organized effort conducted by the change agent. For campaigns which focus on attitude change, human behavior and habits.

Social Marketing: Social Marketing refers to the process, tools and technique to communicate to target audiences for achieving the target by changing the behavior.

Social Problem: An issue the world is grappling with. Then social marketers/campaigners have to find the potential solution to solve the problem by launching a campaign to change attitude and behavior.

Strategy of Community-Based Social Marketing: Strategy of Community-Based Social Marketing refers to “tools” that have been shown to be effective in changing behavior in each community by the use of CBSM. In this dissertation it refers to the CBSM that includes the tools that use to remove barrier and increase benefit for target group.

Universal Design: Universal design refers to the way to create buildings and environments that makes people feel convenient and comfortable. Universal design is relevant for all people. It is intended to facilitate a simpler life for everyone. It aims to develop an accessible environment for everyone.

User: Elderly and persons with disabilities who have been affected with inconvenience from non-safe environment and facilities.
CHAPTER 2

THE REVIEW OF LITERATURE

This chapter highlights documents, research, theory and related issues of Community Based Social Marketing (CBSM) in two parts. The first one is research and study and the second one is concepts and theories.

The first part considers three terms. The first is about social marketing, that includes the meaning of social marketing, details of social marketing and also explain the difference between social marketing and commercial marketing as many people are confused about the concept. The second part explains community-based social marketing campaigns by using the concepts of social marketing and discusses successful campaigns that applied CBSM as based on the issue of this study. Universal Design (UD) is then explained in detail, including future trends in UD and covers the research related to UD.

Considering research and study, the researcher focused on Social Marketing techniques. Social marketing is similar to commercial marketing, but the goal of social marketing is different by changing community behavior. It is mostly used in a way that benefits the community. Social marketing can fulfill the objective of UD to treat all people equally. It also has benefit for the elderly to maintain independent lifestyles and increase their ability to participate in society.

2.1 Research and Study of Universal Design

As UD is the specific concept of special design for persons with disabilities, it emphasizes the differences between able and disabled persons. Consequently, the design concept is subsequently adjusted to provide equality or UD for all people, no matter if they are persons with disabilities, children, adults, elderly, males, or females, to gain equal benefits from such design improvements. This approach to UD links
with the concept on building a society that supports all groups of people with equal rights and dignity in order to become an inclusive society. UD was created after the Barrier-free concept. The main goals of UD were to provide technological facilities, accessibility, and also give importance to aesthetic design. UD can be everywhere, in companies, in daily life, or in public accommodation. Some sectors have been using UD for a long time, but other sectors still lag.

The Barrier Free concept was intended to facilitate accessibility for persons with disabilities by modifying buildings. Barrier Free approaches appeared in Japan. The difference is, in UD terms, they will create, since the beginning of the construction, facilities for disabled people. UD, which can be called Design-for-all or Lifespan Design, can be compared such as Green Design for environmental sustainability, or Universal Design for social sustainability (Institute for Human Centered Design, 2015).

UD is important because everyone is different-men, women, the elderly, or the young, with temporary or long term disabilities. All styles of people need to enjoy public facilities. Building designs can and need to be useful for everybody. All Due to these differences architects have to provide readily accessible buildings. (Centre for Ageing Research and Development in Ireland, 2011).

The first use of UD was in the United States by Professor Ron Mace although forms of it were quite prevalent in Europe well before. For the purpose of this chapter, UD is defined as ‘the design of all products and environments to be usable by people of all ages and abilities to the greatest extent possible (National Disability Authority, Centre for Excellence in Universal Design., n.d.). UD in recent years has assumed growing importance as a new paradigm that aims at a holistic approach ranging in scale from product design to architecture, and urban design on one hand and systems of media and information technology on the other (D’souza, 2004, p. 3). Conventionally the word universal is synonymous to general and refers to a set of principles that are stable, timeless and value free. In this sense UD could be interpreted as deriving from a positivist paradigm.

UD is concerned with both products and the environment. For the environment it is a major concern because it involves important groups of people who are affected by the UD concept. As shown in the national statistics in Y2013, the proportion of
Thai people with disabilities who are elderly are more than 50 percent and is expected to increase steadily. There are several requirements to allow persons with disabilities to live a long and active life in order to avoid becoming a burden to their family and society. They should be supported by public policy in terms of managing the environment and transportation system that encourages people of all ages (Ministry of Public Health, International Health Policy Program, 2013, p. 132). For example, when the population of aging people grew rapidly in Ireland, the government looked for ways to increase the living standards and quality of life of this group by applying UD principles to public buildings, spaces and environments. They found that UD had two major benefits for the elderly to maintain an independent lifestyle and increase their ability to participate in society (Centre for Ageing Research and Development in Ireland, 2011, p. 3). Another case study of successfully applying UD was in Japan, when in 2005 a General Principles of Universal Design Policy was introduced which stipulated that the concepts of universal design should be used in the design of buildings and public transport. Similarly, in Denmark, the houses of a private project in Roskilde were all built according to UD principles, enabling the inhabitants to remain independent as they grew older (Centre for Ageing Research and Development in Ireland, 2011, p. 6)
Figure 2.1 Principles of Universal Design

Source: Delta Centre, 2013, p. 67.

The seven Principles of Universal Design were developed in 1997 by a working group of architects, product designers, engineers and environmental design researchers, led by the late Ronald Mace at the North Carolina State University (NCSU). The purpose of the Principles was to guide the design of environments, products and communications. According to the Center for Universal Design in NCSU, the Principles "may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments" (National Disability Authority, n.d.b).

The seven principles of UD are:

1) Equitable use: The design is useful and marketable to people with diverse abilities.

2) Flexibility in use: The design accommodates a wide range of individual preferences and abilities.

3) Simple and intuitive use: Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current interesting issue.
4) Perceptible information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.

5) Tolerance for error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6) Low physical effort: The design can be used efficiently and comfortably and with a minimum of fatigue.

7) Size and space for approach and use: Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility (National Disability Authority, n.d.b).

Goldsmith (2000) created a pyramid of UD which can be useful for creating some ‘levels’ to classify the degree of disability. Each level adds a degree of disability. On level 1, it shows people in good condition, who can dance, work and walk. These are fit people who can run and even jump on their stairs. On level 2, are normal adults who can walk on stairs without any problems. On level 3, we begin to see the elderly, women with children, people who need more accessible facilities to enjoy their lives as existing facilities are inadequate for them. On level 4, there are the elderly but not yet disabled persons. On level 5, there are persons with disabilities. On level 6, there are independent wheelchairs users. Levels 7 and 8 (the highest level) includes people with wheelchairs, who cannot support themselves and require medical assistance. They need support from another person or additional support as shown in level 8. On the other side, lines A-B-C-D represent the satisfaction of these people’s requirements.

By applying the beginning principles of “equitable use” and “flexibility in use”, these are the principles that frame individuality in terms of human experience. Principles 3 and 4, “simple and intuitive use” and “perceptible information” can be related directly to the needs of blind and other visually impaired people. The principle “tolerance for error” can be regarded as an important dimension to remind us that all are human. Standard facilities should be applied, such as ramps at entrances, hand rails, wide doors for access and an easy to use public toilet. In addition, principles 6 and 7 can be acknowledged in place of the needs of wheelchair users and other physically impaired people. These show the link between the pyramid and the principles.
As Pyramid shown in the first level, if talk about physical abilities, people have more “skills”: they can walk, or lift, meaning they can use strength, and have stamina and physical skills. For sensory skills, abilities include speech, touch, and hearing. For example, products use in building facilities (handrails, or knobs) must not be potentially allergic but pleasant for touch. WCs must be adaptable for people with wheelchairs, but also for people who suffer from allergies (allergy concern all level). Also, we have to think about mental abilities, including cognition, intellect, and interpretation. People do not have the same knowledge, or make the same interpretation of things. So all explanations must be easy to understand for everybody, from the young to elderly people, with disabilities or without. Just in one look, we have to understand the message.
For Thailand, although there are some laws supporting the fair rights of persons with disabilities, the design for fairness has not always occurred in practice. Many designs were unable to support all people properly because most areas and buildings with the promise of “universal support” seemed to be available according to the objectives only after their construction. Subsequently, they were unavailable or the advantages were wrongly taken by persons without disabilities, for example, those in department stores or parking places. This led to a tendency of resistance against special provisions for the disabled and authorities were slow to take action against violators ("Push up A Ra Ya Satha Pat: Support CSR in Organization," 2014). When considering the definition of persons with disabilities, the Promotion and The Act on Promote and Improve the Quality of Life for Person with Disabilities B.E. 2550 defined the meaning of persons with disabilities as a person with limitations in performing daily life activities or social participation due to their disability, incorporated with obstacles requiring special necessity to gain support to perform daily life activities or socially participate in the same manner as persons without disabilities. In addition, persons with disabilities means

Person with disabilities means individuals who have limitations to perform their daily activities or to fully participate in society due to visual, hearing, mobility, communication, mental, emotional, behavioral, intellectual, learning and/or other impairments, resulting in different types of barriers, and have special needs in order to perform their daily activities and fully participate in society according to the types and criteria of disabilities prescribed by the Minister of Social Development and Human Security (National Office for Empowerment of Persons with Disabilities, 2007).

Moreover, the term “persons with disabilities” also seems to be a broad definition made by the WHO (2012) that the meaning of persons with disabilities covers all disabilities and limitations on performing any activity or participation, and impairment caused by body functions or structure. As a result, disability is a complex process reflecting interaction between physical qualifications of the person and their social skills. This meaning reflects how the society considers disability. In addition, society also believes that persons with disabilities have limited abilities. This view
makes the persons with disabilities to be seen as a burden on the society. To change this attitude it is necessary to change Thai people’s beliefs. They should sympathize towards persons with disabilities instead. In addition, Thai people should be encouraged to realize that persons with disabilities can have similar abilities and competencies as persons without disabilities. As a result, promoting and developing persons with disabilities to their full potential may provide great benefits for them. When considering persons with disabilities as “patients”, it was easy to consider them only as persons requiring support and a burden on society. However, if everyone consider persons with disabilities as “humans” the same as others, there should be no one with disabilities in this society because all humans are “humans” who will eventually encounter illness and death.

Fight for disability rights is one way to help them to feel the same as persons without disabilities. Everybody have to stop considering that they always need someone to help them live, and make efforts to let them act how they want. Social marketing was created to change behavior. Campaign must be used to persuade people to change and stop adopting attitudes that stigmatize persons with disabilities. Also, policies and laws need to change in the same way. In some countries, disability people are still discriminated against, for example for get married, or when travelling (e.g., in France, in October 2015, a young boy, with a medical assistant was refused entry to an airplane because of his respirator). Furthermore, people with disability have to feel that they can be a part of the society as a persons without disabilities. (United Nation Human Rights, 2010).

Persons with disabilities have the same health needs as persons without disabilities – HIV tests, cancer screening, and immunization. Disability cannot be considered only as a health problem. It is more complicated and more complex. People with disabilities have to find a place in the society in which they live. They have to deal with poverty and social exclusion. If people with disabilities have access to the health and rehabilitation services that they need, there will be less barriers for them (World Health Organization, 2015).

Recently, the National Development Plan for the Life Quality of the Persons with Disabilities No. 4, B.E. 2555-2559 emphasized building an integrated society for persons with disabilities and stated that all persons with disabilities shall be able to
access and utilize their rights fairly and equally without discrimination. The people with disabilities shall be able to access and utilize environment, technology, information, and news. In addition, strategies related to providing facilities for the disabled shall be established (Ministry of Social Development and Human Security, Department of Empowerment of Person with Disabilities, 2011).

2.2 Universal Design Process

The process of UD requires a macro view of the application being considered as well as a micro view of subparts of the application. UD can be applied to a variety of applications (Burgstahler, 2015). UD is composed with different process and principles. First, you have to identify where you want to apply universal design in products, objects, and the environment. After this, the universe of action needs to be defined. That is, it needs to be understood how to define to whom your product, object or environment will be useful to-for the elderly, students, or women but also recognizing more precise characteristics, such as age, size, ethnicity, or usage abilities, such as abilities to read and to understand. Once defined, different channels can be used to announce your process, such as the Internet or media. Guidelines or standards need to be created (possibly using existing standards in UD), and these have to be applied to maximize the benefit of the application. Make plans to facilitate the understanding, for example sign language, train stakeholders, make them feel like that it is an inclusive experience, and conclude by evaluate the application through asking users for feedback for future modification/improvement. The following list suggests a process that can be used to apply UD:

1) Identify the application
2) Define the universe
3) Involve consumers
4) Adopt guidelines or standards
5) Apply guidelines or standards REPEAT
6) Plan for accommodations
7) Train and support
8) Evaluate
In Thailand, from concept to implementation, a study by Instructor Chumkhet Sawaengcharoen from Faculty of Architecture, Thammasart University found the Rangsit model to explain the UD process

1) Define the problem/sharing knowledge
2) Site survey by follow the UD standard
3) Design stage by review knowledge and consult with professional
4) Present design concept to the community
5) Design develop
6) Final present to the community
7) Construction
8) Evaluation
9) Extend the idea
Figure 2.3 Universal Design Process in Thai Context

Source: Chumkhet Sawaengcharoen, 2014, p. 11.
2.3 Universal Design Strategic Planning in Thailand

UD is a concept that became popular in Thailand because it aims to make environments to be accessible, usable, convenient, and a pleasure for everyone’s benefit. Nowadays, there have been several UD campaigns that concentrated on spreading UD knowledge management and awareness in the society. Nevertheless, there was not enough cooperation between those campaigns which led to confusion, and the campaigns did not develop in the same conceptual way. For example, the Research and Creative Center for Architecture and Built Environment (RCCAB) of Faculty of Architect of Bangkok University had a vision for creating UD strategic planning that motivated UD in Thai society. From 1st year to 3rd year at the beginning of UD motivation, the Research and Creative Center for Architecture and Built Environment acted as a UD center to link related parties to work on UD together. Then from 3rd year to 5th year, the Research and Creative Center for Architecture and Built Environment asked for a supporting budget from Thai Health Promotion Foundation for creating the strategic planning under the concept “Designing for everyone” from May 1st, 2014 to December 31st, 2014 (Research and Creative Center for Architecture and Built Environment, 2014).

Objectives of the planning were:
1) For studying UD completed projects and UD projects in progress
2) For surveying and collecting people who work in UD range
3) For issuing UD cases and setting UD strategic planning
4) For announcing UD strategic planning to public. All objectives could show a clear goal and encourage a cross over learning between related UD parties that created a good relationship among them and encouraged such cross over work between related UD parties in the future.

The strategic planning was brainstormed between five groups of people who had worked in UD, as follows:
1) Government sectors
2) Private companies
3) Educational organizations
4) NGOs and
5) Urban parties

To solve each party’s working problems and create UD strategic planning that concerned three issues, namely:

1) UD knowledge transformation and database.
2) UD policies and regulations transformation.
3) UD public relations campaign. At the end, there was a follow up and evaluation of all UD parties for allocating the budget to UD projects.

A study for strategic plans of inclusive society according to UD concept, was as follows:

1) UD knowledge transformation and database were about knowledge management of UD research in Thailand. Operating them as a system that could reach the public, and support a crossover of knowledge between the relevant UD parties. According to the 1st issue, the Research and Creative Center for Architecture and Built Environment wanted to let these things happen, following the collection of a UD people data base, to let people better understand UD, and to create a UD knowledge network and encourage a crossing over of knowledge by designing an interdisciplinary certified course in UD. UD parties who should participate with this issue were government sectors, private companies, educational organizations, UD scholars and the Association of the Physically Handicapped of Thailand.

2) UD policies and regulations transformation developed an environment suitable for people with disabilities, and they were taken to a legal level. A strategy of this plan was creating campaigns that concentrated on improving UD architecture in society. UD architecture should be supported by related UD parties and become UD architecture law. The main parties of this issue should be the Thai Health Promotion Foundation and the Department of Empowerment of Persons with Disabilities (DEPD).

3) UD public relations campaign could improve awareness of upstream people who had an interest in changing the UD environment, including architectural students, architects, and people who lived with disabled people. These people would be leaders in changing and developing the UD environment in society, and also help to spread UD awareness to other groups of people. A strategy for this issue would incorporate UD architecture into the curriculum of all faculties of architecture and
develop UD courses for these people. Moreover, it should create a UD information center to link works from all related UD parties and help them to follow the same path. The main groups who could accomplish this were the Association of Siamese Architects, the Architects Council of Thailand, and institutes or universities with faculties of architecture, and NGOs.

**Figure 2.4** Universal Design Strategic Planning in Thailand

**Source:** Research and Creative Center for Architecture and Built Environment, 2014, p. 15.
### 2.4 Universal Design Strategic Planning Indicators in Thailand

Based on the first strategy, the objectives and indicators of knowledge and database development are as follows (Research and Creative Center for Architecture and Built Environment, 2014):

1) To find explicit directions for UD research through the cooperation of all sectors. For this part, indicators are determined for achieving goals, including a research project of experts and persons working in the UD field in Thailand regarding UD’s meaning, as well as a research project on UD at an international level.

2) To promote research building knowledge based on the Thai context by determining three indicators consistent with the goals set, including:
   
   (1) A project of the research that is considered as local wisdom for environmental improvement.

   (2) A project of the research on environmental improvement based on types of disability.

   3) To create management system of information, research, and knowledge via modern information systems leading to public dissemination. For this part, indicators were divided into four parts, including:

   (1) A database system of experts and persons working in UD field.

   (2) A database of knowledge obtained from experts and persons working in UD field.

   (3) A project of information technology system infrastructures that was accessible.

   (4) 80% of target populations were able to perceive and access data from the information system.

4) To build cross-disciplinary knowledge through five main indicators, including:

   (1) Build mutual knowledge among instructors and students from different faculties and persons with disabilities through a workshop project.

   (2) Hold UD academic conferences once a year.

   (3) Conduct mutual research among personnel from different organizations, increasing by 10% per year.
(4) Create learning through academic workshops or conferences.
(5) Establish at least one course as an UD Interdisciplinary Certificate Course.

Based on the second strategy, the objectives and indicators of development to drive policies and regulations are as follows:

5) To drive policies on environmental improvement for persons with disability through six indicators.
   (1) A campaign on UD places and buildings at least once a year.
   (2) Increase surveys on obstacles at places and buildings by 10% per year;
   (3) Follow up and evaluate number of buildings and places with environmental improvements caused by campaigns;
   (4) Hold at least one campaign per year to motivate entrepreneurs to improve their environment for working with persons with disabilities;
   (5) Find at least one guideline for consecutive campaign management;
   (6) Increase environmental improvement projects conducted under consecutive campaign guidelines by 10% per year.

6) To motivate enforcement of laws on the provision of facilities. There are three indicators including:
   (1) 80% of target populations perceive the provision of facilities in buildings and places.
   (2) Create a mechanism to monitor and evaluate the enforcement of laws on providing facilities.
   (3) Build guidelines for applying to the provision of facilities in the mass transit system.

For the final strategy, the objectives and indicators of public relations campaigns for building awareness and implementation are as follows:

7) To acknowledge the importance of change agents (e.g., students of Faculty of Architecture, architects, community technicians, and persons with disabilities) because they influence environmental improvement indicators, as follows:
   (1) Create a course of Bachelor of Architecture program considering UD.
   (2) Establish at least one guideline for developing the course.
8) To reinforce knowledge on UD among change agents to lead to environmental improvements throughout the system. Indicators are:

   (1) Create four training courses on environmental improvement based on UD principles for students of Faculty of Architecture, architects, community technicians, and persons with disabilities.

   (2) Hold specific training for at least five groups in both universities and occupational training institutions.

9) To reinforce UD in interdisciplinary fields to lead to its wider application. Indicator is creating one subject on UD in the general education program.

10) To establish organizations for collecting information leading to researching, distributing, and utilizing knowledge for the public. Indicators are:

    (1) Establish at least one UD Information Center.

    (2) Establish at least one Specific UD Information Center in cities and rural areas.

11) To connect the mutual network among academics, related occupations, and the public and private sectors. Indicators are:

    (1) Build cooperation in developing prototype UD area in communities.

    (2) Build at least one prototype area in the community.

Then UD strategic indicators will become standard for projects from each sector. They require a check list about what has been done to meet the targets of the key strategic indicators. These would include the scope of the project and also should collect the data from all projects to be a future UD database.
2.5 Research and Study of Social Marketing

Social marketing was born as a discipline in the 1970s, when Philip Kotler and Gerald Zaltman realized they could use the same marketing principles for selling products to consumers for changing the behavior and attitudes of a community.

Many definitions have been suggested for social marketing. Social marketing is the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programs designed to influence the voluntary behavior of target audience in order to improve their personal welfare and that of society (Andreasen, 1995).

Social marketing is a process that applies marketing principles and techniques to create, communicate and deliver value in order to influence target audience behaviors that benefit society (public health, safety, the environment, and communities) as well as the target audience” (Kotler & Lee, 2008)

Social marketing has the goal of changing behavior and this requires different tools. Social marketing has to focus on consumer orientation: meaning real importance must be given to individual needs. Mutually beneficial exchange: All parts of the project have to be beneficiaries, target and campaigner. Consideration of all environments, internal and external, Good communication, Media use, and Create objectives (Jones, Iverson, Penman, & Tang, 2005). The sponsoring agency examines the change goals in the belief that they will contribute to the individual’s or society’s best interest (Kotler & Roberto, 1989).

Social marketing uses the same tools as commercial marketing to sell products and ideas. Moreover, it uses commercial marketing techniques to target a specific category of the population to achieve goals and change society for the better. This is a key success factor for social marketing campaigns. Social Marketing tries to find what will best work with the target group. There is no the simple way to command the target group but it has to let the target group feel or desire on their own terms. The target group has to feel convinced about the benefits if they adopt the new behavior.
The product or service has to serve the target group’s needs, activate their satisfaction and minimize the cost of the new behavior (California Project Lean, 2004, p. 4).

Social marketing has been used successfully in the past to address a number of public health issues and therefore appears suitable for this application. An example was the project Leaders Encouraging Activity and Nutrition (LEAN) were awarded funds from the United States Department of Agriculture, via the California Nutrition Network for Healthy, active Families, to improve healthy eating behaviors among low-income Californians. Coordinator various health promotion and mass communication campaigns focusing on social problems have been called social marketing campaigns (California Project Lean, 2004). Some studies interpreted the term social marketing as the study of “the impact of a social marketing campaign on increasing fruit and vegetable consumption among middle school adolescents”. It supported the continued use of social marketing to create necessary environmental and policy changes to increase fruit and vegetable consumption among adolescents. It further found that combining cognitive approaches with social marketing-based environmental and policy changes may be more effective in changing fruit and vegetable consumption than either strategy alone (Thackeray, 2000)
The program was successful in achieving its social goals. The goal was to use social marketing by applying marketing theories and techniques to influence behavior about food consumption. In other words, social marketing is similar to commercial marketing, except for its goal. The target of social marketing is not to maximize profits or sales volume but to change behavior for a better society—such as persuading more people to use efficient lighting, stop smoking, or be environmental friendly. Moreover the kinds of actions that could benefit the community, such as the ‘eat your vegetables’ program, found that if people were healthier, they will put less pressure on healthcare programs. For a car pools program, if the people used the same car when they were going the same way, this will save energy and reduce carbon dioxide. As a result, social marketers have made behavior change their default option or major outcome of interest, putting behavior ahead of product and services in the marketing mix. This has led, in too many cases as mention to the use of persuasive communications and other elements of health communication to achieve these ends and a lack of attention to developing products and services to address public health needs (Stein, 2004).
2.5.1 Social Marketing Concept

Social marketing helps customers to meet their wants and needs. In health issue, it has both increased and decreased health concerns, such as increasing the consumption of eating vegetable, or stopping smoking behavior. Social marketing need people to adopt new behaviors.

Five factors define the concept of social marketing (Lefebvre & Rochin, 2007)

2.5.1.1 Consumer Orientation: It is understand by Consumer Orientation that everything in the project is driven by the consumer. Researchers have to follow, understand and evaluate consumer viewpoints and experiences to be sure to be on the right track.

2.5.1.2 Audience Segmentation: They have to create groups with the same interests, same culture, and same motivation. In our general audience, They have to subdivide in small groups to create the most efficient strategy.

2.5.1.3 Channel Analysis: They need to analyze the best place and the best time. In fact, they have to think about how and when our audience will be ready to answer and pay attention to our message.

2.5.1.4 Strategy: Plan to achieve the objective

2.5.1.5 Process Tracking: Mechanism to monitor the program implementation. The use of feedback is important to collect, revise and modify the components of the program.

To be sure to obtain good results, social marketing strategies have to focus on the customer. The strategies have to be ‘customer-oriented’. Marketing concepts, such as place, where and when, price (special supplies) and promotion (meanings) should reflect the target customer. If we want analyzable results, we should prepare everything. (Choi, 2003, p. 18).

2.5.2 Social Marketing Strategies

We can see, in social marketing campaigns, the use of simple expressions, of simple worlds or sentences to convince targets to change their behavior.

“Just think” (Anti-alcohol violence campaign)
“Smoking, is to be tobacco slave” (French Government’s tobacco campaign)
“Slow down stupid” (Queensland’s anti-speeding campaign)
―Careful, fragile‖ (French Government’s biker protection campaign)
―Draw the future.‖ (Siam Cement Group Campaign)
―No garbage in the world.‖ (Wongpanish Recycle)
―Green-Waste-PA.‖ (Thai Health Promotion Foundation)
―Reduce paunch for better health‖ (Thai Health Promotion Foundation)

Social marketing is only a model of practice. It cannot say that social marketing is a theory of behavior because it is not a critical tool. Social marketing does not evaluate a target’s assumptions. Also, social marketing focuses on behavior change of the target population. To explain ‘behavior change’, for example, if we target change for new products, accessing services which are better for general life, or adopt healthier conduct, more preventive/protective. To create a performance campaign, creators have to focus on program design, and have efficient metric techniques to measure consumer response, use and satisfaction. Social marketing gives us only the particular behavior that should be adopted. It does not give us a reason, why to adopt this behavior makes sense or why old behaviors are prohibited (Robinson, 2009). Social marketing strategy is the mix methods and tools which the campaign seeks to achieve its objective by understanding the three components: target-adopter segment, social marketing mix and social marketing budget (Kotler & Roberto, 1989).

2.5.2.1 Product

In commercial marketing, the main goal is to create products and services. In social marketing, we promote education about regulatory challenges, where the central problem is promotion. We ask to our target a change, a difficult change of behavior. Many of our audiences are economically disadvantaged, and discriminated against. Their world is really different from that of the social marketer. We have to try to see their viewpoints. We ask a single father to avoid smoking and drinking, to drive slowly, to care of children, to take medical tests, or to recycle dishes. Social marketing offers promotional messages but what people need are products and services that will allow them to worry less, and to improve their life (Smith & Strand, 2008). The product is offered to target adopters (Kotler & Roberto, 1989). In social marketing, products refer to the problem that we want to change. Behaviour objective is how audiences adopt a new behaviour. (Tyson & Hurd, 2009).
We can also say that products can also become a service in social marketing. For example, with prenatal care, the objective here is to increase people’s utilization of a service (California Project Lean, 2004). Then marketers have to define the Product/Service: What can they create and whether it will help their audience to reduce barriers and increase benefits.

Social product is idea, practices, or ongoing services that sustain the product's adoption or whether the social product is accompanied by a tangible item that is instrumental for adoption behavior (Kotler & Roberto, 1989).

**Figure 2.6** Social Marketing Product

**Source:** Adapted from Kotler and Roberto, 1989.

2.5.2.2 Price

In commercial marketing, price serves two functions. The first one is to ensure that the income will exceed the cost of company expenses. The second reason is to fix a price that consumer will find adapted to their needs and desires. In social marketing, the considerations are the same. Price is the cost of the target adopters have to bear (including the list price, discount, allowances, payment period, and credit
terms (Kotler & Roberto, 1989). For example: In Africa, impoverished communities prefer to pay for traditional health care than use free modern health care. In fact, for them, free health care services are equal to low quality services. So, we can see that they prefer to pay than receive free modern health care. Price, in social marketing can also be a factor of behaviour change (Smith & Strand, 2008). So, based on commercial marketing, social marketers have to define the Price of their products/services: It is essential to study audiences before and ask what will putting that product or service in place cost?

2.5.2.3 Place

In marketing, place refer to: Where products or services will be available, When (times) products or services will be accessible, and Who will be providing products or services at those places and times (Smith & Strand, 2008). The place means which social product is delivered to the target adopters that include distribution outlets and channels for delivering services, both governmental and in the private sector—location, inventory, and transport (Kotler & Roberto, 1989). For Place concerns, the main decision is: Where will you make that product or service available and is it easily accessible for the target? For example, if our targets are working people, will it be best to offer products/services during week days?

2.5.2.4 Promotion

Promotion is the part that most people think of when they think about marketing. Promotion comes after a long Jain of research and development phases, analysis work, testing, and decision making. Promotion is the means by which the social product is promoted to the target adopters, including advertising, personal selling, sales promotion, and public relations (Kotler & Roberto, 1989).

The main purpose of Promotion in marketing is to ensure that our targets understand exactly the benefits offered by new products and services, or educational advice provided to them. Also, the offers provided by marketers have to be credible, personally applicable to the consumer and real (Smith & Strand, 2008). To help to outline the Promotion: how will you promote that product or service so that people believe its benefits are credible?
Sometimes each P is not working alone. It has to be combined with each other. The interesting example of product by developed add value by combine marketing mix together.

The important strategies used in processing the work were developing the product from a normal magazine to a magazine for society, using pricing strategy and consistent product placing which socially disadvantaged individuals had a role in selling the products apart from the old distribution channel and building up profit sharing mechanism in order to circulate the money in the organization and help the society in the same time (Teera Sangsirisayankul, 2012).

Furthermore, additional “P’s” for Social Marketing as mentioned in a social marketing book, found that not only the standard P as we know in marketing mix, but there were also others that could be related to social marketing (Weinreich, 2010). Detail as following

2.5.2.5 Public

In social marketing campaigns, there are different audiences which are targeted. We can classify two different categories, such as internal and external groups. Internal publics are those who are involved, regardless of the way, in the program. External publics include target audiences, policymakers, and gatekeepers.

2.5.2.6 Partnership

To lead an efficient campaign, especially for health and social issues, we need to find partners who have the same main goal. It is too complicated to develop a huge campaign for only one actor. If we find a partner, we can work together, and exchange data to make the campaign more effective.

2.5.2.7 Policy

Social marketing programs motivate individual behaviour change. One of the barriers can come from the policy environment. If they do not have or feel support from Policy makers, it can become hard to obtain results. Also, policy can be a good media advocacy program that can definitely change the results of the campaign.
2.5.2.8 Purse Strings

Most of organizations which develop social marketing programs have to raise funds. They can find different sources, such as foundations, governmental grants or donations. We can add a new question for our strategy: Where will you get the money to create your program?

Lastly, it is necessary to explain and shape the final product, price, place, promotion and related decisions. Then, we can add some details of extra “P”s based on of each target.

2.5.3 Social Marketing VS Commercial Marketing

Social marketing is the application of marketing techniques that are expected to influence behaviour to achieve social goals. It may seem that social marketing is a concept similar to commercial marketing, but the goal is not to maximize profits or sales. The goal of social marketing is to change the behaviours that are beneficial to society (Smith & Strand, 2008).

Social marketing uses commercial marketing methods to develop strategic plans and implement programs. According to Bryant & al., social marketers have less flexibility in modifying products. Commercial marketing needs to encourage people to buy products while social marketing asks them to change their deeply ingrained personal habits. Asking to adopt behaviour with intangible benefits (e.g., smoking or alcohol cessation or exercise). Also, targets are different. In social marketing, they have limited resources. As said before, the use of a good marketing mix is efficient for both commercial and social marketing. They have to use 4p market segmentation analysis to identify the right target. The unique goal of social marketing is to motivate people to adopt socially beneficial behaviours, beneficial for the society and for people. To influence their target, products and services must be well understood, based on values. Again, this emphasises the importance of feedback from targets linking both social and commercial marketing (Choi, 2003, p. 2).

The different approaches of social marketing and commercial marketing are shown in table 2.1.
Table 2.1 Comparison between Social Marketing and Commercial Marketing

<table>
<thead>
<tr>
<th>Social Marketing</th>
<th>Commercial Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meets the needs of the priority population</td>
<td>Creates a need for the priority population</td>
</tr>
<tr>
<td>Society and consumer profit</td>
<td>Marketer profits more than consumer</td>
</tr>
<tr>
<td>Organizations with similar goals cooperate</td>
<td>Businesses with similar goals compete</td>
</tr>
<tr>
<td>Campaigns take longer to change behavior</td>
<td>Shorter time needed to sell a product</td>
</tr>
<tr>
<td>Consumer involvement and commitment needed</td>
<td>Shorter term commitment and involvement</td>
</tr>
</tbody>
</table>


If consumer’s behaviour change in commercial marketing, they will inject profit to the private company. In the definition of social marketing provided by Kotler and Zaltman, (1971), there is a more managerial focus.

The analysis, planning, implementation, and control of programs designed to bring about desired exchanges with target audiences for the purpose of personal or mutual gain. It relies heavily on the adaptation and coordination of product, price, promotion and place for achieving an effective response (Kotler & Zaltman, 1971, p. 4).

Young & O’Neill said that “social marketing is a program designed to influence the voluntary behavior of target audiences to benefit them, and also the society as a whole (Young & O’Neill, 2014).

The first reference of social marketing was in the Journal of Marketing, written by Kotler and Zaltman in 1971. Social marketing was described as a theory for marketing government and nonprofit services.
Social marketing is the design, implementation, and control of programs calculated to influence the acceptability of social ideas involving considerations of product planning, pricing, communication, distribution, and marketing research.

This article marked the beginning of social marketing. Subsequently, applied marketing techniques were adapted in government and non-profit organizations. Yet social marketing does not have to be presented only as a tool for non-profit organizations and health care services group. Those organizations are clients from social marketing agencies. Also, the goal of inducing social change is not restricted to government organizations. For example, funding for the arts can be considered as a part of social marketing. Consumer marketing approach is organization centered. By contrast, the social marketer’s approach is to

- Adopt a customer centered approach and recognize that change will only come about if one starts with the customer’s reality and adapts messages and other program elements to the customers’ perceptions, needs, and wants.

The essence of social marketing is to place the customer/target at the center of all the activities. In other behavior management tools (such as education and law), the focus tends to be on the organization (Andreasen, 1995).

Social marketing has to focus on the customer first, to study behavior, to understand how they act. As in Dashpande (2004) research on American college students drinking habits, social marketers have to consider every psychological quality of targets to promote their campaigns more effectively.

Social marketing has a less professional focus than commercial marketing. In fact, it is based more on social issues so it tends to have more focus on recreation times. Social marketing has been established in public agencies for many years. Social marketing can provide messages via different media such as speakers, meetings, public events, and mass media publications. With the evolution of technology, companies use the Internet to “hit the target” and increase the speed of the public’s reaction process. Similarly, nonprofit and public agencies began to also use the Internet to reach clients (Fine, 1990). For social marketing agencies, it is
easier to upgrade messages on the Internet as they are not restricted by an agency’s budget. Conversely, it is an opportunity to encourage the agencies to advertise recreation benefits on their web site (Choi, 2003, p. 7).

To conclude, social marketing is a type of marketing that applies the same principles and techniques as commercial marketing, with the goal to create goods to influence a certain audience that can also benefit society (Public health, safety, the environment, and communities). Social marketing as the same as commercial marketing in that it offers plan based on customer demand, setting objectives that it could work in short or long term for the organization. In contrast, because social marketing’s objective is to change behaviour, while being a non-profit organisation, the evidence to prove any program’s success is not easy to find.

2.5.4 Social Change

Since ancestral time, campaigns for social change have been promoted. They are not something new or recently created. There are many kinds of social campaigns: some are focused on human behaviour, and some are more general and concerned with the wellbeing of global earth. For example, campaigns which focus on health changes, such as stop-smoking campaigns, drug use and abuse, or the importance of nutrition, are created to modify human behaviour. Other campaigns for safe water, pollution, and protecting national reserves, are more environmentally oriented (Kotler & Roberto, 1989).

For campaigns which focus on attitude change, human behaviour and habits, the change agent-be it an organisation, an association, or a group of people- has important work to do to convince people to change habits that they have held for many years. Social change agents and target adopters must interact to enable campaigns to move forward in the right sense. Careful analyses of successful campaigns allow the researcher to identify the key factors to create good campaigns and to avoid failure. We can classify several such factors:

The first factor is to find a cause. That means to identify a problem and to develop a solution which must provide a better behaviour for target than their old behaviour.
The second factor is the change agent. A group of people or an organization which will encourage the desired social change or the behaviour change.

The third factor is the channels. Channels reorganize communication to propagate ideas and to encourage people to change.

The last one is the change strategy. This refers to the strategy to choose to get the best campaign results.

2.5.5 Behavior Change

Social marketing focuses on changing the behavior of a population. Behavior change can be defined in several different ways. Make the target use a new product, or access new services, or modify their health habits. Developed countries use the units of sales and visits to analyze the results of these campaigns.

In 1894 in the UK, to stop cholera, William Level, went to schools and showed students the importance of hand washing on regular occasions. His campaign influenced behavior change by demonstrating the benefits of regular hand washing was relevant to the interest of target audiences. The core of social marketing is its audience orientation. It seeks to understand what people want and why they do what they do. It adopts an audience-centered instead of an organization-centered to gain a more systemic view of the issue. Behavior influence campaigns are as effective if they tailor messages to each target audience. Social marketing approach is not based primarily on some theories or models, but instead considers the viewpoint of the audience. It is about understanding the determinants, the context of current behavior and desired ones from the point of view of the audience. Social variables must be taking into account, such as poverty, housing conditions, literacy, social capital, and working conditions. The goal is to promote social change, not to change people themselves (Sutton et al., 1995, as cited in Lefebvre, 2011, p. 61).

A campaign’s primary objective is behavior change. The difficulty is to measure changes in the behavior of people. Self-reports can be used to control and analyze results, but in some cases, for example alcohol or drug addiction, the reliability of self-reports can be questioned. Another problem can appear from the campaign, if it does not provide enough explanations for the target (Coffman, 2002, p. 23).
There are several models and theories about social marketing. Campaigners have to determine good subjects and good indicators which will help to choose which campaign is best and create indicators to evaluate the results. Social marketing has to focus on human behaviour, to understand what people need and what they want to change. Campaigners have to understand that from people in their own contexts, not from models or theory. Sometimes it may be better to aim to change organisations, such as a school for targeting young people, or policies. For example, if we want to promote a stop smoking campaign, it is logical that government must choose a policy which will not encourage people to smoke. If campaigners say that people have to stop smoking, but at the same time the government reduces the price of cigarette, that aim will not be achieved.

Also, some criteria are not only about targets. For example, we cannot ask poor people to buy the latest electric car to reduce pollution. Some contexts, like housing conditions or working conditions, depend on social and legal policies, not only people.

Behaviour change must be adapted from the way of life of targets and their life situations, not from models or theories. To use marketing principles in the real world is not that easy. Understanding is one thing, while practice is another. To achieve behaviour changes, the best way to understand how use those principle is to ‘deconstruct’ the behaviour. Then you will better understand how to impact people’s behaviour. For a social marketing campaign, the campaigner will use the same tools as for a normal campaign marketing. What is important is to really understand the behaviour and study human to be sure that our target will be “touched” by our campaign (Smith & Strand, 2008).
Before thinking about anything, you have to: first determine your target audience, and think about what is important for them, second, what do you want your audience do, and finally what factors will or could influence the behavior of the audience.

After those three points, the last and most important question is: What interventions will you implement that will influence those factors, so that the factors, in turn, can influence the behavior? The Behave Framework allows you to be sure that you have thought of everything before you make intervention design decisions (Smith & Strand, 2008).

### 2.5.6 Social Marketing Goal

Every social marketing program has a behavioural goal. You want to change a behaviour—people are doing one thing; you want them to do another. That is what your project, or at least a specific campaign, is about.

Prochaskau and DiClemente (1992) argue in “a Social Marketing Framework for the Development of Effective Public Awareness Programs” that people will not change their behaviour immediately. It take times, gradually. Young and O’Neill
(2014) suggests to better understand the process, they created a useful model, with five steps that can explain the behaviour changes of people (Prochaskau and DiClemente, 1986, as cited in Young & O’Neill, 2014, p. 2).

2.5.6.1 The first is called Pre contemplation. This is when people think that behaviour is not adapted for them at this point in their lives. For example: Stop smoking at 17 years old.

2.5.6.2 The second stage is called Contemplation. People begin to think and evaluate recommended behaviours. They heard about campaign and begin to think what they have to change.

2.5.6.3 The third stage is called Preparation. People begin to established actions to carry out the behaviour. They think about whatever is needed to begin the change.

2.5.6.4 The fourth stage is Action. This is the first time that people apply the new behaviour.

2.5.6.5 The last one is called Confirmation. People have integrated the new behaviour and will not return to the old one.

Sometimes social marketing may not be successful because of the attitude and campaign to encourage the target audience is still not seen as useful and important. It is a waste of time to develop a social marketing campaign in this situation. It is would be better to suggestions to change behaviour by developing a relationship with the community and acceptance of the same target before planning any social marketing campaign.

2.6 Communication on Community

Communication is important because every change activity or community reform project requires effective communication, both direct and indirect. Effective communication would be the way to increase the desired behavior change. Communication has several definitions in different contexts:

Alatalo (2012) used Pathi’s (2008, p. 1) definition that communication is “an exchange of facts, ideas, opinions or emotions and as a way that individuals or
organizations share meaning and understanding with one another”. But in addition to this, communication is also bidirectional (Alatalo, 2012).

Another definition that Alatalo (2012) used in her research was: “Communication is a process in which signals produced by people are received, interpreted, and responded to by other people” (Alatalo, 2012). When mentioning communication, it found effective communication started from the common elements of exchanging communication between the sender and the receiver. The sender and receiver share the same meaning when both of them correctly understand the same information. The quality of communication can determine the number of targets achieved through the specific communication. Moreover, communication is the key element for sustainable development and is an essential part of the process for helping a community development to achieve its goals (Sackey, 2014).

Effective communication serves as a means of interaction between persons in the community. The linkage between communication and community is:

Why does the community have such trust and support for participatory projects? ‘Because the people that work with it are valuable resources.’ ‘Because they have the support and acceptance of the people.’ ‘Because they make continual efforts toward improvement, as in this evaluation.’ These are the three answers most frequently cited by respondents during a participatory evaluation (Servaes, 2008)

Sackey (2014) states that “the goal of community development is a process of helping a community to develop towards its full potential, with communication as the key element of a sustainable development”.

Servaes (2008) states that two perspectives are required for communication development. The first perspective is of communication as a process not limited to the media or the message but interaction in a network of social relationships. The second perspective is a mixed system between mass communication and interpersonal channels that impact and reinforce each other.

Effective communication will help to move people from an individual centered deficit model of learning behavior development and change the collective and community-basis of participation, appreciation, and equity. Communication is
important in community because it must be fostered for people to participate in a project. Community is the basis of action in this research. The relevant definitions of community are:

A common definition of community emerged as a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings. The participants differed in the emphasis they placed on particular elements of the definition. Community was defined similarly but experienced differently by people with diverse backgrounds (MacQueen, et al., 2001).

This defines community as a group of people with diverse characteristics who are linked by location, social ties, share common perspectives, and joint action. To explain more the meaning of social ties, social ties are the interpersonal relationships. The types of relationships include: family, parent, cousin, roommate, household, lover, friends, neighbor, associate, coworker and support group (MacQueen, et al., 2001). Community voluntarily emerges from personal experiences. It is when individuals act without support from the government. It may be based on interest groups, such as cultural or religious groups etc. (Krishna, Wiesen, Prewitt, & Sobhan, 2000).

Professor Dr. Prawet Wasi states that

The meaning of community is the number of people with a common purpose who act generously towards one another. They attempt to act together to collaborate by learning in actions that include communication. The formation of communities may occur in different situations and locations, such as family community, work community, academic community, internet community, etc. (Siangdham Foundation, 2009).

From this meaning, we can see the meaning of community should include common interests, relationships and interaction. They may be in the same location or maybe not. The physical location is relatively unimportant. Communities focus on many projects to understand the characteristics, needs and barriers to behaviour of persons involved in health issues and environmental issues. Universal design may
help the elderly or persons with disabilities, and people of all ages and abilities, to meet their needs for a lifetime livable community. Moreover, the community is based on the project involved. In this dissertation, the main community was architects and students in architectural faculties.

Communication for community development means moving from a focus of informing and persuading people to changing their behaviors or attitudes to a focus of facilitating exchanges to solve a common identified problem. This in essence would lead to a common development initiative to experiment with people and to identify what is needed to support the initiative in terms of partnerships, knowledge and material conditions. Communication is a process through which needs, emotions, desires, goals and sentiments are expressed among human beings using codes, symbols and languages understood by the parties involved in the process. Communication is important as it involves the study of people relating to themselves and to one another in groups, societies, influencing one another and being influenced, informing one another and being informed, teaching and being taught, loving and being loved, entertaining and being entertained (Adedokun, Adeyemo, & Olorunsol, 2010).

Finally communication will help in community development and encourage people to participate in the project or campaign. Effective communication can reduce barriers in understanding and increase benefits for the target audience and the community. Moreover, the policy maker/community member and campaigner will take ownership of the campaign and understand the correct method of communication.

2.7 Community-Based Social Marketing

Community-based social marketing (CBSM) emphasizes direct contact among community members and the removal of structural barriers, since research suggests that such approaches are often most likely to bring about behaviour change. CBSM is a tool to make changing behaviours more appealing. In CBSM, practitioner can select different tools, such as building community norms, make a public commitment,
personal contact like home visits, also engaging community block leader to have more impact from leader to follower. Also do not forget the need for feedback and removing external barrier (Mckenzie-Mohr & Smith, 1999).

Israel and Warner explain that, after a survey by Cornell University and the American Planning Association, two-thirds of the audience recognized that the needs of seniors were the same as families with young children. The problem is finding actions on the ground which can satisfy both. According to the study edited by Thackeray, which compared the effect of a social marketing campaign in a five day curriculum-only intervention and ‘no-intervention’ in Salt Lake City school district. Here he compared the effects of both solutions on fruit and vegetable consumption. Other study variables were self-efficacy, asking behaviors, knowledge, availability, presentation and preferences for fruit and vegetables. The results showed, in the social marketing campaign school and the curriculum-only, no improvement, or really marginal improvement. The reasons cited were that several factors affect eating patterns, including individual, environmental and behavioural factors. The social marketing intervention addressed environmental factors, but not individual and behavioural factors. Studies which showed an improvement had involved multiple components (Thackeray, 2000).

The ultimate goal for social marketing initiatives is sustained behavioural change (Andreasen, 1995). Thus, when determining the effectiveness of community based social marketing interventions, direct measurement of behavioural change is advocated, as opposed to indirect measures such as self-reported practices or an increase of awareness, both of which have been described as unreliable indicators of behaviour (Redmond & Griffith, 2006).

The study of Guidelines on Promotion of People Participation in Increasing of Green Areas in Urban Communities to Lessen Global Warming found that

Social measures to promote participation of community people in tree planting through community-based social marketing technique worked by creating incentives for the people to participate in the desired behaviour, and by the creation of awareness of issues and impacts on future generations through reliable media such as speakers and video materials. In addition, social measures also include elimination of issues preventing behavioural changes of
the people from taking place-time, money, immoderate physical efforts, excessive brain cycles, social deviance, and non-routine activities. The study found this method was capable of persuading people in the community to participate in tree planting activities (Sunee Mulikamal & Prawpannarai Mulikamal, 2012).

Community participation is an active process by which beneficiaries or clients undertake projects with a view to enhancing their wellbeing in terms of income, personal growth, self-reliance or other values they cherish. To empower people and to forge an individual’s initiative and capacity to sustain an adoption even after a social marketing campaign is complete is an objective to their participation (Kotler & Roberto, 1989).

Community-based social marketing has its foundations in social psychology. It is based on the premise that behaviour change initiatives are most effective when they are delivered at the community level using personal contacts and it focuses upon removing barriers to behavioural change while concurrently promoting the benefits of change (Kennedy, 2010, p. 1144). Kennedy (2010) found that the development of environmental regulation theory and practice, and of community-based social marketing, has occurred largely in parallel. Community-based social marketing scholarship points to specific, actionable approaches to implementing parts of these regulatory systems. This scholarship suggests that, in conjunction with environmental regulation, community-based social marketing offers the ability to better manage individual environmental behaviour through a whole-systems approach of identifying and overcoming barriers to change, a comprehensive menu of behaviour change tools, and on-going feedback and evaluation.

2.7.1 **Community-based social marketing (CBSM) VS Social Marketing**

The most important difference between CBSM and Social marketing is that CBSM breaks barriers, and at the same time provides another activity which benefits the target. CBSM uses persuasion, commitment, and normative tools to provide behaviour changes. The big difference is that social marketing provides benefits to
the target by demonstrating social advantages (Mckenzie-Mohr, 2000, as cited in Lightman, 2011).

Social marketing has been utilized for several decades primarily to promote behaviour changes that improve public health and prevent injuries. CBSM borrows from social marketing an emphasis on understanding what impedes and motivates a target audience to act, as well as the importance of piloting programs prior to their wider implementation (McKenzie-Mohr, 2011).

CBSM is an offspring of traditional social marketing. CBSM involves a departure from social marketing practices on two fronts. First, it de-emphasizes the satisfaction of customer needs that is a linchpin of social marketing. Second, it de-emphasizes the marketing segmentation practices of social marketing (Lightman, 2011).

Cheng, Kotler, and Lee state that “CBSM uses marketing principle and techniques to create, communicate, and deliver value to influence a targeted behaviour in a socially beneficial and long-term way”.

### 2.7.2 Five Steps of Community-Based Social Marketing (CBSM)

CBSM is based on five steps: (1) carefully selecting the behavior(s) to be targeted; (2) identifying the barriers and benefits associated with the selected behavior(s); (3) designing a strategy that utilizes behavior change tools to address these barriers and benefits; (4) piloting the strategy with a small segment of a community; and finally (5) evaluating the impact of the program once it has been broadly implemented. Each of these steps is described subsequently (Mckenzie-Mohr & Schultz, 2014).

The description of five steps as below:

#### 2.7.2.1 Selecting Behaviours: In selecting behaviours, we have to understand that we have to choose, with few criteria, which part or which behaviour we want change, but also adapt our campaigns in terms of areas and of people’s habits. As an example, we would not create a campaign in Sahara desert for promoting water economy. For organizations that promotes sustainability, they have
numerous behaviours from which to choose. For example, a program which encourages reducing the use of energy in houses could promote insulation in attics, using economic bulbs, or programmable thermostat. Clearly, not all behaviours are of equal importance. So how we can determine which behaviour to focus on and how to make the best choice?

2.7.2.2 Identifying barriers and benefits: Each behaviour has its own barriers and benefits. Also, the choice of a target includes different barriers and benefits; if we choose children or the elderly, or low/high income earners. Barriers can be internal, such as a lack of knowledge, or external, such as a lack of facilities or accommodation.

2.7.2.3 Developing a Strategy: Community based social marketing has to promote the change of behaviour in positive way, and conversely has to discourage “bad” behaviour. It has to utilize the tools that foster change the behaviour.

2.7.2.4 Piloting can be compared as a test before the campaign. The point of a pilot is to identify and address problems before launching a campaign throughout the community. You should expect there to be problems and build into your plans the opportunity to refine your strategy until it works well. Until you do not have the results expected about behaviour changes, you have to pilot again and again to obtain better results.

2.7.2.5 Broad-scale implementation: When a pilot has demonstrated that a behavioural change can be brought about cost-effectively, it is time to broadly implement the strategy. Prior to this, collect baseline information regarding the present level of engagement in the behaviour to be promoted. Once you have implemented your program, begin to collect data to ascertain its impact.

You have to realise that you will evaluate results at different times to see if behaviour changes over time. Collecting data and beginning to analyse it is important for the following up the survey (McKenzie-Mohr, 2011).
Figure 2.8 Community-based Social Marketing Step  
**Source:** McKenzie-Mohr, 2011, p. 4.

Pickens (2002) develops the CSBM model by adapt from McKenzie-Mohr and Smith. The first step of this model is organized benefits and barriers to a particular behavior are identified.

Figure 2.9 Community-based Social Marketing Model by Pamela Mae Pickens  
**Source:** Pickens, 2002, p. 19.
2.7.3 Community-based Social Marketing (CBSM) Tools

Community-based social marketers have many tools to implement their campaigns, including commitments, prompts, convenience, social norms and communication. We can separate these tools into two different groups. The first three-commitment, prompts and convenience—are used for changing a behaviour that already exists. They encourage people to change and reduce the gap between the intention to change and the desired behaviour. Social norms and communication are there to create motivation, and influence targets (Lightman, 2011).

2.7.3.1 Commitment

Commitment is a tool which encourages people to promise themselves something. Individually it usually motivates people to sign something. Then if they want to return to their earlier bad behaviour, they can remember their commitment and think that if they fail, they are being irresponsible.

Commitment in public may be the best solution. As we now live in a “comparison society”, people will take more care to keep their commitment if their neighbours have made the same promise. They will be concerned that their personal image will be affected if they do not keep their commitment (Lightman, 2011).

Durable commitments, such as placing some stickers to inform people that we are using energy saving lights is also a good way to encourage people, and foster both social norms and social diffusion (Mckenzie-Mohr & Schultz, 2014).

2.7.3.2 Prompts

Prompts encourage people to follow good behaviour. Prompts can be stickers, signs, or sentences which are placed near the object (for example, near ashtrays or near containers) to help people remember to use objects correctly (Lightman, 2011).

Numerous actions that promote sustainability are susceptible to the most human of traits: forgetting. Fortunately, “prompts” are effective in reminding people to engage in sustainable behaviours. A prompt is a visual or auditory aid which reminds us to carry out an activity that we might otherwise forget. Prompts can be slogans, brochures, stickers, posters, or oral reminders (McKenzie-Mohr, 2011).
2.7.3.3 Norms

To date, few programs have emphasized the development of community norms which support people engaging in sustainable behaviour. This lack of attention to norms is unfortunate given the impact they can have upon behaviour. Norms guide how we should behave. If we observe others acting unsustainably, such as using water inefficiently, others are more likely to act similarly. In contrast, if we observe members of our community acting sustainably we are more likely to do the same. When considering including norms in programs, keep the following guidelines in mind: Make the Norm Visible (Mckenzie-Mohr & Schultz, 2014).

For norms to influence the behaviour of others they have to be aware of the norm. The very act of taking recyclables to the curb side, for example, communicates a community norm about the importance of recycling. Most sustainable activities, however, do not have the community visibility which recycling has, and norms that support the activity, therefore, have to be promoted more actively. Finding ways to publicize involvement in sustainable activities, for instance, such as providing on-going community feedback on the amount of water that has been saved by homes using water efficiently (Lura Consulting, 2010).

2.7.3.4 Communication

To provide effective communication, you have to use specific, concrete images which touch their target. Also, your sources need to be credible and trusted by your target. The message must be clear, and if you want to involve more, you have to invoke community objectives (we have all the same goal), so that people will act for all the community and not only for themselves (Lightman, 2011).

Communication can be used to deliver a message with the aim to learn new things and encourage people to change. We will see the impact of communication in different ways. Also, there are different communication supports to deliver the message, mailing, media mass, door to door, to see which one is the most efficient (Beran, 2002).

2.7.3.5 Incentive

Incentives are a useful tool to motivate behaviour change. Incentives are most effective where the incentive and the behaviour are closely paired, and where they are visible. Some studies, (Wang and Katzev, for example) prove that
incentive can be a key factor for succeed on changing behaviour. Inceptsives must be positive and not negative, and useful, in direct link with the behaviour for example bottle holder, or special bag for recycling (Lightman, 2011).

Financial incentives can help people to adopt a new behaviour or to encourage people to continue the behaviour that they adopted before (McKenzie-Mohr, 2011).

2.7.3.6 Social Diffusion

Social diffusion is important for targets to show that they are acting in a good way. For example, prominently placed curb side recycling is clearly visible for other people. This shows that recycling is important for all and is like an intrinsic value which encourages others to do the same (Mckenzie-Mohr & Schultz, 2014).

Social diffusion can be defined as the influence on your decision making by your surroundings. For instance, the last movie you watched, the last restaurant where you have been, or even the school that you chose for your children. These decisions were likely influenced by someone who told you ‘Oh, that’s movie was so good did you see it?’ It is the same for CBSM. Behaviour can change with help of social diffusion. In the 1930’s, farmers in USA were in crisis because of the loss of topsoil (fertile land for agriculture). To fix this problem, the government distributed brochures in which they encouraged farmers to plant trees to protect their land from the wind. At first, farmers thought that planting trees would make the land drier. Yet a few farmers, helped by local government, adopted this technique. After positive results, other farmers who were sceptical went to the farm of the ‘precursor’ farmer, and, after talking and discussing the results, they decided to adopt the same technique (McKenzie-Mohr, 2011)

2.7.3.7 Convenience

Reduce barrier is the logo of CBSM. Convenience is important to encourage people to change. For instance, people will not recycle if the first recycling centre is too far from their home. They also have to use their cars (non-ecological behaviour) to get there, so it would be a double penalty. Also, some changes may be convenient for one, but reduce convenience for others. So if we make bicycle paths for cycle users, car users will have less space on the road (Mckenzie-Mohr & Schultz, 2014).
Convenience can be defined as a way to facilitate access to services or products with the aim of changing behaviour. In those two examples, where the object was to promote recycling, we can see that facilitating access to recycling tools was a success. In first example, they decided to use three hypotheses: option1/Put an ashtray at 100 feet from the trash, option2/Put an ashtray near the trash, and option3/Create a combination of trash-ashtray in one ‘object’. During a 48 hour day, the creator of the study counted the number of appropriate and inappropriate waste in each options. Results proved that the last option, the combination, was successful with 89% of appropriate waste. Conversely, option 1 had only 16% of appropriate waste. In another study, just by changing position of containers, which were on a laundry room before and unused, when they were placed in the garbage room the use of containers increased 50%. So, to conclude, according to this result, convenience is very important to facilitate ways for people to use appropriate tools and change behaviour. If we want to see change, we have to make available tools so it is easy for people to change.

Pickens (2002) apply the five of CBSM tools that are: commitment, prompts, norms, communication, and incentives. We are not saying that CSBM programs need all of the tools listed above, nor that they be used simultaneously. The selected tools are shown below:
## Table 2.2 Principles of Community-Based Social Marketing Tools

<table>
<thead>
<tr>
<th>PRINCIPLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>The commitment tool is utilized by asking a person to make a commitment to change using a verbal or written agreement. The argument behind using this tool for behavior change is that once a person commits to a certain idea or action a subtle shift occurs in their attitude toward it. This shift in attitude causes that person to act with consistency.</td>
</tr>
<tr>
<td>Prompts</td>
<td>Prompts are visual or auditory aids that remind a person to carry out an activity that they might otherwise forget. Prompts are useful in community-based social marketing campaigns because they can be used to target specific behavior and don’t need to be costly additions to the program. Sometimes, a person simply forgets to act, so by hearing or seeing a prompt they are reminded.</td>
</tr>
<tr>
<td>Norms</td>
<td>Norms guide how a person behaves because they look around for clues on how to respond. Behavioral norms influence change through techniques such as “modeling” desired behavior.</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication is used to effectively persuade, educate, and communicate desired behavior changes in a community based social marketing campaign. Without creating or “framing” a message, new ideas and attitudes could not diffuse through a community.</td>
</tr>
<tr>
<td>Incentives</td>
<td>Incentives are a tool used to motivate a person to continue performing a desired behavior, or to change from an undesirable to a desirable one. Some common incentives include user fees, refunds, variable rates, preferential treatment, and social approval.</td>
</tr>
</tbody>
</table>

An example that illustrates combined CBSM tools is Recycling, paper reduction and environmentally preferable purchasing by Elaine Janet Cole (2007). This study occurred in the American University and the target was all people who were able to study, work or pass through the campus. The first tool chosen was communication channels. This tool allows the diffusion of the idea to the target. The researcher used a variety of communication channels to promote her project. She used a pre-survey to find the best channel, and the majority of answers e-mailing. But, to be sure that targets will receive the information, and also because not all people read and remember mail, she decided to use multi channels, such as the student newspaper, printed articles, open meetings, interviews on local TV and also the Internet’s YouTube channel. Prompts were also used to convince targets to adopt and change behaviour on the school.

Prompts serve as reminders for a targeted behaviour. Here, the prompts were stickers. The association decided to create stickers with recycled paper, in partnerships with two companies. Prompts were placed in strategic places, such as printers, or near recycling dustbins to explain how to effectively recycle waste. Stickers were written in different languages to target more students. Another prompt was an email sent with information about waste recycle, called ‘Wait! Can you recycle that?’ This was sent with an online brochure to explain how to recycle if you want to act like a good citizen. The pledge was sent back one month after the beginning as a reminder. Prompts were also placed also on recycles paper, to send the message that using recycled paper was a good thing to do.

The last tool used was commitment. Commitment can be understood as an involvement. The use of commitment, when done in a group or in public, helps to increase participation because people like to be seen as being consistent and when tied to a groups of familiar people they are more likely to follow through with their actions (Mckenzie-Mohr & Smith, 1999). People will be more motivated if they are accepted in a group with the same (more or less) values. In this study, they decided to
create a web-based pledge as a commitment, the same pledge was used as prompt one month later to serve as a reminder (Cole, 2007).

In Thailand, Thai Health Promotion Foundation is an organization which promotes community based social marketing for their campaign. To improve the well-being of Thai citizens, Thai Health Promotion Foundation uses a model called the ‘Tri-Power Model’. The three keys of this model are: creation of relevant knowledge through research, social mobilization and political involvement and advocacy.

The organization encourage villages, districts and provinces to intensify health promotion, by working with non-governmental organizations, companies and civil society. Future work will be to influence public policy to promote importance of health behavior.

Thai Health Promotion Foundation has developed a social marketing plan to dealing for many issues involving Thai people, such as alcohol, tobacco, car-bike accidents and physical exercises to neutralize tobacco and alcohol advertising. Thai Health Promotion Foundation has campaigned to improve health for all groups of people (children, women, persons with disabilities, and the elderly).

Many plans created by Thai Health Promotion Foundation deal with social issues such as tobacco consumption control, alcohol consumption, health promotion in the community, children’s youth and family health (Thai Health Promotion Foundation, 2014).

Finally, this model seeks to move individuals in the community from engaging in some pre-determined “incorrect” behaviour to a different, “correct” behaviour. To foster this change the model primarily focuses on voluntary actions as opposed to regulations. The result is measurable behaviour change within an identified community.

2.8 Research Review

Many researcher apply social marketing to their research such as “Effects of condom social marketing on condom use in developing countries: a systematic review and meta-analysis”. Social marketing is the global technique that uses not only in
western area but also in Thailand “Social Marketing Communication Strategies through be magazine”. It found that social marketing different from commercial marketing because it measure behavior change, awareness and knowledge not profit. It can prove that social marketing is the technique that improves behavior of the audience. As it use for communicate on reducing alcohol consumption among undergraduate students in Bangkok by Chonlada Tantikittichai (2011) and the impact of a social marketing campaign on increasing fruit and vegetable consumption among middle school adolescents by Rosemary Thackeray (2000). For the community-based social marketing issue, Community-based social marketing has its foundations in social psychology. It is based on the premise that behavior change initiatives are most effective when they are delivered at the community level using personal contact and it focuses upon removing barriers to behavioural change while concurrently promoting the benefits of change (Kennedy, 2010, p. 1144). The research topic “Using Community-Based Social Marketing Techniques to Enhance Environmental Regulation” by Amanda L. Kennedy (2010), CBSTM technique is the part to change the regulation.

UD emerged from slightly earlier barrier-free concepts. UD is barrier free building modification consists of modifying buildings or facilities so that they can be used by people who are disabled or have physical impairments. Al-Tal, Sami Mohammad. study “Integrated Universal Design: A Solution for Everyone” by address the problem of accessibility and to offer an easily adoptable design solution through the concept of UD. It found that UD is the greatest concept for everyone and no need to adapt (Al-Tal, 2002).

The below is review of research of Social Marketing, Community-Based Social Marketing and Universal Design that can apply in the study.
<table>
<thead>
<tr>
<th>Study</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influences of Online Social Marketing Communication on Reducing Alcohol Consumption among Undergraduate Students in Bangkok</td>
<td>Finding: The patterns of online social marketing communication on reducing alcohol consumption among undergraduate students in Bangkok, to study influences of online social marketing communication on reducing alcohol consumption among undergraduate students in Bangkok, and to study the opinions of undergraduate Students in Bangkok about online social marketing communication on reducing alcohol.</td>
</tr>
<tr>
<td>Type: Thesis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Marketing Communication Strategies through “Be magazine”</td>
<td>Finding: To study social marketing communication strategies, roles in social business and problems and obstacles of “Be magazine”.</td>
</tr>
</tbody>
</table>
Table 2.3 (Continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Detail</th>
</tr>
</thead>
</table>
| Peggy Hiu-Nam Choi (2003) | Organization Of Public Parks And Recreation Web Pages: Application Of Social Marketing Concept  
Type: Dissertation  
Country Setting: USA  
Finding: To exploratory study to examine if social marketing messages were observable at public parks and recreation agency Web sites. |
| Rosemary Thackeray (2000) | The Impact of A Social Marketing Campaign On Increasing Fruit And Vegetable Consumption Among Middle School Adolescents  
Type: Dissertation  
Country Setting: USA  
Finding: The impact of a social marketing campaign on increasing fruit and vegetable consumption among middle school adolescents among middle school adolescents in the Salt Lake City School District, by comparing a school-based social marketing campaign to a 5 a Day curriculum-only intervention, and to no-intervention. |
| Amanda L. Kennedy (2010) | Using Community-Based Social Marketing Techniques to Enhance Environmental Regulation  
Type: Journal  
Country Setting: Australia  
Finding: An environmental regulation may be improved through the use of community-based social marketing techniques. CBSM technique is the part to change the regulation. |
<table>
<thead>
<tr>
<th>Study</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumalee Mullikaman and Prawpannalai Mullikamarn (2012) Guideline on Promotion of People Participation in Increasing of Green Areas in Urban Communities to Lessen Global Warming Type: Project</td>
<td>Finding: The study found that social measures to promote participation of community people in tree planting through community-based social marketing technique worked by creating incentives for the people to participate in the desired behaviour, and creation of awareness of issues and impacts on future generations through reliable media such as speakers and video materials. In addition, social measures also include elimination of issues preventing behavioural changes of the people from taking place-time, money, immoderate physical efforts, excessive brain cycles, social deviance, and non-routine activities. The study found this method was capable of persuading people in the community to participate in tree planting activities</td>
</tr>
</tbody>
</table>
## Table 2.4 Universal Design Research Summary

<table>
<thead>
<tr>
<th>Study</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antika Sawadsri</td>
<td>Country Setting: Thailand</td>
</tr>
<tr>
<td>Accessibility and Disability in the Built Environment: negotiating the public realm in Thailand</td>
<td>Finding: Access for disabled people and the ways impaired bodies negotiate with hostile environments is seen as a method that is resistant against the dominant stereotype of disabled persons as passive and burdensome.</td>
</tr>
<tr>
<td>Sami Mohammad Al-Tal</td>
<td>Country Setting: USA</td>
</tr>
<tr>
<td>Integrated Universal Design: A Solution for Everyone</td>
<td>Finding: To address the problem of accessibility and to offer an easily adoptable design solution through the concept of Universal Design, which can be defined as the design of products and environments that can be used and experienced by people of all ages and abilities, to the greatest extent possible without adaptation.</td>
</tr>
<tr>
<td>Kimberley Hodgson (2011)</td>
<td>Country Setting: USA</td>
</tr>
<tr>
<td>Multigeneration planning: Using smart growth and universal design to link the needs of children and aging population</td>
<td>Finding: Universal design (UD) standards improve the livability of homes and neighborhoods, not only for the elderly and the disabled, but for every member of the community. Universal design requires the cooperation of planners, architects, and designers, and not only addresses internal design and functionality but also helps tackle issues of exterior access to buildings and spaces, landscaping, and maintenance. Planners</td>
</tr>
</tbody>
</table>
must be at the forefront in educating residents about the benefits of multigenerational planning.
2.9 Implementation

CBSM has targeted behavior change by requiring individuals and businesses to engage in diverse actions, such as reducing waste, increasing water and energy efficiency, stopping smoking etc. It has been proved that more change takes place when campaigns use personal contacts in community. The traditional tools are ads, brochures or websites to encourage behavior change but these alone do not work. A new approach, community-based social marketing, is now being used effectively in numerous programs in Australia and New Zealand.

CBSM initiatives show how and what tools may be implemented to change behavior in the long term. Behavior is complex, contextual and multi-faceted, and there is no mechanism to analyze behavior. The changes to behavior may succeed in some situations from regulations alone. However, McKenzie-Mohr and Smith (1999) argue that the ability to regulate effectively is contingent upon the willingness of people to be regulated. Community based social marketing offers a well-developed mix of supplementary interventions to support behavior change.

After considering a wide variety of changing behavior programs and studies, the researcher considers the outcome of community-based social marketing campaign related to the UD concept can provide benefits to persons with disabilities and the elderly, as well as the wider society. This perspective may help authorities to create a more inclusive society in Thailand.
2.10 Conceptual Framework

Figure 2.10 Conceptual Framework
CHAPTER 3

RESEARCH METHODS

This study on Universal Design for Building an Inclusive Society in Thailand: Community-Based Social Marketing is a qualitative research. Data collection was divided into data collected from documents, data collected from videos, data collected from observation, data collected from project participation, and data collected from interviews with some experts and project managers or major operators of each project.

The researcher determined the scope of research upon the research’s objectives that consists of the following procedures:

3.1 Scope of Research
   3.1.1 Scope of Content
   3.1.2 Methodology
   3.1.3 Timing Scope
   3.1.4 Sample Group

3.2 Methodology
   3.2.1 Tools used in data collecting
   3.2.2 Data Collection
   3.2.3 Testing Validity and Reliability
   3.2.4 Action and Data Analysis
   3.2.5 Presentation of Data Analysis Result
3.1 Scope of Research

3.1.1 Scope of Content

The objectives of this research on Universal Design for Building an Inclusive Society in Thailand: Community-Based Social Marketing are divided into three main objectives as follows:

1) To study the process of universal design campaign in Thailand.
2) To analyze the strategies of community-based social marketing (CBSM) for Universal Design (UD) used in Thailand to create an inclusive society.
3) To analyze the output of the strategies of Community-Based Social Marketing (CBSM) for Universal Design (UD) in Thailand.

3.1.2 Methodology

This research is a qualitative research. To explain the technique of qualitative research, it is as follows: Qualitative research includes techniques such as focus groups, prototyping, talking to community leaders, direct observation, and in-depth individual interviews. These methods are qualitative because they involve small numbers of the target population and, therefore, are not representative (Smith & Strand, 2008). The researcher used several methods of data collection including:

3.1.2.1 Data collected from related documents according to the research objectives as mentioned above. This data collection was conducted by studying primary sources including internal documents, project objectives, operational strategies, as well as secondary sources including books, articles, magazines, thesis, the Internet, research reports, and related printed media. Moreover, it was also conducted through collecting data from Youtube from the Muang Jai Dee TV program & Si Yaek Jai Dee project from Sam-mi-ti news. This program first broadcast on October 8th, 2012 and ended on January 28th, 2013. However, the researcher was able to study fifteen tapes of the program via the Internet and YouTube. Those tapes were 1-9, 11, 12, 14, 15, 16, and 17 (Remarks: Tape 10 was not recorded and Tape 13 was a duplicate of Tape 12).
Table 3.1 Summary Collection Data from YouTube

<table>
<thead>
<tr>
<th>YouTube</th>
<th>On air date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muang Jai Dee TV program Tape 1</td>
<td>8 October 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 2</td>
<td>15 October 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 3</td>
<td>22 October 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 4</td>
<td>29 October 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 5</td>
<td>5 November 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 6</td>
<td>12 November 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 7</td>
<td>19 November 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 8</td>
<td>26 November 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 9</td>
<td>3 December 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 11</td>
<td>17 December 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 12</td>
<td>24 November 2012</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 14</td>
<td>7 January 2013</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 15</td>
<td>14 January 2013</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 16</td>
<td>21 January 2013</td>
</tr>
<tr>
<td>Muang Jai Dee TV program Tape 17</td>
<td>28 January 2013</td>
</tr>
<tr>
<td>Si Yaek Jai Dee project from Sam-mi-ti news</td>
<td>11 August 2014</td>
</tr>
</tbody>
</table>

3.1.2.2 Field Research: Field research was conducted by using structured observation, while to collect basic data, participant observation and non-participant observation were used. Observation concerns our direct experience of a phenomenon or event. The key value of observation is to see the behavior itself rather than the reported behavior (Hammond & Wellington, 2013, p. 111). Observation has advantages by providing direct access to the social phenomena under consideration. Observations are applicable in a variety of contexts and involve both qualitative and quantitative data that can be formal or informal. Observations are associated with our total vision. This means translating the senses of sight, sound, and touch.

Observation is more than just recording of data from the environment. When we observe, we are active, not passive collectors of data like a tape recorder or video camera. Our brains are engaged as well as our eyes and ears, organizing
data so we can make sense of them. Perception is thus part of all human observation (Fox, 1998, p. 2).

According to UD concepts, the researcher as observer participated in several group activities held from May 1st to December 31st, 2015. These included the Universal Design Talk Project in elective course in Architectural faculty by KMITL held on March 20th, 2015, and the “Ar Ra Ya sa Ta Pat” Ambassador Project held in the plenary meeting on November 8th, 2014 and Faculty Party 2014.

In addition, the researcher as participant observer also took part in the Universal Design project by The Association of Siamese Architects under Royal Patronage (ASA) that consisted of four parts. The researcher participated in part 1 as observer, which was design exhibition activity for the public at “Ban Jai dee 56” held in Architect 13 during April 30th–May 6th, 2013, at the IMPACT Exhibition and Convention Center.

3.1.2.3 Collecting data from sample groups through structured interviews for basic data and questions addressing the research objectives. In-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program, or situation. For example, we might ask participants, staff, and others associated with a program about their experiences and expectations related to the program. This could include the thoughts they have concerning program operations, processes, and outcomes, and about any changes they perceive in themselves as a result of their involvement in the program. The process for conducting in-depth interviews follows the same general process as followed for other research: plan, develop instruments, collect data, analyze data, and disseminate findings.

The questions for the interview guide consisted of open ended questions that were modified to be consistent with situations through unstructured interviews. This type of interview gave an opportunity to the researcher to obtained plentiful data without limitations. It could be considered as narrative interview.
3.1.2.4 Interview Question Guidelines

1) Interviewee was asked to introduce herself/himself:

2) How do you involve with UD?: Introduction
3) Please tell about your project’s process and details: Process
4) Who are your project’s target group?: Strategy
5) How does your project’s target group involve with you and UD?: Strategy

6) What are problems of your project’s target group?: Strategy
7) Guidelines of solution for solving problems in order to give benefits to your target group: Strategy
8) What do you wish to see from your project?: Output
9) How do you drive your project?: Output

3.1.3 Timing Scope

In this research, the duration of field data collection of specific project was during 2014-2015.

3.1.4 Sample Group

For key informants, the researcher collected data from field research by using purposive sampling because the researcher was interested in the major campaigners in each project. There were four main groups. Persons playing a role in developing UD strategic planning in Thailand were the Government sector, the Private sector, the Education sector and NGOs.

3.1.4.1 Government sector
Poom (pseudonym) Social Marketing department of Thai Health Promotion Foundation

3.1.4.2 Private sector
Yodyiam Theptaranon Managing Director of International Project Administration Company Limited (Inter PAC)
Pavinee Limpasurat Architect of International Project Administration Company Limited (Inter PAC)
3.1.4.3 Education sector
Rittirong Chutapruttikornat, Ph.D. School of Architecture, Bangkok University
Antika Sawadsri, Ph.D. Faculty of Architecture at King Mongkut’s Institute of Technology Ladkrabang (KMITL)

3.1.4.4 NGOs
POL.LT.COL. Bundit Pradabsook, Ph.D. President of The Association of Siamese Architects Under Royal Patronage
Kitti Jai Netpisavanich, Independent Living Foundation (Chonburi Branch) and persons with disabilities
Krisana Lalai, Head of Universal Design Ambassador, Journalist and persons with disabilities
Pakkard Poesri, “A-ra-ya-satha-pat” Ambassador, persons with disabilities

The selected projects consisted of five projects from four major agencies and were obtained by using purposive sampling using the following criteria. Select projects using UD criteria with public areas and environment that is not product. 1) Select four main agencies to be consistent with Strategic Plan of Inclusive Society According to Universal Design concept. 2) For government sector, select projects operated by Thai Health Promotion Foundation that was an organization supporting UD for other organizations, as well as providing funds to Strategic Plan of Inclusive Society According to Universal Design concept, that is, the “Muang Jai Dee” TV program. 3) For private sector, select projects operated by competent architects who were experienced in the design and construction field. This project was operated by the former President of the Association of Siamese Architects under Royal Patronage (ASA) and its objective was to study medical information for elderly in 2014 led by Yodyiam Thepthranon and team. 4) For educational sector, select projects operated by the core team of Strategic Plan of Inclusive Society According to Universal Design concept, that is the Universal Design Talk project 2015 in elective courses in the Architectural faculty of King Mongkut's Institute of Technology Ladkrabang. 5) For NGOs, select UD projects that were familiar and directly operated by professional design organizations for physical areas related to UD. Two projects
selected from two operators consisted of the Universal Design project by ASA and the “A-ra-ya-sath-pat” Ambassador by Krisana Lalai.

Qualitative field research provided the researcher with a better understanding of the needs of the people involved. A purposive technique was used to access a particular subset of people related to UD building design. When talking about the designer, the organization that was concerned was the Architects’ Association. For designers, it was thinking about the well-known architect who was the ex-president of the Association of Siamese Architects under Royal Patronage (ASA) and who also had experience with hospital projects related to UD. The Architect’s Association of Thailand is referred to as the ASA. After interviews, the researcher found ASA did not have sufficient access to people with the necessary characteristics. Then researcher asked a representative of the ASA to recommend the names of campaigners whose work was related to UD. He gave further referrals, which provided additional contacts, especially the Thai Health Promotion Foundation, the organization that campaigns for better health for Thai people, and also an educator he had previously worked with. Krisana Lalai was the campaigner for A-ra-ya-satha-pat recommended by KMITL.
Figure 3.1 Sample Group
3.2 Methodology

3.2.1 Tools Used in Data Collection

The researcher used various types of tools to collect data for appropriateness and correctness by considering their logical validity. The results of interviews with two persons were analyzed and the data obtained was checked with other data sources, including interviews and articles in magazines and documents, as well as overall inspection of experts about content, languages, and coverage.

3.2.1.1 Basic Survey Form. This was used for recording related data, including documents, academic articles, research, project conclusions, articles in magazines and newspaper, articles in websites, as well as tapes of TV program watched via YouTube.

3.2.1.2 Observation Form. The researcher used participant observation for collecting data in the project (Campaign) participated in by the researcher when she was able to interact with relevant persons in the campaign. In addition, non-participant observation was used for recording general characteristics of the project.

3.2.2 Data Collection

Data collection was divided into 2 steps including:

Step 1: Collecting correct documents and researches
Step 2: Collecting field research–Data was collected through observation, interview, and campaign participation in order to obtain actual data. For data on project’s details, it was collected by using interview with well-informed persons and head of such projects based on research objectives integrated with related theories on Community Based Social Marketing by using research methodology based on the following procedures:

3.2.2.1 Related documents and research survey.
3.2.2.2 Study of program record tapes via the Internet and YouTube.
3.2.2.3 Participant observation and non-participant observation.
3.2.2.4 Face to face interviews and phone interviews with the respondents who could not conveniently participate in a personal interview, due to
disability, or repeated interviews for finding additional data on information requiring more explanation.

**Table 3.2** Summary Data Collection Method

<table>
<thead>
<tr>
<th>Population</th>
<th>Data Collection Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Muang Jai Dee” TV program by Thai Health Promotion Foundation</td>
<td>Data collection (secondary sources including articles, and the Internet)</td>
</tr>
<tr>
<td></td>
<td>Data collection from videos.</td>
</tr>
<tr>
<td></td>
<td>Semi-Structured interviews</td>
</tr>
<tr>
<td>Geriatric Medicine 2014</td>
<td>Data collection (primary sources internal documents and project objectives)</td>
</tr>
<tr>
<td></td>
<td>Semi-Structured interviews</td>
</tr>
<tr>
<td>Universal Design Talk 2015 project in elective course in Architectural</td>
<td>Semi-Structured interviews</td>
</tr>
<tr>
<td>faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)</td>
<td>Observation</td>
</tr>
<tr>
<td>Universal Design project by The Association of Siamese Architects under</td>
<td>Data collection (primary sources internal documents and project objectives)</td>
</tr>
<tr>
<td>Royal Patronage (ASA)</td>
<td>Semi-Structured interviews</td>
</tr>
<tr>
<td></td>
<td>Observation</td>
</tr>
<tr>
<td>A-ra-ya-satha-pat’ Ambassador by Krisana Lalai</td>
<td>Data collection (secondary sources including articles, magazines, and the Internet)</td>
</tr>
<tr>
<td></td>
<td>Semi-Structured interviews</td>
</tr>
<tr>
<td></td>
<td>Observation</td>
</tr>
</tbody>
</table>
3.2.4 Testing Validity and Reliability

The choice of method for understanding the processes and the relationship situation in the several projects was qualitative. The researcher analyzed the statements and actions of the concerned groups to better understand them. She used a variety of methods rather than one single method to increase confidence in the validity of findings. Triangulation is one approach to improve the validity of qualitative data.

The definition and important of triangulation is stated below,

The use of reliability and validity are common in quantitative research and now it is reconsidered in the qualitative research and paradigm. Since reliability and validity are rooted in positivist perspective then they should be redefined for their use in a naturalistic approach. Like reliability and validity as used in quantitative research are providing springboard to examine what these two terms mean in the qualitative research paradigm, triangulation as used in qualitative research to test the reliability and validity can also illuminate some ways to test or maximize the validity and reliability of a qualitative study. Therefore, reliability, validity and triangulation, if they are relevant research concepts, particularly from a qualitative point of view, have to be redefined in order to reflect the multiple ways of establishing truth (Golafshani, 2003).

Triangulation is one method for increasing validity of findings, through deliberately seeking evidence from a wide range of sources and comparing findings from those different sources. For example if you have done interviews and focus groups, compare the findings from each. If they coincide, that strengthens our faith in having identified important issues. Remember, though, that people talk about things very differently in different contexts: any differences you find are an important source of data in themselves (Patton & Cochran, 2002).

Triangulation has become an important methodological issue in naturalistic and qualitative approaches to evaluation (in order to) control bias and
establishing valid propositions because traditional scientific techniques are incompatible with this alternate epistemology” (Mathison, 1998, p. 13, as cited in Golafshani, 2003)

Triangulation comes in different forms, as stated by (Denzin, 1989, as cited in Daymon & Holloway, 2002)

1) Data triangulation uses different sources of data.
2) Investigator triangulation, is when the research is involved with more than one expert researcher in the same study.
3) Theoretical triangulation employs several possible theoretical interpretations of the study.
4) Methodological triangulation is when multiple methods of data collection are used.

Data triangulation and methodological triangulation are the most common methods (Hudelson, 1994). The same form of triangulation may not be able to be used in all research. It depends on the research criteria when choosing the best means of triangulation to test validity and reliability (Golafshani, 2003). This research chose data triangulation and methodological triangulation.

Data triangulation was used with various contact persons, places, and times to confirm that the information was accurate. Therefore the data from the Meuaung Jai Dee project was rechecked against the data from ASA and Krisana Lalai to confirm its validity.

Methodological triangulation was the method used to collect data and to gather more information. The study used many techniques, such as data collected from documents, from videos, from participant observation, and from non-participant observation. In-depth individual interviews were also used.

In addition, to minimize bias in research, the researcher regularly consulted her advisor to determine the most appropriate research approach.
3.2.5 Action and Data Analysis

Data obtained from studying related documents and research as well as concepts and theories were used as the guidelines for classifying data obtained from studying basic primary documents, program record tapes via the Internet and YouTube, participant observation and non-participant observation, and interviews. Subsequently, the reliability of data obtained from various sources was classified to compare mutual characteristics, consistency, or difference.

For data analysis, this was analyzed using the methodology of qualitative research that explained the results of data obtained from studying various methods of data collection. Details were classified into sub-topics based on research objectives.

3.2.6 Presentation of Data Analysis Result

The results of data analysis based on qualitative research conducted in the form of descriptive analysis were classified according to the three objectives of this research.
CHAPTER 4

DATA ANALYSIS

The main goal of this research can be defined as exploring the process of universal design campaigns in Thailand, and to analyze all strategies of community-based social marketing (CBSM) with the aim of creating an inclusive society. Also, this research show the efficiency of those CBSM strategies in order to develop UD in Thailand. The researcher collected information from two sources: the first source of information was several Interviews and participant observation. The second was data collected from reports, newspapers, magazines, TV shows broadcast via. YouTube and previous research.

Chapter 4 is divided into three parts:

4.1 Project introduction and Universal Design (UD) process in Thailand.

4.2 Community based social marketing (CBSM) strategies for Universal Design (UD) projects in Thailand.

4.3 Output of the strategies of community based social marketing (CBSM) for Universal Design (UD) in Thailand.

4.1 Project Introduction and Universal Design Process in Thailand

Design is the starting point to create benefits for everyone. To overcome limitations of design, architects have to understand and create acceptable designs. They do not need to separate special features because this may result in higher costs and an unattractive look. They have to build up standard designs for the environment, so that everyone can perceive the high value and benefits provided. (Story, Mueller, & Mace, 1998).

Nowadays, many organizations support campaigns to promote UD in Thailand. The following examples come from the government sector, the private sector, the education sector, and NGOs.
4.1.1 Introduction of “Muang Jai Dee” TV program by Thai Health Promotion Foundation

“Muang Jai Dee” was a reality TV program broadcast. The program’s aim was to provide facilities for understanding the importance of design in the construction industry, but also to create a better future in Thailand. People who were involved in this program were project owners who needed to change houses or areas, architects, specialists in architecture, architecture students, vocational students and local contractors. This program highlighted persons who wanted to build accommodation according to the principles of UD emphasizing design for all people in society. This TV Program was created to build knowledge and understanding for adapting built environments to aid all people in society. In addition, program won the Nataraja Award for the Documentary Field. Muang Jai Dee also received the Media Award for Building Dhammacratic Society 2012, and the “Fourth Estate Golden Prize” for an Excellent TV Program on June 9th, 2013. Although this program has concluded currently, there is a fan page still available on Facebook, which was created at the same time when the program was broadcast. This fan page still publishes useful news and information, as well as video clips of the program regularly. As a result, this program is considered a 24 hour program.
The “Muang Jai Dee” project involved many communities. The main party was the Association of Siamese Architects under Royal Patronage (ASA): information provider, social marketing and driving health department for specific groups, such as the elderly and persons with disabilities from Thai Health Promotion Foundation: campaigner/supporter, Superjeew Company Limited: producer (Thai Health Promotion Foundation, 2012b). This program began on 8 October 2012 and ended on 28 January 2013.

“Muang Jai Dee” showed renovations for houses, temples, provincial health offices, and public areas, in Bangkok and also up country. Some of the main programs are explained in what follows.

On 8 October 2012 (1st tape on air), the subject was to renovate house of an elderly couple in Chiangmai. The house owner, Mr. Songwut Jaiwut, was really proud of his house which was built from his imagination. After all their life in their home, the design was still attractive, but the house was no longer convenient for the elderly couple. There were steps on the floor which were not easy to access. Normally, houses have to be renovate by meeting the physical needs of people who stay there.
However Mr. Jaiwut had health problems, with difficulties in walking, and he could only use his left hand. The major requirement of UD principle was for equitable and flexible use especially in the bathroom and stairs. The house was renovated by students of the architectural faculty of Chiangmai University and built by Chiangmai vocational students with a limited budget of 30,000 baht and two days of work (Thai Health Promotion Foundation, 2012a).

**Figure 4.2** Muang Jai Dee TV Program (Tape 1)

**Source:** Thai Health Promotion Foundation, 2012a.

On 15 October 2012 (2\textsuperscript{nd} tape on air), the program showed another elderly couple whose house needed renovating. Mr. Doungchote and Mrs. Somjit Mahasorn were around 65 years old and had some congenital diseases. Their house was a four story townhouse in Bangkok and was no longer not suitable for their age. The main difficulty was going up and down the stairs. Moreover, they had some problems with the bathroom. In this case, the house was renovated by students of architecture from Sritapum University and built by Thanyaburi Technical College (Thai Health Promotion Foundation, 2012c).
On 22 October 2012 (3rd tape on air), programmers selected a traditional house upcountry in Khonkaen province. This type of house was commonly found in upcountry. This kind of house is built on stilts, with a high basement. So everybody who wants to go inside the house has to climb the stairs. Even for children, the climb is not easy and can be dangerous. The dweller elderly, around 70 years old and his son was 46 years old. Also, he was considered as someone with disabilities because of an accident. The house was renovated by students of architecture from Khonkaen University (Thai Health Promotion Foundation, 2012d)
On 29 October 2012 (4th tape on air), they decide to target persons with disabilities, more precisely a wheelchair user: Mr. Sophon Chimjinda, who lived in Pathumthani. The first consideration was to give him an easier access to his house without the help of family members. Mr. Sophon’s family was there to support him but, as suggested by UD principles, he wanted to be able to do everything by himself. One of Mr. Sophon’s requirements was to feel free in his house alone, with no space-limits and be able to store material downstairs. The architect found that steps and storage were the main limitations in this case. The house was renovated by architecture students from Silpakorn University and built by Pathumthani Technical College (Thai Health Promotion Foundation, 2012e).
Figure 4.5 Muang Jai Dee TV Program (Tape 4)

Source: Thai Health Promotion Foundation, 2012e.

Muang Jai Dee’s 5th tape aired on 5 November 2012. This project aimed to renovate Pureethorn Kumpu Na Ayuthaya’s house, which was a small piece of land (600 square wa) that housed 18 people, made up of four families. The occupants included the elderly, and working age men and children living together under the same roof. The problems were the underdevelopment of floors including the house’s front and back entrance, and the floors inside the house. These caused inconvenience mainly to the elderly who were disabled and in wheelchairs. They were troubled by the limited space available and unable to access certain places in the house.

“Muang Jai Dee” therefore decided to renovate the house by sending in volunteers: the architects (university students from faculty of architecture of Thammasat University) and constructors (technical college from Kanchanapisek Samutprakan) (Thai Health Promotion Foundation, 2012f)
Similarly, “Muang Jai Dee” also aimed to renovate other structures and targeted a multipurpose house/museum. This program on “Muang Jai Dee” (6th tape) aired on 12 November 2012. The owner of the project’s multipurpose house/museum was a national artist, Mr Suchart Sapsin. The occupants were nine people including the elderly, working age men, and children. However, many people visited this house daily and it was not long until problems including transportation and sanitation erupted. Therefore this area was renovated by two groups of volunteers: the architects (students from Walailak University) and constructors (technical college students from Nakhon Si Thammarat) (Thai Health Promotion Foundation, 2012g)
The next project involved a public building owned by a public health center. This building was used by many people, mainly by elderly locals, but they found several problems: different level floors, inappropriate door types, and unsanitary toilets. The place was on its last legs and demanding renovation. However, this was different from those aforementioned. It required a networking team embodying architects, locals, building users, representatives from the elderly community, building owners, doctors and nurses, and constructors. This building’s renovation aired on “Muang Jai Dee” (7th tape) on 19 November 2012 (Thai Health Promotion Foundation, 2012h).
The next project involved a Wangthonlang public park located in Bangkok. This building’s renovation aired on “Muang Jai Dee” (8th tape) on 26 November 2012. The main users of this park were the elderly. The problems involved rough and uneven platforms so walking was difficult. Furthermore, the entrance was blocked by a barrier so the park was inaccessible to wheelchair users. A well known architect from Architect 49 helped to renovate this project under budget 50,000 baht. Observation was the technique that architect used to define problems and find out the solutions (Thai Health Promotion Foundation, 2012i).
Another renovation involved Klongnung temple in Patumthani. Temples naturally on “Meaung Jai De 9th on 3 December 2012 have great cultural and historical significance for Thai people. Visitors included citizens, especially the elderly. This renovation aimed to minimize the problems faced by different age groups, including steep stairs, and toilet issues. The solution required help from many different groups of people: monks, locals, representatives from the elderly community, and community leaders. They all had to work closely with architects and constructors to address the problems. The architects who helped were Choomket Sawaengjaroen, an instructor from the faculty of architecture of Thammasat University (Thai Health Promotion Foundation, 2012j)
Another house renovation also presented potential religious problems. This aired on “Muang Jai De 11th on 17 December 2012. The house is occupied by two elderly people. Being 38 years old, the house was having problems. As the residents’ age increases, it is more difficult for them to navigate around the house, such as going up to the second floor or visiting the toilet. Thai people believe that the prayer room, consisting of many Buddha statues, should be on the second floor. Therefore, the residents had to go upstairs to pay their respects. The architects therefore suggested to move the prayer room to the first floor. However, their solution was first dismissed by the house owners. In order to convince the owners, the architects brought in monks, whom the house owners respected. The house owners were Mr and Mrs. Kaewsodsri, 84 and 70 years old (Thai Health Promotion Foundation, 2012k)
The next “Muang Jai Dee” programme 12/13th on 24 December 2012 involved the renovation of a house owned by a couple who were persons with disabilities. The owners were Mr. Sermkit Suanngwattana and Mrs. Sukanya Sansrijai. Since the house was not built for disabled people, the users started experiencing inconvenience from problems with stairs, toilets, and furniture. Therefore, to increase the user’s standard of living, renovations had to be made to the house. This project demonstrated that the cost of renovating a house was not as high as expected. Renovations were made by two groups of volunteers: the architects POLL.T.COL. Bundit Pradabsook, Ph.D. President of The Association of Siamese Architects Under Royal Patronage and students from King Mongkut's University of Technology North (Thai Health Promotion Foundation, 2012k)
The last tape concerning house renovations was aired on “Muang Jai Dee” (14th tape) on 7 January 2013. The house’s occupants were Mr and Mrs. Detchkhom who were 74 years old. Problems found were similar to those previously considered: toilet issues and accessibility to the second floor. Furthermore, their way of living had to be changed-items had to be reorganized as objects cannot be placed too high. After renovating the house, the owner, who was the chairman of the elderly community, presented the solutions used to renovate his house to other members to improve their understanding of universal design. This house was renovated by volunteer architects from the Faculty of decorative arts, Silpakorn university (Thai Health Promotion Foundation, 2013a)
Another program tape reflecting on all the renovations was aired on “Muang Jai Dee” (15th tape) on 14 January 2013. The feedback was highly positive as occupants could now live their lives individually without help from other parties. Not only did this improve their will to live but their convenience also increased. Chances of accidents happening also decreased and relationships between family members improved. The solutions proposed to these houses were not only applicable to houses but could also be used on other buildings (Thai Health Promotion Foundation, 2013b). The feedback from house’s owner such as

Mrs. Somjit Mahasorn: house owner said “Because we are old, we want something convenient and can be easy to access”. Our ramp is too steep. I just knew that the curtain angle. There are no elderly around me, yet I have ramps in house due to the fact that I am aging state by Pureethorn Kumpu Na Ayuthaya: house owner

The 16th tape of the “Muang Jai Dee” TV programme similarly reflected on the renovations made to public buildings/areas and responses to the renovation by the beneficiaries. It aired on 21st January 2013 and included a response from Dr. Kritsada Ruengareerat, Thai Health Promotion Foundation Manager:
If we can design an environment appropriate for everyone, society would not struggle in coexisting with persons with disabilities. I believe that this is a very important investment by the nation. By investing, we are demonstrating that persons with disabilities are not a burden to society. We are merely giving them an opportunity to learn on themselves and live life individually. If we provide them with this opportunity, society would not have to look after them.

This tape concluded that public buildings/areas were visited by a variety of people but those who encountered the most problems were the elderly and those with disabilities. The solution to these problems must be formulated by people in the community working with architects not only just by users. The program aimed to present a new perception to the viewers: these problems could be solved without having to be enforced by law (Thai Health Promotion Foundation, 2013c)

The TV program’s selection of troubled users mainly consisted of the elderly and those with disabilities -those with fewer opportunities in the society. The renovation of places not only served as an opportunity to increase their opportunities in life but also increased peoples understanding of the Universal Design concept. These changes started from an improvement in perception, to renovations in houses and ultimately public places.

Muang Jai Dee also showed how Pattaya City, a tourist city Chonburi with 6,000,000 visitors per year, was improved in program no.17 aired on 28st January 2013. The program obtained a sample group from visitors who travelled and stayed in Pattaya, including the elderly, blind students of the School for the Blind in Pattaya, people with different genders, deaf teachers, and persons with disabilities who use wheelchairs. Subsequently, Jomtien Beach area was improved. This depended on cooperation from various sectors and government support. In this regard, Mr. Itthipol Khunpleum, the President of Pattaya City, realized the importance of improving the area. The professional architect on this project was Instructor Kritsada Prasertsit, the Instructor of Department of Landscape Architecture, Kasetsart University (Thai Health Promotion Foundation, 2013d)
The problems found were: rough surfaces, unusable paths for persons with disabilities, and no navigation signs. This renovation was constructed by considering the needs of everyone, including those of persons with disabilities. For example, wheelchair users require a special pathway, those who are blind require signs in Braille, those who are deaf require clear visual images. If persons with disabilities can use these designs, people without any disabilities will be able to use them as well. This design marked a step towards constructing a world in which persons with disabilities will have equal opportunities as those without. The outcome was not only to improve the various pathways but also to create opportunities so that everyone could use the places equally. Furthermore, Pattaya is a prime location for tourists. Hence, these renovations may persuade them to re-visit in the future, thereby generating income to the locals.

Muang Jai Dee TV Program is a project aiming to help improving houses and public areas. For home improvement, there were three students, as the representatives of Faculty of Architecture from various universities, presenting their designs and concepts to three judges who are experts in various fields for providing suggestion to
achieve actual construction and usability. Simultaneously, the actual renovations will be performed by ten vocational students studying in educational institutions located in the areas of such improvement. For public area improvements (e.g., public parks, public health centers, and temples), it will be designed by some professional architects who are the instructors at the Faculty of Architecture and constructed by local construction team.

There were 15 tapes of Muang Jai DeeTV program used for this research including Tape 1-9, Tape 11-12, and Tape 14-17 while Tape 10 could not be found. In addition, Tape 13 was a duplicate of Tape 12. To view all records of Muang Jai DeeTV Program as mentioned above, they could be viewed via the FaceBook fanpage of Muang Jai DeeTV Program and YouTube.

The objectives of Muang Jai DeeTV program were:

1) To promote the concept of Universal Design for equal benefits of usability of all people;
2) To build knowledge and understanding on Universal Design
3) To give inspiration on environmental adjustment for various types of people in society.

Based on problems of users (including the elderly with illness and improper health conditions or disabilities), Universal Design aims to build equality to all people enabling people to have various designs for their comfortable living, safety, and happiness. The program’s guidelines were start from daily living of persons in the houses with disabilities or the elderly then develop to occupants or persons participating looking after those with disabilities and the elderly because the most common problem was accidents in the home. That is consistent with the survey on the elderly in 2014 of National Statistical Office as mentioned in Chapter 1 which found that the elderly most often encountered accidents in their homes.

Based on official information or that obtained from my patients, around 50% of patients who are the elderly or children often encounter with accidents in their houses.

Dr. Somsak Lauwattana, an orthopedic surgeon of Bangkok Hospital, Theptarin Hospital, the Association of Siamese Architects under the Royal Patronage
of His Majesty the King, gave an interview in Episode 15 of Muang Jai DeeTV program.

Universal Design is not only an adjustment of space or objects it is also an adjustment of lifestyle starting from one self to the family to move toward space adjustment of houses for improving accessibility. For example, the house of Mr. Duangchoke Mahasorn in Tape 2. Besides improving the quality of life of residents, the results of space adjustment of houses also helps to build relationships between family members suitable for Thai people’s lifestyle, that is large families, for example, the house of Mr. Phureethorn Kamphu Na Ayutthaya in Tape 5. Besides life adjustment, public area adjustment that is common utility space of various groups of people is also undertaken. Consequently, the major emphasis was on convenience and the safety of the elderly who had the most problems.

In addition, multigenerational planning study found that the safety is the most concern for every age not only for elderly (Hodgson, 2011)

Safety is another multigenerational concern that greatly impacts location choice. While many families look for communities where children can play and learn in a safe and culturally diverse environment, seniors also consider safety a major component in their housing design and neighborhood setting. Many adults with limited mobility struggle to navigate their space due to the poor design of their homes and neighborhoods.

According to the utilization of theories leading to participation and understanding of actual operation, Muang Jai Dee became the model for Universal Design in Thailand. The most common problems were differences and the variety of persons who had to live together. Although they live in the same house, they have unequal convenience. Moreover, since they have to use common public areas, these need to be improved based on the principles of Universal Design. It is not necessary to build any specific facility for any specific person but a facility to provide comfort to all people (men, women, person with disabilities, the elderly, and children) to live happily and comfortably together. This is consistent with the concept of Dr. Trirat Jarutat.
As someone who has studied and driven urban development under the concept of Universal Design that is popular among developed countries, I have learned that this concept is based on “three mice” theory, i.e., there are three mice with various sizes (big, medium, and small) live together but it is necessary for mice to drill a hole in three sizes. On the other hand, it makes the hole upon the biggest size of the big mouse allowing other mice to use the same hole comfortably.

Assoc. Dr. Trirat Jarutat, the Assistant to the President and Head of Department of Housing, Faculty of Architecture, Chulalongkorn University, gave an interview on Wednesday 2nd, October 2013 in Naewna Newspaper. According to the living adjustment of family members and people to be consistent with other persons who live together and changing characteristics of objects, equipment, and facilities, users will be the best indicators of appropriateness of design as well as planning for supporting future, as suggested below.

Prompt preparation is important for houses because we have to live in our residence daily. Since convenience and safety is necessary for our houses, our house adjustment to Universal Design can support such convenience and safety immediately. So we have to survey our current houses whether they are safe enough or not.

Instructor SakJai Yomtrakul, the Judge of Muang Jai Dee Muang Jai Dee from The Association of Siamese Architects under the Royal Patronage of His Majesty the King gave an interview in Episode 15 of Muang Jai Dee.

Universal Design considers the past, present, and future of houses.

Dr. Somsak Lauwattana, an orthopedic surgeon at Bangkok Hospital, Theptarin Hospital, the Association of Siamese Architects under the Royal Patronage of His Majesty the King, gave an interview in Episode 15 of Muang Jai Dee.

Muang Jai Dee considered as creative media for renovating model houses and public areas to enable audiences to see that Universal Design is able to solve real problems. Consequently, users can gain convenience and safety as well as accessibility leading to wider happiness. As a result, it also helps to build
relationships among family members and people in society as well as enabling them to utilize all areas and facilities equally. The principle of Muang Jai Dee was that Universal Design must start from one’s attention in adjusting and changing their own family, society, and country to be a pleasant place for everyone.

4.1.2 Work Process That is Consistent with Universal Design of “Muang Jai Dee” TV Program by Thai Health Promotion Foundation

Muang Jai Dee is a reality show presenting the concept of Universal Design with the aim of building knowledge and understanding to design and construction field in order to build a brighter future for Thailand. It must begin from persons who have problems with buildings to architects who will create improvements, as well as general people and volunteers who will help to improve all areas (both houses and public areas) to be Ban Jai Dee to Muang Jai Dee. The term, Jai Dee, is a Thai word referring to being a generous person that is a characteristic of Thai people. It can be said that Thai people are often “kind”.

Process of space improvement is consisted of four main groups:

Area Owners are responsible for proposing facts, problems, situations, and space utilization as well as planning and seeking funds and budgets.

Local Administrators are responsible for promoting the project from policy level to implementing policy to be concrete as well as coordinating the operation smoothly.

Users are persons who have to use the areas directly and the responsibility of users is not to only make demands but participate in finding solutions with participants.

Participants are divided into four main groups including designers, specialists, contractors, and sponsors.

Designers are academics providing knowledge, suggestions, solutions, and management in order to obtain the most correct and appropriate design.

Design specialists will consult during the operation and inspect the correctness of complex works in order to make the design efficient.
Health specialists are responsible for inspecting appropriateness for the utilization of persons with physical limitations in order to obtain designs that are not harmful to health.

Contractors are experts in construction who will make drawings for buildings as well as supply materials and equipment under a defined budget and for a limited duration. Sponsors are persons providing funds for the operation of the project.

However, there are some important differences among persons responsible for improving houses and public areas. For instance, local administrators have no involvement with the main operation of house improvement, yet local organizations under the supervision of the Thai government play an important role in providing information and coordinating between local people and designers for public areas improvement.

For house and public area improvements through “Muang Jai Dee”, it was expected to be a model for area improvement through a systematic UD process consisting of 11 stages as follows:

1) Interviewing on daily life of users.
2) Define problem.
3) Survey and provide knowledge.
4) Make simulations of the same problems encountered by users.
5) Designing.
6) Studying on materials and equipment to be under budget.
7) Consulting with experts consisted of: Dr. Somsak Lauwattana, an orthopedic surgeon; Assoc. Dr. Kullathida Techawasinsakul, Department of Industrial Design, Faculty of Architecture, Chulalongkorn University; Instructor SakJai Yuantragkul, the President of Building Safety, the Association of Siamese Architects under the Royal Patronage of His Majesty the King.
8) Interviewing with users to check data correctness.
9) Presenting and improving drawings to be consistent with demands of users.
10) Constructing,
11) Actual use
12) Evaluation.
One of the designers who participated as a volunteer architect in “Muang Jai Dee” presented Rangsit Model—that is the design process based on UD principles as outlined in Chapter 2. This is considered as the process in the context of Thai society consisting of the following procedures: visiting the site to listen to problems from community/providing knowledge, surveying the area using standard criteria, designing and reviewing knowledge/consulting with experts, presenting solutions to the community, developing drawings, presenting final drawings to the community, constructing and expanding outcomes.
**Figure 4.15** Universal Design Process (Muang Jai Dee and Rangsit Model)
The process found in the procedures of Rangsit model is similar in defining problems, site surveys, knowledge sharing, the design stage, consulting with experts, consulting, and evaluation.

The first procedure was to define the problem and its context clearly as well as identifying where the actual problem was by seeking information from persons in any family or community who had to use such public areas as well as beneficiaries.

Moreover, the similar step before starting construction was Design Develop. This is the procedure of design after preliminary inquiries i.e., sketching various designs on paper before modifying and amending until the right design is obtained for actual construction.

The differences were divided into two groups as follows:

1) Extend the idea-Rangsit model recognizes that extend the idea is essential for UD operation. The community is the relations among people in various dimensions (e.g., economic and social dimensions) in the form of relatives and dependents. Such relationships affect the quality of life of people in such communities, though the relationship of rural sector development is complex and not certain. As a result, outcome enhancements for UD focus on sustainable operations enabling people to apply principles and knowledge as represented in “Muang Jai Dee” for model houses and public areas (e.g., temples, public health centers, and public parks) to other areas. In addition, such operations should connect with other communities because improvement based on UD principles is not complex, therefore it is easy to apply as a model for other communities. As a result, outcome enhancement means working with people and the community for benefits to increase the opportunities for all people to access public areas equally.

2) Simulation of the same situation encountered by users–According to improvement of house areas and public areas in “Muang Jai Dee”, one important thing found by the researcher was the simulation of the same situation encountered by users as this helps us to understand the necessary physical conditions. Although there are principles of design based on UD principles as the operational framework, designers should understand problems of persons with disabilities and the elderly in order to create designs to be consistent with demands of users. These two groups of people are similar as mentioned in the interview of Assoc. Prof. Kusuma
Thamthamrong, the Judge of Muang Jai Dee TV program from the Association of Siamese Architects under the Royal Patronage of His Majesty the King, given to Episode 9 of Muang Jai Dee TV program that

The elderly are persons with all types of disabilities, i.e., unhealthy vision, hearing, movement, and strength”

Moreover, design under UD principles must show that it is not only function that is emphasized but attractiveness is also considered.

4.1.3 Introduction of the Study on Data Regarding Geriatric Medicine 2014 by Yodyiam Theptaranon

Yodyiam Theptaranon is one of Thailand’s best known architects. He is the Director of Inter PAC Co., Ltd., an interior design and construction management firm. His expertise has led him to develop and host the “Home Doctor” television variety show and “Talk with Home Doctor” radio program on FM 96.5 MHz. Yodyiam also teaches as a special lecturer at several universities and serves on committees to public bodies such as Standard Price Committee, Supplies Regulation Committee, Committee of the Energy Protection Fund, as well as a consultant to other key state agencies. A former president of The Association of Siamese architects under Royal Patronage from year 1994-1996, Yodyiam dedicates a great deal of his time to social work. He was recognized as Chulalongkorn University’s Outstanding Alumni, the Association of Siamese architects under Royal Patronage’s Outstanding Architect, Honorable Member of J.I.A. (Japan Institute of Architects), University of Illinois’ Outstanding Student, and recipient of Merit Award R.S.U., among others. Moreover, Yodyiam is a prolific writer who has published research, articles and publications such as General Construction Problems, Value Added by Design (V.A.D.), Construction Contract Documents, Computers for Thai Architects, WTO and FTA and Architect Profession, among others.

Most of his works have always distributed for free and they always specify “No Copyright for Creating Better Society”. Instructor Yodyiam is a professional activist who is generally well known as can be evidenced from a part of acknowledgement of the graduation ceremony of doctoral degree from Wikipedia that profiles his personality as follows:
Mr. Yodyiam Theptaranon is a famous architect in national level who has dedicated himself to works until he has been accepted and considered as the good model of architecture field. In addition, he is also a moral and ethical person that can be proved as well as the core of establishment of the Architect Council of Thailand. He has also supported Thailand’s architectural profession until it meets with universal standards as well as held several importation positions of consultant and committee in national level. Finally, he is promoted in the highest rank and receives several awards and acknowledgement in national and international levels (“Yodyiam Theptaranon, 2016”).

The major goal of Instructor Yodyiam Theptaranon is to help to improve society. Currently, his company has a reputation for hospital design due to several important works at Siriraj Piyamaharajkarun Hospital, Phramongkutklao Hospital, Chulabhorn Hospital, and Ramathibodi Hospital.

Figure 4.16 Yodyiam Theptaranon

The study on data regarding medication for the elderly in 2014 was one of the projects of Instructor Yodyiam Theptaranon. The objectives of this project were to make a better society for the ultimate benefit of all people as well as to be a model, therefore this project was intended to motivate action. Instructor Yodyiam has
operated these projects consistent with UD for over 10 years through articles, writing and study trips. He has always passed on his knowledge as an expert in the design field to others. Considering the organization that he is under (business sector), there may be a question how his operation makes profit because it does not operate for charity. On the other hand, it can be seen that UD is able to make a profit for both entrepreneurs and designers. Yodyiam Theptaranon, Interview 2015

Yodyiam said that the growth rate of the elderly is getting higher and the elderly is also the main group using hospital services. Consequently, it is necessary for hospitals to be expanded and supported. As a result, new construction and improvement of hospitals always occurs. The experts in this field are also required.

For entrepreneurs, if hospitals have sufficient areas for supporting the elderly and persons with disabilities, as well as facilities for accessibility of people of all ages and genders, the number of hospital customers will increase. Consequently, design is very important. Not only patients but their friends and relatives are also important because visiting people with love and concern is important for the morale of patients as well as playing an important role in their recovery. This is consistent with the statement of Arthit Limpaisarn, Senior Vice President–Property development, stated that

Sometimes, patients’ followers or relatives are persons who decide to use services of each hospital. If such hospital contains complete facilities, they will want to use those services of such hospital. In addition, hospitals should not neglect but emphasize the importance of users, i.e., doctors and nurses, because space design and work flows and equipment usage are also needed to improve work efficiency and facilitate users.

According to research, the higher cost of medication of hospitals in Bangkok is an average cost of personnel of approximately 55% that is mostly the cost of specialists calculated to be around 30%. Simultaneously, the cost of medicine and medical supplies is only 16% of such higher costs (Witan Jaroenphon, 2010). If
personnel are the key of service business, facilitating users is another channel to improve the quality of hospitals.

Hospitals main objective is to give health care to patients who are weak physically and mentally and separated from their daily life comforts and families. As a result, good quality of life and living is an important element for recovering patients. Consequently, hospitals are compared as the sanctuaries for people with all ages and genders. Accordingly the operations related to hospitals are considered as making merit. For this reason, hospital design interested Instructor Yodyiam Theptaranon and also matches his work goals because it aims to bring happiness to all people and rewards to Thai society.

Siriraj Hospital, the oldest hospital in Thailand has been operated for Thai people for more than 127 years. It is considered as one of the Top Ten Hospitals in Thailand and was ranked accordingly by toptenthailand website (Toptenthailand, 2015). Although it is admired as one of the best hospitals, Siriraj has still continued to make adjustments and support changes that will help the elderly aged over 60 years, now more than 10% of Thai people. Since Faculty of Medicine, Siriraj Hospital, Mahidol University, aims to improve quality of life of the elderly, the study on data regarding medication for the elderly was begun to establish “The elderly Health Service National Center” in Samut Sakhon.

Main objectives of this project are:

1) To study the development of research and medical services provided to the elderly in Japan that is considered as the pioneer of the elderly society in Asia.

2) To build knowledge, understanding, and abilities in lesson learned for applying to design and the physical improvement of utility spaces in hospitals or other elderly institutions.

3) To build motivation and the final image of the projects for the elderly operated by Faculty of Medicine, Siriraj Hospital and Interpac to make familiar good standards leading to standard building construction based on appropriate lessons.

This project was conducted via a study trip to visit Tokyo Metropolitan Geriatrics in Tokyo, National Center for Geriatrics and Gerontology in Nagoya, Kyoto University Hospital, and Osaka City University Hospital during October 31st – November 9th, 2014. This project aimed to design buildings and environments
facilitating the elderly because physiological changes caused by aging are considered as a new topic of Thai society. As a result, building designers must understand the limitations of the elderly. Accordingly, Instructor Yodyiam Theptaranon emphasized this issue and made a study trip to visit some of the elderly hospitals in Japan as that is the country with the highest number of the elderly with advances in designing buildings for the elderly.

4.1.4 Work process of data regarding Geriatric Medicine 2014 by Yodyiam Theptaranon

The case study of participation by the private sector in the National Geriatric Medicine Center (Samut Sakhon) was an example from Inter PAC together with government agencies. Interpac is a renowned Thai architectural designing and consulting company and is a member of ASA. The National Geriatric Medicine Center in Samut Sakhon was a project to design buildings to facilitate the elderly patients physical and mental recovery before returning to society. As Clinical Professor Udom Kachintorn, Dean of Faculty of Medicine Siriraj Hospital, Mahidol University has put it:

Siriraj foresees the importance of preparation for demographic shift in Thailand as people tend to live longer and we are heading toward an aging society. National Geriatric Medicine Center has therefore been established in Samut Sakhon to be a specialist in Geriatric Medicine training for all health science personnel, performing research and educational studies in the promotion of wellbeing and disease prevention in the elderly, and providing multidisciplinary medical services to the elderly patients while also supporting the learning of Geriatric Medicine in accordance with their principles. This will lead the organization to become a prototype for excellence in Geriatric Medicine at the national and regional level.

The initiative and support provided by Interpac for the geriatric hospital observation trip to Japan was an example of collaboration between the private and public sectors. Siriraj Hospital would like to develop a prototype project for post-recovery for the elderly patients (Intermediate Care) to prepare them before returning
homes. Interpac hopes that the project design shall be based on the understanding of limitations of the elderly patients. This is to synergize strengths from both government and private sectors instead of a separate implementation.

The National Geriatric Medicine Center was established based on the awareness of shifting demographic structures as we head towards an aging society. Some medical services are inadequate in giving access to people from different social strata. Reforms in medical service system hence became one of the agendas in the national reform driven by the National Reform Council to strengthen the country’s medical services in a sustainable manner. Focal points were shifted from hospital-based and disease-centered to regional-based and citizen-centered. This could help enhance well-being, fairness, and participation in decision-making activities and to improve health capabilities at individual, family, community, and society members based on the relationship with other components, notably the ones close to the public in the regional health system for either public or private sectors including social participation. The timeframe for system reform was approximately five years between 2015 to 2020. The procedure after problem recognition was the selection of reform aspects to shift “the center” of services in the medical system from “diseases” to “citizens” based on the integration of services. Analytical activities could be done through brainstorming and knowledge exchanges among sub-committee members, experts and stakeholders, relevant sub-committees, and feasibility studies conducted from field visits and knowledge sharing between area staff. One area considered by the National Geriatric Medicine Center was Bangkok Noi where the project “Bangkok Noi Model: Collaboration between two generations by Siriraj Hospital” was facilitated by Siriraj Hospital and Bangkok Metropolitan Administration together with local networks. The purpose of the project was to create a prototype community for well-being by focusing on collaboration with local senior citizens and later expanded to other dimensions through three key performance indicators-inputs, processes, and outputs/outcomes. One of “Processes” indicators for the collaboration between public and private sector was relying on the success of negotiation, agreement, making contracts, audits, and evaluation (The Secretariat of the House of Representatives, 2015).
As the National Geriatric Medicine Center is a pilot project to comply with the medical service reform by having citizen centricity, understanding and answering needs are important processes before the actual implementation. However, the implementation of this kind was the first time in Thailand and the physical development, especially the architectural aspects, were considered primitive. Therefore, oversea studies were feasible choices and Japan was chosen because of its reputation for the design of facilities for the elderly. An analysis of physical environment and utilization from the case studies was complied after the trip to gain a better understanding and ease of reference or implementation.

The construction of this project has yet to begin. Initially, the collaboration between the designer and the project owner can be explained as follows:

1) Define the scope of problems: this is to study the design objectives for “The Safe Home for The elderly” in the National Geriatric Medicine Center, Samut Sakhon, thoroughly in order to gain understandings of relevant conditions and define the appropriate scope of works.

2) Information research: studying and gathering relevant information for the establishment of the National Geriatric Medicine Center and classifying the categories related to problems. The value of information is to gain understanding and suggest problem solutions. Interpac has discussed with the project owner, Siriraj Hospital staffs, staffs from other hospitals designed by Interpac, patients, and went on the study trip to Japan.

3) Analysis: information from the study trip was compared and considered. The analysis of results were part of the project feasibility study to obtain optimal choices for the project. Documents were prepared for future reference.

4) Conceptual design: the development of design concepts after receiving information from clients and performing information analysis to promote easy usability, answering the needs of senior citizens as a target group and maximizing benefits, properly managing available resources, and including ideas for the design.
(1) Project planning can be conducted by determining the location of study trips that should be appropriate and consistent with learning topic.

(2) Project objectives can be conducted by setting objectives of the study trip.

(3) Project preparation can be conducted by issuing letters asking permission to visit hospitals in Japan, planning the budget of cost of transportation, informing participants on date, time, venues, and learning topics and program of such study trips must be scheduled clearly, inspecting safety of transportation, vehicle, route, safety, and facilities such as toilets and dining areas.

(4) Study trips can be conducted by searching and studying information through observation, recording, photography, and discussion with persons related to each visited project.
Post-study trip process obtained knowledge of each participant must be reviewed and applied in conceptual design stage of the National Geriatric Medicine Center (Samut Sakhon) project. The meeting of each team for brainstorming must be held in order to exchange opinions of participants. The knowledge obtained must be followed up and evaluated before gathering knowledge from each person. Obtained knowledge was then applied to operation through the “Elderly Health Service National Center” Book.

**Figure 4.18** Activities Process Regarding Geriatric Medicine 2014

### 4.1.5 Introduction of Universal Design Talk Project 2015 in Elective Course in Architectural Faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)

Educational institutes are legal bodies with the duty or objective of providing education under the public or private sectors, for example, schools, colleges, universities or other types of educational institutes. For design and architectural instruction, this is available in higher education level from public institutes (e.g., universities, institutes, and military academy) and private institutes (e.g., private universities, private institutes, and private colleges) (“Architect, 2013”). King Mongkut’s Institute of Technology Ladkrabang is an institute of higher education with a Faculty of Architecture. For Universal Design, it is classified as an elective course of Advanced Interior Architectural Design Learning Group under Bachelor of Architecture Program in interior Architecture (Amended Curriculum) B.E. 2554.
Currently, subjects related to UD are only elective subjects emphasizing theoretical instruction in order to understand on design direction considering universal and equal utilization for all people without any modification for any specific group of people. Designs related to UD cover designs of public curb ramps, places, and buildings for people in wheelchairs or braille for visually impaired people. This kind of design benefits other people as well as enabling persons with disabilities to live comfortably with others. The UD concept should be widely applied in Thai society because it helps all members of society to live together equally and accept one another. It is based on the belief that all humans are equal and society must be responsible for enabling everyone to live together equally. As designers, it is necessary to plan in detail requiring special knowledge and skills to design constructions for all people.

Accordingly, additional learning activities such as a seminar on Universal Design was held as an afternoon tea to make students feel relaxed and familiar and enjoy the seminar leading to more participation. For this seminar, the institute invited some external experts to provide knowledge to students. In addition, the project also prepared some documents about suitable environments for the elderly, persons with disabilities, and children. Students of Faculty of Architecture are the new generation who pioneer new construction designs for Thailand’s future and they are also can be the pioneers or Change Agents that can pass on knowledge and understanding about common benefits for the public.

The main objectives of this seminar were to provide knowledge on UD and understanding about working technique with communities and actual operation through the perspective of architects. According to the project for providing knowledge to change agent of KMITL, it was found that learning plays such an important role in behavior change, as shown in the interview with Dr. Antika Sawadsri who state that,

UD is technique plus social activities. If I still use teaching in class technique only it will make students bored, then I invite a speaker who has experience come to sharing. It makes more fun in class and also builds network for change agents in the future.
The learning play technique is also used in another university such as Bangkok University. It was found that students have a better understanding as shown in the interview with Dr. Rittirong Chutaprutti korn who stated that:

Formerly, when I had to inspect completed works of Universal Design, there was only ramp design. Nowadays, Universal Design in Thailand is various with developed format so I think that Thai students already have a better understanding on UD.

Design works delivered by students are considered as indicators of their knowledge and understanding on UD. However, Thai students have not paid a great deal of attention to UD because it cannot be developed for increasing income for other projects. As a result, instructors need to play an important role in motivating students to see the importance of UD that can be applied to design of other types of buildings, such as department stores and hotels, the same as green building design. Moreover, the number of students who are interested in elective subjects and thesis subjects related to UD are also considered as key performance indicators.

4.1.6 Work Process Consistent with Universal Design of Universal Design
Talk Project 2015 in Elective Course in Architectural Faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)

The Universal Design Talk 2015 Project provided some seminars to students in KMITL as well as some opportunities to outsiders who were interested in UD to join these seminars without charge. The process of this project consisted of: Pre-Seminar Preparation: Survey issues, write projects, and prepare seminars.

According to pre-seminar process, the first procedure was surveying issues and problems for selecting topics to meet with students’ demands and be consistent with the curriculum. Secondly, project writing in order to specify responsible persons, principles reasons, objectives, lecturers, duration, venue, budget, and expected results. The final procedure was seminar preparation consisted of public relations and advertising through leaflets distributed and posted on the instructor’s Facebook and the area of KMITL. Dr. Antika Sawadsri was responsible for inviting participants to this seminar. Kasama Yaemsri, the architect of Ta Saeng Studio Social Business
Organization, was invited to lecture on operation process for working with the community on UD and building a participatory process.

**Figure 4.19** Universal Design Talk Project 2015 at KMITL

Operational Procedures during Seminar: Open the seminar prepare talks upon Universal Design Talk 2015 Concept. Since this seminar was unofficial in order to make participants feel relaxed, the speeches opening and closing the seminar were given by the instructor responsible for elective courses.

Post-Seminar Procedure: Report the outcome to the head of faculty.

Finally, the lecturers at these seminars were paid subject to the regulations on training expenses regarding payment of lecturers.
In this seminar, the speaker explained the working process between architect and community. The starting process was the same as with another project, that is to define the problem. Observation was the tactic speakers used to identify and analyse the information. The design process allows the community to take part. Even if the person in community does not have knowledge about UD or design, the speaker and her designer team used “Foot maps”-called in Thai “Pan Tee Duen Din”-to find out details from the community. Foot maps were a way to integrate information from communities to designers by understanding social life, social living, lifestyle, what they do, and physical spaces. The architect will make and draw a map from what they see and let persons in the community work with them. Further detail will be discussed in the strategic content.
4.1.7 Introduction of Universal Design Project by The Association of Siamese Architects under Royal Patronage (ASA)

According to the study on information of the Association of Siamese Architects under the Royal Patronage of His Majesty the King via ASA website and an in-depth interview with the President of The Association of Siamese Architects under the Royal Patronage of His Majesty the King to understand history and background of the operation of the Association of Siamese Architects, it was found that the Association of Siamese Architects was established by a group of architects who had some opportunities to continue their study overseas and considered there should be an association established to promote architectural occupations and to be recognized by general people as well as to exchange knowledge among members.

ASA is the association of personnel in architecture field and anyone interested in architecture of Thailand. It is one of four architectural associations including ASA, the Urban Designers Association, the Thai Association of Landscape Architects, and the Thailand Interior Designers’ Association. ASA is an NGO aiming to participate in promoting Thai people to have a better quality of life. The initiation of the ASA’s UD Project originated from the growing number of the elderly and persons with
disabilities creating a need to improve residences and public buildings to allow accessibility for those people.

NGOs stands for Non-government Organizations referring to private development organizations, or an assembly of the people who can negotiate or counterbalance with government or business organizations. For government, NGOs are responsible for monitoring and inspecting government’s decisions to be beneficial for public. The characteristics of NGOs is being an independent organization without any direct control by the government (Werker & Ahmed, 2007).

In addition, there are three generally accepted characteristics of NGOs:

1) NGOs must be the organizations that are not established as part of any political party;
2) NGOs must be non-profit organizations; and
3) NGOs must not be criminal organizations and must not use any violence in any operation (Non-violent). These characteristics are used as the conditions for recognizing private development organizations by United Nations.

The initiation of the Development Mechanism project for Supporting UD of ASA was based on the high number of elderly and persons with disabilities. Attention needed to be paid to the physical environment of residences and public buildings to make them more accessible for living and to improve the accessibility of those groups. This caused UD to become a guideline for public areas design that is recognized by several countries throughout the world including Japan and several European countries. In Thailand, according to the resolution of the cabinet declared on May 19th, 2009, various regulations have been made to create consistency and enable persons with disabilities to better access public buildings. This resolution was declared in the Government Gazette on January 16th, 2013. Consequently, the public sector has become more alert to UD and the government has had some policies to support UD through giving budgets to government agencies for constructing five basic facilities for persons with disabilities in government buildings and areas. Moreover, the government also orders all authorities to set the goals for providing facilities to persons with disabilities that shall be completed within 2015 in order to support the AEC. However, although there are many ministerial regulations, several buildings and areas have not been improved under UD principles. In addition, new
problems on public accessibility are still found. The Association of Siamese Architects under the Royal Patronage of His Majesty the King, the organization for all architects, considers that as recognition of UD is a priority of this operation, it is necessary to provide correct knowledge on UD to students of educational institutes, building designers, policy makers, and general people for making Universal Design the standard of public building design. Formerly, the Association of Siamese Architects cooperated with the Thai Health Promotion Foundation to create some activities for providing knowledge on Universal Design-for example, Residential Simulation Exhibition (Jai Dee Buildings), Muang Jai Dee TV program production, etc. To expand the effect of those activities, a Development Mechanism project for Supporting UD was initiated in April 2013 aiming to be a cooperation framework with clear operational mechanisms as well as making architects and the general public understand on the importance of supporting UD. The mission of this project had four parts including:

   Part 1: Development of tools and activities on UD;
   Part 2: Development of Mechanism and Universal Building Standards Certification System for Efficiency and Actual Practice;
   Part 3: Development of Model Areas for UD in Local Level with Private Sector and Local Administrative Organizations (Pioneer Area: Ratchaprasong);

There were two main objectives of the project including:

   1) To support knowledge on UD to instructional system and related occupational systems;
   2) To support UD as the standard of public buildings and traffic system designs that is understood and supported by general people and policy establishers.

The main targets of this project were architects in various regions, students of Faculty of Architecture, local administrative organizations, entrepreneurs, and all types of persons with disabilities. This project commenced on April 4\textsuperscript{th}, 2013–April 30\textsuperscript{th}, 2014.

To achieve the project’s objectives, there were four outcomes determined to be achieved within the due date including:
Part 1: Development of tools and activities on UD

This was a part for providing knowledge on Universal Design through training, instruction, and occupational systems related to activities regularly held by ASA.

1) Preparation of simple design handbooks for distributing to associations’ members and students;

2) Road shows for providing knowledge to the network of Faculty of Architecture throughout Thailand;

3) Inserting physically environmental adjustment to the meeting of the Council of Deans of Architecture Schools of Thailand (CDAST);

4) Inserting knowledge on physically environmental adjustment in training of Continuing Professional Development (CPD) that always provides architectural training;

5) Supporting realization and perception on UD through architect fairs held yearly (through providing exhibition areas and supporting budgets).

Part 2: Development of Mechanism and Universal Building Standards Certification System for Efficiency and Actual Practice

1) Conclusion of standard criteria for Universal Design by granting UD LABEL;

2) Development of data inspection system and efficient building certification system that could be operated practically and sustainably;

3) Addition of award categories for granting Excellent Architecture of The Association of Siamese Architects under the Royal Patronage of His Majesty the King;

4) Building motivation on certifying standard quality of Universal Design.

Part 3: Development of Model Areas for UD in Local Level with Private Sector and Local Administrative Organizations (Pioneer Area: Ratchaprasong)

1) Coordination for finding and selecting the pioneer areas with related organizations;
2) Participatory development of design team and design process with land owners, local administrative organizations, and users (persons with disabilities and the elderly) for preparing proposal;

3) Coordination for fundraising and supporting budget allocation of public sector to be sufficient for actual operation;

4) Supporting and controlling construction process to meet with standards and drawings;

5) Supporting communication process for communicating with press and public through preparing some interesting public media in order to explain its value and importance.

Part 4: Development of Policy proposal and Public Policy Advocacy on UD

1) Organizing some seminars and workshops of some professional architects and uses (persons with disabilities and the elderly) for gathering opinions in order to make policy proposals;

2) Establishment of some working groups for discussing and making understanding with representatives of relevant public sectors (Bangkok Metropolis, Department of Public and Town and Country Planning, and Ministry of Finance) and press interested in Universal Design;

3) Supporting academic information in the official meetings of related authorities with Thai Health Promotion Foundation and other networks.

4.1.8 Work Process consistent with UD of Development Mechanism project for Supporting Universal Design operated by The Association of Siamese Architects under Royal Patronage (ASA)

Initially, the creation process of each work must be based on the research conducted upon the defined problem. Subsequently, design will be conducted by considering on space because humans need space for performing various actions. As a result, architects are responsible for managing systems and orders before creating interior and exterior attractively. Pol.Lt.Col.Dr. Bandit Pradubsook, Interview 2014.
The operational process related to UD in the ASA case study can be divided into four parts as follows:

Part 1: Development of tools and activities on UD consisted of:

1) Preparation of simple design handbooks for distributing to associations’ members and students. This handbook is considered as a central standard that can be applied by students, architects, and general people. It is published under the name of “Building and Environments Design Recommendation for All” that published 1,000 copies under the cooperation of KMITL. The process of this handbook preparation was approved by six meetings from February to August 2013 for consulting and discussing the content of this handbook.

2) Road shows for providing knowledge to the network of Faculty of Architecture throughout Thailand-This activity was operated under cooperation with the Board of Regional Architects and Sirindhorn National Medical Rehabilitation Center to hold seminars in four regions including central region, northeastern region, southern region, and northern region. In conclusion, the total number of participants in the four regions was 154.

ASA (Central Region) cooperated with Sirindhorn National Medical Rehabilitation Center to hold a seminar during December 16th-17th, 2012, at the Meeting Room of the Association of Siamese Architects under the Royal Patronage of His Majesty the King, with 37 participants.

ASA (Northeastern Region) cooperated with Board of Isan Regional Architects and Sirindhorn National Medical Rehabilitation Center to hold a seminar during January 21st-23rd, 2013, at Rajamangala University of Technology Isaan, with 38 participants.

ASA (Southern Region) cooperated with Board of Southern Regional Architects and Sirindhorn National Medical Rehabilitation Center to hold a seminar during February 8th-9th, 2013, at Hat Yai Hall, Central Festival Hat Yai, with 36 participants.

ASA (Northern Region) cooperated with Board of Northern Regional Architects and Sirindhorn National Medical Rehabilitation Center to hold a seminar during March 7th-8th, 2013, at Faculty of Architecture, Chiang Mai University, with 43 participants.
3) Including physical environment adjustments to the meeting of the CDAST. This process was conducted to provide knowledge on UD to be contained in curriculums of Faculty of Architecture of several universities. As a result, an agenda on UD knowledge and support was brought into the instructional system of Faculty of Architecture and related occupational systems with the cooperation of Faculties of Architecture of universities throughout Thailand. In addition, there was a resolution to appoint a working group to study and outline the curriculum. This group consisted of representatives from the Association of Siamese Architects under the Royal Patronage of His Majesty the King and representatives of various universities including Kasetsart University, King Mongkut’s Institute of Technology Ladkrabang, Khon Kaen University, King Mongkut’s University of Technology Thonburi, Assumption University, Rangsit University, Naresuan University, Walailak University, that cooperated with NGOs and the educational sector for establishing the sustainability of UD.

4) Including knowledge on physically environmental adjustment in the training of CPD that provides architectural training. This process was coordinated with the Architects Council of Thailand to establish eight points for certifying architects participating in the training as mentioned in article 2 and held by ASA for motivating architects to be interested in participating in UD training.

5) Supporting the realization and perception on UD through architect fairs that held yearly through providing an exhibition area and supporting budget – This exhibition was held in UD House or in Thai call “Ban Jai Dee 13” of Architect 13 during April 30th – May 6th, at IMPACT Muang Thong Thani. The target group of was architects from throughout Thailand, persons with disabilities from disabled associations, government agencies, and students from various universities, especially students from Faculties of Architecture.

Part 1: The development of tools and activities on Universal Design of ASA, was not only an activity focusing on environmental adjustment or design based on UD principles but also an activity focusing on spreading UD knowledge to change agents, including students of Faculty of Architecture or professional architects. The process was coordinated through networks of architect associations, the educational sector, and the public sector. Architects were change agents for proposing guidelines of
design and decoration to the project owners. If architects had enough knowledge and understanding of UD, they could make drawings that were consistent as well as share a correct understanding with the project owners. Consequently, although the cost of operations for the project owners were no different, returns would be higher if changes were planned at the start, as stated by Pol.Lt.Col.Dr. Bandit:

Although Universal Design is the concept that is suitable with all people and a trend of sustainable design, it is necessary to be accepted that most people in the society have no actual knowledge and understanding on this topic as well as not realizing the importance of UD. This fact can be observed from designing developed housing, condominiums, residences, or official places. Although there are some areas that may facilitate utilization of special group of people, most of them are still designed for persons without disabilities. Nevertheless, when Thai society moves towards an elderly society with a higher number of special groups of people, it is believed that this approach to design will become more seriously interested. However, it is necessary to observe whether it is timely for social demand or not. In addition, it should not be forgotten that designing houses or buildings based on Universal Design principles should not raise the cost of production but subsequent adjustments may cause higher costs.

Part 2: Development of mechanism and Universal Building standards certification system for efficiency and actual practice divided into 3 sub-activities as follows:

1) The first activity on agreeing on a standard criteria for Universal Design for granting a UD LABEL was holding three meetings by the judges to select buildings as good examples of Universal Design (Jai Dee buildings). This was done with the cooperation of Faculty of Architecture of KMITL and Kasetsart University for preparing the handbook of building evaluations for equality, convenience, and safety for all people (UD). This published 2,000 copies with the criteria for considering and certifying buildings inspected on UD design leading to granting the UD LABEL that met with the defined criteria.
2) The second activity was developing a data inspection and efficient building certification system that operated practically and sustainably. This meant inspecting buildings aiming to participate in the selection of UD buildings. Based on the draft of handbook for building evaluation there were some errors found when inspecting buildings. Consequently, such errors were improved and amended until the final handbook was obtained. The project inspected buildings located in four locations including Baan Khaolak Beach Resort, National Electronics and Computer Technology Center, King Power Downtown Complex, and Bangkok University.

3) The third activity was the addition of award categories for granting Excellent Architecture as well as adding proposals for UD criteria when considering excellent architecture. This was done in the committee meeting of the Association of Siamese Architects using the criteria for granting Excellent Architect Awards in 2014. In addition, the meeting resolved to use this criteria for granting the Excellent Architect Awards in 2014. The outcome recognized buildings with an Excellent Architect Award and Universal Design.

4) The last activity of Part 2 was building motivation on certifying standard qualities of UD by holding PR activities and giving prizes to attract entrepreneurs to participate in the activity. No less than 30 persons and five buildings passed the Universal Design standard certification.

For Part 2 of case study of ASA Project, UD process was not based on UD principles such as Rangsit model, but was the process for holding supporting activities to motivate understanding, starting from recognizing problems with UD realization to build wider realization. As a result, it was agreed to grant the award to buildings that were consistently designed with UD principles based on established standards. Those buildings had be surveyed according to standards using the same process was the design principles shown in Muang Jai Dee or Rangsit. Finally, the eligible buildings would be awarded by the ASA and become model UD buildings. Consequently, ASA could expand the outcome of designs consistent with UD. In addition, the project owner could use the outcomes for publicizing those buildings to people with all ages and genders, as well as expanding his customer base.

Part 3: Development of model areas for UD in local level with private sector and local administrative organizations (Pioneer Area: Ratchaprasong)
This process was divided into coordination, discovery, and selection of the pioneer areas with cooperation from Bangkok Metropolis, Municipal Police Office, Metropolitan Electricity Authority, BTS, and an educational institute (Kasetsart University). This process consisted of the meeting for preparing improvement of pavements in the area of Ratchaprasong Intersection based on UD concepts. A survey of physical condition was conducted by crews from the Faculty of Architecture of Kasetsart University to measure space dimension and create drawings of former conditions. The officer who responsibility in that area were invited to consult on problems and obstacles as well as propose physical surveys of the areas and basic physical design. Subsequently, the design team with land owners, local administrative organizations, and users (persons with disabilities and the elderly) worked together to prepare proposals. The third process was coordination for fundraising and supporting budget allocation of public sector as well as negotiation with private sector. For example, department stores located in the Ratchaprasong Intersection to find budget and operational guidelines for fundraising. The fourth step was supporting and controlling the construction process to be standardized and match the drawings. However, this activity did not take place because it was left to the local sector. Finally, there was a process for communicating with the press and the public through creating some interesting media including television and newspaper stories. Consequently, related organizations and the public could perceive and understand on benefits of UD design and build equality in utilization of physical environment.

Part 3 is the design process consistent with the Rangsit Model (Chumkhet Sawaengcharoen, 2014) and UD Process (Burgstahler, 2015). The important point of design based on UD principles is approaching the area by emphasizing community participation and coordination with public agencies and private organizations to build motivation and participation. In addition, it will be proposed to the public sector for further development under the name of UD Intersection or in Thai called “Si Yaek Jai Dee”. Although the Ratchaprasong Intersection has not currently been improved as intended, people have participated in understanding obstacles in the public areas. Such obstacles do not only affect persons with disabilities but all people using the space. The content of the analysis including removing, defining, leveling, greening and installing will be explained later in the CBSM Strategy of UD project by ASA.
Evaluation of the operation is not the end of the operation but outcome enlargement will increase the sustainability of UD.

For the detail of removing, defining, leveling, greening and installing are shown in CSBM Strategy of Universal Design project by The Association of Siamese Architects under Royal Patronage (ASA)

Last part, Part 4: Development of policy proposal and public policy advocacy on Universal Design divided into 3 sub-activities including:

1) The first activity was to organize some seminars and workshops of professional architects and users (persons with disabilities and the elderly) for gathering opinions for policy advocacy. Such policy is related to design and condition adjustments based on UD for government agencies with the content of information
proposal on design and listen to opinions from the representatives of persons with disabilities, whereas the public sector can utilize information for specifying facilities and make laws, rules and regulations to cover all people. The seminars were held to cover four regions of Thailand (seminar in northern region held on January 24th, 2014 at Rajamangala University of Technology Isaan in Nakhon Ratchasima with 47 participants, the southern part held on February 7th, 2014 at Hat Yai Hall, Central Festival Hat Yai Department Store, in Songkhla with 34 participants, the northern region held on March 9th, 2014 at Faculty of Architecture, Chiang Mai University, with 22 participants, and the Central Region held on July 7th, 2014 at Ratchavibha Room, Chaophraya Park Hotel, Bangkok, with 28 participants)

2) The next activity was the establishment of some working groups for discussing with representatives of relevant public sectors (Bangkok Metropolis, Department of Public and Town and Country Planning, and Ministry of Finance) and press interested in Universal Design. As well as collecting proposals from preparation of policies in order to understand the physical environmental management, rules and regulations required support from public sector.

3) The last activity was gathering academic information from official meetings with related authorities, Thai Health Promotion Foundation and other networks. A networking seminar with the Architects Council of Thailand and communities on “Universal Design for Community” was held to collect information and concepts for considering on physical improvement under UD principles in various communities. This emphasized utilizing local materials for the benefit of communities as well as the ability to utilize UD for physical design and improvement for persons with disabilities in communities. This activity was held on March 19th, 2014.

Supporting Universal Design as a standard of public buildings and traffic system design that is understood and supported by general people and policy makers was the first step towards understanding overall demands to find appropriate formats and suggestions that could be used based on UD. Completion of information acquisition must be based on partnership networks, including networks of architects, educational institutes, and users. For this case study, only the proposal and actual outcome improvements may be based on social and political factors.
4.1.9 Introduction of “A-Ra-Ya-Satha-Pat” Ambassador by Krisana Lalai

“A-ra-ya-satha-pat” Ambassador The Universal Design Ambassador may be the most familiar project because its manager is a famous person well known through several TV programs hosted by Krisana Lalai such as Krisana Tour Yok Lor, and Khon Kon Kao.

The term, A-ra-ya-satha-pat combines two words, i.e., satha-pat-ta-ya-kam (design and construction) and a-ra-ya (progress) referring to advanced and updated design for the current situation and needs of people in society. However, when interpreting the English equivalent, UD means designing residences, buildings, places, facilities, utensils, and public services with the objective of enabling access and use for all people of all ages, physical conditions, and genders conveniently, safely, and fairly. For this reason, A-ra-ya-satha-pat is not a concept meaning charity or pitifulness. If so, A-ra-ya-satha-pat may not be effected sustainably. A-ra-ya-satha-pat means developing equal legal rights and universal rules requiring everyone to accept the needs of the elderly and the disabled in the modern world.

The A-ra-ya-satha-pat Ambassador Project uses the slogan “Do Best for Better Society” that originates from the project aiming to make UD effective practically, tangibly, and concretely. The role and duties of Universal Design Ambassadors are to campaign and promote knowledge and understanding on A-ra-ya-satha-pat (Universal Design) to approach universal and fair designs for all people. This project has commenced since the end of 2012 and new generations who are not persons with disabilities have been selected as A-ra-ya-satha-pat Ambassador each year.

The A-ra-ya-satha-pat Ambassador Project is supported by Thai Health Promotion Foundation, the Tourism Authority of Thailand (TAT), and the Thailand Wake Up Project of the Royal Thai Army operated by Krisana Lalai, the project manager. It not only selects new generations as the representatives for communicating UD to young people, the public and organizations, but these Ambassadors are also responsible for monitoring which places should be developed and improved for universal accessibility using UD principles. The A-ra-ya-satha-pat Ambassadors will do field surveys throughout Bangkok and other provinces and take pictures of those areas for publishing via online media such as Facebook, YouTube, and some TV
programs, including Kuan Khao Chao Wan Yood, Channel 3, and Krisana Tour Yok Lor hosted by Mr. Krisana, as well as via the Nation Channel for getting this information across to the general public. This is another channel for promoting the practice of Universal Design concepts. (Interview with Krisana Lalai, 2014). Besides appointing new generations as Universal Design Ambassadors, some actors, actresses, and celebrities have volunteered as UD Ambassadors, including Apichart Chumnanont, Khemmanij Jamikorn, Pongsri Woranutch, and Rabiabrat Pongpanitch, for building networks and making this project newsworthy.

The A-ra-ya-satha-pat Ambassador project is considered another way to promote UD to be utilised, by motivating new generations (i.e., students of Faculty of Architecture and other related faculties) to be the upstream of design in order to help Thailand become the hub of UD development in the AEC. The project named “New Generations of Universal Design Ambassadors” emphasized holding PR activities in several famous universities for publicizing and finding new Universal Design Ambassadors (Thai Health Promotion Foundation, 2015). Accordingly, UD Ambassador aimed at motivating the people’s consciousness and was open to all as explained below. Everyone is able to be a Universal Design Ambassador by passing on these good things to society. Pakkad Phoesri, Interview 2016.

Finally, this project was held to express appreciation to all volunteers and networks who had worked together and to link all organizations interested in UD. In the event, some volunteers and buildings with Universal Design were also awarded for building motivation towards Universal Design (Lalai, 2013). However, all activities as mentioned above were based on the campaign stating that There is no person with disabilities in this world but only disabled environments” Krisana Lalai, Interview 2014. This project emphasized equality in order to make everyone understand that persons with disabilities also should have the same chances as other people in this society. In addition, persons with disabilities are not burdens on any society or anyone. If built environments are improved to facilitate the access of persons with disabilities, they will be able to live in the society the same as other people.

is an important and necessary topic for today’s world and unavoidably in the future (National Housing Authority, 2012). Although, if people fail to act on this matter today, they will have to perform it in the future for these five reasons:

1) High quantity of elderly throughout the world. Currently, many countries as well as Thailand are becoming aging societies. Humans will live longer and will need more facilities for their convenience and safety in their daily life. According to data obtained from the United Nation (UN), there are over 7 billion inhabitants in the world whose 893 million are elderly (over 60 years old). The elderly represent 12.8% of the worldwide population. Of this 893 million elderly, 340,000 are aged almost 100 years old. In addition, the elderly population will increase to 200 million within the next 10 years, so the size of the total elderly population would be over one billion in 2022.

2) Persons with disabilities are increasing day after day. Person with disabilities or people requiring special facilities for living will increase in today’s world, also in the future because most disabilities are not disabilities by birth but are caused by illness, accidents, or aging.

3) Enforcement of laws, several developed countries (e.g., Japan, U.S.A., UK, and Germany) enacted several laws to ensure all public places and buildings would provide some facilities for all disabled and elderly people. However, fifteen years ago, Thailand enacted several laws on this issue including the Constitutional Law B.E. 2540, promoting and developing the quality of life of persons with disabilities, Ministerial Regulations of Ministry of Interior B.E. 2548, Ministerial Regulations of Ministry of Social Development and Human Security B.E. 2555, etc. These laws and regulations encourage all public buildings and places to use UD, i.e., by providing facilities for those with disabilities and elderly persons.

4) Universal Rules: We can see that UD is considered as a universal language in our current world but also for the future as we can see in developing countries. For this reason, “Universal Design” can be considered as an indicator of development for each country. Shortly, Thailand will become a member of the ASEAN Community, so we should think about this issue. If we do not focus on UD to improve and develop our country, Thailand may not be accepted on the world stage. If we ignore our elderly, our persons with disabilities and our patients in rehabilitation,
we will violate the fundamental rights of humans. As a result, we may be considered an undeveloped country.

5) The core of Buddhism: Lord Buddha said that birth, aging, and death is normal and no one can avoid this truth whether she/he is rich, or black, or white. Therefore, UD represents carefulness on living and this design will be useful for everybody. Because as Lord Buddha said, persons without disabilities will depend on UD one day or another, when they will be old or sick. The researcher considers that UD is an issue that everyone should feel concerned about given the need to create an inclusive society. Many sectors in Thailand utilize the concept of UD but no one has collected a data base on Community-Based Social Marketing Campaigns for UD or studied the process of the program. This research would be an advantage not only for relevant organizations but for everyone in society.

4.1.10 Work Process consistent with UD of “A-ra-ya-satha-pat”

Ambassador

Krisana Lalai, is the well-known host of “Krisana Luang Luk” TV Program with the image of a man riding wheelchair that is rarely found on general TV. Krisana experienced an accident while he was traveling to report news in other provinces causing him to use a wheelchair for ten years. However, this accident seemed to have no effect on his work and he had an opportunity to be interested in new topics like Universal Design in Thailand. Consequently, he made this topic the theme of his TV program called “Krisana Tour Yok Lor” as well as the theme of his column with the same name published in Kom Chad Luek newspaper.

In 1997, when I had an accident causing me to experience with difficulty of living and transportation whereas Thailand’s environment has not designed for supporting physically unhealthy people such as the elderly, persons with disabilities, small children, or pregnant women. Consequently, their living turns to be difficult and unsafe. Krisana Lalai, Interview 2014.
According to this interview, it could be seen that the person responsible for the project had developed and driven Thailand to UD was one who had experienced the situation directly. Accordingly, this project was based on the intention of building equality in society because UD principles make all people equal with the same rights and opportunities. Moreover, an opportunity to visit a country that is considered a model of UD was another opportunity to make UD truly happen in Thai society.

My rights were derogated by other persons, inconvenient public buildings, and living causing me to be impatient with that I experienced. One day, I had an opportunity to discuss with other friends who were also persons with disabilities including persons with poliomyelitis, persons with disabilities caused by various accidents, then I had a question why my country was so underdeveloped and why there was no facility for the elderly, persons with disabilities, disabled veterans, pregnant women, and small children based on fair and equal convenience and safety that is the universal standard called Universal Design. Finally, I found that the country that could be the model of this kind of design was Japan. Krisana Lalai, Interview 2014.

The above statement raises the question how to make people become interested in Universal Design for finding answers as well as perform the operation
concretely. As a result, the Universal Design Ambassador Project used the operational guidelines of Universal Design in Japan as a model. Krisana’s Japan trip gave him an opportunity to see Japan’s national development with facilities facilitating anyone riding wheelchair to travel conveniently, the same as ordinary people. Even ancient buildings such as the Asakusa Temple that is a famous temple in Tokyo over 100 years old had ramps, lifts, and toilets for persons with disabilities. In addition, Japan’s mass transit system also has non-step buses facilitating wheelchair users to use their services conveniently.

When considering the case of Thai society, there was a question why there were no facilities for persons with disabilities or even the elderly who are the majority of temple visitors. In addition, Thailand has no or incomplete facilities for persons with disabilities and the elderly on buses and BTS. As a result, the persons with responsibility for the improvement, design, and construction of these places must consider all types of people and must be able to be utilized practically. This would help budgets to be spent wisely and help Thailand to be more developed. If other countries can create UD, we should be able to do so.

This environmental improvement would be beneficial for domestic travel because retired foreign tourists would be able to live their remaining life in Thailand. This would be that consistent with the aim of developing Thailand as the Asian Hub of Health. Accordingly, our environment must facilitate such living as stated by Dr. Kwanrudee Chotichanataweewong, the Director of Thailand Environment Institute Foundation in this interview with Manager Online:

A-ra-ya-sata-pat is the matter of human rights, especially with public buildings providing services to large amounts of people such as banks, department stores, hotels, restaurants, hospitals, and gas stations. Currently, ASEAN countries have not been alert with this matter therefore Thailand aims to be the leader of Universal Design in ASEAN causing Thailand to be advantageous in tourism when participating in the AEC.

As a result, the “A-ra-ya-satha-pat” Ambassador is not only a project operated for design based on UD principles but it also serves as an observer to monitor all public areas to check whether they facilitate all types of people. New generations of
Universal Design Ambassadors will survey and give their opinions on place and object designs used in daily life for facilitating (or not) the utilization of all people equally. Encouraging new generations to be Universal Design Ambassadors makes them realize the importance of UD since they are young. Consequently, they will be able to tell their families and friends. In addition, it can be seen that UD is not complex and hard to understand therefore “A-ra-ya-satha-pat” Ambassador become important announcers for spreading news. Moreover, the “A-ra-ya-satha-pat” Ambassador project helps to make related persons or persons with authorization for area improvement to realize that the rights of groups of people have been discriminated against although the ministerial regulations are in place.

The rules and regulations of the Ministry of Interior defined that facilities for persons with disabilities and the elderly must be effective in 1999 but they are technical terms, not principles of public service, with no retrospective effect. This has caused complaints as happened with the case of BTS when it was being constructed in 1996. Based on surveys on utilization after its completion, it was found that there were no elevators in all stations or connecting ways, causing persons with disabilities to ask for help from others to carry them to trains (Krisana Lalai, 2013a). Consequently, several times groups of people complained and requested facilities for persons with disabilities and the elderly but it has not worked. Currently, Thailand’s built environment is still often unfriendly for the disabled. Accordingly, in 2015 the Administrative Court issued an order to build facilities for persons with disabilities and the elderly as well as spaces for wheelchairs in 23 BTS stations (The Administrative court orders, 2015).
The “A-ra-ya-satha-pat” Ambassador Project preferred using criteria for making decisions based on actual operations to procedures of UD process. There was no calculation or measurement about the criteria of designers or suggestion of professional designers. The project focused on problems that can be experienced by persons with disabilities therefore it becomes a process to build consciousness on UD for public areas for leading to practical outcomes, i.e., making all places and buildings accessible to all groups of people. Consequently, all people are able to access facilities under UD principles and it could become the solution for solving the problems of disabled people in the environment.
4.1.11 Universal Design Process Conclusion

The number of the elderly and persons with disabilities is growing. It is time to find solutions to aid these people to live better. Universal design is one concept that should help. UD refers to the way to create buildings and environments that make people feel convenient and comfortable. UD is relevant for all people. It is intended to simplify life for everyone. It aims to develop accessible environments for all. If a disadvantaged person can use a facility, it can work for all people. The target group that every project concerns is normally the elderly and persons with disabilities.

However, the elderly and persons with disabilities are not burdens for society. They do not want others to take care of them, and prefer to live by themselves if the facility and environment is suitable for their needs. As troubled users mainly consists of the elderly and those with disabilities-they are showing the way for those with
fewer opportunities in society. The renovation of places not only serves as an opportunity to increase their opportunities in life but also increases peoples understanding of the Universal design concept. These changes start from an improvement in our perception, to renovations in houses and ultimately in public places.

The five projects from four sectors (Government, private, education and NGOs) were the case studies. It can separate the UD process into two types—the first one is UD process related to the design function, and the second one is Universal Design processes for campaigns.

UD process relates to the design function we can refer to as the Rangsit Model. This model emerged from a local study using UD concepts for renovating a temple. But after study the process of design in other projects we found a difference in the demonstrated content. The demonstration starts with user (the elderly and persons with disabilities) and also with architects as supporters. The demonstration can make both sides better understand what they should do, do for whom, and this could indicate that the design is fit for the requirement. Most campaigns aim to increase the knowledge and understanding of UD better. This is the UD campaign process. Moreover, it found that young designers are key persons. They could be change agents for UD in the future. Young people can be ambassador for UD by inviting all people to change their attitudes.

The process can be separated into two terms—the first one is the activities process and the design process. The activities process has three main steps: pre-project, project running and post project. The key concern is the post project to summarize results for recommendation for action and to report the management level for project members.

Recommendation for Action is the process that takes place after selecting the most appropriate solution by collecting information from discussions and seminars with the architects and beneficiaries in all regions. The report must be presented to the persons with power of approval for solving such problems. It is considered as building the roles of the public to participate in presenting information to the public sector that is an integral part of national development.
Preparing Report is the last procedure using tables, numbers, and letters for explanation and simplicity of understanding the content.

**Figure 4.26** Activities Process

**Figure 4.27** Design Process

In addition, participatory operation, at the family, school, community organizational, or national levels, is very important because it makes participants feel a sense of ownership, encouraging participants or beneficiaries to comply with and give their commitment voluntarily. Participation of all groups in one society and community is required, to involve a variety of genders, ages, and social status. Giving some opportunities for building equality in society for all to provide their thoughts, abilities, knowledge, and roles, so that the current operation does not target any particular group but influences all the people in the community and society thoroughly and fairly.
Facilities required improvement are divided into three main areas including:

1) Facilities related to house and townhouse construction: Currently, both existing houses and newly constructed houses have no planning on facilities although those houses are owned or occupied by persons with disabilities. Consequently, persons with disabilities or members of the houses who are persons with subsequent disabilities (e.g., the elderly) have to face difficulties in performing activities with family members. As a result, campaigns on the realization towards house construction with better planning and designing on facilities, for example, amendment of houses with steps, ramps, and wide doors for using wheelchairs.

2) Facilities in public areas: These include community areas (e.g., Pattaya beaches, public parks, temples) improved by Muang Jai Dee or Si Yaek Jai Dee designed by ASA for developing as a model area. Since such public areas are used by several groups of people, design based on UD principles must understand various types of people.

3) Facilities in the mass transit system mean require convenience and safety from departing to arriving as led by the Universal Design Ambassador Project in requesting construction of lifts for all BTS stations and low-floor buses.

4.2 Community Based Social Marketing (CBSM) Strategies for Universal Design Project in Thailand

Traditional commercial marketing uses mass media to let people change or adopt new behavior, while CBSM strategies focus on contacting people by seeking to remove barriers and increase the benefits. CBSM as the international strategy used in health or environment issues. The five process of CBSM consist of:

1) Selecting behaviours.
2) Identifying the barriers and benefits to an activity.
3) Developing a strategy that utilizes CBSM tools that have been shown to be effective in changing behaviours.
4) Piloting the strategy.
5) Evaluating the strategy once it has been implemented.
CBSM aims to eliminate obstacles of occurred behaviors while performing behaviours on selection and/or benefits that may improve the target’s interest. Social marketers or campaigners must understand those considered as obstacles and benefits by the target group. Naturally, people usually pay attention on benefits first but each person perceives obstacles and benefits differently, i.e., something that is beneficial for someone may be useless for another person. As a result, it is necessary to develop strategies by using appropriate tools for each situation with target groups in order to build efficient behavior change.

4.2.1 CSBM Strategy of “Muang Jai Dee” TV Program by Thai Health Promotion Foundation

Muang Jai Deewas a project aiming to help improve houses and public areas. The program’s aim was to provide facilities for understanding the importance of design in the construction industry, but also to create a better future in Thailand. CBSM is the concept to apply for this purpose.

CBSM is based on five steps: selecting behavior is the first step, identifying barriers and benefits, developing strategies, piloting, and the last is implementing and evaluating as mentioned above. Behavior change is essential to guide us towards a sustainable future. And to do this, specific programs need to provide information-intensive campaigns to encourage people to adopt environmentally friendly behaviors.

Strategy is the third step by identifying the tools that foster changed behavior in the target group.

Behavior that should promote UD is the main concern. UD is the concept aiming to create friendly environments for all people that everyone can access even with different ages, gender, or abilities. “Muang Jai Dee” separates the target areas into two types-houses and public areas. Muang Jai Dee’s team found that many houses were not convenient or safe. This is quite surprise because housing should offer the most convenience and safety. The major problem was the age and ability of the person in house changes over time. Some houses were is built when the user was still young. Some house were built following design trends and the owners of some houses had developed disabilities. Renovating homes under the UD concept was the behavior that “Muang Jai Dee” promoted. The target group was the elderly and
persons with disabilities as they are the major ones who suffer from inconvenient spaces in their living areas.

For renovating houses using the UD concept Muang Jai Dee’s team had to understand the barriers, as well counter a lack of knowledge of UD, the desired style, and cost of renovation concern. The benefit for motivation was convenience and safety for better living. The tools used for removing barriers and increasing the benefits for each factor are shown below:

![Diagram of Five Process of Community-Based Social Marketing with Tools](image)

**Figure 4.28** Five Process of Community-Based Social Marketing with Tools  
**Source:** Adapted from Mckenzie-Mohr and Schultz, 2011.

1) Communication Tool

Based on communication during site visits and interviews with users in the project, the team found that they felt inconvenient and unsafe in their own homes. Users faced this problem every day and did not know how to solve this problem. Lack of knowledge was found. The Muang Jai Dee team developed effective tools to access the target user for sharing knowledge face to face from architect to user. The young designer, designers and consultants who had responsibility for the project were the key persons. Actually it was not only sharing knowledge with the users, it was also necessary to involve the family members as well. Another effective tool combined
with communication tools was modeling. When the UD concept is not fully understood the use of visual images would be another solution. The renovation of eight houses used models to communicate with the user. The communication style was two way communication. Even when the designer understands the UD concept they have to understand the needs and apply the concept in practice. That will merge the UD concept with actual needs before beginning renovations. Moreover, when the extra cost of renovating for UD seemed to be high, the designer separated each item to show that it was not high as imagined. UD concepts are easy to apply with a low cost. No more than 50,000 baht would cover the cost of renovations under the UD concept as shown in the Muang Jai Dee TV program.

**Figure 4.29** Example of Communication Style  
**Source:** Thai Health Promotion Foundation, 2012f.

2) Commitment Tool

Commitment is a tool that was used in this example. It aired on “Muang Jai Dee” 11 on 5 November 2012. Most elderly people believed that bedrooms have to be in upstairs and Buddha statues have to in upstairs as well. It was not easy to change their belief. The explanation from designer and consultant was not enough to change
their perception. Trusting a person was the key for this, so the designer asked a Monk to speak to the users about the proposed change. Then the message should be concrete. Thai people still believe in Buddhism and Monks could be spokes persons to help users change their belief by moving bed room and Buddha statues for more convenience. The area of Buddha statue is not fixed. Not always high level, it can stay at downstairs. Depends on the area and the convenience of user. Samuchan Sirijanato, Monk from Bangkae Temple in “Muang Jai Dee” TV program After the house owner listened to the Monk they agreed to move Buddha statue down and said that: We agree to move it down, it has more space and convenience to daily offer food to Buddha statue. Rabieb Kaewsodsri, House owner, 70 years old in “Muang Jai Dee”

Figure 4.30 Example of the Trusted Source
Source: Thai Health Promotion Foundation, 2012k.

Public areas are open spaces and commonly used by various groups of people. Consequently, the major emphasis is convenience and safety of the elderly and persons with disabilities who were the main problems for the project. Every “type” of people needs to have the right to enter freely, with equal rights, to public areas, even if they have handicaps. UD’s principle lets people access spaces equally, so UD
concepts should be promoted. Also, identifying barriers is a primary step needed to understand the problems and to provide campaign which promote specific behaviours, at a good time and in a good place.

Conducting barrier research comes from the interviews with representatives of persons in the community, project owners and key users. The additional key agency concerning public space is the local government. They can authorize, and make decisions, and support funding for renovations.

In this case, the barrier was accessibility, and then it had to identify what kind of facilities were needed to solve the problem point by point. The starting point for renovations was ramps, and another one was changing from push doors to sliding doors with an appropriate size for handicap access. The UD concept is not well recognized and no one knows how to apply UD, so communication is the best tool to let community better understand the concept. The design team arranged meetings for two way communication to educate and receive comment from community members.

Finally, finance is a barrier that concerns communities. Persons in community do not know whether renovations will be costly or not. Then the designer has to motivate them to understand the long term benefits for all users so the community will feel comfortable and safe.

4.2.2 CSBM Strategy of Data Regarding Geriatric Medicine 2014 by Yodyiam Theptaranon

Thailand is becoming an aging society and health risks are increasing characterized by the inadequacy of medical service access opportunities among citizens. Knowledge from this pilot project should be transferred to the general public, elderly patients, relatives and caretakers, and organizations in order to provide awareness on health promotion, prevention of diseases, and nursing the elderly. This is to promote the appropriate development of elderly nursing according to the quote provided by Yodyiam Theptaranon, who in 2015 said

Hospitals are nursing facilities that help recover patients from sickness to normalcy, but if medical personnel in hospitals lack safety then how can patients be safe. All hospital personnel are aware of many dangerous in hospitals, both visible and invisible. Eliminating all dangers might be
impossible, but alleviation of dangers might be possible. The effective way of reducing dangers is to brainstorm for solutions and “organizing thought processes” or “arranging thoughts in a systematic manner” and orderly collaboration in a systematic and orderly manner. Therefore, dangers could have been reduced.

Quality nursing facilities are not only measured by patient treatment quality, but also the safety of structures, buildings, places, and the environment also plays a crucial role. This is for the treatment quality and the safety of life and belongings of either personnel or patients. Engineering standards, regulations, safety requirements, and other laws relevant for buildings, places, and environments are also in place such as the Nursing Facility Act or the Building Control Act. However, laws and standards do not always guarantee the safety of nursing facilities should there be lack of understanding in those standards and relevant laws for implementation. Only the continuous enforcement and support from management and personnel at all levels could create the confidence in building structures and environments. Whenever we mention about quality improvement, the target should always be a continuous journey of learning processes in order to promote awareness, quality, safety, and standards in the organization. This could only happen based on a correct set of knowledge and understanding.

Geriatric Medicine is a new approach for citizen-centered healthcare services. The objective of the project was to be a prototype of a post-recovery intermediate care facility for elderly patients to prepare them to go back to their residences and prevent recovery complications. Also, Siriraj Hospital patient wards could serve more new emergency patients effectively and enhance public benefits in line with the objectives of the National Reform Council. The collaboration between Interpac and Siriraj Hospital is collaboration between a government sector and a private sector, and successfully identified barriers and benefits for strategy development as follows:

1) Lack of Knowledge Barrier

The major obstacle in the planning is that this project had no predecessor so knowledge was of the utmost importance. The project owner and the project planner must collaborate to achieve mutual objectives, because “customer
satisfaction” is highly regarded in the architectural design. Design knowledge is the foundation knowledge of architecture, however, specific designs for the elderly must employ and enhance the UD concept to make the principles become reality.

2) Communication Tool to Remove Lack of Knowledge Barrier

The removal of barriers in knowledge inadequacy employs several communication strategies. These include the face-to-face communication between the project owners who are specialists in the area, and architects who are design specialists. This is not only a cross-industry knowledge sharing but also provides benefits of connecting knowledge sets. The 2014 visit for the elderly medical facilities in Japan enhanced physical design knowledge by using Japan as a design prototype and then adjust accordingly to local resources.

3) Prompt Tool to Remove Lack of Knowledge Barrier

Prompts were also employed to promote recognition en route to the sustainable participation through data collection from all five medical centers studied in external areas, out-patient departments, general in-patient departments, specific in-patient departments, and supporting areas for staff.
4) Funding Barriers

The second obstacle is a source of funding. The development of Geriatric Medicine considers capital as a driving factor. The government projects hence require participation from the private sector for project enhancement and project risk mitigation. Capital is also a powerful "tool" to enhance project efficiency. This project not only received support from designers but also from construction material suppliers (ThinSiam DotCom, 2014).

5) Incentive Tool to Remove Funding Barrier

Incentive strategies were employed to reduce the funding limitations. The Interpac project led by instructor Yodyiam Theptharanon foresaw the public benefits from the establishment of the National Geriatric Medicine Center in addition to the knowledge utilization and enhancement opportunities. Therefore he initiated the study and supported all expenses in his 2014 visit to Japan’s hospitals for the elderly.
6) Increasing Benefit

Had the National Geriatric Medicine Center been established in Samut Sakhon, the wellbeing of the elderly could be improved and the vicinity could be a prototype of inter-collaboration between governmental and private organizations for further expansion through the country. Additionally, this project was also an investment opportunity for investors taking part, yielding both income and public image generation in accordance with the 22nd Reform Agenda: Medical Services.

The National Geriatric Medicine Center in Samut Sakhon will expand Siriraj Medical Services to the community level. The project also fits reform objectives by providing citizen-centered healthcare services and focusing on aging society problems.
4.2.3 CSBM Strategy of Universal Design Talk 2015 Project in Elective Course in Architectural Faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)

Three desired outcomes of Universal Design Talk 2015 project that show willingness to change behavior include:

1) Enhance the knowledge of UD.
2) Increase awareness of UD and increase the number of student in elective course in the future.
3) Implement the UD concept to work in the future.

An effective CBSM strategy removes barriers to the behavior to be promoted. CBSM stresses the evaluation of implemented programs.

Educational institutions aim to enable students to apply obtained knowledge to practical usage in their vocational field as well as to produce students with expertise. As a result, they include the operational guidelines of architects with classroom experience for making students understand the operation of such vocational field using UD.

1) Utilization of Communication Tool in Removing Barrier on the Quantity of Students Interested in UD Elective Subject That is Still Low with Low Attractiveness.

UD has aroused only limited interest been interest in Thailand as yet. UD is still classified as elective subject in the Faculty of Architecture in Thailand that is selected by students in low level in both public and private universities. In addition, instructional conditions of elective subjects of universities in each system are different, for example, public universities always open this course without considering the quantity of students while private universities require that the quantity of students must meet a minimum quantity defined by universities. As a result, to make UD to be more appealing, it is necessary to make students become more interested in UD principles design to gain opportunities in their vocational field. For instructors, it is necessary to build in learning about UD to increase the number of students.

An interview with Dr. Rittirong Chutapruttikorn (August 19th, 2014) School of Architecture, Bangkok University, who work relate with KMITL found that:
As a private university, income is another factor for determining subjects for opening and the opened subjects must have students over than 10 persons. As a result, it is such a difficult thing to be operated because although there is a group of persons interested in such course, minimum target of the university can stop the project. It is important to obtain a win-win situation for both universities and students, i.e., Universal Design must be developed for students in order to motivate their interest and perception.

Moreover, Dr. Rittirong also said that “the opportunity to make money for students in this field is still lower than building high-rise buildings or green buildings”.

Only theoretical instruction may not be sufficient for inspiring students to choose this elective subject and inviting lecturers from outside with experience on vocational field to tell their experiences is also interesting and can attract students. Each year, many lecturers have introduced UD subjects to inspire students, for example, in 2014, there was an activity held under the title of From the concept to Practice with professional architects, Krisana, and representatives of NGOs to build knowledge through actual experiences. In March 2015, the Universal Design Talk Show was held under the title of “Universal Design and Architect’s Roles”. Inviting lecturers from outside to provide knowledge to students is not building knowledge based on actual experiences but it is building realization, developing knowledge, and being a part of producing new generations who understand and are able to create universal environments for all people sustainably. Importantly, it can attract students to be interested in UD as well.

Moreover, the instructor of UD elective subject, i.e., Asst.prof.Dr. Antika Sawadsri, also plays a role in promoting UD in Thailand as the operator of UD Strategic Planning Project in Thailand. She is also a part of the group of staff operating Building and Environment Design Recommendation for All with ASA as well as the person involved in the Universal design Ambassador project in KMITL. Consequently, the reputation of the instructor attracts students to be interested in studying this course. In the event that a student is seriously interested in UD elective subject, the instructor will give support and an opportunity to be the assistant of the
instructor for conducting some research on UD. This can be considered as a portfolio and develop a good profile for the future. In addition, such research is also published in Thailand and other countries and if students receive research scholarships, they will obtain new learning experiences.

2) Utilization of Communication Tool in Removing Barrier on Lacking of Understanding on Roles and Duties of Architects in Performing UD Operation

In this case study, Kasama Yaemsri, the architect of Ta Saeng Studio Social Business Organization, was invited to lecture on operation process for working with the community on UD and building a participatory process. Kasama passed on his direct experiences to students and anyone interested by using presentations. He illustrated how each work process started from addressing problems on how to access the community, work process, coordinating with all sectors of management, and working with the networks of Ta Saeng Studio including community hospitals/volunteers, educational institutions, physiotherapists, and community networks. Moreover, other persons are also focused without emphasizing the elderly or persons with disabilities.

![Universal Design Talk Poster](image)

**Figure 4.33** Universal Design Talk Poster

**Source:** Sawadsri, 2015a.
It was found that as the concept for driving UD may be difficult to spread due to a lack of understanding, it starts from building and adapting understanding on a simple design process that is exchanged between designers and local people of the community as in the statement that “UD is not easy to understand or drive because it is not understood by many people. As a result, it should be started from building and adapting understanding”.

The project raised as an example of this instruction was Ban Mun Kong Network of Chiang Rai province, consisting of 10 communities and operated during 2014-2015. The project was conducted by inviting local people to participate in design process in order to exchange knowledge and understanding to both parties through simple methods without any complex techniques. Such operation is consisted of the following processes:

Inviting to discuss and brainstorm on current obstacles or problems of Ban Mun Kong found in communities, for example, obstacles and problems encountered by persons with disabilities and the elderly.

Inviting to survey and make a map and plan of the locations of the houses of persons with disabilities and the elderly that was the activity created for participation of local people to make them realize and participate in the activity as the database. If it is too technical a process, it may not attract local people. In addition, this activity was also beneficial for perceiving all areas that can be accessed by all persons for building the common areas for communities.

Inviting to draw, write, and design in order to make local people in the community to feel fun, participate in, and mutually learn differences of area sizes that are necessary for each group. As a result, people were classified into three groups based on the waistline instead of using technical principles, i.e., s, m, l sizes of the human body.

3) Utilization of Communication Tool in Removing Barrier on Data Collection

This will enable students to see the operation on collecting data through survey mapping after surveying the sites and having conversations with local people. They have to observe and exchange their opinions during the survey as well as write down remarks obtained from surveying the communities that can tell each
community’s story. This method allows architects to remember areas and problems found in each area that is considered as utilization of communication tools because architects may forget something they heard and saw while surveying. Foot maps allow architects to see the overall picture of the community completely for performing further operations. Foot maps were a way to integrate information from communities to designers by understanding social meaning, social function and physical spaces. In addition, it is also a good beginning for building relationship between architectures and local people.

**Figure 4.34** Example of Foot Map in Universal Design Talk Project 2015

In addition, the seminar program invited speaker who had work related experience in UD. This was the technique that Antika Sawadsri used to create connections for young architects, helping her students to feel relaxed while and learning from real cases. This strategy makes students more interested and aware of UD concepts.
Figure 4.35 Poster of Tea Talk 2014
Source: Sawadsri, 2014.

Figure 4.36 Poster of Universal Design Talk March 2015
Source: Sawadsri, 2015b.
4.2.4 CSBM Strategy of Universal Design Project by The Association of Siamese Architects under Royal Patronage (ASA)

1) Part 1: development of tools and activities on Universal Design of ASA

Communication is a tool under CBSM principles that helps to make the problem of knowledge and awareness be consistent with the behaviors required to be changed. Communication formats are developed to be suitable for the target group that is consistent with the first part of operations performed by the ASA.

The ASA aimed to provide knowledge about UD to all its networks in four regions, including the northern, southern, northeastern, and central regions, as well as cooperate with educational networks to develop knowledge from various institutions, so design information becomes an important part emphasizing knowledge and understanding related to the design field. Exhibitions are another tool used to explain and demonstrate the UD for people who are interested in this concept.

Incentive is another tool that ASA used to increase the number of participation in UD seminars. The architect who attended this seminar received eight credit points for Continuing Professional Development (CPD). The CPD score is used for extending an architect’s permit annually from the Architect Council of Thailand. A CPD score needed to reach at least 12 credits.

2) Part 2: Development of Mechanism and Universal Building Standards Certification System for Efficiency and Actual Practice

To motivate alertness and realization about UD as well as to be a part of project development to be consistent with UD principles, ASA has held an award for excellent architecture. Consequently, this has been used as a tool for motivating behavior.

Incentive is considered another tool for motivating behavior through various methods including refunds and fee discounts. It is also considered as the reward of desirable behaviors and reward is a kind of incentive to be used in this activity. In this regard, ASA established the criteria for evaluating such buildings. In the event that any building could meet such criteria, such buildings would be certified as Jai Dee Building of 2013. Such buildings would be rewarded as the guarantee that they were correctly designed under UD criteria and standards. The objective of this award was to build realization on the importance of the solutions for solving the
problems on environment obstructing utilization of underprivileged people, including persons with disabilities, the elderly, pregnant women, and children. In this regard, the seal of this award will be installed in front of buildings that met these criteria. However, such buildings have not won any design competition but it is the guarantee that they were designed under UD standards and criteria, the same as Thai EGAT Certification for electrical appliances or TIS mark for certifying industrial products.

The Association of Siamese Architects under Royal Patronage of His Majesty the King invited all buildings interested in this project to be the nominated in Jai Dee Building Award 2013 by submitting their works on February 21st, 2013. Subsequently, ASA surveyed the buildings during February-March 2013 and evaluation was conducted in April 2013. The award was granted at the Architect 2013 event and Jai Dee Building must be buildings constructed or improved for facilitating all people in society. Such buildings must be equipped with ramps for wheelchairs, elevators with buttons for persons with disabilities, or construction of special materials for the convenience of blind persons.

UD Label is not an activity representing the social responsibility of participating organizations but it helps to boost the reputation of organizations and publicizes UD more extensively.

**Figure 4.37 UD Label**

**Source:** The Association of Siamese Architect under Royal Patronage, 2014.

3) Part 3: development of Model Areas for Universal Design in Local Level with Private Sector and Local Administrative Organizations (Pioneer Area: Ratchaprasong)
Bangkok’s pavements are notoriously dangerous and difficult for walking. Footpaths used by urban people daily are full of obstacles, commercial areas, stores, stalls, restaurant tables, signboards, billboards, and public pavements are used as car parks. UD is one important tool for solving the problem of such poor conditions, as told by Pol.Lt.Col.Dr. Bandit Pradubsook, the Vice President of The Association of Siamese Architects Under Royal Patronage of His Majesty the King and the President of Development Project of mechanism for Supporting Universal Design for Physical Environment (Si Yaek Jai Dee Project) that:

Currently, several public areas have not been improved or designed to support utilization of people with all ages and genders including children, pregnant women, the elderly, persons with disabilities, and general people, especially, intersections and pavements in commercial or tourist areas.

Accordingly, ASA has operated this project with the support of Thai Health to survey and design physical environments that are based on Universal Design. The objective of this project is to provide public areas that can be used by everyone pleasantly and equally. In this project, Rajchaprasong area was selected as the pioneer area for expanding to other public areas.

From field surveys and information from crews of instructor Kotchakorn Wora-Arkom (Land Process) who cooperated with students of the second class of Urban Management Program of Bangkok Metropolis, there were five concepts of the improvement process as follows:

Removing : The removal of obstacles, for example, degenerated telephone booths and excessive number of traffic signs.

Defining: Reserving sufficient public pavement space enabling 2-3 persons as well as wheelchair users to walk and ride conveniently that should be 1.50–1.80 meters wide.

Leveling: It is important to pay attention to the importance of pavement levels by adding ramps to facilitate transportation of persons without disabilities of all ages and genders and persons with disabilities.
Greening: Increasing green areas to urban zones giving not only attractiveness but freshness from vertical and horizontal gardens. In addition, green zones of urban areas that sensitive to floods.

Installing: Managing stalls, especially flower stalls, in Rajchaprasong area to display their products vertically as designed beautifully for providing enough spaces for walking as well as becoming a new landmark.

Communication tool is intended to enable general people to have opportunities in utilizing the Rajchaprasong area. Having good pavements and friendly public areas under UD principles is a way to serve the disabled properly. However, to improve public areas, it is necessary to depend on people from various sectors including related public and private sectors, local interested persons, and people using the area. As a result, this project used the strategy of utilizing communication for news making as a way to reach the public as well as for building power to public sector and decision-making that may occur in the future. Accordingly, Rajchaprasong intersection, the landmark of Bangkok’s center, was used in this project. However, to operate this project it was necessary to have a detailed plan as mentioned by Mrs. Prapapan Channual, the Director of Land Readjustment and Urban Renewal Division, Department of City Planning (Bangkok Metropolis) that:
Primarily, it is possible to operate such project but the copy of application should be submitted to Bangkok Metropolis for considering and determining agenda. In addition, Bangkok Metropolis would like to ask all related sectors, especially the private sector, to participate in driving such project. Subsequently, if Si Yaek Jai Dee Project is agreed by all sectors and Bangkok Metropolis, this project should be operated practically. Moreover, if the project in this pioneer area of Rajchaprasong is successful, the outcome may be expanded to other areas in the future.

Creating news stories were considered as a tool for measuring the potential on building recognition and the feelings of the public. This project was publicized in various kinds of media, including newspapers in Prachachart Durakij and Khao Sod Newspaper on August 287th, 2014 (Noppon Satiruedee, 2014) and social media (e.g., ThaiPR.net) (“Grand opening,” 2014). This project was also
covered by some television media, including Khao Sam Miti TV the program of Channel 3 broadcast on August 11th, 2014 (Thai TV Club, 2014).

As a result, it is another channel for building recognition and understanding enabling people to utilize pavements in the area of Rajchaprasong interaction equally under UD concept.

4) Part 4: Development of Policy Proposal and Public Policy Advocacy on Universal Design

ASA cooperated with regional committees (including Isaan: Northeast of Thailand, Lanna: North of Thailand, Taksin: South of Thailand, Rajamangala University of Technology Isaan, and faculty of Architecture, Chiang Mai University) to hold a seminar for presenting academic information on UD to the public sector. This was considered as promoting the rebuilding of public areas to various sectors in society for exchanging knowledge, consulting, and discussing through two main processes including:

Development of public issue, i.e., UD;

Preparing policy proposals. Primarily, it is considered as gathering and developing elements of basic policies driving emphasizing clarity, coverage, and completeness for evidence for development in the future.

For work in part four, it was also conducted by using communication tool with important messages divided into two parts, i.e.,

1) Details and regulations requiring support from government and networks of persons with disabilities throughout Thailand. The public sector was able to utilize data for determining facilities for every person and making laws, rules and regulations to cover all people.

2) Promoting UD to local people and emphasizing how existing facilities in local areas needed to be accessible in order to make UD become an issue that can be participated in by all people. It is performed by using the internal communication process in the group with the same interest, i.e., architects and interested users, i.e., persons with disabilities. Finally, interesting issues will be screened and submitted to authorized persons For government administration, it will be further expanded.
4.2.5 CSBM Strategy of “A-Ra-Ya-Satha-Pat” Ambassador by Krisana Lalai

As with identifying barriers, the obstacles of project accessibility considered by the “A-ra-ya-satha-pat” Ambassador are public buildings and places that do not facilitate utilization of people leading to limitation of the rights of persons with physical problems. As a result, this project focused on this problem and sought methods for reducing these obstacles.

1) Obstacle to Access

The problems of facilities for persons with disabilities and the elderly are still found in “A-ra-ya-satha-pat” Ambassador current buildings. Although some laws have been enforced, there are still some gaps in laws that lack retrospective effects. In addition, although some buildings and places are not practical, the important thing is to adjust the existing environment. Consequently, two important factors include major demands on accessibility of persons with disabilities and the elderly. The Universal Design Ambassador Project considered that ramps and toilets for persons with disabilities and the elderly were important parts of public areas. Secondly, places that should be adjusted are attractions such as temples (e.g., Wat Phra Kaew, Wat Arun) because the elderly prefer visiting temples and temples are also a main tourist attraction providing income to Thailand.

It is pitiful that there are only 10 temples from over 40,000 temples that have complete facilities for people with all ages and physical conditions because all temples still lack improvement and development on UD by Krisana Lalai, Krisana Tour, Universal Design, 2013.

How to improve these religious places to provide facilities for visitors in Thailand

2) Building Social Norm

Norm strategy was utilized to show that facilities are standard and should be provided by all buildings. As a result, “A-ra-ya-satha-pat” Ambassador presented places that all people can access in order that such buildings were considered as an example that should be complied with. For temples, some temples with facilities are good examples, such as Wat tri Mitr in Bangkok or Wat Sra Pang in Petchburi.
3) Communication Tools

Moreover, “A-ra-ya-satha-pat” Ambassadors are the new generations used for developing and publicizing the project. Fifteen “A-ra-ya-satha-pat” Ambassador visited the sites for campaigning and reinforcing knowledge and understanding about UD under the proposed principles of convenience, safety, coverage, fairness, and equality, as well as to survey and provide facilities.

Currently, the fifteen “A-ra-ya-satha-pat” Ambassadors seek to build knowledge and understanding on UD for the elderly, persons with disabilities, veterans, patients, pregnant women, and children in Bangkok and throughout Thailand.

The project recorded video and took photos of survey activities as well as providing stories for broadcasting via some TV programs on the National Channel as well as Kuan Khao Chao Eon Yud TV Program and Krisana Yok Lor TV program. This was another channel motivating and promoting UD to be practically effective. At every site, Mr. Krisana was the host of the program with his wheelchair that was familiar for audiences. The indirect outcome is motivating persons with disabilities or humans to spend their lives normally. Also, in the event of any obstacle to access public buildings and places, these TV programs could highlight the need for improvement.

4) Incentive Strategy

To motivate better knowledge about how UD could solve the problems with buildings and attractions in Thailand, as well as to welcome the AEC, the “A-ra-ya-satha-pat” Ambassador Project granted awards to buildings facilitating people to be accessible under the title of “Universal Design Place of the Year”. This award is granted annually at Volunteer Parties that are also New Year Parties for thanking volunteers and supporting organizations. In addition, this has the indirect outcome of building relation among the networks of workers on UD and to encourage them to develop other projects in the future.
4.2.6 Overall of CBSM Strategy and Tools

1) Incentive

Incentive is considered another tool for motivating behavior through various methods including refunds and fee discounts. It is also the reward for desirable behaviors and a kind of incentive was selected to be used in this activity. The Universal Design Ambassador Project and Jai Dee Building Activity (Universal design Label) were conducted through developing mechanisms of design and building physical environment for all types of people under UD concepts. ASA grants awards to buildings that are friendly for all kinds of people while the Universal design Ambassador grants the award under the title of “A-ra-ya-satha-pat Places” or places with facilities for the elderly, persons with disabilities, women, and children. Simultaneously, ASA grants the award of Jai Dee Building (Universal Design Label) based on the criteria for evaluating buildings for equality, convenience, and safety. Those awards related to UD principles aim to motivate others to improve their buildings and become models of improvement for Universal Design. After receiving the award, standards of such building will be improved to publicize to other people. However, although the characteristics of these two activities are similar as the activities for motivating the building owners, their criteria are different, i.e., evaluation of ASA emphasizes the technical criteria of UD while the criteria of the Universal Design Ambassador Project emphasizes accessibility to users based on the principle stated that every place should have ramps and toilets for persons with disabilities.

Simultaneously, the education sector uses incentives to motivate change agents to become famous architects in the future through supporting their research with instructors. For the private sector, incentives are used for subsidising expenses for studying new projects related to UD principles.

2) Communication

Another major tool used in CBSM for UD in several projects was communication. For example, based on the study of 11 cases from 14 episodes of Muang Jai Dee, users and related persons were interviewed prior to the actual utilization. Architects and experts who were the representatives for improving each area will discuss how UD can give happiness to families and communities. Such
discussion helps reduce barriers between users and architects to understand actual demands. In addition, it is also mutual information exchange helping to create new dimensions of learning for use in communication, i.e., presentation, whereas, presentation is used for explaining and building understanding with architects and students.

In the event that the audiences are confused with information, some manuals of Ban Jai Dee prepared by ASA were available that audiences can contact the program for free delivery. The proportion of designed and constructed environment as well as all equipment must be consistent with needs and provide some educational opportunities to the new generation architects who are starting to study UD. This manual is a small text reminding designers to comply with correct principles. Moreover, the manual is also an element of the criteria for granting UD Label therefore it is considered as a connecting point among operations.

Finally, exhibition was also another channel that illustrates the model of works, procedures, and guidelines used in the Architect Exhibition that will be expanded regionally.

3) Prompt

Prompts were also an important tool used in CBSM. Based on its meaning, it is a kind of image or sound reminding the target group to perform desirable behaviors. Prompts were utilized to remind the audiences of Muang Jai Dee TV program. After understanding the demands and operational procedures small details were emphasized in the program as “Jai Dee Tips” shown in Episode 3 broadcast on October 22nd, 2012. This episode explained Jai Dee tips for providing ramps and other facilities to helping to assist walking on graded paths. The ramp suggested by Muang Jai Dee TV should not have slopes more than 1:12 (Height: Length). (In addition, it should be equipped with a stable handrail and two handrails for the ramp with a length over than 2.5 meters.) Moreover, the ramp’s floor should be material with a rough surface and have rest areas for wheelchair users with a length of more than six meters.

In addition, Prompts were also used in the private sector for preparing data regarding Geriatric Medicine 2014 to record useful information obtained from
visiting Japan as well as the general benefits for anyone interested in projects related to the elderly.

4.3 The Output of the Strategies of CBSM for UD in Thailand

4.3.1 The Output of the Strategies of “Muang Jai Dee” TV Program by Thai Health Promotion Foundation

Muang Jai Dee’s communication strategy concentrated on improving two types of areas, people’s houses and public areas. The output was the following: It also get an outcome

1) “Muang Jai Dee” was awarded the winner of Nataraja Award in the Documentary Field.

2) Muang Jai Dee Program also received the Media Award for Building Dhammacratic Society 2012

3) “The Fourth Estate Golden Prize” for the Excellent TV Program, on June 9th, 2013

4) “Muang Jai Dee” created volunteers, who wanted to improve society in UD term, and they wanted to be UD architects in the future.

5) Lecturers and advisors came to help increase the potential of prospective students who will be future architects or designers, and with knowledge from real works not from text books.

6) There was a working network that decreased gaps of misunderstanding and led all parties to the same goals. Nevertheless, the key person who linked all parties must be acceptable to all parties. Not only could this person expedite flow of work between all parties but also had abilities that could attract people to join the parties.

7) Prototypes were created of both people’s houses and public areas for developing UD projects in the future.

8) Learning and communications between UD users and UD developers would find the best ways for co-operation.
Muang Jai Dee TV Program emphasized on participation by selecting universities and community technicians to take action by improving houses and public areas in each community. The family members and community have been part of the renovation process from the beginning until its end. For each episode of Muang Jai Dee, the prototype area targeting can be repeated to magnify the result. The target house is targeted using common characteristics of types of residential buildings in Thailand, i.e., houses, townhouses, and traditional houses in rural areas. In addition, the target group with various family members is also emphasized to develop inclusive design model allowing various groups of people to live and interact together. For example, houses with persons with the disabled, houses with big families consisting of children and the elderly, and target areas with different forms of utilization, including residences, commercial and residential buildings, public areas (e.g., public parks, public health centers, temples, etc.).

Finally, UD can help users by changing their behavior to facilitate better living, such change living space from upstairs of the house to downstairs for more convenience, so the elderly and persons with disabilities can more easily interact with others people in the community and need less help for their physical support.
Figure 4.39 Example of Changing Behavior

Source: Thai Health Promotion Foundation, 2012g.
<table>
<thead>
<tr>
<th>Tape</th>
<th>Type of project</th>
<th>Target</th>
<th>Type of place</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>House</td>
<td>Elderly</td>
<td>4-story townhouses</td>
<td>2. Better living in family and community without equipment/facility barrier.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>House</td>
<td>Elderly</td>
<td>Traditional house</td>
<td>3. Create future UD architects.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>House</td>
<td>Persons with disability</td>
<td>House</td>
<td>4. Nataraja Award in the Documentary Field.</td>
<td>4. Nataraja Award in the Documentary Field.</td>
</tr>
<tr>
<td>5</td>
<td>House</td>
<td>Elderly</td>
<td>4-5 family living in the big house</td>
<td>5. Media Award for Building Dhammacratic Society 2012</td>
<td>5. Media Award for Building Dhammacratic Society 2012</td>
</tr>
<tr>
<td>7</td>
<td>Public area</td>
<td>People in community/Elderly</td>
<td>Public health center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Public area</td>
<td>People in community</td>
<td>Public park</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Public area</td>
<td>People in community/Elderly</td>
<td>Temple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>House</td>
<td>Elderly</td>
<td>2-story houses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>House</td>
<td>Persons with disability</td>
<td>Townhouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>House</td>
<td>Elderly</td>
<td>House</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Feedback from</td>
<td>People in community/Elderly/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>house renovation</td>
<td>Person with disability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Feedback from</td>
<td>People in community/Elderly/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>public area</td>
<td>Person with disability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Public area</td>
<td>People in community/Elderly/</td>
<td>Pattaya city, Chonburi province</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person with disability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 The Output of the Strategies of Data Regarding Geriatric Medicine 2014 by Yodyiam Theptaranon

The output of utilization of communication tools in removing barriers on lack of knowledge showed that the major objective of working in the private sector was to gain profit. However, it is not necessary to make the operation to be commercial. Rather, it is possible to work as a consortium in creating works. Knowledge exchange across science is the major outcome that will outline the project design based on demands, utilization, and correct standards. As a result, further development is needed to establish the National the elderly Health Service Center at Samutsakorn that will be beneficial for all people in the society as well as a model for further operation.

The output of utilization of incentive tool in removing barrier on funds showed that support of the private sector could accelerate all projects leading to cooperation and new knowledge because learning may sometimes occur outside the classroom. Moreover, utilization of this strategy builds relationships among organizations, helping Interpac to have a high reputation in national design.

In addition, in the event that this project is constructed, the overall health and well-being of people, especially the elderly, will have good effects in the future, i.e., working with people in the local area on details defined by the National Reform Council in 2015 emphasizing on making people as the center.

1) People have behaviors on health and environment facilitating being healthy whereas the center of community is the local sector and all related sectors.

2) Risk factors and threats on health are reduced.

3) People in the community receive quality services thoroughly, especially, people in Samut Sakhon area.

4) Community and local sectors of Samut Sakhon also participated in developing and managing health.

Finally, this program is also impacted to the behavior of architect. Every project as Interpac handle was offered UD concept in the drawing such as Siriraj Hospital project and Buildings of KMUTT (Bangmod Campus).
4.3.3 The Output of the Strategies of Universal Design Talk 2015 Project in Elective Course in Architectural Faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)

Based Educational institutions are also important in driving UD concepts and creating quality personnel to be a part of social change in the future. Besides emphasizing on strengthening students in their occupational fields, educational institutions should emphasize working with the community for solving design problems as stated by Asst.Prof.Dr. Antika Sawadsri (2014) stated that:

Whenever the society or the country has public sector projects that are beneficial for people extensively. In the event that educational institutions with a part of employees’ salary gained from public taxes are unable to rely on themselves, we are unable to expect that private companies will be responsible for this matter.

Designs, knowledge management, and UD driving through working with community. Ta Saeng Studio, Social Business organization Group

The outcomes of the utilization of Incentive Strategy in removing barriers showed that the quantity of students interested in UD as an elective subject was low. The target group were students in the Faculty of Architecture of KMITL in Bachelor’s Degree, Master’s Degree, and the Doctorate Degree. The course name of such elective subject is Design for The elderly and Persons with Disabilities with three credits. There were 20-30 students interested in this subject. For Master’s Degree, the course name is Universal Design with three credits and there are 5-10 students enrolled in this elective subject. For the Doctoral Degree, the course name is Universal Design with three credits and there were four students. The strength of this course was its instructors, including Instructor Kusuma, Instructor Siriluck, Asst.Prof.Dr. Benjamas Kuta-in or Asst.Prof.Dr. Antika Sawadsri.

These instructors are reputed for their academic roles related to UD or participating in social development with UD as the operational tool. Personnel are considered as the key for passing on existing knowledge to students through various methods. Building interest in daily instruction makes traditional theoretical subjects
more interesting. Asst.Prof.Dr. Antika Sawadsri explained this: (Interview, January 10th, 2014).

Although KMITL currently separates from bureaucracy system causing higher amount of admission fee, it is still lower than that of private universities. In addition, the accumulated reputation is one of attractive points interested by students making them apply and take examinations for admission. Importantly, Architecture is considered as a vocational subject requiring five years for graduating but can give high income to students. Although the Faculty of Architecture of KMITL does not give scholarships to students interested in UD only, any student who conducts their thesis under the topic related to that of their instructor may help their instructor to receive research funds for such a project. Recently, KMITL will open IDEar Center that will become important knowledge for students and outsiders interested. In addition, it will become the center for allocating funds to anyone interested in the near future as well.

Moreover, a UD elective subject also motivates students to win the competition in Architecture Classification of Universal Design Exhibition under the concept of Happy Life held by ASA for Architect 15 event on April 17th, 2015. The awarded work was Ban Ton Makham Project of Hua Takae Community by Miss Sulma Intarapracha, Miss Yada Yasothorn, Miss Thitinat Chongkiatcharoen, Mr. Pasu Chutai, and Miss Supitcha Sutthanontkul. In addition, such work was submitted to the National Research Competition of the 5th International Conference for Universal Design in Fukushima and Tokyo 2014 held on November 12th, 2014 under the topic of User Involvement in Applying Universal Design from Global to Local Thailand Context.
The output of utilization of Prompt Strategy in removing barriers to data collection showed that students were able to learn the guidelines for accessing community in order to gain data and solutions, as well as to understand the guidelines for collecting data through simple plans explaining the way of life of the community.
However, understanding of students who chose to admit UD as an elective subject started from the understanding that this subject was designed for persons with disabilities that would be extended to the elderly, and eventually all people. Most student UD work has been concerned with ramps only, but those works are currently being enlarged and instructors are aiming to make UD a compulsory subject requiring all students of Faculty of Architecture of KMITL to study in the future, as well as other faculties such as Medicine, Nursing, and Communication Arts. UD elective subject is considered relevant for students from Bachelor’s, Master’s, and Doctoral levels who are interested in this subject.

4.3.4 The Output of the Strategies of Universal Design Project by the Association of Siamese Architects under Royal Patronage (ASA)

To ensure a broad impact and sustainability of the ASA initiatives, the supporting mechanisms for universal design and physical environment development project have been initiated to empower knowledge, skills, and awareness in the physical environment design by employing UD principles. This could support utilization for diverse ranges of people. There are four major activities for the development of objective frameworks with concrete supporting mechanisms, in which target groups are architects from every region, architecture students, local management councils, entrepreneurs, and groups of the disabled. The performance indicators for each activity and CBSM strategies are:

1) Communication: Output in First Part of Project

The first part is the development of tools and UD activities. Communication is tools that are employed to facilitate the department success

Standardized media and materials for the use of students, architects, and general publics. Communications were used to promote UD learning behavior and recognition.
The organization of workshop seminars to promote the knowledge of facilities design for the elderly and persons with disabilities to students and architects from public sectors, private sectors, state-enterprises, and interested individuals. This is an output from the communication strategy through seminars held by professionals from all four regions. The target number of participants was not less than 200 persons. Nonetheless, 154 persons attended the seminars after the conclusion of this activity.

Exhibition materials which are prototypes for other exhibitions. Initially, ASA had produced a “Ban Jai Dee” mock-up exhibition which was too large to move so it was downsized to a poster consisting of “Ban Jai Dee” contents for mobility purposes. This is also another alternative for the communication strategies promoting knowledge.

2) Incentive: Output in Second Part of Project

The second part is the development of efficient and realistic mechanisms and systems that support universal building standards by using the incentive strategy to encourage entrepreneurs about the importance of UD. It provided the Best UD Architectural Awards to encourage at least thirty entrepreneurs to participate in building standard certification and the number of buildings certified for universal standards should not be less than five. However, the participation of
entrepreneurs and building owners was less than expected which might be attributed to the lack of understanding of UD principles. This could be improved future by organizing better public relations and providing a knowledge sharing session about UD. However, in 2014 three award categories were offered:

(1) Excellence level where award winners are entitled to gold trophies and certifications,

(2) Good level where award winners are entitled to silver trophies and certifications, and

(3) Complimentary level where award winners are entitled to certifications.

Five organizations participated in the event:

(1) Baan Khao Lak Beach Resort,
(2) National Electronics and Computer Technology Center
(3) King Power Downtown Complex
(4) Bangkok University and
(5) Chaloem Krung Theater.

Four of them were eligible for the prizes:

(1) Baan Khao Lak Beach Resort,
(2) National Electronics and Computer Technology Center
(3) King Power Downtown Complex and
(4) Bangkok University.

Finally Baan Khao Lak Beach Resort won Good level awards while King Power Downtown Complex and Bangkok University won Complimentary level rewards. It shown that incentive is powerful tools for encouraging behaviours. It can create the number of UD project from zero to four projects in that year.

3) Communication: Output in Third Part of Project

The third strategy is the development of prototype neighborhoods in universal design by collaboration with the private sectors and local administrative organizations. The target prototype neighborhood was Ratchaprasong area. Commitment, norms, and Incentive strategies were together employed to encourage the development of footpath landscapes in Ratchaprasong Junction. However, the project has been postponed due to political conflict so only part of the project could
be carried out by mutual negotiation with private enterprise, such as department stores to obtain funding. They are willing to collaborate but precise details have yet to be finalized. Further operations are also expected.

The last strategy was the development of policy proposals and participation in policy advocacy for universal design. Public policies about the environment refurbishment according to the UD principles have been proposed to government agencies. This department has been initiated due to the fact that the body of knowledge is insufficient for policy development, so public hearings from representatives of the disabled and UD specialists are necessary to integrate knowledge and fulfillment. After the conclusion of these regional activities, the requirements for physical environment design and regulations that require government enforcement for the network of the disabled nationwide will be gathered. The government agencies can subsequently use this information in the stipulation of UD requirements and issuing relevant laws or regulations to maximize coverage according to UD principles.
Table 4.2 Summary Outputs and Outcome of UD Project by ASA

<table>
<thead>
<tr>
<th>Project</th>
<th>Output</th>
<th>Outcome</th>
<th>Channel of communication</th>
</tr>
</thead>
</table>
| Part 1: Development of tools and activities on UD | - No. of participants seminar in the four regions was 154 from target 200 persons.  
- Agenda setting “UD knowledge brought into the instructional system of faculty of architecture of university in Thailand.  
- Give 8 points to architect who participate training.  
- UD house or “Baan Chai Dee” Exhibition | - Four UD Building                                                   | - ASA website                                 |
- Develop data inspection for UD building “Jai Dee Building”  
- Set criteria for granting the excellent architect award 2014 by get building 5 building join this program and get certify 4 building | - ASA website                                 | - Builder news magazine                      |
| Part 3: Development of Model Areas for UD in Local Level with Private Sector and Local Administrative Organizations (Pioneer Area: Ratchaprasong); | - Conceptual design for Si Yaek Jai Dee                                | - TV “Khao Sam Miti” on channel 3          | - ASA Website                                 |

- ASA website  
- Exhibition  
- Builder news magazine  
- Social media
4.3.5 The Output of the Strategies of “A-ra-ya-satha-pat” Ambassador by Krisana Lalai

From the aim to encourage new generations to take part in the “A-ra-ya-satha-pat Ambassador” project to promote and share knowledge about UD principles to make practical and material impacts so all buildings and public places are providing facilities, and roadshows in all universities that run architectural schools are conducted as the new generation of architects will be the driving force for UD designing in the future. In 2013, the “New Seeds for A-ra-ya-satha-pat Ambassador” activity was held five times. The first one was held on 27 June 2013 at Faculty of Architecture, King Mongkut’s Institute of Technology Ladkrabang, where the faculty dean Associate Professor Boonsanong Rattanasuntarakul and Assistant Professor Doctor Antika Sawadsri were key persons behind this activity. The second one was held on 31 July 2013 at Faculty of Architecture and City Planning, Thammasat University Rangsit Campus. Her Excellency Paweena Hongsakul, then Minister of Social Development and Human Security, presided over the opening ceremony along with representatives from International Disabilities Development Consortium, students, and faculty members. The third one was held on 9 September 2013 at Faculty of Architecture and City Planning, King Mongkut’s University of Technology Thonburi (KMUTT) Bangkhuntien Campus. His Excellency Pongthep Thepkanchana, then Deputy Prime Minister, represented government organizations to preside over the opening ceremony, and all faculty members were key players. The fourth one was held on 12 September 2013 at Faculty of Architecture, Bangkok University Rangsit Campus. MR Sukhumbhand Paribatra, the Bangkok Governor, presided over the ceremony. The university dean Dr. Mantana Santiwat, Professor Wirat Rattakorn, and Dr. Rittirong Chutapruettikorn were the contact point for students. The fifth one in 2013 was a trip to visit community leaders, sub-district heads, village heads, members of sub-district administrative councils, and members of provincial administrative councils to take part in the A-ra-ya-satha-pat Ambassador” project.
The “A-ra-ya-satha-pat Architecture of the Year” Award encourages the public and private sectors to take part in the UD initiatives. This was a survey of buildings by Civilized Architecture ambassadors and representatives from disabled networks to award the “A-ra-ya-satha-pat Architecture of the Year” prize to selected buildings and places. In addition, the “A-ra-ya-satha-pat Ambassador” project also awarded certificates to individuals, organizations, or corporations, and places such as temples, schools, hotels, or tourist attractions that were good examples in providing facilities for the elderly, disabled, expectant mothers, and young children to promote the continuity of Civilized Architecture. 12 places were awarded in 2014:

Four A-ra-ya-satha-pat Architecture buildings which were the Government Complex Building Commemorating His Majesty the King's 80th Birthday Anniversary, 5 December 2007; Wellbeing Center in Sathorn; Diamond Building, Faculty of Architecture, Bangkok University Rangsit Campus; and Buddhadasa Indapanno Archives or Suan Mokkh Bangkok. All these places had been designed and constructed to facilitate safe and convenient utilization while also being immaculate.
and charming. These facilities were fit for all genders, age groups, and family members. This helped to create happiness, equal opportunity, and promote the dignity of the places, improving the image of modern Thai society.

Figure 4.43 A-ra-ya-satha-pat Architecture Building Award Project

A-ra-ya-satha-pat ambassadors also employed a norm strategy when surveying the conditions to propose accessible facilities for all by pointing to the importance of slopes and elevators as common standards for building. Projects that won the “A-ra-ya-satha-pat Architecture of the Year” Award were among the UD drive by Civilized Architecture ambassadors. Standards proposed by A-ra-ya-satha-pat ambassadors were for example:

- Footpaths should come with slopes.
- Stairs should come with elevators.
- Direction signs should come with wheelchair icon.
- Toilets should come with Toilet for people with disabilities.
- Parking spaces should come with handicapped parking.

4.3.6 Overall of Project Output

The California Department of Health Service (2004) states that social marketing was not the way to command the target group, but to help them achieve changes in their own term.

To achieve a successful output, outcomes through impacts on behavior change or policy for each project are not the same. Some projects only had one input, while the outcomes of other projects depended on the process, strategy and the community they were involved with.

Most of the projects achieved an outcome but the final aim was to impact the behavior and policy for long term improvement of UD issues. To expand the outcome, it should be evaluated to provide an opportunity for more effective programs.
<table>
<thead>
<tr>
<th>Project</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meung Jai Dee</td>
<td>X</td>
</tr>
<tr>
<td>(15 tapes, 9 universities and architect join the program and design of house &amp; public area)</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>(Media award, Future UD Architect, Create relationship in family and better living)</td>
<td></td>
</tr>
<tr>
<td>Impacts</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Behavior change (Lifestyle of user)</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td></td>
</tr>
<tr>
<td>Strategic 2: Develop and drive policies regulations: A campaign on UD places and buildings at least once a year</td>
<td></td>
</tr>
<tr>
<td>Strategic 3: Public relations campaigns for building awareness and implementation: Build at least one prototype area in the community</td>
<td></td>
</tr>
<tr>
<td>Geriatric Medicine 2014</td>
<td>X</td>
</tr>
<tr>
<td>Experience and knowledge of UD</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Geriatric medicine handbook/ construction drawing</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Behavior change (Architect)</td>
<td></td>
</tr>
<tr>
<td>UD Talk 2015 (KMITL)</td>
<td>X</td>
</tr>
<tr>
<td>No. of attend</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Understand UD better</td>
<td></td>
</tr>
<tr>
<td>UD Project (ASA)</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>No. of attend Jai Dee Construction Label</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>UD building (4 buildings)</td>
<td></td>
</tr>
<tr>
<td>A-ra-ya-satha-pat” Ambassador</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Ambassadors</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>UD project</td>
<td></td>
</tr>
<tr>
<td>Strategic 2: Develop and drive policies regulations: A campaign on UD places and buildings at least once a year</td>
<td></td>
</tr>
<tr>
<td>Strategic 3: To reinforce knowledge on UD among change agents to lead to environmental improvements throughout the system</td>
<td></td>
</tr>
<tr>
<td>Strategic 2: Develop and drive policies regulations: A campaign on UD places and buildings at least once a year</td>
<td></td>
</tr>
</tbody>
</table>
4.4 Conclusion

The research considered how communication was used in the project. Sometimes communication did not come in the form of words or mass media. Rather, the communication process in the UD projects adjusted to the communication style of the customer. The most effective means of communication was to ensure everyone shared a common meaning, such as in requesting a user to say a few words indicating her intention to change their lifestyle by applying UD concepts to her family community, as shown in Muang Jai Dee TV Program Tape 5. This type of communication was a verbal commitment from the user. On the other hand, Muang Jai Dee brought architects and specialists together in going door to door to communicate about renovating houses and public areas by offering incentives to the residents.

ASA and A-ra-ya-satha-pat ambassadors carefully watched the buildings and facilities being renovated to make sure that they were fit for all people and properly implemented UD concepts. The concepts and objectives were the same but the criterion used was observation. This kind of influence could have long-lasting effects. As shown in the Si Yaek Jai Dee project, the conceptual design needed to show that if any place had stairs it should also include a ramp, especially in areas used by many people, such as in the Ratchaprasong area, a Bangkok landmark. Campaigners used norms as a tool to increase the degree of trust people had in-when they saw stairs they had to think about ramps. So the primary focus group or community of this project was the project owner and also the people who access and live near that area.

Selecting a celebrity to be involved in a renovation project could also increase the impact of the UD message. Therefore the A-ra-ya-satha-pat ambassadors’ project chose some actors and well-known people to be A-ra-ya-satha-pat ambassadors in the beginning stage of program.

Taking appropriate action to promote the desired behaviors is the aim of every reform project. This depends on messages that can empower the audience. For example, using the term Jai Dee to label the Muang Jai Dee TV Program, and ASA in their projects, to represent the kindness of people who improved places by caring for others.
The lifestyle of users and other involved persons needed to be examined in order to understand their lifestyle, beliefs, and any daily problems occurring. For residences, related persons besides the main users were family members and persons interacting with them. For public areas, users included members of the community who had some reason to access the areas for various types of services, as well as visiting outsiders. As a result, public areas were open areas with a variety of visitors. There were two main methods for accessing the areas. The method of Tasaeng Studio was when the presenter invited by KMITL collected data through discussion by asking local people for information. As a result, “Muang Jai Dee” TV program used the same method with the volunteer students who improved houses and public buildings.

It was found that each group had a focus in each community that created relations among people in various dimensions. This research categorized the community as follows:

The architect community in Thailand has an architect’s association. Thai Architects who have licenses are members. The center of associates is located in Bangkok while the rest are located in the northeastern region, the southern region, and the northern region.

Students who study in architectural faculties in universities.

People who live in the same area who have a chance to share the environmental facility.

People who work in the same place who have same target and direction of the business

Otherwise, the architect is related to the design and plan of construction or architecture, and understands building construction standards as well as materials used as the components in such construction. As a result, it is necessary for architects to be qualified and have a License for Professional Architect the same as the criteria for other occupations.

Architects can be change agents who can provide a desirable answer to social problems leading to environmental improvements through the system. Architects familiar with UD are the key persons for implement and develop these program. The
architect’s knowledge of UD can be passed on to others in a simple way and can then be applied in designing.

Muang Jai Dee used architects to involve the community to identify problems and select effective tools to fix them. Observation and interviews were the techniques that used to understand the community’s needs. These architects not only initiated and explained the process to persons in the community, but they also learnt from the community, especially the users.

The user then should be involved in the process of design from the beginning for feedback that can be used to meet the requirements found in the KMITL project. Moreover in the Geriatric Medicine project, the owner was part of the initial analysis. It found that project owners understood the importance of UD and wanted to apply UD principles in the project in the right way.

The UD projects from ASA and “A-ra-ya-satha-pat” focused on architects and students in architecture faculties as the community. If they gained a better understanding of UD, it would be a chance for them to apply UD concepts to every building. Yet the number of UD buildings are quite small compared with the number of buildings in the whole country. Campaigners need to motivate change agents to acquire knowledge about UD as an incentive for owners to use UD principles in their buildings and explain to society the advantages of UD designs.

It found that the input of all five projects had the same objective-to motivate persons in each community to be interested in UD-but the tool each project used was different. Some had clear results, while some expanded their outcomes, but to have an impact to change behavior and policy would take time. Sometimes outputs cannot represent the success of project. All of the results were linked, however good outcomes came from good outputs.
Figure 4.44 The Process from Inputs to Outputs
CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

From Universal Design for Building Inclusive Society: Community-Based Social Marketing in Thailand research, the summary of objectives of the study, methodology, discussion and recommendations are as below:

5.1 Objective of the Study

1) To study the process of universal design campaign in Thailand.
2) To analyze the strategies of community-based social marketing (CBSM) for Universal Design (UD) used in Thailand to create an inclusive society.
3) To analyze the output of the strategies of community-based social marketing (CBSM) for Universal Design (UD) in Thailand.

5.2 Methodology

This research is qualitative research. It gathered the information by data collected from documents, data collected from videos, data collected from observation, data collected from project participation, and data collected from interviews.

5.2.1 Data Collected from Documents

This data collection was made by studying primary sources, including internal documents, project objectives, operational strategies, as well as secondary sources including books, articles, magazines, theses, the Internet, research reports, and related print media.
1) “Muang Jai Dee” TV program by Thai Health Promotion Foundation
2) Data regarding Geriatric Medicine 2014 by Yodyiam Theptaranon
3) Universal Design Talk 2015 project in elective course in Architectural faculty of King Mongkut’s Institute of Technology Ladkrabang (KMITL)
4) Universal Design project by The Association of Siamese Architects under Royal Patronage (ASA)
5) “A-ра-ya-satha-pat” Ambassador by Krisana Lalai

For data collection, the researcher obtained additional information from Thaihealth, KMITL, Bangkok University, ASA and also information from electronic sources, including www.thaihealth.co.th, www.asa.or.th, www.facebook.com/a-ra-ya-satha-pat ambassador (in Thai), www.facebook.com/antika.kmitl, www.facebook.com/public/yodyiam.theptaranon (in Thai) and data from books belonging to ASA, Yodyiam Theptaranon and Krisana Lalai

5.2.2 Data Collected from Videos
Meuang Jai Dee program was first broadcast on October 8th, 2012 and ended on January 28th, 2013 However, the researcher studied 15 tapes of the program via the internet and YouTube. Those tapes were 1-9, 11, 12, 14, 15, 16, 17

5.2.3 Data Collected from Interview
The researcher used in-depth interviews in a semi-structured free format. The interviewees for this research were the leader of five projects under government sector, private sector, education sector and NGOS.

1) Government sector
Poom (pseudonym) Social Marketing department of Thai Health Promotion Foundation

2) Private sector
Yodyiam Teptaranon Managing Director of Inter PAC Co., Ltd.
Pavinee Limpasurat Architect of Inter PAC Co., Ltd.
3) Education sector
Rittirong Chutaprutti Kornat, Ph.D. School of Architecture, Bangkok University
Antika Sawadsri, Ph.D. Faculty of Architecture at King Mongkut’s Institute of Technology Ladkrabang (KMITL)

4) NGOs
POL.LT.COL. Bundit Pradabsook, Ph.D. President of The Association of Siamese Architects Under Royal Patronage
Kitti Jai Netpaisanvanich, Independent Living Foundation (Chonburi Branch) and persons with disabilities
Krisana Lalai, Head of Universal Design Ambassador, Journalist and persons with disabilities
Pakkard Poesri, persons with disabilities

5.2.4 Data Collected from Project Participation, and Data Collected from Interviews

According to UD concepts, the researcher as a participant observer participated in several in group activities between during May 1\textsuperscript{st} to December 31\textsuperscript{st}, 2015. These included the Universal Design Talk Project, an elective course in Architectural faculty by KMITL held on March 20\textsuperscript{th}, 2015, “Ar Ra Ya Satha Pat” Ambassador Project held in the plenary meeting at Thai Health on November 8\textsuperscript{th}, 2014 and Faculty Party 2014.

In addition, the researcher also participated in the UD project by the Association of Siamese Architects under Royal Patronage (ASA) that consisted of four parts. I participated in part 1 as observer in a design activity for the public exhibited at “Ban Jai Dee 56” Exhibition held in Architect 13 during April 30\textsuperscript{th} – May 6\textsuperscript{th}, 2013, at the IMPACT Exhibition and Convention Center.
5.3 Discussion

Many organizer/social marketer/creator in Thailand provide UD project for increase the knowledge and create the awareness of UD in Thailand. It was found, by UD strategic planning, a specific department of UD in Thailand, that many project was promoted about the same subject, and it’s not helpful for make UD sustainability. This study would explain, for each project, process, strategy and tools which were used. Information are not only useful for understands process, strategy and tools of each project but also for provide model for guide UD working team. In other hand, we would understand the working gap which was created and cooperate working team for new project in the future. The project was conducted detail during 2014-2015.

1) “Muang Jai Dee” TV program by Thai Health Promotion Foundation
2) Study on data regarding Geriatric Medicine 2014 by Yodyiam Theptaranon
3) Universal Design Talk 2015 project in elective course in Architectural faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL)
4) Universal Design (UD) project by The Association of Siamese Architects under Royal Patronage (ASA)
5) “A-ra-ya-satha-pat” Ambassador by Krisana Lalai

5.3.1 The Process of Universal Design Campaign in Thailand

Process is the operational procedures leading to concrete outcomes that can be utilized practically and enlarged in the future. Based on the UD process of Burgstahler (2015), UD consists of eight procedures, while the UD process of Rangsit model consists of nine procedures (Chumkhet Sawaengcharoen, 2014). Based on the basic process with procedures related to UD of the five sample projects, there were six major procedures consisting of defining the scope of problems, information research, analysis, preliminary design, conceptual design and design development.

To explain the term design, it has three steps before completing the process including:

Conceptual design provides the information for creating new projects and also helps to solve some important problems as well as develop abstract hypothesis that subsequently can be mixed with other concepts.
Preliminary design creates a conceptual design for abstract things to be concrete, visible, and tangible in the format of 2D image or model.

Design development presents selected designs for further development by adding more details after the preliminary design has been approved. It is considered as developing a concept to be a concrete work and must be able to be developed for actual construction.

Figure 5.1 Universal Design Process before Construction

Most of the UD process of project selection in this research ended up at the design development stage. Only one project had a chance to be built and evaluated after its design as “Muang Jai Dee” TV program by Thai Health Promotion Foundation.
Most processes of a UD project are related to design that is considered as the science of thinking for solving actual problems. As a result, design is important and valuable for living. Consequently, if buildings are designed correctly, all spaces will be utilized fully. UD process must be based on the following foundations:

1) Convenience means improving the environment and residences to be more convenient and appropriate for the physical abilities of users (persons with disabilities and the elderly).

2) Safety means improving the environment and residences to minimize risks or dangers that may affect users (persons with disabilities and the elderly).

3) Practical utilization means improving the environment and residences to be suitable for users (persons with disabilities and the elderly) on price, utilization, and provision.

UD process, there is first the beginning process, i.e., understanding actual problems to understand the demands of the target group and possible limitations of each project. Learning from users is the most important process for building understanding and participation between designers and users to reduce possible gaps and assist users to open their minds in accepting changes proposed by designers. The key processes to accomplish UD are:

1) Users must participate in design process.

2) Design must be developed under the suggestions of users.

Formerly, the UD concept was created to respond to persons with disabilities and the elderly specifically. However, there is a question whether design for responding to specific group of persons emphasizes differences among people in society. As a result, modern UD concept is developed for responding to demands of all people in society, including persons with different sizes of body from standard size, the elderly or young people, persons with disabilities or persons without disabilities, or even foreigners or local people who use common areas together. They are entitled to access basic facilities equally.

Size was mentioned in every design issue relate to UD. It was mentioned as a principle of UD in detail in chapter 1 and chapter 2. Size and space for approach in use was the last principle of UD concerning the user’s body size, posture, or mobility (Christophersen, 2002). It also mentioned about the size on the guideline for standards.
developers to address the needs of the elderly and persons with disabilities, from children to adults, size was diverse. So, places must be easy to access for everyone (National Disability Authority, Centre for Excellence in Universal Design, n.d.).

Then the design stage needs to consider size to let handicapped people to access it and allow users to be part of the design process as shown in the “Muang Jai Dee” TV program by Thai Health Promotion Foundation, Universal Design Talk 2015 project in elective course in Architectural faculty of King Mongkut's Institute of Technology Ladkrabang (KMITL) and “Ar Ra Ya Sa Ta Phat” Ambassador by Krisana Lalai

Moreover, each UD project in this research had a design program pre and post activities. It helped campaigners to develop programs by planning and evaluating.

5.3.2 The Strategies of Community-based Social Marketing (CBSM) for UD can be used in Thailand to Create an Inclusive Society.

Based on Strategic Plan of Inclusive Society According to Universal Design Concept established at the end of 2014, it was found that UD concept development must rely on support from several sectors, including the public, private, and educational sectors and NGOs. However, to solve the problem of UD directly, it is necessary to begin from personal design to lifestyle design as users and persons who live with users. The important thing is to build understanding and knowledge from a community level. Community means those people who live and interact together, i.e., people who live in the same area or zone.

Treating each other cooperatively is the important thing for enabling “space and humans” to work together supportively. As a result, it is the origin of connecting CBSM with UD, namely, it is necessary for families, communities, persons in the same occupational fields, or volunteer groups, to understand target spaces or communities, whereas, users (including persons with disabilities and the elderly) must always participate in solving problems. The researcher found that the major factor helping UD to be accomplished was learning from users, namely, exchanging information between parties helping to build connections, and understanding, as well as providing opportunities to users to participate in the design process consistent with actual demands and utilization.
As a result, UD motivates people to be interested through various strategies to involve students of Faculty of Architecture who will be change agents, professional architects, house owners, building owners, interested persons in the area, and related public organizations to be involved in UD.

You are only a human and you have never known that you would be disabled tomorrow or not because I have believed that there must be a condition of a person that will become the person with disabilities. However, before taking any action, we are required to give more ideas for us and them not for only you. A wheelchair user, Mr. Sophon Chimjinda, Interview “Muang Jai Dee” Tape 4th on 29/10/2012

As mentioned in chapter 2, CBSM is based on five steps (Mckenzie-Mohr & Schultz, 2014).

1) Carefully selecting the behavior(s) to be targeted.

2) Identifying the barriers and benefits associated with the selected behavior(s).

3) Designing a strategy that utilizes behavior change tools to address these barriers and benefits.

4) Piloting the strategy with a small segment of a community.

Evaluating the impact of the program once it has been broadly implemented. Each of these steps is described subsequently.
As the design strategy is the concept that focus in this research, each project use the difference tools to remove barriers and increase benefits for the person relating in project. CBSM has been applied in several cases, including health communication, and environmental campaigns for changing attitudes and behaviours. CBSM has been developed from social marketing mainly aiming to build desirable behaviours not profits. Based on five major steps as mention above, the outcomes are identifying barriers and finding proper strategies for removing barriers.

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Community-based social marketing also uses a set of "tools" which have been identified as being particularly effective in fostering such change. While each of these tools on its own is capable of promoting healthy and/or sustainable behavior under the right conditions, the tools are most effective when used together (McKenzie-Mohr, n.d.).

CBSM tools refer to anything used with the intention to perform a behaviour already existing that aims to create the motivation for sustainable behaviour. Lightman divides CBSM into two groups. There is the intent to perform a behaviour and then to motivate sustainable behaviour. Commitment, prompts, convenience, social norm and etc. (Lightman, 2011).

The three main issues in UD strategic planning, as mentioned in chapter 2, were UD knowledge transformation and database, driving the policy, regulation and provision and awareness creation via a public relations campaign (Research and Creative Center for Architecture and Built Environment, 2014). Enhancing knowledge is under the awareness creation public relations campaign strategy, the same as the strategy in this research that needed to increase the knowledge of target people. Below is shown the link between the strategy and tools.

1) Increase Knowledge Strategy
As the barrier is a lack of knowledge, the solution is to educate people in each community to achieve the outputs and outcomes. The key strategy is to understand the UD concept and increase the knowledge of UD

2) Communication Tool
Communication is the major format used in CBSM strategy. With the cases studied, it could be seen that communicators were reliable persons or sources, for example:

Muang Jai Dee TV program consisted of experts participating in proposing some concepts, designs, and area improvements to young architects who can make direct personal contacts in the community for sharing knowledge, to explain how to apply UD in their community, and finally to gather information from the community.
KMITL invites experts who are architects to suggest how to work with community as well as suggest which design method can allow community participation.

Data regarding Geriatric Medicine 2014 was an example of mutual work between experts and designers with experiences in hospital designing.

ASA is an example of effective communication between central architects who transfer their knowledge to local architects.

Finally, A-ra-ya-satha-pat Ambassador was the only project that did not use professional experts as communicators. On the other hand, persons with disability with social roles are used for motivating and building understanding.

It was found that each project needed to understand the behavior of target groups in order to design messages and tools that were appropriate for utilization, especially enriching UD’s operation by using the term “kindness” (Jai Dee) as the mediator, for example, Muang Jai Dee TV program, Ban Jai Dee, and Si Yaek Jai Dee.
This communication method was used by architects, except for the A-ra-ya-satha-pat Ambassador project which targeted the community by sharing experience from person to a group of change agents.

3) Incentive Tool

Even the change agent is the key person that focuses on every program. Moreover it has to increase awareness of UD for owners as well. The cost of renovating in the “Muang Jai Dee” TV program was not over 50,000 Baht. This was a motivation for the owner to improve their house by following UD concepts. The architect explained that sometimes UD renovation could be made without cost and also by changing positions in the house so everyone could use them.

In addition, there are various forms of incentive that are applied. In this regard, reward mostly in the form of incentives. There are several projects selecting to use rewarding and fund supporting as the incentives for motivating the target group. For rewards, it was found that A-ra-ya-satha-pat Ambassador Project and the UD Project of ASA had used the same format but different means of evaluation. However, it is interesting that ASA has developed a UD label as the reward standard for good buildings, similarly to Thai EGAT Certification for electrical appliances. Moreover, it motivates professional architects to be interested in UD by coordinating with the Architect Council of Thailand for giving 8 S scores for certifying architects who participate in UD training. In addition, some architects and projects interested in UD also received scholarships for spreading the outcomes of UD.

4) Prompt Tool

Prompts are another strategy helping to remind and increase awareness of the target groups. The most preferred format is a printed manual because there are several details of UD that may be forgotten. Accordingly, after training, information is gathered in order to allow architects to study more by using such manual as the basis for further study.

5.3.3 The Output of the Strategies of CBSM for UD in Thailand

Referring to the strategic planning under the concept “Design for everyone” by RCCAB stated that groups of people that have worked with UD are the government sector, private companies, educational agencies, NGOs and urban parties.
This research found that the government sector, the private sector, education and NGOs were the key groups who used UD in each community. Urban parties were the subset of NGOs, such as Regional Architects in four main regions including central, northeast, south, and northern region.

Moreover each key group had a focus in each community to create relations among people from various dimensions. This research categorized the community as follows:

1) Architect community, in Thailand has architect association. Architects in Thailand with licenses are members. The center of associates is located in Bangkok while the rest are locate the northeast, south, and northern regions.

2) Student who study in architectural faculty in the university

3) People who live in the same area who have a chance to share the environmental facility.

4) People who work in the same place who have same target and direction as the business

Output is obtained from strategic management process by using tools for motivating and developing understanding on the behavior of target groups according to the principles of CBSM, i.e., removing barriers and increasing benefits. Most obtained outputs were consistent with indicators of three major strategies-including knowledge and database development, policies and regulations and development, campaign and public relations for building realization on Universal Design in the five year period.

The obtained outputs help to build inspiration and consideration about the value, the importance, and the effects of UD on the architectural occupation. To build basic knowledge, necessary techniques, and understanding leading to additional research connected with actual practice, and build direct experience connecting knowledge with utilization based on the social, economic, and cultural contexts of Thailand.
Figure 5.4 The Outputs of the Strategies of Community Based Social Marketing for Universal Design

From the graph it can be seen that the inputs is a project set up in order to achieve intervention objectives. It can have different result as follows,

Outputs are evaluated in terms of target groups to be engaged in the activities.

1) ASA project: An output of seminars held by professionals from all four regions. The number of participants was 154 persons who attended the seminars after the conclusion of this activity.

2) “New Seeds for A-ra-ya-satha-pat Ambassador” activity was held five times in the A-ra-ya-satha-pat Ambassador project.

Outcomes are short and medium-term results.

1) Starting to develop National Geriatric Medicine Center in Samut Sakhon after touring in Japan and writing the Geriatric Medicine 2014 book by Yodyiam Theptaranon.

2) The research from KMITL student under the topic of User Involvement in Applying Universal Design from Global to Local Thailand Context.
Impacts were divided into two terms for changing behavior and policies, but this research found only an impact on behavior change. Better quality of life in “Muang Jai Dee” TV program by Thai Health Promotion Foundation after renovated house/public area.

5.4 Universal Design with Community

5.4.1 “Muang Jai Dee” TV Program by Thai Health Promotion Foundation

Muaeng Jai Dee was the project that represented three communities, including students in architectural faculties, family community, and the neighborhood community. This project created a chance for students who were architectural faculty volunteers to design and develop drawings and also participate in construction. They had to work with the family community and understand the type of house that would make users comfortable and convince them to change their daily behavior. They also needed to understand how to apply UD concepts to a single house, townhouse and traditional houses. The neighboring community is about people who use the facility or live in the same area. Muaeng Jai Dee used public parks, temples, health centers, and Jomtien Beach in Pattaya to be representative of how to apply UD in the community. UD principles begin small then move to a larger area.

The additional benefit that community will receive was not only the benefit from improved living functions but also to enhance the health of their members and build relationships between family and community.

5.4.2 Study on Data Regarding Geriatric Medicine 2014 by Yodyiam Theptaranon

The community in this project refers to the working community. The hospital owner and architect had the same target for designing and constructing the Geriatric Medicine 2014 project in Thailand. This encouraged architects and project owners to collaborate with information and work together as partners, not as in a doctor-patient relationship.
5.4.3 Universal Design Talk 2015 Project in elective course in
Architectural faculty of King Mongkut's Institute of Technology
Ladkrabang (KMITL)

Architects may be connected to diverse people in target local communities and empower people in ways that are meaningful to their community base. The key for working with the community is to develop a partnership between campaigners and the community. The speaker demonstrates techniques to students in architectural faculties for working with the community. Moreover empowered members can help each other. Architects may acknowledge that they cannot do all the necessary work by themselves. They need the knowledge and power from the community to create better living conditions to meet community needs.

5.4.4 Universal Design (UD) project by the Association of Siamese Architects under Royal Patronage (ASA)

The community in this project was the persons who had an architectural background. They were located in many areas, not only in Bangkok but also upcountry. For the upcountry region, the way to reach the architect community was to pass through the architect association centers classified by geography (North, South, Northeast and Center of Thailand). This way the campaigner had access to the community to act as a leader in teaching the principles and concepts of UD.

5.4.5 “A-ra-ya-satha-pat” Ambassador by Krisana Lalai

With the campaign for handicapped people, the community involved were students in architectural faculty and the handicapped themselves as representatives to promote the A-ra-ya-satha-pat Ambassadors. The owners and developers were the ownership community. Yet the term ‘UD’ means different things to different people. For the A-ra-ya-satha-pat Ambassadors UD was the standard function that every building should have, but for owners it may mean additional costs and make investment less attractive. Therefore A-ra-ya-satha-pat Ambassadors need to act as leaders to show the right application of UD principles to not only improve the image of structures but also make them more useable.
Finally, the study found that community means ownership, not just the location base. The people in the community had to link together by studying the same issue, living in the same place, using the same facility, or working on the same target. Then the development meets the needs of the community with agency support for success. The characteristic for creating an UD community are:

1) The user moves in the building, or from building to building, making it easier for all ages and abilities, especially the elderly and persons with disabilities. 

2) The user benefits from improvements in the current living space to both houses and public areas.
5.5 Recommendations

UD is a concept aiming to build equality for all people in society. However, people with disabilities and the elderly are specially emphasized in UD campaigns because it is believed that if the weakest in society can use any facility or area, they can be utilized by all people. In design and project operation, the benefits for persons with disabilities and the elderly are always considered. In addition, these two groups of people have the same basic demands as mentioned by the expert of The Association of Siamese Architects under the Royal Patronage of His Majesty the King: The elderly is person with all types of disabilities, i.e., impaired ears, eyes, and legs, with less energy. These are all disabilities gathered in the elderly.
Assoc.Prof. Kusuma Thamathamrong, the Committee of Jai Dee Building Project of The Association of Siamese Architects under the Royal Patronage of His Majesty the King, Interview in Episode 9 of Muang Jai Dee TV Program.

Since all people are able to be a part of building an environment that facilitates every person’s use to build an equal society, UD is another guideline for building equality for all people. UD may not be new in Thailand but it can be said that knowledge and understanding of UD is not sufficiently widespread.

Although Thailand has several laws and ministerial rules forcing buildings, places, and public services to provide facilities for the elderly and persons with disabilities for more than ten years, one remaining problem is that many places and buildings have no such facilities. Laws are only used for enforcing standards about new projects but serious implementation has not been performed or has been ineffective due to a lack of knowledge. To further develop UD concepts, it is necessary to study the operation of UD projects for modeling further operations.

Otherwise, the researcher has made several recommendations below, including UD policies, communication about UD concepts, change agent actions, community action and future research that could guide directions for working with UD and study.

5.5.1 From Behavior to the Policy of UD

Three major potential benefits of UD include the personal, the community, and the country. It is important to demonstrate to all sectors the benefits that can be derived from UD because of its value and importance. It is undeniable that the modification of houses and public buildings under UD is not restricted to any one person but can be mutually beneficial to everyone in the society.

5.5.1.1 Promoting personal benefits. If a dwelling or area is unsafe and likely to cause accidents, UD could solve this problem. Moreover, it should promote a Thai lifestyle where we live together in one big family. If we consider UD housing principles from their beginning stage, it can help everyone to live more happily, safely, and comfortably. Cooperating with Thai Health Promotion Foundation, the ministry of Social Development, and also with home builder businesses can promote UD concepts in society.
5.5.1.2 Promoting community benefits. UD helps to build mutual understanding as well as encouraging people to listen to and understand others. In addition, it may be expanded for developing basic environmental system in communities leading to harmonious living among local people. UD can benefit the community by increasing the number of accessible areas. The elderly and persons with disabilities can go out and participate with others, such as by exercising in the park so they will not feel lonely and improve their health. Many businesses could be created to support an aging society, such as the "Seniors School" that has opened in Korat, Nakornratchasima Province to create ideas and initiatives to aid the elderly. The elderly today must remain active through their use of social networks. The traditional attitude that the elderly must stay home and watch their grandchildren should change (Koratstartup, 2016)

5.5.1.3 Promoting national benefits. UD can lead to changes and development of overall areas making urban locations to be more pleasant and sustainable, as well as areas that can be utilized by all people more conveniently with less expense or without any charge. Many public areas still do not have UD, such as the Ratchaprasong area, although it is well known by Thai people and many tourists. It would be good to renovate the area using UD concepts as a design plan, as ASA offered in part 3 of the Universal Design project mentioned in chapter 4 to policy makers. It can promote Thailand as a tourist destination for all. This will create opportunities for more money to be spent in the country. In addition, the study of Pattaya City in Meung Jai Dee could be a model for other cities. The Tourism Authority of Thailand could be the project owner for such renovations following UD principles.

UD needs to have a solid legal basis. Besides building understanding, laws are also able to be applied for motivating and emphasizing the actual enforcement of laws related to UD in Thai society. Although there is currently a mix of laws and regulations, some people fail to comply with these and lack consciousness in caring for others. Consequently, although there are several laws, they cannot improve Thai society. Laws are only the tools making people recognize correct regulations and practices. It was found that several public and private organizations have tried to apply the UD concept to their works. However, such operations are still separated
without sufficient integration and there is a lack of mutual strategies leading to the problem of over processing the same matter under various organizations. As a result, the operational process of UD campaigns should consist of networking and partnership building between organizations or agencies in order to build a better realization of UD as well as include the concept in education and government policies. UD is also consistent with the project for establishing a strategic plan towards a more equal and inclusive society in Thailand.

It is impossible to force UD policies on Thai society but it may be possible to build support through several networks. According to this study of the five activities of four organizations (including public sector, private sector, educational sector, and working group on UD called NGOs), it was found that UD development is considered as teamwork where we can clearly see the systematic operation of networks. For example, the Muang Jai Dee TV Program based on building knowledge and understanding about UD in the construction field which started from persons requiring buildings to architects, builders and the general public.

Importantly, UD activities are not only intended for building realization and knowledge but also need to consider what entrepreneurs or project owners will obtain from UD in order to enable UD to be economically viable and attractive, i.e., UD may be included in some campaigns of the Tourism Authority of Thailand for promoting buildings with UD. Or buildings certified for UD may be granted tax exemptions, helping to persuade persons to comply with existing laws. Then it would corporate with The Ministry of Social Development and Human Security on the stipulation of regulations, protocols, and conditions with respect to the facilitation of services and safety for elderly citizens in other public services B.E. 2548. It might be a viable way to promote UD and make the adoption of UD concepts more appealing.

Unfortunately, it still appears that UD is not an urgent consideration for many people. Consequently implementing UD successfully will require long term planning. The important thing is to develop project networks for operators to expand obtained outcomes. In addition, this can be a network for developing future projects. However, sustainable development must include a central supervising organization to avoid repetition of work and lack of coordination.
5.5.2 Communication in UD Concept

5.5.2.1 Mass Media may be Required in order to Promote

UD to the public as well as to build understanding about the requirements for UD. Consequently, it can facilitate the operation of architects who have to design such projects when the project owner already has a basic knowledge and understanding of UD. Architects should consider an appropriate place and opportunity to put their proposals into practical operation to increase public understanding of UD. This is an appropriate time because Thai society is paying attention to becoming an inclusive place for the elderly of the world as well as its own citizens. UD should be promoted as a significant social trend in Thailand. UD projects under the ASA used the Jai Dee term to represent the kindness of people who improve places by caring for others. It has been used for Bann Jai Dee, Town House Jai Dee, Jai Dee Building, Si Yaek Jai Dee, Muang Jai Dee, and the Jai Dee Label.

5.5.2.2 Demonstrating:

Referring to the five projects considered in this research, they focused on the elderly. It can be said that the elderly are a part of every family. Everyone in every family will in future become elderly. Therefore government policies should promote the caring for the elderly concept by cooperating with business, even for short and long term residents. Another important thing is visual communication, i.e., a manual is not enough for building correct understanding because UD is a new topic that is not widely understood. As a result, communication based on visual demonstration may be best for all parties, including communication between users and designers. In addition, it is also necessary to develop some updated communication formats because training manuals may not be able to sufficiently motivate people.

5.5.2.3 Evaluate the Project Feedback:

Output should be measured by concrete outcomes because there are several projects still require outline proposals or models. In addition, the outcome of preparations should be monitored to measure whether it is successful or not and which part should be amended to improve UD standards and act as a model for other projects in the future. In addition, the successful parts will be developed to meet the indicators of the three main UD strategies. Most projects had an outcome level but a
limited impact on changing policy. This suggests that campaigners need to seek a bigger group of targets and also to evaluate the results from the users of each project to understand their needs and prepare the direction of future projects.

5.5.3 Change Agent Action

5.5.3.1 Business model of UD

We know that temples are places that the elderly prefer to go. Temples have great cultural and historical significance. They can use UD for renovations to provide more convenient and safer spaces. They could be centers for people in the community to spend time together and set up festival ceremonies. They could use the cases of Muang Jai Dee and Ar Ra Ya Satha Pat to be models for renovation under UD concepts.

5.5.3.2 Increasing knowledge

As architects are the change agents, they can help the project owner and users to build a better environment for not only houses but also public areas. It could be a channel to deliver knowledge about UD to project owner and users.

5.5.4 Community and User Action

5.5.4.1 Everyone is the part of the project.

To not only provide users and persons in community to take part in the design, but to allow the elderly and persons with disabilities to join in the design stage as well as these persons may know the best way.

5.5.4.2 UD Community Model.

This aims to support the formal community by encouraging communities to start developing by themselves and not wait for government support. The process of design that encourages users and persons in the community to be involved would help them to understand and absorb UD concepts in the hope that they will apply them to their houses.

5.5.4.3 Building Networking.

UD can begin from personal home owners and be extended country-wide. Network building is the main tool for building participation Therefore it must consist of the involvement of all persons or organizations related to a project to
perform activities mutually leading to shared goals. As a result, it may be a particular activity, but after achieving that goal, such networks may be dissolved but can be reassembled if there is any new mission. Network building in the manner of exchanging must be improved in order to find the strengths of each network for learning from and supporting one another. It is a kind of synergy that is one of guidelines for building sustainable networks. However, there is currently no organization that is clearly responsible for building UD networks in Thailand. As a result, it may require the assembly of users directly, or the establishment of public organizations relating to UD policies as well as having a mediator that could gather information and establish correct channels of communication.

5.6 Future Research

The study concluded that better communication about UD principles for renovating existing areas and structures is vital for creating a better society. The needs of other disadvantaged groups, such as the poor, immigrant workers, or children living in remote areas, could be considered in further studies, as well as continuing research attention to the residential and spatial needs of the elderly and the person with disabilities. The key in any of these cases is how best to work with and involve the community. Future research should examine more actual and potential examples of the implementation of community based social marketing for applying UD principles to all relevant construction or renovation projects across the nation. There also needs to be further study on how to improve user feedback to better understand the potential, practice, and limitations of UD principles. Another possible research topic could focus on how to improve coordination and networking between government agencies, the private sector, and NGOs in the crucial area of policy development.
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APPENDICES
Appendix A

Approval Letter

1 August 2016

To whom it may concern

I approve Ms. Siripun Krasasen to use my document data including picture from Universal Design Talk project in her Ph.D. Dissertation topic “UNIVERSAL DESIGN FOR BUILDING AN INCLUSIVE SOCIETY: COMMUNITY-BASED SOCIAL MARKETING IN THAILAND”

Signature

.................................................................

(.........................................................)
I approve Ms. Siripan Krasaeen to use my document data including picture from Geriatric Medicine book 2014 in her Ph.D. Dissertation topic “UNIVERSAL DESIGN FOR BUILDING AN INCLUSIVE SOCIETY: COMMUNITY-BASED SOCIAL MARKETING IN THAILAND”

Signature

[Signature]

(...........................................)
1 August 2015

To whom it may concern

I approve Ms. Siripan Kranasee to use my document data including picture from A Study for Strategic Plan of Inclusive Society According to Universal Design Concept in her Ph.D. Dissertation topic “UNIVERSAL DESIGN FOR BUILDING AN INCLUSIVE SOCIETY IN THAILAND: COMMUNITY-BASED SOCIAL MARKETING”

Signature

(Asst. Prof. Dr. Rittirong Chutagruythorn)
Appendix B

Invitation Letter

[Image of the invitation letter with text in Thai]
## BIOGRAPHY

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<tr>
<th><strong>Name</strong></th>
<th>Siripan Krasaesn</th>
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<tbody>
<tr>
<td><strong>ACADEMIC BACKGROUND</strong></td>
<td>Bachelor’s Degree with a major in Finance from Huachiew Chalermprakiet University, Samutprakarn Province, Thailand in 2000 and Master’s Degree with a major in Business Administration, Assumption University, Bangkok in 2007</td>
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<tr>
<td><strong>PRESENT POSITION</strong></td>
<td>Marketing and Product Group Manager, of Teo Hong Silom Company Limited, Samutprakarn Province, Thailand</td>
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