A Study on the Integrated Design Process for the BoP and Inclusive Business

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ABSTRACT

In recent years, designers have shown a greater interest in underdeveloped global regions and have focused their efforts toward these regions in an empirical fashion. Despite this increased interest, to date, there have been no major development agencies (e.g., United Nations of Development Planning, UNDP) to discuss the role and participation of design in IDC. As a result, participation in international design-related activities has not been considered as a tenet of Millennium Development Goals (MDGs) proposed by the UNDP.

Despite this oversight, a growing movement in the design domain has begun to emphasize a macro-level perspective. Designers have begun to explicitly discuss MDGs, and as a result, they have started to appear at design exhibitions. Also, many researchers have commented on the limitations of Official Development Aids (ODA) as existing solution. As an alternative to these temporary solutions, the concepts of the “Bottom of the Pyramid” (the BoP) and “Inclusive Business” (IB) are suggested as more tenable frameworks for addressing design-related issues in underdeveloped countries. The BoP refers to the four billion people around the world (roughly 2/3 of the world population) who make less than four dollars per day and represent a new global market. IB is the next sustainable development solution with regard to the BoP. Taken in concert, these two concepts are expected to produce more sustainable methods through which underdeveloped countries can become self-sufficient.

In this thesis, to promote active design participation in IDC, I suggest an integrated process model that incorporates the concepts of the BoP and inclusive business as future approaches in international development. To these ends, I have organized this project into a series of interrelated sections. The first section introduces the background for the current research, as well as its scope and methods. Second, I explain the concepts of international development cooperation, the BoP, and inclusive business to provide a comprehensive understanding of how they relate from a macro-level perspective. Next, I review and analyze extant research related to the BoP and inclusive business processes to provide a conceptual framework for the proposed integrated process. To validate the process and ensure its practical applicability, 12 experts are interviewed to generate feedback based on their experiences in the field. By refining the first iteration of the model on the basis of these suggestions and feedback, I ultimately suggest an integrated process for the BoP and inclusive business.

Timely, design domain should expand the spectrum of the role not only solving first-end design problems of the poor but also finding the real needs of the BoP people and provide sustainable inclusive business model. Through a review of this research, design participation and potential approaches for developing a model that incorporates the BoP and inclusive business emerge. In exploring such a model, this document can facilitate an understanding among designers of common goals discussed in the international development domain.

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1. INTRODUCTION

1.1 Background and Motivation

In recent years, designers have shown a continued interest in underdeveloped countries. To illustrate, in 2007, the Cooper-Hewitt National Design Museum held an exhibition called “Design for the other 90%,” which illustrated the potential for undertaking design potential and interest through a number of real project. In addition, a number of designers are currently attempting to address global problems associated with water, electricity, and the general lack of healthcare (Smithsonian Institution, 2007). However, the majority of studies within the realm of design have been restricted in the ways in which they approach these problems. For example, a large number of studies exclusively leverage case study methodologies to address their research questions.

Still, designers continue to devise methods for generating solutions to world problem. Despite these efforts, designers have thus far neglected to discuss these issues at a global level. To effectively redress some of the problems facing the world, designers must engage in discussions related to international development.

The UNDP, which is a representative agency for worldwide international development efforts, focuses on establishing businesses that not only create value for markets in countries stricken by poverty, but also improving the quality of life for the country’s citizens. In addition, Official Development Assistant (ODA) has provided a significant amount of financial support to these countries. However, this support has been one-sided in nature. Researchers have indicated that one-sided assistance is limited in its sustainability, as it does not strengthen a population’s capacity to live independently. Therefore, the UNDP insists that assistance-based methods for improving underdeveloped countries must be changed (UNDP, 2008).

To this end, an inclusive business model represents a more viable solution for simultaneously addressing a country’s needs related to business and social development. The population of a developing country plays a significant role in the inclusive business model. Specifically, consumers that are part of the Bottom of the Pyramid (BoP) can serve as customers, employees, manufacturers, or employers. Given the roles that can be played by a country’s citizens, inclusive business refers to an “integrated development approach” through which business is performed. So, this model highlights the ways in which the BoP groups can serve as business partners. As such, the UNDP has emphasized the inclusive business model’s promotion of sustainable development.

The key strength of the inclusive business model is its capacity for overcoming the limitations of ODA to promote international development. In this vein, the current research focuses on issues

related to global improvement not only from a design perspective, but from an international development perspective as well. Specifically, this research would explore practical approaches for improving underdeveloped global regions from a macro- (i.e., global-) level design perspective.

1.2 Scope of Research

To produce results that can be of practical use to designers and policymakers, this research has two interrelated focal points:

1. Most designers work in a market characterized by consumers and producers at developed region (Polak, 2008). Although it is entirely dissimilar to the developed region, designers must comprehensively understand the characteristics of the BoP to exploit thus far untapped business opportunities there.

2. The process for developing ideas and products crucial for activity within the design domain (Jiehui & Kandachar, 2009; Melles et al. 2010) insisted that effective design processes intimately influence to produce superior design results and further argue that a comprehension of design processes is critical for providing benefit to society as a whole. Because, they explained the reason that design process have provide more a rational to link specific instrumental design approaches to product design process

Cross (2011) noted an inextricable relationship between product design and process. He conceptualized product design as a systemic and creative process through which a product meets its potential. Ulrich and Eppinger (2011) similarly insisted that industrial design is a special stage within the overall development process. Given these conceptualizations, this research explores key production processes within the field of design to promote inclusive business processes and a greater emphasis on consumers in the BoP.

Ultimately, the central objective of this research is to develop an integrated process that brings together the BoP and inclusive business practices. In doing so, this research is meant to promote a more comprehensive understanding of development in underdeveloped countries and active development of solutions to global problems.

1.3 Research Method & Outline

This research suggest integrated process model to promote designers in order to participate in international development cooperation. Still, several cases from practices are emerging as much as research area. However, there is no practical explanation to understand practices and research area both. Therefore, in this research adopt Burg's study that try to connects 'pragmatic knowledge' between both area through science-based design perspective.

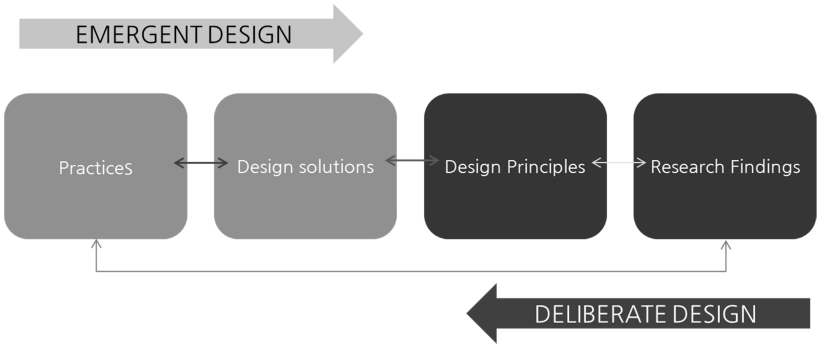


Figure 1.1: Research Method as Adopted from "The Research Design Development Cycle from Science-Based Design Perspectives" Burg et al (2008)

The frame of process for the BoP and Inclusive business is derived from the literatures and analyzed to first version of integrated process model from first research. On the other hand, second research findings are from experts who have work experience in real field. The experts are supported that they have experienced many project in field as practices. And then, these findings are mixed to develop and modified to create integrated process for the BoP and inclusive business. Also Figureureure 2 illustrates results adopting Burg's frame as this research method.

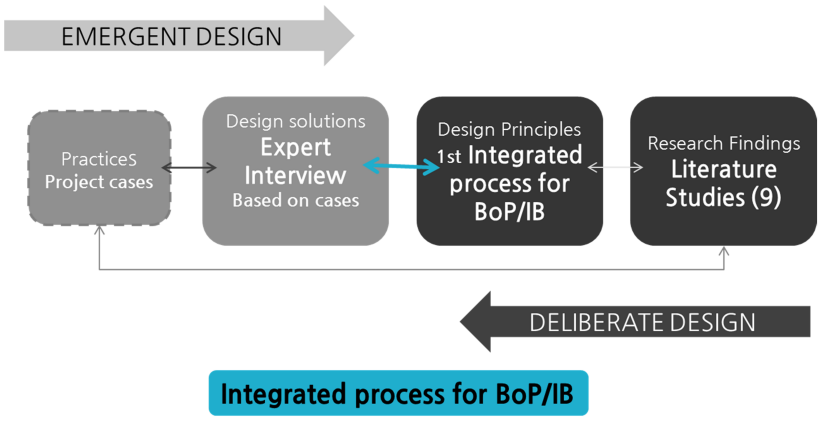


Figure 1.2: Research Method & Outline

The structure of the research can be summarized as follows

Chapter 1 introduces research background, scope of research and research method & outline.

Chapter 2 explain main concept that international development, the BoP, inclusive business in this research through literature review in detail. Also tendency to design approach is explain to link to main concept in international development cooperation

Chapter 3 presents prior studies of the BoP and Inclusive business and analyze to research findings. These 1st research findings are frame of integrated process model

Chapter 4 introduce expert interview as research method to verify 1st research findings and presents results.

Chapter 5 finally, this chapter suggests to integrated process for the BoP and inclusive business model.

Chapter 6 discuss summary of main research findings and mention limitations. Also further research is mention.

2 LITERATURE REVIEW

2.1 Introduction

In this chapter, this study explains the main concepts of international development cooperation, the BoP, and inclusive business. This study also investigates the participation of design and its role in international development. On the basis of earlier studies, elements and phases are found to create an integrated process.

2.2 International Development Cooperation

2.2.1 Definition and Concepts

Development Assistance (DA) is international assistance that delivers various resources to recipient countries, including goods, technology, donated properties, and loans from donor counties. An International Development Cooperation (IDC) is similar to DA, but is engaged in more comprehensive activity in the international society. An IDC promotes the economic and social development of underdeveloped countries through other cooperation methods, including official flow, export credits, private investments, and partnerships.

An IDC has the goal of contributing to the improved welfare and development of underdeveloped countries. This term also describes a change of perspective in mutual partnerships, rather than one-sided aid. It implies the needs of integrated cooperation above ODA. The motivation and objectives of an IDC cannot be easy to generalize to understand current phenomena. This is because each country has entirely different strategies and goals to achieve for development, and there are particular relationships between recipient countries. However, one main goal is poverty reduction and increasing the effectiveness of assistance.

This study is based on an IDC that focuses on poverty reduction and sustainable development rather than meeting the fundamental needs of underdeveloped countries. Therefore, this study attempts to understand the bottom of the pyramid (the BoP), which refers to emerging partnerships from under developed countries, and investigated detailed information for urging design cooperation

2.2.2 MDGs

The United Nations (UN) Millennium Development Goals (MDGs) have been agreed upon by world leaders and the leading global development institutions for international development. These goals are designed to achieve poverty reduction by effectively helping developing countries through cooperation. To achieve a reduction in human suffering, 189 nations set 8 major goals and 18 particular aims as important targets for 2015. The goals represent the ultimate aims not only of the UN and the international community who deal with global social problems, but also humanity as a whole.

Table 2.1: MDGs: Millennium Development Goal, UNDP (2008)

Goal		Target
1	Eradicate extreme poverty and hunger	Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day
		Achieve full and productive employment and decent work for all, including women and young people
		Halve, between 1990 and 2015, the proportion of people who suffer from hunger
2	Achieve universal primary education	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
3	Promote gender equality and empower women	Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015
4	Reduce child mortality	Reduce by two thirds, between 1990 and 2015, the under-five mortality rate
5	Improve maternal health	Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
		Achieve, by 2015, universal access to reproductive health
6	Combat HIV/AIDS, malaria and other diseases	Have halted by 2015 and begun to reverse the spread of HIV/AIDS
		Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it
		Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
7	Ensure environmental sustainability	Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources
		Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
		Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.
		By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers
8	Develop a global partnership for development	Address the special needs of the least developed countries, landlocked countries and small island developing states
		Develop further an open, rule-based, predictable, non-discriminatory trading and financial system
		Deal comprehensively with developing countries' debt
		In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

2.3 The Bottom of the Pyramid (BoP)

2.3.1 Definition

The BoP is the socio-economic term for the people who live in underdeveloped countries and whose annual per capita income is less than $1500 dollars per person based on purchasing power parity. This group is approximately four billion people who are living on less than $2 per day and representing 2/3 of the world's population

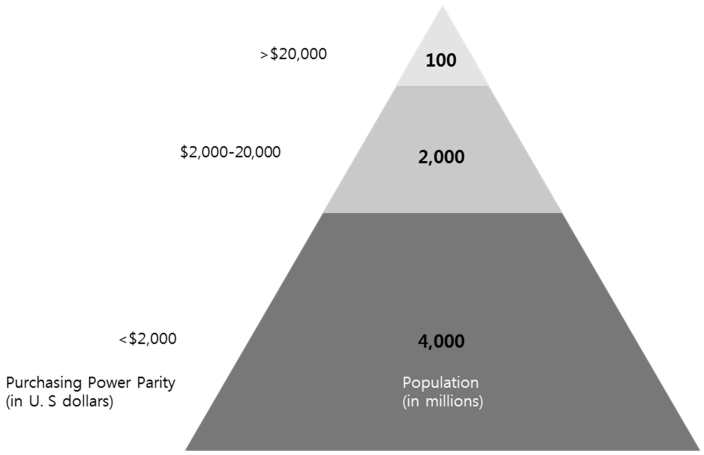


Figure 2.1: The World Pyramid, Prahalad et al (2002)

2.3.2 Meaning

The reason for redefining this marginalized and destitute group is the failure of non-governmental organization (NGO) aid agencies such as the International Monetary Fund (IMF) in the past 50 years. The UN has shown that poverty reduction is the hardest problem of humanity, and they have insisted on the goal of development emphasis situation rather than short-term solutions during the 21st century. In this context, the UN suggests that one of most concrete solutions is to develop a win-win scenario and sustainable innovation with the poor. The BoP business strategy is initiating the biggest and the fastest-growing market in the world through cooperation with government, huge companies, civic groups, and the poor (Prahalad, 2009).

The BoP business strategy focuses on possible access to goods and services for a target group, helping them gain a profit in a growth-oriented way simultaneously. Most of the BoP strategy centers around the well-off group in the BoP market, but the major part of the industry exists in the BoP population. Therefore, it is important to perceive companies leading in the market. In reality, local companies provide the poor with access to goods and services to meet their needs (Schrader et al, 2012).

In accordance with product development, a number of studies have been conducted for advanced economies within advanced industries. In contrast, product development for the BoP is lacking (Viswanathan & Sridharan, 2012). Therefore, the current study aims to explore how to approach the BoP to achieve success.

Van der Kroft (2010) indicates that BoP researches are divided into two groups based on Prahald's "fortune at the bottom of the pyramid." In early studies, Kroft argues that researches are more focused on the following concept: multinationals should eradicate poverty by creating jobs and empower the poor. The poor are considered "potential entrepreneurs" that climb out of their poverty by "increasing income levels." Despite early studies, later studies are introduced strategies for 'creating specific products and services.' Some case studies can also be found. This tendency will be considered to in the literature review presented in Chapter 3.

2.4 Inclusive Business

2.4.1 Definition

The Growing Inclusive Market Initiative was launched in 2006. This initiative was inspired by Unleashing Entrepreneurship: Making Business Work for the Poor, 2004. This inclusive business model includes the poor on the demand side as clients and customers, and on the supply side, as employees, producers, and business owners at various points in the value chain (Figureure 2.3 below). The reason why this group is attractive to international society is innovation in business. At first, one-sided aid is not enough, and provides only temporary relief for the poor. However, inclusive business can increase profit and jobs, allowing the poor to work for their living spontaneously and sustainably. This approach can also help derive profits from an inclusive business model, improving productivity and achieving sustainable profit and high-level inclusiveness (UNDP, 2011). This approach also introduces the following benefits of inclusive business. Follows as

"The benefits from inclusive business models get immediate profits and higher incomes. For business, they include driving innovations, building markets and strengthening supply chains. And for the poor, they include higher productivity, sustainable earnings and greater empowerment." (UNDP, 2009)

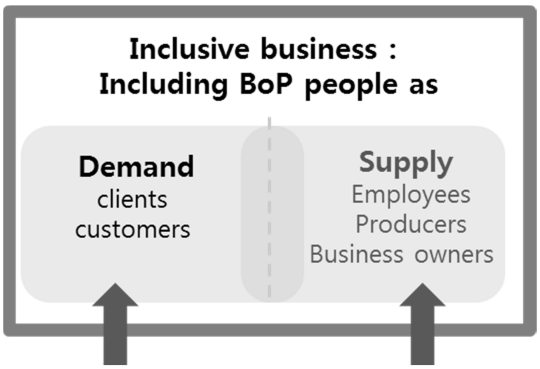


Figure 2.2: Definition of Inclusive Business

The BoP is the next international development approach to overcome the ODA. The inclusive business model can also contribute to realizing the human development framework of doing business with the poor, concentrating on meeting basic needs, and providing access to the goods, services, and earning opportunities that foster economic empowerment.

The MDGs are concretely defined to solve the problems of humanity in all sorts of fields, for example, 'human development' connects to viable aims. Therefore, UN-affiliated organizations have made progress in decreasing global poverty. The Growing Inclusive Market Initiative (GIM) has made progress to show sound aims from 2006. The GIM insists that potential resources to invest and innovate for achieving MDGS are in the private sector of the BoP. Research cases based on GIM show that inclusive business can solve the problem of achieving MDGs.

The following cases show the number of types successful inclusive business cases. These cases are extended to various industries, such as textile, water, healthcare, and hygiene industries. The reason for success varies greatly. However, each case can be categorized into several types, and a successful inclusive business model applies strategies to address constraints in the market and achieve goals.

Table 2.2: Cases of successful inclusive business for achieving MDGs, UNDP (2011)

	MDGs	Company
1	Eradicating extreme poverty and hunger	Juan Valdez, CocoTech
2	Achieving universal primary education	Tsinghua Tongfang (THTF)
3	Promoting gender equality and empowering women	Forus Bank
4	Reducing child mortality rates	Celtel and Celplay
5	Improving maternal health	Money Express
6	Combating HIV/AIDS, malaria, and other diseases	VidaGás
7	Ensuring environmental sustainability	AtoZ, CFW
8	Developing a global partnership for development	Smart Communications

2.4.2 GIM matrix

The GIM matrix is a research tool that will increase our understanding of the 'market for the poor' and 'existing opportunities and challenges.' The GIM matrix is an analytical framework that 'helps to identify market constraints and think through strategies for addressing them.'

According to successful cases, the solutions and that activeness show insight for business opportunity and influence to other business. The inclusive business has great potential in many areas, and more opportunities in open markets are available (UNDP, 2011). To solve the restraints in the BoP market with a systematic approach, the UNDP suggests the GIM matrix as a summarization of solution. The restraints that are faced in the BoP appear on the left side, and the solutions appear on

the top of the matrix. The UNDP expects that this matrix and many successful cases can be used to promote participation in its activities. In report, creating value for all explains how inclusive business can make initiative through 50 case studies.

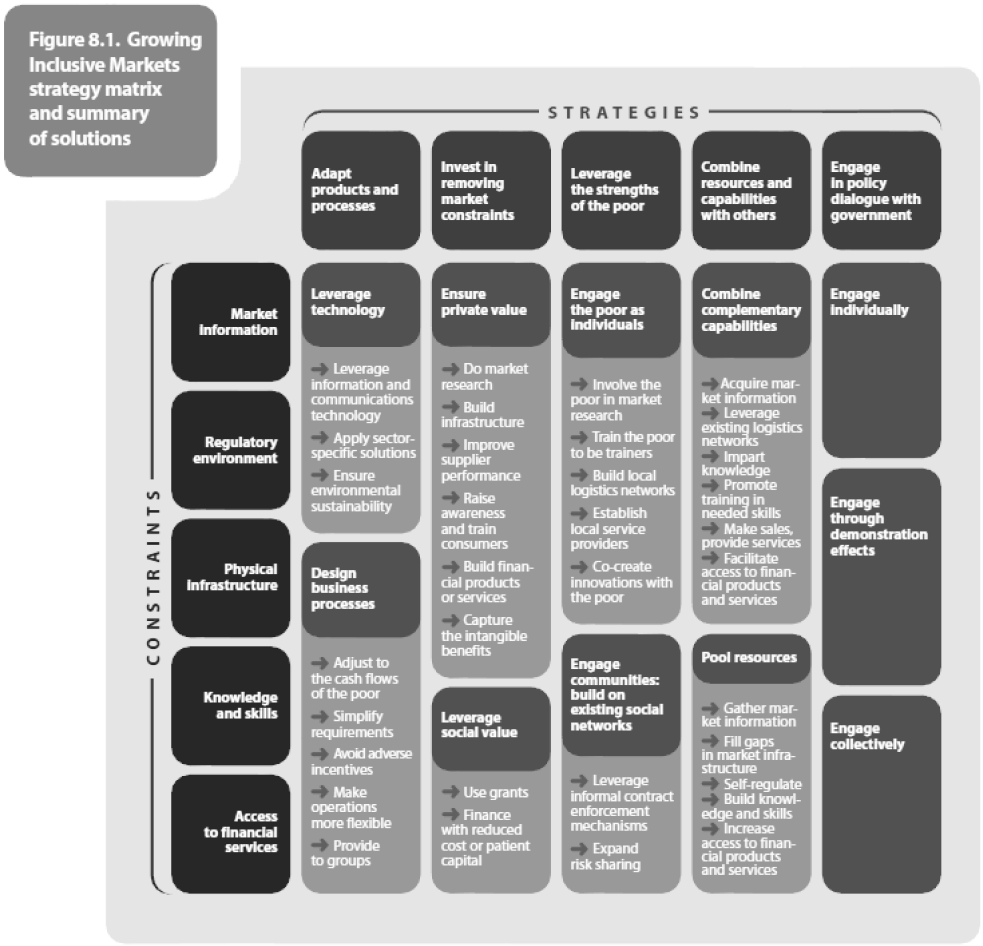


Figure 2.3: Growing Inclusive Markets strategy matrix adopted from "Creating Value for All" (2009)

Based on the GIM matrix, solutions can be re-categorized into what subjects can do. Examples of subjects include business, government, communities, non-governmental organizations, and other development organizations. The GIM is a platform for facilitating the participation of these groups in making inclusive business. This study introduces the concept of inclusive business and provides solution based on the conclusions of restraints and strategies. However, this approach seems restricted to solutions within the genuine design background, such as financial issues or policy. As mentioned previously, many subjects can participate in the inclusive business model. Therefore, the following process must be explored from a multi-disciplinary perspective. In the next section, some cases are presented to explain inclusive business.

2.4.3 Inclusive Business Cases

This study presents 50 cases categorized based on the type of company and sector to which the examples are relevant. Next, each case is investigated based on a comparison of its objectives and the MDGs. With all cases involving war, both the demand and supply side are checked by the definition of inclusive business. The following section presents the inclusive business model as follows.

Table 2.3: 50 cases of inclusive business

no	Case	region	Demand		Supply			Type of company
			Customer	Client	Employee	Producer	Business owner	
1	**A to Z Textiles**	Tanzania		●	●		●	Local SME
2	**Amanco**	Mexico	●	●			●	Large National Company
3	**Amanz' Abantu**	South Africa		●	●		●	Local SME
4	**ANZ Bank**	Fiji		●				Multinational corporation
5	**Aspen Pharmacare**	South Africa	●			●		Large National Company
6	**Association of Private water operators**	Uganda	●		●			Local SME
7	**Barclays' Susu Collectors Initiative**	Ghana		●				Multinational corporation
8	**Cashew Production**	Guinea				●	●	Local SME
9	**Celtel and Celplay**	Democratic republic of Congo	●					Multinational corporation
10	**Coco Technologies**	Philippines	●			●	●	Local SME
11	**Construmex**	Mexico		●				Developing Contry multinational corporation
12	**Danone**	Poland	●				●	Multinational corporation
13	**Denmor Garments**	Guyana			●			Local SME
14	**DTC Tyczyn**	Poland		●			●	Local SME
15	**Edu-Loan**	South Africa		●	●			Local SME
16	**Fair Trade Cotton**	Mali				●		Local SME
17	**Forus Bank**	Russia		●			●	Local SME
18	**Huatai**	China				●	●	Large National Company
19	**Integrated Tamale Fruit Company**	Ghana	●			●	●	Local SME
20	**Juan Valdez**	Colombia	●			●	●	Large National Company
21	**K-REP Bank**	Kenya			●		●	Multinational corporation
22	**Lafarge**	Indonesia	●		●			Multinational corporation
23	**LYDEC**	Morocco		●			●	Multinational corporation
24	**manila water company**	Philippines		●			●	Developing Contry multinational corporation
25	**Mibanco**	Peru		●			●	Local
26	**Money Express**	Senegal		●	●		●	Local SME

27	**M-PESA**	Kenya	●	●	●		●	Developing Contry multinational corporation
28	**Mt. Plaisir Estate Hotel**	Trinidad and Tobago		●		●		Local SME
29	**Narayana Hrudayalaya**	India		●				Local SME
30	**Natura Brazil**	Brazil	●			●	●	Large National Company
31	**Nedbank and RMB/FirstRand**	South Africa		●				Large National Company
32	**NTADCL**	India	●				●	Large National Company
33	**PEC Luban**	Poland		●	●	●		Local SME
34	**Pésinet**	Mali &Senegal		●				NGO
35	**Petstar**	Mexico			●		●	Large National Company
36	**Procter & Gamble**	Cross-regions	●					Multinational corporation
37	**Rajawali express taxi**	Indonesia			●		●	local company
38	**RiteMed(UniLab)**	Philippines		●			●	local company
39	**Rural Electrification**	Ma		●			●	local company
40	**sadia**	Brazil					●	
41	**Sanofi-aventis**	Sub-Saharan Africa	●					Multinational corporation
42	**SEKEM**	Egypt	●		●	●	●	Local SME
43	**SIWA**	Egypt			●		●	Local SME
44	**Smart Communications**	Philippines		●			●	Developing Contry multinational corporation
45	**sulabh**	India		●	●			NGO
46	**The healthstor foundation**	Kenya	●		●		●	NGO
47	**Tiviski Dairy Mauritania**	Mauritania	●			●	●	Local SME
48	**Tsinghua Tongfang (THTF)**	China	●				●	Large national company
49	**VidaGás Mozambique**	Mozambique		●			●	Local SME
50	**Votorantim Celulose e Papel**	Brazil	●			●	●	Large national company

2.4.4 The BoP and Inclusive business

Inclusive business provides four opportunities for a company to achieve profitability and growth. The core motive of inclusive business is entrepreneurship. Entrepreneurs are pioneers who 'perceive opportunity and take advantage of it' in starting a business. Companies as well as underdeveloped people are required to adopt this spirit.

Table 2.4: Four Opportunities for company in Inclusive Business, UNDP (2006)

Generating profits and financial Self-sustainability.	Business with the poor can be profitable, sometimes even more profitable than business with the rich.
Driving innovation	The motive for doing business with the poor is not always immediate profitability. Sometimes it is longer-term growth and competitiveness
Developing new markets	Expanding into poor markets allows firms to capture market share in a growing economy. And it allows them to build brand recognition and loyalty with a growing customer base
Strengthening supply chains	Many firms now buy significant shares of their inputs of both goods and services from other firms

Among these opportunities, 'developing a new market' is more relevant to the BoP in terms of expanding into, and opening, new markets. The BoP is the next huge potential market, and the BoP can be understood as a target market in the inclusive business model. However, the problem is that the 'BoP markets suffer from unmet needs for food and services.' The environment and industry of the BoP has been thoroughly studied (Hammond et al, 2007). The reason is that the poor have limited money to pay for goods and services. However, the BoP's real needs are not considered in the market. In this context, inclusive business must find out the real needs in the BoP, including the people who have lived in the BoP.

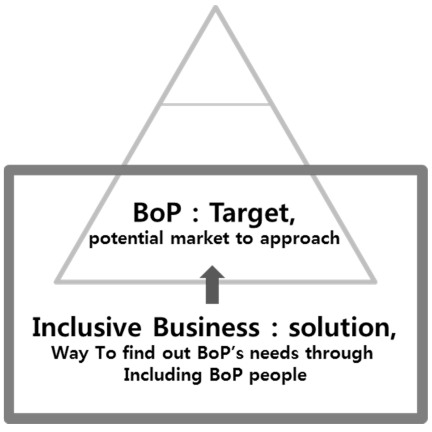


Figure 2.4: Concept of the BoP and Inclusive Business

2.5 Tendency of Design participation

2.5.1 Design for society

The problem of participation in the design domain of international development is acknowledged by a number of researchers and professionals. One problem is that 90% of designers develop products for only 10% of the well-off people. This is primarily because there is no market for goods and services for the poor. However, poor people in underdeveloped countries represent the greater part of the population of the world (UNDP, 2011; Polak, 2008).

Two researchers insist on the importance of the information design issue in the design domain. First, Whiteley states that design supersedes the limited boundaries of styling images and product. Likewise, the contribution of design is also appreciated in terms of its responsibility and value for society. From a wide perspective, design for society includes IDC, and it is often mentioned by researchers (Whitely, 1993; Papanek, 1985).

Whiteley argues that design is not an area of study growth itself. Design can be grown in relation to society issues, which is “the strength of the tradition.” He emphasizes that there is a “direct link between a society’s design and its social health.” Moreover, “design is a manifestation of the social, political, and economic situation.” Therefore, design is deeply rooted in social problems.

Papaneck (1985) indicates that designer participation is related to IDC. This author has the concept that underdeveloped countries are third-world countries that need immediate help. His book, titled ‘The design for the real world’ is like the bible of responsible design activism (Whitley, 1993). This book criticizes design for consumerism, stating that most of humanity cannot hold the bottom level of the minimum standard of life; however, design is focused on rich people living in developed countries. Whitely argues that this situation cannot be justified, and suggest six priorities for design in this context. The first priority is ‘design for the third world.’ He mentions ‘with the global increase in population over the last twenty years, nearly three billion people stand in need of some of the most basic tools and implements’ (Papenek, 1985). Hence, he tries to seek for solutions through design. After 30 years, the BoP accounts for 2/3 of the world population, and the problem which they have held is not Figureuring out. Therefore, there is an ongoing need to participate in this problem, which requires design.

Whitely agrees that design requires in-depth participation for third-world countries. Furthermore, the author insists upon extending this domain to support design responsibility for society and produce products that are appropriate for the local culture. Products and manufacturing processes that do not consider local culture and customs will fail in the market.

To ensure the appropriateness of technology, manufacturing, and culture, a number of studies have been conducted on the appropriate technology domain. Whitely mentions that this area requires

special attention to the relationship between design and appropriate technology. Schumacher (2010) also mentions that the human-oriented approach is more valuable than the appropriate technology because it is able to make designs suitable for the third-world culture, and its design with composure (e.g., small is beautiful). Furthermore, Whitely argues that designers wishing to participate in IDC vigorously must move from residential areas to underdeveloped countries rather than visit or study their culture and customs for a certain period of time. This is because, visiting and staying in a local region prevents designers from properly understanding and considering the needs of underdeveloped countries.

Two activities are required to ensure genuine participation 1. Move residence to a underdeveloped country 2. Go to common places and become involved with local people as main agent. From an 'inclusive' perspective, the arguments of these two studies share definition of inclusive business and its value. Papanek (1985) also shows the power of participation in local areas. Including local people can help them to be future designers, forming a 'seed project.' These local people fully know their own culture, lifestyle, and precise needs in the context of their heritage. Therefore, many researchers follow Papanek's opinion regarding this issue.

"Ideally: the designer would to the country and do all the things indicated above. But in addition, he would also train designers to train designers. In other words he would become a 'seed project' helping to form a corps of able designers out of the indigenous population of the country. Thus within one generation at most, five years at the least, he would be able to create a group of designers firmly committed to their own cultural heritage, their own life style, and their own needs. (…) Design itself must always be a seed project, always operative." (Papanek, 1985, P. 84-85)

2.5.2 Appropriate Technology and Design

Design participation for international development has recently been described as a partnership between appropriate technologies (정인애, 2012). The background of appropriate technology originates from Ernest Friedrich Schumacher's advanced analysis of Gandhi's philosophy called Intermediate Technology. Schumacher founded the Intermediate Technology Development Group (ITDG) in 1966, and described the concept of intermediate technology in his book, titled 'Small is beautiful' (Schumacher, 2010). Intermediate technology represents an alternative way to Figureure out problems without using mass technology, and it is instead based on local-small technology.

This concept has progressed to appropriate technology defining several meaning through various eras and environments. One definition of appropriate technology is technology that improves the quality of life in various aspects, including the environment, ethics, morality, culture, society, politics, and economy of humanity (나눔과 기술, 2011).

The appropriate technology movement has recently reinterpreted its meaning to reflect previous failures. However, design must also be based on an understanding of the latest issues and circumstances. The argument here is that appropriateness must break the tradition of the technology-oriented approach but must consider the end user and market, in which consumer-related appropriate technology is based on the capability of people (나눔과 기술, 2011). Martin Fisher, the founder of Kick-start who tried to Figureure out poverty through appropriate technology, says that the biggest reason for the past failure of the appropriate technology movement is ignorance of basic economic principles. In this context, appropriate technology can offer a new perspective of business and user-oriented design. (Fisher, 2006)

2.5.3 Appropriate Design (AD)

Toshio (1986) and Nieusma (2004) explain the concept and definition of 'appropriate design.' Both of these studies define appropriate design based on appropriate technology. Toshio's concept of appropriateness investigates underdeveloped countries and one of area where design take. The objectives of AD are to build a methodology for field research, and its perspectives are based on interdisciplinary concepts like economics for development, area studies, and cultural anthropology. Toshio's concept can be understood two ways. The first involves underdeveloped countries as traditional discipline. The second is participation in international development issues to solve problems based on natural ability.

Nieusma (2004) states that design can be used to solve social problems through a method called alternative design. Appropriate design is an alternative way to solve the latest social problems. In this study, appropriate design is similar to the spirit of universal design, 1980 and participatory design, 2000, which are used to read trends and directions for current thought. Appropriate design represents a synthesis of design alternatives such as Universal Design, Participatory Design, Ecological Design, Feminist Design, and Socially Responsible Design. This approach considers appropriateness to fit the needs of marginalized people. In addition, the four elements of appropriate design are described as follows.

- Appropriate design accounts for diversity and disagreement
- Appropriate design accepts and copes with uncertainty
- Appropriate design recognizes the importance of governing mentalities
- Appropriate design theorizes agency-structure tensions

This research argues that design is a positive solution when it cooperates with other disciplines. This is because the design-only approach cannot understand 2/3 of the world's population, who live with their own value systems and culture. For example, climate and natural characteristics includes various aspects, such as food, clothing, shelter, society, and value. Therefore, the differences between underdeveloped and developed countries must include multi-disciplinary factors.

2.5.4 Design for other 90%

'Design for the other 90%' is a huge exhibition in the Smithsonian Cooper-Hewitt national design museum that addresses IDC issues in terms of design domain. Blomink, who planned 'Design for the other 90%,' describes design responsibility from a positive perspective. According to this perspective, design is the balance among aesthetics, functionality, and cost within products or concepts. Bloemink provides another definition of design as a method to solve international problems, and designers who deal with these international problems are called 'social entrepreneurs.' In this sense, design can be used to help people who are marginalized meet their basic needs for a living. Many cases in this exhibition force the designer to reevaluate the role of design, and most designers start to recognize the people of underdeveloped countries through activities of understanding their needs and requirements based on resources. In addition, designers can develop simple practical products and system designs that can be used by the BoP using viable resources. Furthermore, those designs allow the BoP to retain their rights to live as entrepreneurs. (Smithsonian Institution, 2007)

Worthman also emphasizes the role of designers, and especially design schools. Throughout active recent projects, he argues that designer must participate more than ever. The reason is that a scale of the BoP is broader than the top of the pyramid (ToP). Worthman also mentioned that design also have various positive effects, such as social effects, cultural relation, economic viability, ecological influence, and effective use of resources and making spaces. Thus, these characteristics are connected to the typical issues of international crux being dealt with by BoP (Smithsonian Institution, 2011). During the past ten years, researchers have posed various questions regarding the design profession in international development. The following crucial question is regarding the needs of design and the education required to meet new challenges in global issues. (Collina, 2011)

2.5.5 Overall debate: limitations

Project Process led by design, HCD toolkit

The business area has long used human-centered design methods. The HCD toolkit was started from an initiative in which these methods can be used to overcome challenges from underdeveloped countries. The HCD toolkit was designed specifically for NGOs and social enterprises who work with underdeveloped countries. The HCD toolkit provides specific methods, processes, and a field guide. Many organizations have used this toolkit for their projects: Acumen Fund, AyurVAID, Heifer International, ICRW, IDE, Micro Drip, and VisionSpring. Lately, cases based on the HCD toolkit have proven the contribution of this approach. This toolkit consists of three parts that 'hear,' 'create,' and 'deliver,' called the HCD process.

Table 2.5: HCD Process, IDEO (2011)

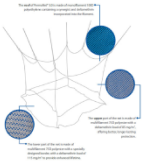
HEAR	During the Hear phase, your Design Team will collect stories and inspiration from people. You will prepare for and conduct field research.
CREATE	In the Create phase, you will work together in a workshop format to translate what you heard from people into frameworks, opportunities, solutions, and prototypes. During this phase you will move together from concrete to more abstract thinking in identifying themes and opportunities, and then back to the concrete with solutions and prototypes.
DELIVER	The Deliver phase will begin to realize your solutions through rapid revenue and cost modeling, capability assessment, and implementation planning. This will help you launch new solutions into the world.

The HCD approach differs from the inclusive business model in several ways. Part 1, called hear, emphasizes and introduces user-centered traditional design methods such as interviews, self-documentation, etc. In Part 2, called 'create,' the toolkit provides methods like participatory co-design and empathic design, which come from general design work. However, Part 3, called 'deliver,' provides simple information such as developing a revenue model and a pilot plan. It seems that this toolkit focuses on finding needs through the 'hear' part and generate concepts. The 'deliver' phase is not as significant as the other phases. The HCD toolkit was developed by design and business, but it is mainly based on design methods. Therefore, it has limited use for developing an inclusive business model.

Cases: Design for other 90% and The Big Idea[1]

To follow and check recent design contribution, 12 cases are investigated that the cases are introduced at design for other 90% exhibition and in the National Geographic magazine. Some of products are overlapped. Collected data are restricted to available in internet website. Cases are investigated based on the definition of the inclusive business model.

Table 2.6: 12 cases from "Design for Other 90%" (2007) and "The Big Ideas" (2011)

						
Title	Sugarcane Charcoal, MIT (2004)	Embrace(2007), Infant Warmer	Spacemask spacer(2007)	Q-drum(1993), water container	The pepper eater(2009), Chili Grinder	OLPC(2006), Affordable laptops,
Organization	D- lab, School	Embrace, NGO	Respiradesign, Mexico, NGO	South Africa Q-Drum	The peppereater, Ethiopia, NGO	OLPC
Deliver	Support to make sugarcane	Donation/ Sell to only parter who support target community	Donation	Retail sale	Donation	Donation
						
Title	Treddle Pump(2006)	Life straw(2005)	Kinkajou Microfilm Projector + Potable Library(2004)	Hip Money Maker(2005)	Permanet (2000)	big boda load carrying bicycle(2002-05
Organization	IDE, NGO	Vestergaard Frandsen (Europe-based international company	Design that matters, Inc ,NGO	Kick start International	Vestergaard Fransen,	Worldbike , NGO
Deliver	Retail sale	Donation	Donation	Retail sale	Donation	local manufacture /Retail sale

In results, generally in terms of inclusiveness, every product is included The BoP as

[1] From "The Big Idea", by Margaret G. Zackowitz, Photographed by Renee Comet, 2011, *National Geographic* Copyright National Geographic Society. Retrieved fromhttp://ngm.nationalgeographic.com/big-idea/16/little-packages

demand side. However, only ‘sugarcane charcoal’ is designed that The BoP people can produce and sell to market. Even 7 cases; Embrace, Spacemask, life straw, OLPC, Permanent, Kinkajou Micro film, the pepper eater are distributed by donation from NGOs. 4cases; Q-drum, Treddle pump, Hip Money Maker, Big boda load carrying are sold by local company in proper price. In the strictly sense, products and services for The BoP which are led by design initiatives is hard to contribute inclusive business in terms of setting new business and participating as producer as supply side. In other word, design’s contributions are limited only demand side that it is off-balance of sustainability.

The results of this study show that, in terms of inclusiveness, every product is included the BoP on the demand side. However, only ‘sugarcane charcoal’ is designed for the BoP people to produce and sell in the market. Even seven cases—Embrace, Spacemask, Life Straw, OLPC, Permanent, Kinkajou Micro film, and The Pepper Eater—are distributed using donation from NGOs. Four cases—Q-drum, Treddle Pump, Hip Money Maker, Big boda load carrying—are sold by the local company at a reasonable price. Strictly speaking, products and services for the BoP that are led by design initiatives find it difficult to contribute inclusive business in terms of setting new business and participating as the producer on the supply side. In other words, design contributions are limited to the demand side, creating an off-balance situation that hinders sustainability. The next section presents future design approaches based on this limitation.

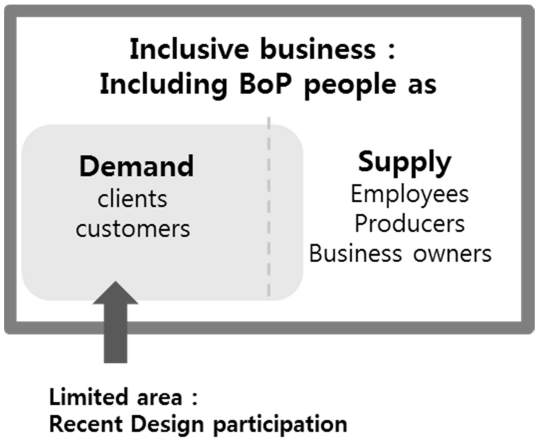


Figure 2.5: Limited area: recent design participation

2.6 Summary and Next Steps

Establishing MDGs as targets to be reached to benefit all of humanity is of great significance. For example, as co-founder of the Bill and Melinda Gates Foundation, Bill Gates emphasizes that the importance of setting objects for project and their measurement as an evaluation (Gates, 2013). While Gates quotes Rosen (2012)'s arguments, international development products can promote global progress if they are (a) defined by clear goals, and (b) develop measures that incite progress toward those goals. Gates reiterated this statement, claiming that the definition of goals and development of measures "may seem basic," but are often overlooked. This statement suggests that setting objectives and plans of action for achieving them are critical for the success of development projects.[2] For example, although investment in underdeveloped countries was a cornerstone of ODA, how those investments contributed to changes in those regions was largely ignored. After establishing MDGs, however, the ways in which investments in underdeveloped countries improve those regions is more easily understood (e.g., reductions in infant mortality).

To this end, the UNDP established MDGs that determine International Development Cooperation (IDC) and suggest inclusive business models for achieve MDGs associated with sustainable development. Specifically, the UNDP has proposed the Growing Inclusive Business Matrix (GIM) to explore various strategies (each with its own respective constraints) to promote inclusive business in underdeveloped countries. The GIM has acts as a compass in this vein, as it provides direction towards methods for solving various problems. Given this, GIM strategies are useful in facilitating the efficient management of funds and verifying the success of various inclusive business.

Relative to those strategies that address world problems at the macro-level, the provision of one-sided aid in the absence of long-term strategy is not sufficient for developing a viable solution in underdeveloped countries. Given this, designers must participate in IDC as a primary stakeholder rather than a simple partner to facilitate an understanding of how an inclusive business model can be activated in those countries in need. In order to participated in domain of IDC serving as more core and sustainable role, design need to get perspective of oriented to inclusive business and The BoP at starting point.

Several stakeholders can generate solutions on the basis of the GIM matrix. For examples, stakeholders come from businesses, government institutions, communities, non-governmental organizations, and schools. The varied nature of stakeholders suggests that successful inclusive

business practices are contingent upon the collaboration of individuals from various fields. Designers can serve as representatives from yet another group that can provide insight for solving the problems outlined above.

To date, designers have worked to provide goods and services that meet the needs of the demand side of inclusive business. In addition, most design work is made possible by donations; this is contradictory to the self-sustainable spirit of inclusive business. Therefore, this research also seeks to explore and identify opportunities for designers to engage in inclusive business practices demand and supply side both (Figureure 2.6 below).

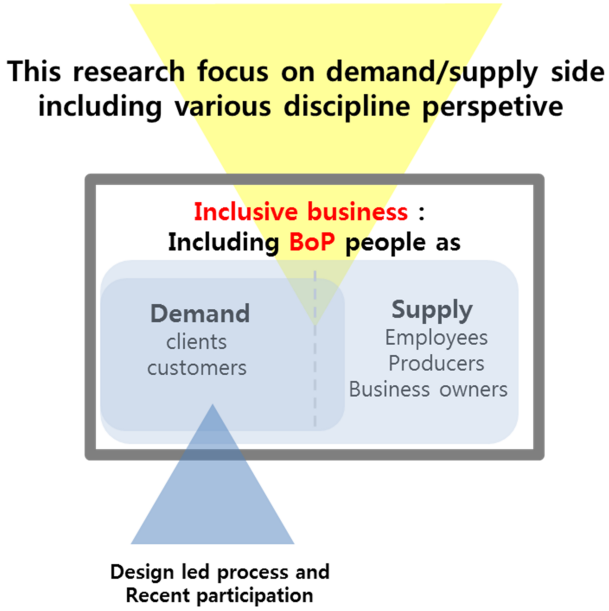


Figure 2.6: Research Aim of this Thesis

3 STUDIES of the BoP and INCLUSIVE BUSINESS in VARIOUS DISCIPLINES

3.1 Introduction

This section provides a literature review of the integrated inclusive process. This background consists of two parts. First, the elements of this process are derived based on the views of many researchers from various academic backgrounds. The second phase explores how these elements are connected and interact with each other at each step. Finally, these results are combined with the research findings from the literature to create a conceptual process model to understand the inclusive business process for the BoP.

3.1.1 Data Collection

The literature on sustainable business in the BoP increased after Prahalad (Kroft, 2010). The inclusive business model was introduced in 2006. Therefore, the period under review in this study spanned from 2004 to 2012. Tohiso(1986)'s Appropriate Design research was added regardless of the time line because it deals with the process in terms of appropriate design, which is highly relevant to IDC. The data collection process was conducted as follows.

First, search engines such as Google Scholar, Ebhost, Elsevier Science Direct, and JSTOR were used to review the literature.

The keywords used for search were the BoP, Inclusive Business, process, case study, appropriate design, and appropriate technology. These terms were iteratively combined find potential studies.

Although many researchers have investigated the BoP, the research regarding process is fragmented by author's academic background. Also, data were selected within various academic backgrounds. Few studies have explained this process because it is too abstract to understand within the big picture of IDC. Therefore, data was restricted to diagrams to explain the findings more precisely than text, making it easier to identify the process. Through interactive trial, eight literature sources were found along with one internet source.

3.1.2 Method

Literature on the BoP and inclusive business dealing with process based on its own project has become tendency of recent studies. (Kroft. 2010) Therefore, the number of studies is related cases.

This research based on research-design-development framework. (Burg et al, 2008) This framework follows science-based design perspective that links the scientific knowledge to the pragmatic and

creative work of practitioners. In this section, scientific knowledge are investigated to find 'research-based principles' derived by literature review of qualitative approach. Comparing literatures set of elements and principles are composed by 'confronting and comparing' within list of literature. Next in chapter 4, expert interview is conducted for emerging findings as practices.

3.2 Studies of The BoP and Inclusive business process

3.2.1 Appropriate design process cycle and considerations (1986)

Toshio refers to appropriate design based on appropriate technology, and presents a concept similar to the intermediate technology proposed by Schumacher. This approach is also based on the 'Basic Human Needs' approach, which promotes economic development to provide for the basic needs of the poor, and the 'Another Development' approach, which has become a development theory in northern European countries. Toshio argues that product design must be globalized in underdeveloped countries where most of humanity must attempt to meet their undefined needs. These needs are dissimilar to the needs of the top market's industry. Therefore, Toshio suggests appropriate design to Figureure out the problem from a design perspective. Appropriate design applies the proper level of this approach to developing countries. Toshio argues that this approach promotes design requirements. Continuous study is also needed for developing countries, comparing the commonalities and differences of developed countries to strengthen the design basis.

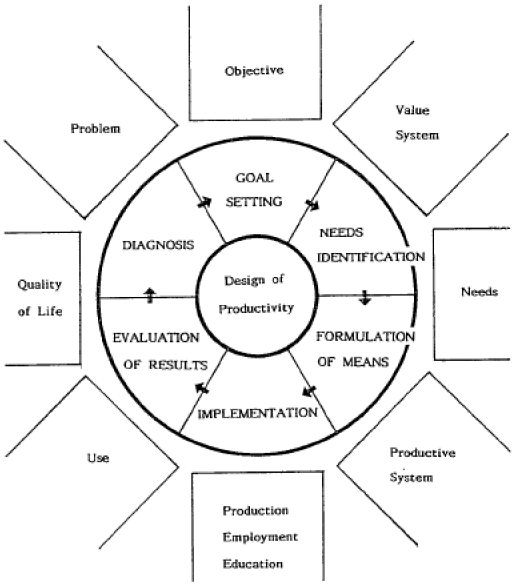


Figure 3.1: "Circulative System for Design of Productivity" from Fundamental Studies on role of Appropriate Design for developing region, Toshio (1986)

This concept suggests more of a need for a macro view than other literature. The appropriate design process includes related academic areas like economics, area study, and cultural anthropology. These disciplines overlap with design. Therefore, the aim of this study is build a perspective and design methods for field research through inter-boundary disciplinary study. Toshio's argument is significant because it indicates multi-disciplinary cooperation with design. Participation in development issues is also promoted from the industrial design domain. In this approach, there are six steps and eight considerations, which work like connection to move next step.

Table 3.1: Process of "Circulative System for Design of Productivity"

	1	2	3	4	5	6
Process	Goal setting	Needs identification	Formulation of means	Implementation	Evaluation of results	Diagnosis
Consi-deration	Objective	Value system	Needs	Productio n system	Production/ Employment education	Use	Quality of life	Problems

3.2.2 Responsible design for responsible business (2005)

Sethia (2005) refers to responsible design as designing activities for the BoP that require a close relationship with responsible business. The goal of responsible business is to find new opportunities, whereas design needs to take a role and participate in this context. Therefore, a successful design in the BoP must combine the design and business area. Designers are creative, and they are expected to serve both the company and customer. Furthermore, they can contribute to the world using their sensitivity and adopting a long-term perspective based on their current role in the market. Previous research reveals four major roles of "designers' vital and unique duty."

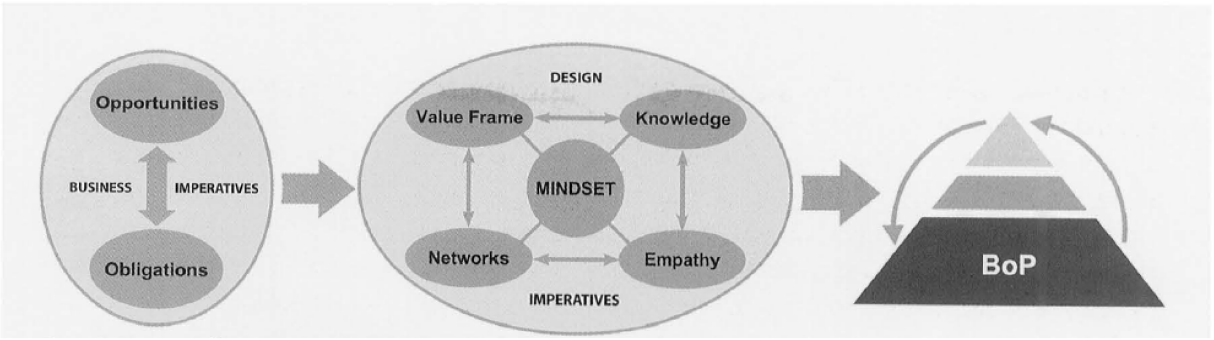


Figure 3.2: "Business and Design engaging Responsibility with the Bottom of the Pyramid: A Comprehensive Framework" from Responsible design for responsible business, Sethia (2005)

Sethia describes four imperative for the BoP design to explain a responsible design. A responsible design can add significant value to BOP-directed business imperatives underlying such initiatives, and subsequently lead to the recognition of concomitant design imperatives.

Table 3.2: Four design imperatives, Sethia(2005)

Knowledge	Learning some basics facts about economic, social, political, and environmental conditions, cultural and geographical context
Empathy	Deep sense of empathy for the poor
Network	Designers need to become the part of an appropriate network of fellow (travelers, social entrepreneurs, and social sector organizations) and to get their insights and experience
Value frame work	The ultimate challenge for the BoP is not about products and services, but about ways of life

3.2.3 Design process model for the BoP(2007)

Kandachar (2007) is a member of the Industrial Design Engineering (IDE) team at TU Delft, and has been conducting research on design for the BoP since 2003. Delft hosts one of the best research centers for this topic, and provides many cases based on practice emphasis in which the number of elements must be considered before the design representative or business success. Kandachar & Halme shows that design methodologies need to be set and develop as new opportunities. The process and plan to approach for the BoP must also be built at a certain level. In conclusion, he found that the most effective approach is to meet the unmet-needs of the community, and tried to analyze how to innovate in these cases.

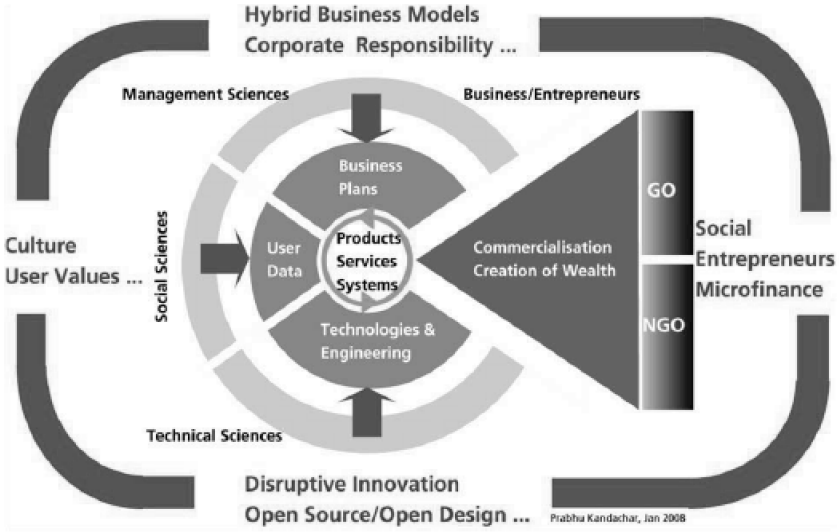


Figure 3.3: "A model for design processes for the Base of the Pyramid" from Design for Emerging Markets, Kandachar et al (2009)

The suggested process is also an analytical process for the BoP and field research in terms of the design domain. Recent research trends at TU Delft for the BoP have attempted to define the BoP. The question is what differences exist between the common product design process and design for the BoP. Kandachar and Halme answered that both products and innovation for the BoP are based on user's needs. Furthermore, Kandachar clarifies the moment of innovation as when designers meet user's tacit needs. So, one of the domains is social science. The other three parts are related to

cooperation among various disciplines, as Toshio [1] states. There are four outcomes from each domain, and the outcomes can be materials for setting innovations through iterative product and services systems. Although TU Delft is specialized in design engineering, this process is linked to technology, business, entrepreneurship, and social research. Therefore, TU Delft and interpreted this topic as a multi-disciplinary approach for the BoP. Because underdeveloped countries are often limited by time and environment, an integrated approach can help meet real needs and deliver services more easily with conjugate analysis.

Table 3.3: Process of "A model for design processes for the Base of the Pyramid"

Domain	Innovation	Outcome
Social science	-Ethnographic tools -Cultural probes	User data
Management Science	-Hybrid business model -Corporate responsibility	Business plans
Technical Sciences	-Disruptive innovation -Open source design	Technologies & engineering
Business Entrepreneur	-Microfinance -Social entrepreneurship	-Commercialization -Creation of wealth

3.2.4 Model for developing market oriented appropriate technology (2012)

Kim argues the needs of the appropriate technology model for the BoP based on Polak (2010). In writing "The death of appropriate technology," he clarifies the limitation of one-sided aids in developing cooperation, and the authors of the current study also agree with this notion. Design for market and design considered market represent potential solutions to this problem. Develop methodology model progress through three steps and specific contents follows. The structure here includes two parts: activities and approaches.

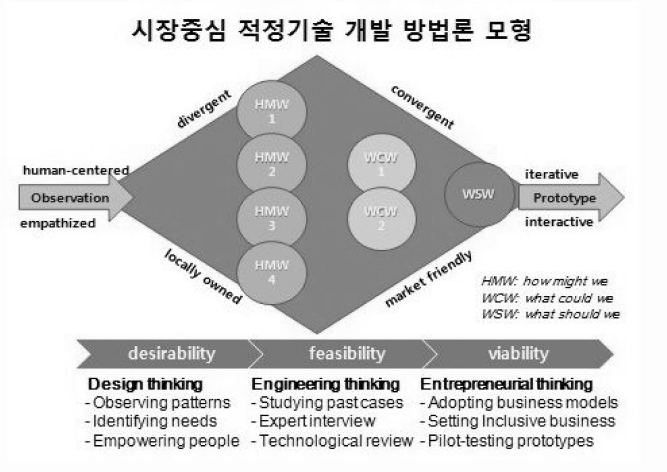


Figure 3.4: Model for Developing Market Oriented Appropriate Technology. Retrieved from http://theuntoday.com/search/design%20thinking, Kim (2012)

In the first stage of Desirability, the model starts with observing and empowering to create empathy with local people. In this stage, qualitative approaches like lifestyle and daily patterns are collect to identify needs. During this stage, design tasks are derived from the 'How might we' (HMW) approach, based on design thinking. The second stage of Feasibility, examines the appropriateness of the results from the first stage. At this stage, engineering thinking leads out in studying past cases, expert interviews, and technological reviews. Design tasks are then re-interpreted to examine their appropriateness for a few 'What could we' (WCW) design tasks. In the final stage, Viability, the WCW design task turns to a WSW design task. Economic feasibility and productivity are examined for setting inclusive business. However, the role of an entrepreneur requires visible results. To adopt a business model for the BoP, field test and pilot testing iteratively conduct to make progress and improvement of products and service.

Table 3.4: process of "Model for developing market oriented appropriate technology"

	1	2	3
Activities	**Desirability**	**Feasibility**	**Viability**
Approaches	How might we Design Thinking - Observing patterns - Identifying needs - Empowering people	What could we Engineering thinking - Studying past cases - Expert Interview - Technological review	What should we Entrepreneurial Thinking - Adopting business models - Setting inclusive business - Pilot-testing prototypes

A key point of this model is that the problem-defined design task and these tasks for the BoP are modified though three stages of thinking. This model serves as a foundation of the BoP where lack of infra have a signification from intuitive insights by design thinking and rational by engineering thinking. Finally, entrepreneurial thinking is used to derive the inclusive business model for achieving the specified task.

3.2.5 New Market, New Challenge, New Opportunity –overview of china rural healthcare &Design Methodology(2008)

Jiehui and Kandachar are TU Delft members who participate in research regarding design for the BoP. In this study, they apply TU Delft process to develop China's rural healthcare services. This study is also based on the premise that the design approach comes from Hart(2004), who defined the BoP with Prahalad. The basic ideas of rural design analysis include three principles, "Base of the pyramid protocol" , taken from Hart's perspective are follow.

- Engage in deep listening and mutual dialogue with target group
- Co-discover and co-create new product design opportunities and business models embedded in the local cultural infrastructure
- Co-design and launch products that generate mutual value for all partners

This study applies the results of the process in [3] to develop China rural healthcare to achieve innovation in each innovative approach. As a result, this process consists of twelve steps and three levels of approach. Each level represents different research fields, like design, technology, and business. Outcomes must also be derived for the project, including design opportunities, product design, and business opportunities. This creates a triangle shape. Twelve steps are analyzed in each level. The results of these steps and level are as follows.

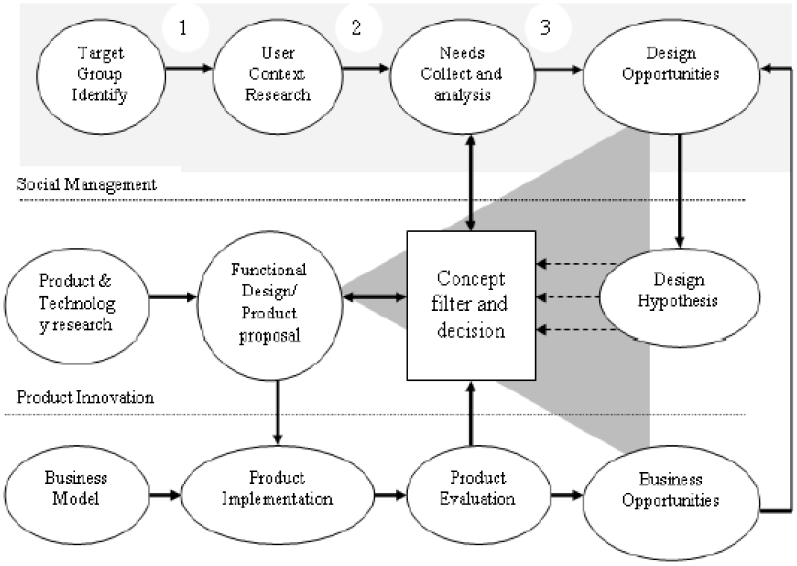


Figure 3.5: "Design approach for China Rural Healthcare" from New Market, New Challenge, New Opportunity: Overview of china rural healthcare & Design Methodology, Kandachar et al (2008)

Three levels are competitively linked. For example, a business opportunity creates a design opportunity, and a design opportunity creates a design hypothesis, concept, product proposal, product implementation, and finally business opportunities. This approach is based on results from practical projects. The limitation of this research is that this approach shows three levels of cooperation, but it do not explain 'how to work' at each level.

Table 3.5: Process of "Design approach for China Rural Healthcare"

	1	2	3
Process	**Level 1: Needs- Design concept**	**Level 2: Product-Market**	**Level 3: Design-Business**
	- Target group identify - User context research - Needs collect and analysis - Design opportunity	- Design opportunities - Design hypothesis - Concept filter and decision + Product & technology research - Functional design/product proposal	- Business opportunity - Product implementation - Product evaluation - Business model

3.2.6 Roadmap research on process in design for base of the pyramid(2009)

The research problem of this research is to find hidden product development process in the BoP. Therefore, the researchers tried to investigate the differences among the 24 cases that involved a master's graduation project (more than six months) for the BoP. First, Kandachar and Jiang define four design parameters that together form Design for the BoP (DfBoP). As a result, seven steps were analyzed to compare common product development methods. The elements that consist of Design for the BoP process is comes from existing methodologies

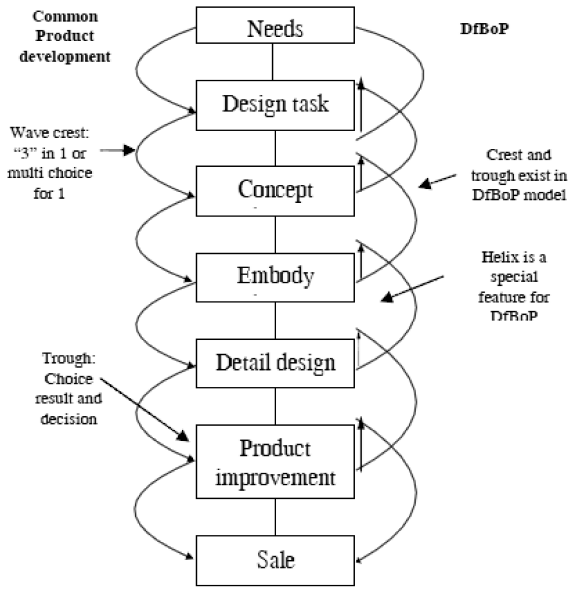


Figure 3.6: "Design procedure estimate model of common product development and DfBoP" from Roadmap research on process in design for base of the pyramid, Kandachar et al (2009)

This study suggests two differences between the design for the BoP and common design in terms of process. Identifying the needs of the Bop requires a unique and significant role. Needs are the starting point of design, and provide motivation to business at the same time. Comparing common product development process, the design for the BoP process has a greater likelihood of achieving better results, and has a helical shape that make it easy to help evaluate and modify the current stage rather than a linear process.

Table 3.6: Process of "Design procedure estimate model of common product development and DfBoP"

	1	2	3	4	5	6	7
Process	Needs	Design Task	Concept	Embody	Detail design	Product Improvement	Sale

3.2.7 The process for developing business specification_ Designing sustainable solutions for the The BoP(2012)

In his latest research, Prahalad defines the BoP emphasis that international development cooperation can build through business based on specific methodology. He analyzed twelve specific design principles for the BoP, yet innovation is still needed. Next, innovation is not setting a business to design products and services, but delivering manufacturing. A key point of his assertion is a specific and in-depth understating of users, who usually talk in the design domain rather than a business background. In other words, insight from users and customers can make business successful.

The innovation achieved in this context is not possible without restraint. Moreover, the innovation at the BoP is able to work with restraints, and this approach is called “working in the innovation sandbox.” This innovation method consists of five stages. A key point of his reassertion is specific and in-depth understating of user which is usually talk in design domain rather than his business background

Figure 3.7:“The Process for Developing Business Specifications” from the process for developing business specification, Prahalad (2012)

3.2.8 Designing sustainable solutions for the BoP_ Integral product development for the BoP(2010)

Diehl attempted to address challenges based on research results that create viable product-service solutions to meet the needs and trends of the local economy and social without wasting ecological resources. Therefore, this study considers issues like sustainability, user context, technology, business a locally fine-tuned solution for design sustainable product-service solution which is excluded from design domain. As result, researchers have proposed a design approach for the BoP for designers. Designers potentiality is verified that they can be take more precise and core job using participatory design method in unfamiliar local environment. In this context, the integral product development approach for the BoP consists of four elements.

Figure 3.8: "An integral product development approach for the BoP" from Designing sustainable solutions for the BoP, Diehl et al(2010)

The point of this study is that all researchers and designers who are working for the BoP must meet local people directly to understand their culture and environment. The solution to the BoP problem is hard to develop in school or design studios. Furthermore, understanding the needs of, and interaction between, people and material is an economical and socio-cultural prerequisite to successful product innovation. However, Diehl insists that a participatory design approach and co-design methodologies can help set the steps of the product-service development process (e.g., needs assessment, concept development, prototype testing, and market introduction).

3.2.9 Design Considerations for The BoP projects(2012)

Diehl explains the design requirements for the BoP based on prior BoP experience and design solutions. The major component discussed in this research is the design consideration for the BoP project. This design consideration is derived from two approaches: 1) framework review, and 2) a practical research project. To understand the BoP and provide guidelines to fit its characteristics, a framework review is presented in this study. The four design clusters—desirability, feasibility, viability, and sustainability—were identified based on the six framework theory, and it divided specific elements.

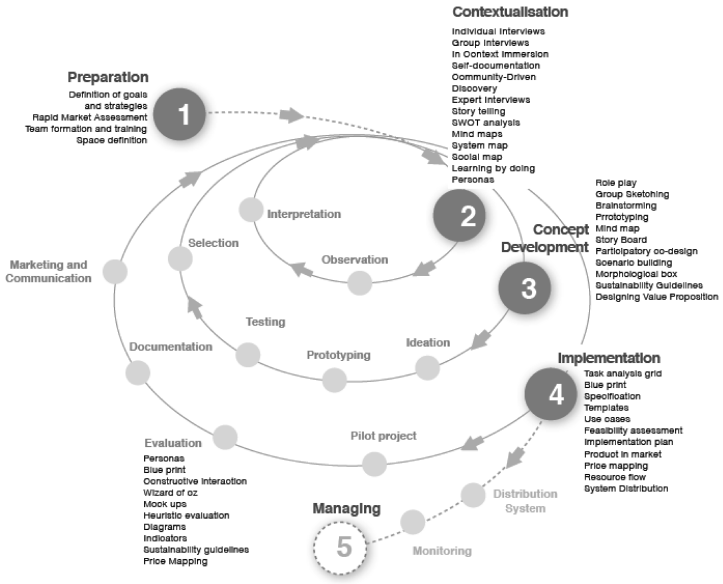


Figure 3.9: "Proposed Methodological Framework and Tools for the BoP" from Design Considerations for the BoP projects, Diehl (2012)

Most of the BoP projects reported in this study consider several elements, and many project problems can influence the whole system because of its huge scale. Therefore, designers tend to Figureure out all considerations when finding an appropriate solution. However, considering all elements is impossible because each element operates independently of each other (Kandachar, 2008). Moreover, the author argues that applying existing problem-solving method to the BoP in a traditional way causes unexpected side effects. Therefore, the author has re-considered methodologies that can be used for studying the BoP. As a result, this study proposes a simple design process for the BoP. This process consists of five steps, and each step is introduced by viable methodology. The specific steps are as follows.

Table 3.7: Process of "Proposed Methodological Framework and Tools for the BoP"

Preparation	First step for starting design project. Team member, design objects, strategy, community partner, time schedule and place are decided.
Contextualization	Team sympathizes with people and gets insight to generate solution using research methodologies. Imagination and generative insights are created for ideas in early stage. And then evaluate methodologies and ideas to find people respond.
Concept development	Team draws ideas and selects prospective idea through detail design concept. At this step, products and service opportunities are defined by selected data and evaluate new solution by testing like prototyping.
implementation	Viable and feasible solution is carries out. Full business model is generated at this step.
Managing	Evaluate technological and biological cycle within process cycle

3.3 Findings

3.3.1 Feature of Researchers

Literature on the process of the BoP or inclusive business is available from various researchers in design, business, and engineering areas that have participated in and all of them interpret participation in terms of convergence among disciplinary. Therefore, future research is most likely to show the convergence of academics related to international development. To achieve a combined view of the literature and to analyze integrated results, cooperation between disciplines must be achieved.

Table 3.8: Researchers' academic background and affiliation

	Name	Academic background(major)	Affiliation
1	Michhasi Toshio	Industrial design	Tsukuba University
2	Nirmal Sethia	Management & Human Resources	California State Polytechnic University
3	Prabhu Kaudachar	Engineering	IDE, TU delft
4	Kim jeong tae	Social Entrepreneurship	MYSC
5	Jiang Jiehui,	biomedical engineering PhD Candidate of Design Engineering	IDE, TU delft
	Prabhu Kandachar	Engineering	IDE, TU delft
6	Jiang Jiehui,	biomedical engineering PhD Candidate of Design Engineering	IDE, TU delft
	Prabhu Kandachar	Engineering	IDE, TU delft
7	C.K prahalad	Business administration	
8	Jan Carel Diehl	Industrial Design Engineering	IDE, TU delft
9	Leonardo gomex Castillo	Sustainable product design.	IDE, TU delft
	J.C Brezet	Energy innovation	IDE, TU delft
	J.C Diehl	Industrial Design Engineering	IDE, TU delft

3.3.2 Limitations

For the cross comparison of nine studies in this paper, they were divided two parts based on level, process, and principle. The basis for dividing these two groups was 1) Elements for process have to follow a nominal order 2) Elements for process has Specific methodologies and expected results which are clarified at specific levels. 3) The others are principle. To focus on consistent needs in a specific phase, this study adopts references 1, 4, 6, 7, and 9 as a framework for processing and extracting elements from all other literature, including references 2, 3, 5, and 8.

Table 3.9: Limitations; Group of Process and Principles

Process	Principle
1. Appropriate design process 4. model for developing market oriented appropriate technology 6. Roadmap research on process in design for base of the pyramid 7. The process for developing business specification 9. Design Considerations for the BoP projects	2. responsible design for responsible business 3. design process model for The BoP 5. Design approach for china rural healthcare 8. Integral product development for the The BoP

3.3.3 Process Structures

To compare existing product development process with suggested process, two structures can be found in the literature. There are also two main premises for analyzing the structure of a process. 1). Each process does not have fragment steps 2). It requires effort to view the entire procedure as a system.

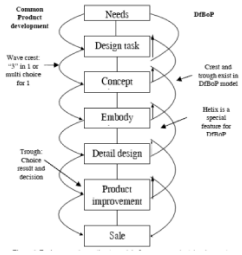
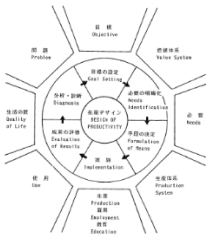
Helix shape

Roadmap research on the design process for BoP compares the process for BoP and the existing product development process. The distinct process for the BoP does not follow a linear order, but returns to the prior stage when problems occur. This helix-shaped process continues until completing the “sales” of products and services. It is easy to solve problems within limited resources in the local area. This feature is often present in other cases (Jeihui, 2009).

Circular shape

In the research of a design approach for China’s rural healthcare (Jiehel, 2008,) there are three levels of research. The result of research at one level affects your witness and influence at another school. Thus, the plan may require continuous modification and opportunities. The effects of seeing social-management on design opportunities and these opportunities can also drive employees to the product implementation level. Recall the results and process mutual interaction to build other project or start point. These model seem like circular shape

Table 3.10: Two types of Structure

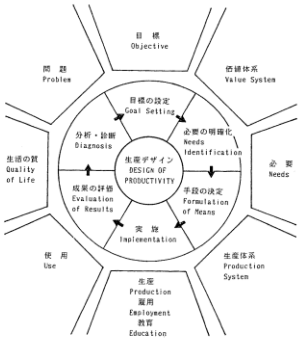
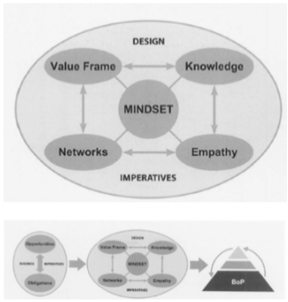
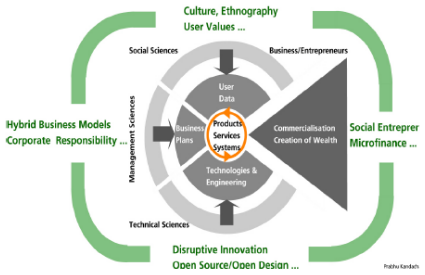
Helix	Circular pattern
	
	
	

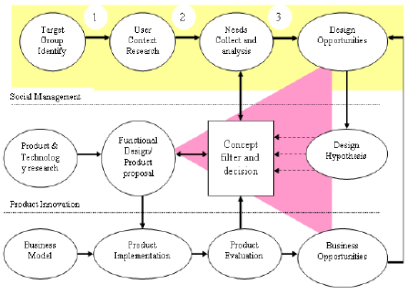
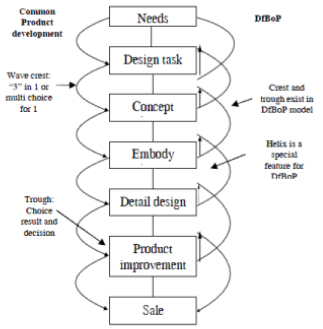
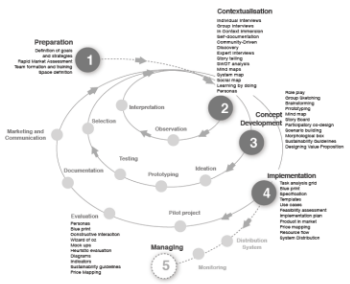
3.3.4 Principles

During the research process, the nine resulting studies can be divided two groups as follows.

In research, design responsibility consists of three phase which are 1) business imperative 2) design imperative 3) apply to the BoP to explain the process. However, the noticeable point of this research is targeted at designers' mindsets, such as value frame, knowledge networks, and empathy. These four mindsets interpret things as an attitude, with the potential for design participation. The design process model for the BoP consideration is also very simple: Four main approaches allow the convergence of socio-culture, design, engineering, and business perspectives. These approaches also help explain cooperation. However, consider the integral product development aspect of the BoP: The key point of this research is to introduce multi-disciplinary approaches for the 3Ps for sustainability, user context observation, new technologies, and innovation through various approaches. Health care research in China introduces successful cases, design approach need business and design perspective to cooperate and understand decision making.

Table 3.11: Summary of 9 Literature Studies

	Title	diagram	Process/ principles	Key points
1	Appropriate design process cycle and consideration		Process	Concpet of appropriate design Circular pattern
2	Responsible design for responsible business		Principle	Opportunity and cooperation bettwen businss and design
3	Design process model for The BoP		Principle	Multi disciplinary perspective within design, social sicence, busines and technology
4	Model for developing market oriented appropriate technology		Process	Multi disciplinary perspective Design/technology/entrepreneur ’s Thinking

5	Design approach for china rural healthcare		Principle	Design apoorach between business and specific product design
6	Roadmap research on process in design for base of the pyramid		Process	Result of comparing Process between common product design process and BoP design process
7	The process for developing business specification		Process	Process for innovation from business perspective
8	Integral product development for the The BoP		Principle	Integrated framework for The BoP Multi diciplinary perspective
9	Design Considerations for The BoP projects		Process	Understanding process through Design methodology

3.4 1st Integrated inclusive business process as Trial

This study includes three stages (Fereday, 2006)

Stage 1 Select the elements for preliminary qualitative analysis based on previous studies. All elements from the literature are gathered directly from previous studies and defined as in sources without changing terminology.

Stage 2 Categorize elements based on their meaning and two bases. The elements 'derived from literature' are the result of categorizing based on two bases and a cross comparison within each study. In this study, 86 elements are analyzed and numbered by their unique meanings. There are two bases for selecting elements. 1) Process components are easy to recognize in this process. 2) Enough appearance frequency to apply for consisting process.

Stage 3 Map and identify elements. Mapping and identifying the results of the second stage show that there are 11 steps with minor terminology changes for organizing. These steps are arranged based on four common phases. The proposed process steps are then used to define its meaning and specific activities.

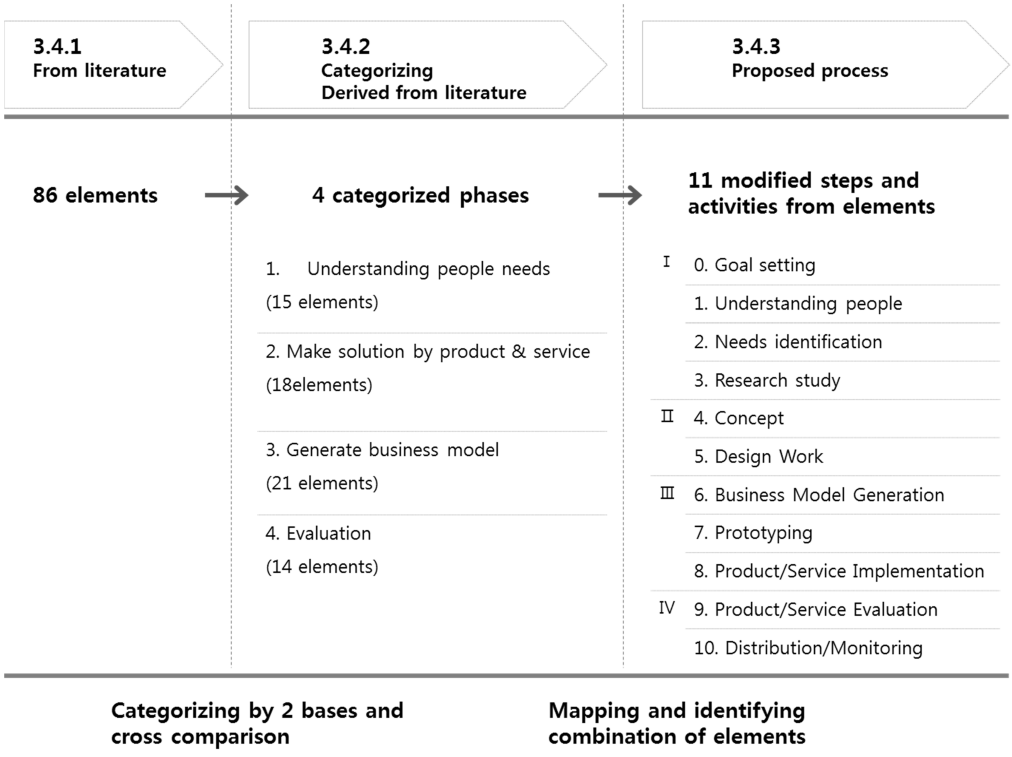


Figure 3.10: Qualitative analysis for the integrated process

ID(Indust rial design) B(Business) DE(Design engineering) PD(Product design)

Table 3.12: Elements from literature

		BG	Author	Y						
1	**Appropriate design process model**	ID	Michhasi, Toshio	86	**Goal setting** Objective	**Needs identification** Value system Needs	**Formulation of means** Production system	**Implementation** Production Employment education Use	**Evaluation of results** Quality of life	**Diagnosis** problems
2	**Responsible design for responsible business**	B	Nirmal, Sethia	05	**Business Imperative**	**Design imperative**		**Apply to The BoP**		
					Opportunities Obligations	Empathy Value frame	Knowledge Network			
3	**Design process model for The BoP**	DE	Prabhu Kaudachar	08	**Product Service System**					
					User innovation(user data)		**Technology innovation (technology & engineering**	**Business innovation (business plan)**		
					Culture Ethnography	User values	Disruptive innovation Open source/open design	-Hybrid business models -Corporate responsibility / -Social entrepreneurs -microfinance		
4	**Model for developing market oriented appropriated technology**	B	Kim, Jung Tae	12	**Desirability**		Feasibility	Viability		
					Observing pattern Empowering people	Identifying needs	Studying past cases Expert interview Technological review	Adopting business models Setting inclusive business Pilot testing prototypes	Iterative interactive prototype	
5	**Design approach for china rural healthcare**	DE	1 Jiang Jiehui, 2 Prabhu Kandachar	08	Target group identify User context research	Needs collect and analysis Design opportunity Design hypothesis-concept filter and decision	Product & technology research Functional design/product proposal	Business model Product implementation	Product evaluation	Business opportunity
6	**Roadmap research on process in design for base of the pyramid**	DE	1 Jiang Jiehui 2 Prabhu kandachar	09		Needs	Design task Concept Embody Detail design		Product Improvement	Sale
7	**The process for developing business specification**	B	C.K Prahalad	12	Immersion in customer life and work style	Consumer insights	Developing broad spec	**The innovation Sand box** Specialization/Pricing/ Capital intensity/ value and organization/volume customer acquisition/ workflow/talent leverage	-Building the core delivery system -Creating the ecosystem for continuous innovation	
8	**Integral product development for the The BoP**	DE	J. C Diehl	12	User context		New technologies and innovation Sustainability (3P)	Business development		
9	**Design**	DE	1Leonardo	1	**Preparation**	**Contextualization**	**Concept development**	**Implementation**	Distribution	**Managing**

	Considerations for The BoP projects	PD	Gomex Castillo 2J.C Diehl 3J.C Brezet	2		Observation Interpretation	Ideation Prototyping Testing Selection	Pilot project Evaluation Documentation Marketing and communication	system Monitoring	

3.4.1 Elements from literature (86 elements)

3.4.2 Categorizing Elements derived from Literature

This step finds process elements through an iterative cross comparison and categorization. By implementing qualitative methodologies, four categories are found in the analysis. These categories represent the trial version of the conceptual phase in the integrated inclusive business process.

Table 3.13: The most mentioned elements in the process for the BoP and Inclusive Business

4 Categorized phases	Literature	
Understanding people needs	Appropriate design process(86) model for developing market oriented appropriate technology(12) Design approach for china rural healthcare(08)	responsible design for responsible business(05) design process model for The BoP(12) Integral product development for the The BoP(12) Design Considerations for The BoP projects(08) The process for developing business specification(09)
Make solution by product & service	Appropriate design process(86) model for developing market oriented appropriate technology(12) Design approach for china rural healthcare(08)	responsible design for responsible business(05) design process model for The BoP(12) Integral product development for the The BoP(12) Design Considerations for The BoP projects(08) The process for developing business specification(09)
Generate business model	model for developing market oriented appropriate technology(12) Design approach for china rural healthcare(08)	responsible design for responsible business(05) design process model for The BoP(12) Integral product development for the The BoP(12) The process for developing business specification(09)
Evaluation	Appropriate design process(86) Design Considerations for The BoP projects(08)	Integral product development for the The BoP(12) The process for developing business specification(09)

Understanding people needs

Unlike existing product design processes, Prabhu emphasized the importance of people's needs. These needs include distinguishing role and start point of design. According to Prahalad, the needs of people are hard to explain in simple terms. He even referred to the 'BoP' as the representative of four thousand people who are living on less two dollars for a day. Of course, the BoP cannot possibly speak the various cultures, language, ethnicity, capability, and needs for each group (Prahalad, 2012).

In designing an approach to China's rural healthcare problem, (Jiehel, 2008) also identified the needs as a noticeable part. This is partly why 'needs-design concept' is superior to just 'healthcare for China.' In addition, feedback based on analysis needs can help develop design concepts and be useful in verifying the needs of users.

Therefore, needs identification can be used to understand how and why their culture and situation is also important in the ToP market. However, the reason that many researchers emphasize

the importance of user research is that most designers stay in the studio or at school and there is currently a limitation to finding real needs and interaction of the BoP (Rodrigues, Thompson et al., 2007). Thus, in this stage, a useful methodology is also suggested together with cultural ethnography and a participatory design for designers who are not used to the BoP situations. This stage is the most obvious than others in terms of using common terminology. It composed by four contents that Preparation, Find User value, User-centered research, Needs identification

Table 3.14: First category of elements

a. Preparation	**b. Find user value**	**c. User-centered research**	**d. Needs identification**
- Goal setting	- Value system identification	- Cultural ethnography	- Needs identification
- Preparing	- User value investigate	- Human centered, - empathy based observation - Pattern	- Needs identification
		- User context research	- Needs finding
- Design opportunities		- Customer's life and context observation	- Needs finding - needs interpretation
- Target group setting		- User context research - Cultural ethnography	

Make Solution: Product-service Embodiment

After understanding people's needs, a solution can be made by embodying products and services. This solution must meet the needs of the user study. However, the objects and fragmentation degree can make a large difference, depending on the researchers' background. This means that making solution part do not make consent yet and it solution widely extend by academic background.

For example, Delft has designed background solutions to the problems mentioned under 'product design.' Prahalad, who is from the business domain, insists on decision making and selecting a solution through the innovation sandbox. However, an integrated solution under one big direction can serve stronger than prior situations. With this integrated perspective, the four common parts have found their meaning.

It composed by four contents follow as Technological review: innovation and possibility, Insight extraction & conceptualization, Product-service design &prototype& test, Making decision & selection

Table 3.15: Second category of elements

a. Technological review_ innovation and possibility	b. Insight extraction/conceptual ization	c. Product-service design /prototype/ test	d. Making decision, selection
- Technology review - Expert interview	- Needs implement	- Open source /open design	- Decision making
- Design imperative	- Concept	- Product design	- Innovation sandbox
- Disruptive innovation	- Concept filtering	- Product development	- Selection
- Technology - Functional design	- Insight extraction	- Evaluate sustainability	
- Technology innovation	- Concept investigate	- Ideation - Prototyping - Field Testing	

Business model generation

To account for the differences between levels, all researchers have agreed to generate a business model, which is a key part over all process. Because, generating business model determined that participation from the poor, value for the poor, innovation and creating opportunities.

Table 3.16: Third category of elements

Business model generation		
Manufacturing system find	Iterative prototype	Manufacturing /employment
Setting business system	Prototype	Micro finance
Hybrid-business model	Pilot test	Expand to Business opportunity
Applying business model	Product implementation	System delivering
Setting inclusive business	Pilot project	Monitoring
Applying business model		
Core-delivery system setting		
Ecosystem for sustainable innovation		
Business development		

Evaluation and deliver

Some researchers have concluded that evaluation is the matter and more important than prior ‘design evaluation’ concepts, which offered only one direction to explain. Prahalad also emphasizes 4As for innovative to identified needs. In addition, Jiehui and Kandachar (2008) interpret the 4As as an evaluation list. The 4A terms are Availability, Affordability, Awareness, and Acceptability.

These 4As are directly relevant to innovation. This innovation can get help for deriving from unique insight within user life. The innovation is not restrict only products, develops an eco-system and this eco system possible to drive business system. The market for the BoP has not developed a more effective method of operation, but instead created a new market. To open this brand new market, new evaluation system is also needed to show success of failure (Prahalad, 2012).

Table 3.17: 4As, Prahalad (2012)

Awareness	Creating an awareness of the product and service such that the BOP consumers and producers know what is available and on offer, and how to use it
Accessibility	Enabling access such that even consumers in remote locations are able to get access to the products/service
Affordability	Ensuring that the product or service is affordable
Availability	Focusing on availability. To build trust and a loyal base at the BOP, we have to ensure an uninterrupted supply of products and services

Table 3.18: Fourth category of elements

Evaluation	Distribution
Evaluation of results	Sale
Evaluate Quality of life	Building the core delivery system
Diagnosis problems	Creating the ecosystem for continuous innovation
Viability	Distribution System
Iterative interactive prototype	Monitoring
Product evaluation	Managing

3.4.3 Proposed process

By iteratively mapping and identifying the combination of elements, the following 11 modified steps can be identified. The selection procedure of set of literatures is slightly distinguished to reflect the characteristics and problems. However, the common process includes the following four categorized phases: 1) Research 2) Solution 3) Business Model 4) Evaluation

In Figureure: 11 below, the 1st integrated process is analyzed to specific 11 steps and presented as diagram, also same color means same categorized phase. In addition, each main phase is represented as a circle and a circular cycle. This approach is based on literature in which a small circle represents activities and detail work which are practiced at the steps. There is 1st integrated process composed by steps. These 11 steps match to each four phase as executed framework. Finally, the whole process is analyzed based on the meaning of the elements from 0 to 10 steps

Step 0 Goal setting This is the starting point. Human resources and budget are decided and final

results set up

Step 1 Understanding people Through an on-site survey, people revealed the context they derived from understanding and observing environment. This step also includes the positive empowerment of local people.

Step 2 Needs Identification Use various methodologies to identify the needs of stakeholders around the business model and the local people. Collect clues to explain their needs and understand the context.

Step 3 Feasibility Review Gather information, clues, and needs from the locals, and review the possibility of potential for a business model. Check viability through past case review and expert interviews. Also, conduct a technology review to embody products and services.

Step 4 Concept Key direction analyzed to solve the problems of local settings based on needs. After ideation and concept filter, the refined concept is decided.

Step 5 Design Work Detailed design proceeds to period to connect business model at the same time.

Step 6 Business Model Generation Develop a business model to implement products and services at the local market.

Step 7 Prototyping Testing the marketability and usefulness of products and services.

Step 8 Product & Service Implementation Complete the design and business model to fit the local market and reach an agreement.

Step 9 Product & Service Evaluation After implementation, evaluate the effectiveness of the proposed business in the local society. Other problems can be diagnosed at this time.

Step 10 Distribution & Monitoring After the final evaluation, the solutions were delivered to the actual market. Monitoring was used to check whether this situation is sustainable.

Table 3.19: Steps and Activity of 1st process

	Steps	Activity
0	Goal setting	
1	Understanding people	- Target group identify - Empowering people - Observing patterns - User context research
2	Needs Identification	- Needs collect - Needs analysis - Interpretation
3	Feasibility Review	- Studying past case - Expert interview - Product technology research - Technological review
4	Concept	- Ideation - Design task - Concept filter - Decision
5	Design work	- Formulation of means - Fundamental design - Embody - Detail design
6	Business Model generation	- Adopting Business Model - Setting Inclusive Business
7	Prototyping	- Pilot testing
8	Product Implementation	-
9	Product Evaluation	- Diagnosis - Documentation
10	Distribution/monitoring	

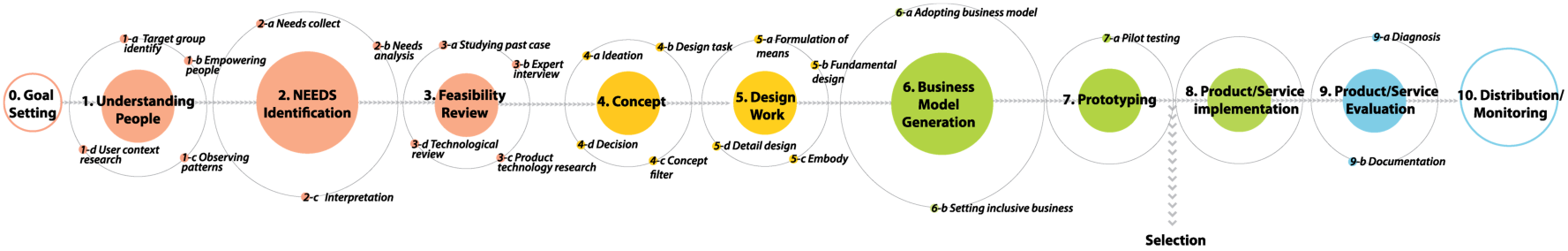


Figure 3.11: 1st integrated inclusive business process model as trial

4 EXPERT INTERVIEW

4.1 Select Interviewees

This section investigates the first integrated process in terms of its utilization in the actual project. To do so, twelve expert opinions were collected and analyzed to identify each phase and to find the designers' potential participation. To select interviewees as experts, basis for selection was as follows

- Experts have experience in international development projects
- Experts work with people from various academic fields, such as design, marketing, etc.

As result of these selection criteria, there are twelve interviewees were chosen.

Table 4.1: Information of interviewees

Interviewee	Affiliation	Position	Background
A	MYSC, Social enterprise	Director	International development/social entrepreneurship
B	DOMC, Social enterprise	Representative	Service design
C	HGU, Green-Appropriate technology center	Researcher	International development
D	HGU, UNESCO division	Researcher	International development
E	ASEM SMEs Eco-Innovation Center	Researcher	International development /social entrepreneurship
F	HGU, international development graduate schnool Master candidate	Researcher/Graduate Student	International development /graphic design
G	HGU, Green-Appropriate technology center	Researcher	International development /international law
H	Malawi, Luke hospital	Program developer	IT
I	HGU, GEM India team	Researcher	International development /management
J	UNESCO-GET program, design volunteer	Student	Graphic design/ entrepreneurship
K	Malawi, Project intern	Student	Architecture/ entrepreneurship
L	UNESCO-GET program, design volunteer	Student	Product design/ entrepreneurship

Towards the end of the interview, questions could be asked about the content. All processes were recorded using a recorder and finished to ask future research after interview.

- Introduce research background and objects
- Explain first integrated inclusive business model

The interviews were constructed to be semi-structured, and it took 60 minutes to interview each participant. The interview questionnaire was semi-structured with sets of question. The interviewees followed two main steps. The questionnaire consisted of four frameworks, and additional questions were asked within the framework. Especially, Questions #2 consists of detailed questions, and all interviewees were asked this part. According to participant's background and experience, additional question were asked to clarify their knowledge and situation.

Table 4.2: Four questionnaire framework

1) What is your role and work in project
2) What differences are in suggested process comparing your project
2-1) what similarity and difference between suggested process and yours
2-2) Is there a need to re-order within procedure
2-3) Is there a missing procedure out of suggestion
2-4) Is there a need to re-group within procedure
3) How designer participate project in terms of role/process/degree
4) What consideration does design have to participate in inclusive business/international development cooperation

Participants explained their experience and described the process, reflecting on their project. At this point, key issues were identified to derive a specific procedure. This method and order are appropriate for drawing the answers about complex topics during interview (Mills et al., 2006).

During the interview, the first integrated inclusive business model served as a hard copy version for the remaining process of the project. When interviewees were asked to answer Questionnaire 2, they could modify the process directly above using hard copy and sketching or writing. The record time was almost 50~60 minutes per participant, and 661 minutes of data were recorded overall (from 12 people). Data collection and analysis proceeded concurrently until theoretical saturation was reached (Hallberg, 2006)

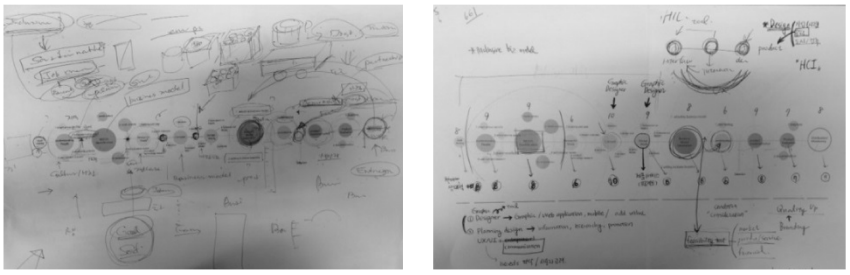


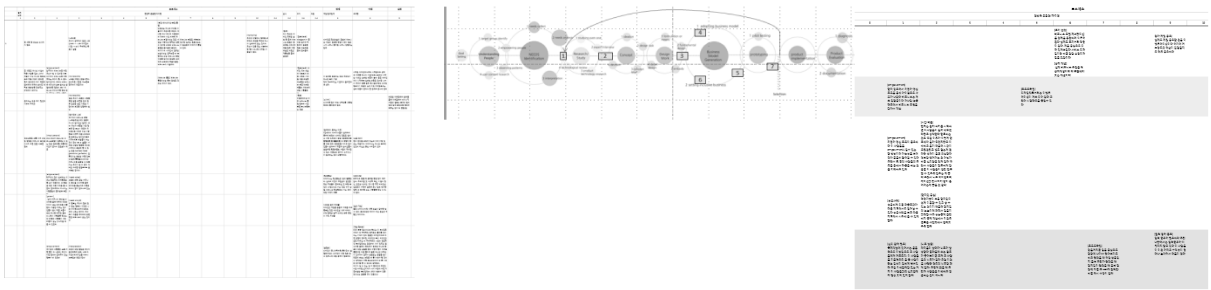
Figure 4.1: Modified process by interviewees

4.2 Method

Traditional qualitative research methods were used to analyze data. This study is based on the means of grounded theory. Grounded theory can be used to analyze concepts that are deducted by data spontaneously rather than found by researchers' hypothesis or prior recognitions. To analyzed interview, there are preceding cases (Feast, 2012). In addition, this study categorizes all insights into code-category concepts following the constant comparative method. Therefore, the similarity and differences that drive variation (Hallberg, 2006) are listed as follows:

- **Code:** After wholly understanding the interview script, select codes based on their significant meaning.
- **Category:** Arrange answers to match with codes
- **Theme:** Perform secondary categorization of commonly mentioned answers to form a group. Then analyze the theme of each group to determine a core answer.

The answers to these questions fall into three categories, and each category can be summarized into six themes. Two themes are relevant to designers' current participation; others are direction for designers' potential roles. All processes were developed through iterative grouping and categorizing answers in context.



Code Category Theme

Figure 4.2: Process of code-category-Theme analysis

5 RESULTS

5.1 Common themes on Process

Overall understanding and comparing interview is mainly discussed based on 1st integrated process. The objects are qualitatively verified with experience of targeting expert. As results, common concept is analyzed to answer interview questions. Also, modification comparing 1st process seeks to apply for suggesting final process.

5.1.1 Difference between 'Start' and 'Setting goals'

Most of interviewees answered that step 0(zero) means only level of start-up. It is totally different from 'setting goal'. The team would set goal after needs identification. The reason is those whole flows which lead the project depends on researcher's perspectives and observation. Therefore, setting goal is very crucial stage and it have to examine precisely relevant the needs. [G] and [I] insist that setting goals work as starting point if problems occurred and importance. Because, local area is completely different and there are more time, place, economic restraints than the ToP. So, setting goals is really helpful to modify problems rapidly. The following quotes explain the differences

[E] Goal is in prior is just start. Specific goal setting can be work after needs identification. At this level, general activity such as work team construction, rough outline.

[A]step 0 means actually start. Specific goal setting have to form after needs identification and concept. Actual goal setting is applied as hypothesis to project. However, step 0 is direction in order to push forward by acting according to hypothesis.

[F]it cannot be possible that setting goal without understanding people. If we don't' understand people, we won't know how to set a goal. It cannot be a design goal.

5.1.2 Empowerment

All interviewees indicated that empowerment of local people is key list for creating inclusive. [F] said that 'if local people do not stand up to participate in development and cooperation, sustainability of help is near zero'. To overcome this limitation, there are two suggestions.

First, education takes significant role. [C] who lived in India for 1 year and participated in various project and helped to developed business items argue.

'The core solution is marking local people recognize the needs for living. Some people were educated by team and they showed vision of business. It create extend to neighborhood through few of people.'

Second, trustful relation is matter from first to end. [A, C, E, G] expert totally agree this problem. Typically, recognition of foreigner is like 'money giver' in local area. So it is really hard to

get out of relationship based on interest rather than partner. Most of time is used for build trust. There are voice of [A] and [F]

[A]If you ignore their voice or their culture, they will never cooperate with you. Then, project will be failure'

[F]from user research to needs identification, role of local people is very strongly significant. those people know social, capital network and market information more than 100 times than us. So, they have case for starting business. And then we can remedy short comings to setting business with information that they bring. We can't know which infrastructure, relation, flat from and community is best way to set business. In respect do this, there is no perfect marketing strategy in developed

5.1.3 Concepts of business model generation

This opinion specially comes from business background expert. They clarity that business model generation and business model (plan) is definitely different is practice. Also, the leader level of expert said that 'business model generation or generation process is possible; however, to continue to viable business is hart to be connect.' The reason of this situation supported by following four reasons

Pressure on period and output

One-sided aids and short term business is worked on nowadays. [A] Insist that inclusive business which takes more time and resources look away for making outcome. Even, inclusive business is sustainable way to concrete solution. [B, D, G] also mention that cooperation degree of team are different at their contribution. So, team organization effect to success of project. So, there are restraints to overcome.

Fund in prior step

In reality, secure fund is really important to make everything from goal setting to business model. If prototyping is success, fund is needed. Especially, [E] said that fund is matter in inclusive business which target for unexpected area

[B] Fundraising structure is absolute to realize business model. If fundraising is hard to facilitate, it will hard to move next phase

[E]Generally, the most important part is fundraising in business model. Furthermore, one of key is secure fund in Inclusive business.

5.1.4 Importance of Field Test and Iteration

Most of interviewee emphasis when period of design development, the iterative phase that prototyping and field test needs to continue to achieve its certain objects. As result of this iterative cycle, business model get harder and survive in unexpected local area. It is not meaningful to go to

next phase without pass this phase

[E] Virtual test makes success of project. [E] Design means project itself. Prototyping and field test makes detail.

[E] Demonstration in market is crucial. It should be checked for effect before optimization. After manufacturing, there is lack of opportunity to modify changes in local. Also, there are various products which people have used in market already. These issues also have to be confirmed.

[F] From a practical perspective, process is not sequence, but complex cycle. From research to business model plus product implementation phase, other problems come up with reality either new business model ideas. Always it is. If we understand local people really well, it will not expected situation even they don't know what they can't.

5.1.5 Evaluation

All of interviewee emphasis importance of evaluation and it has to continue iterative cycle. Especially [B, D, F, G] said that evaluation is the most important phase to reduce failure and progress all phase effectively. [A] insist that evaluation is not only for measure simple ROI, but also consider the quality of life and empowerment degree of local people. So, quantitative and qualitative evaluation also consider for inclusive business context

[A] For setting business model, the possibility has to diagnosis before. Evaluation is continuously generated over asking and hearing local people to modify business model. In later stage, evaluation is more than import.

[D] I completely agree with the weight of evaluations. The most important part in project is evaluation and consideration. If it fails, we should go to first step. Don't be afraid of going first. Trials and errors are always existed.

[G] Partnership make easy to approach to local people. Also, partnership can lower barriers. Before manufacturing, evaluation should be conducted. And then, production yield is decided.

5.2 Understanding Current Design participation

Investigate recent participation in inclusive business and international development process and identify difference of opinion between design and non-design. In reality, there are no designers on process for international development process. Recently, designer start to work in branding and communication part as graphic designers also there are needs to find designers.

This situation analyzed three reasons.

5.2.1 Nonexistent of experience

During FGI with designers said that the concept already decided and design work also progress without designers. In this situation, there is difference opinion between design backgrounds. The reason of those analyzed asking specific questionnaire and three answers were resulted in common.

[A] Designers' role is very important. But these senses of identity as designers can failure project cause of self-consciousness. When we visited local area, firstly we failed cause of delivering only technology. So, we concerned how local people make use technology to solve their problems. However, one thing I realize best contribution of team that make local people to talk about their life as much as they can. So, every team member refrains from talking too much at least 2 weeks. Also they are sensitive of ignorance

[D] Designers need to study professional knowledge for understanding what international development like other discipline is. With a heart for helping the poor is not enough. Professional filed knowledge need to be required to designers. Good design outcome is nothing, if designers don't know their requirement. Our goal is not a delivering outcome but the poor use and make outcome to their own. So, my own knowledge is not working without knowing international development cooperation and the countries.

5.2.2 Reasons of difficulty in participation

Perception gap about designer's role

Existing IDC worker's first impression of design is aesthetic works. In order to sallow recognition of design, designers cannot participate in IDC. Even developed society, there are tendency that design is additional work. Design is excluded in IDC where dealing with humanity and life. Recently, design can participated in promotion or marketing part after setting inclusive business. Still, this job takes limited phase in terms of whole development process. If design can work for life and sustainability like business, it can extend its potential widely [B, C, E, I]

Failure concept-centered traditional design

In reality, there are project conducted by designers. However, most of them are lack of sustainability. The reason is that they suggest only concept without business solution to realize in a world Accordance with these problems, there are two opinions for this.

First, designers are excluded in research, they don't understand big picture of IDC like inclusive business. So, they cannot throw away concept-centered design.

Second, design doesn't consider technology and too focused concept. Because, most of design has

limitation for setting business that lack of understanding of feasibility like marketability and practicality.

5.2.3 Negative Attitude to participate

Recently, international development cooperation needs designers at the part of branding and communication. [J, K, I] also, designers want to participate in graphic and promotion part after prior project. And designer saw designers who are charging of promotion visited in local area. However, there are voices to participate in IDC in terms of dealing with core value. Core means the phase including understanding people and drawing concept. [A, C, D, E, F, G, H]

At this point, there are differences between design and non-design. First of all, non-design people find cause forms designers' passive attitude. In other word, part supporting developing countries has low level of awareness design participation, even designers have not try to go to core field. Some designers required only material and brief for their design work. On the other hand, designers mention that leader in IDC have low understanding design' performance and they are focused achievement without value. Existing IDC and business profession has recognition that design can be work in domestic at least. And this concept is absolute in the field. However, designers insist that they can create better solution to participate in actual place. [B, J, K, L] Even they understand effectiveness from limited fund, they have experience that design totally different outcome cause of non-experience. [K, L]

[A] Designers have too focused on only concept-centered outcome. Also, they seem to be felt fear when the concept is not working in real world. Designers have the advantage for thinking. Even though, the differences are not from profession but interest.

[F] Designers also try to communication with language which is commonly used in international development fields

[I] In developed countries, role of design tend to consider as additional work. For example, the core team member concentrated on flavoring coffee taste higher but designer take a role to sell more coffee. It is the reason of problem in international development field. Actually, the people should be gathered who are really interested in flavor. Designers should go into essence of project getting out of styling

5.3 Potential participation of design in the BoP and Inclusive Business process

For designers' participation in crucial role for future inclusive business project, consideration and potential of design are asked to expert. The answers conclude three possibilities.

5.3.1 Understanding People/Needs from in-depth research

10 experts answer that designer can user-oriented research to find needs and understand local context. For examples, [D] said that when the team design drum for burning sources. But they did not consider grip that people sometimes move drum to other place. At that time, the team members were business and engineering background. They were not used to have user-oriented research and perspective.

Likewise, most of expert mentions that non-designers are hard to design based on reflecting user needs. Because, designers based on design thinking are good at suggesting through realization and physical tool. So, user-oriented research which domain get core in IDC are specialized than others. Therefore, this qualitative approach, designers can deliver business model to fit local area designing products and services.

[D] Designer have to participated in first step if they identify needs

[F]If designers participate to understanding people, they can exact near the real needs

[G] 'Let's doing Appropriate technology' from the teeth forward is not enough. I really want to work with designers and engineers. This is start point to make a voice 'we need designers'. And I agonize about design's participation.

5.3.2 Mediate among Stakeholders by understanding context

If designers participate in prior step so they know whole context with perspective from various angles, designer will be leader who mediate stakeholders and draw overall project. [G] argue that open mind which is familiar with local people and great insight is absolute to participate in local area. Especially, designers mentions that they can work in mediators between stakeholders. It means that designers know their potential but hard to realize in project with existing stakeholders.

[B] Designer can take an overall view of project...Because, project is led by users' needs which designers are specialized found

[B] I think this is role of designers to understand stakeholder who entangled in projects.

5.3.3 Develop qualitative evaluation methods

Recently, there are many tools to evaluate and investigate local area by quantitative methodology. However, many experts notice that creating sustainability dealing with life and

improvement according to value need to be evaluated by qualitative methodology. Especially, inclusive business takes those kinds of characteristics. Designers are one of profession to specialized approach to target by qualitative way. According to this character, number of expert suggests that designer can develop qualitative evaluation methods.

[D]Qualitative evaluation is needed. And designers are good at qualitative approach

[G] Designers have intuitive and emotional aspects to make qualitative evaluation possible

[F] Final goal of IDC is recovering of humanity. This need to evaluate by methods relevant value

5.4 Summary

All interviewees agreed on the importance of establishing inclusive business processes and generally concurred with the suggested way of doing this. Most highlighted the importance of initially "Understanding people" as a first phase. However, the results of the expert interviews indicate that the second and third phases of the first integrated inclusive business model must be modified through additions or changes in category, order, or general direction based on experience. Therefore, we explain the major changes that drive the modification of an inclusive business process and then suggest a final integrated form.

5.4.1 Major process changes

The "start" and "goal setting" concepts have different meanings

Goal setting is an important step of an inclusive business process. Most interviewees stated that goal setting was crucial, as it establishes the specific objective of a business concerning such matters as the kind of product it will sell. Thus, goal setting cannot occur before needs identification. However, the interviewees mentioned that a "start" just refers to a point of departure: a start is a kind of simple design, whereas goal setting is more detailed.

Field test and prototyping are distinct procedures

Because key terms are drawn from various literatures, the terms "field test" and "prototyping" are used interchangeably. However, these concepts have distinct meanings. Prototyping refers to the embodiment of products and services; it is the creation of an exemplar by which products and services can be evaluated. A field test using the prototype is then conducted in a local market to test the product's marketability and consumer response.

Business model generation (BMG) occurs through an iterative process comprising the concept, the design work, and prototyping

Most of the literature describes business model generation as a three-step process comprising the concept, the design work, and the business. The interviews suggested a more holistic view in which business model generation is a higher concept comprising the concept, the design work, and prototyping. Most interviewees stated that business model generation is a central process in project objective formulation (when the project's subsequent phases are planned, for example) and that the iterative process featuring the concept, design works, and prototyping can lead to business model generation.

Business model generation must be distinguished from the business plan

The interview data suggest that business model generation does not imply a readiness for business. Unlike a business plan, business model generation represents the beginning of a business start-up. Most interviewees stated that insufficient fundraising prevents business model generation from producing an inclusive business model. Therefore, the creation of a truly inclusive business process requires that business model generation occur before the business plan is formulated.

The first model must be simple and show its phases clearly

Memorizing 11 steps seems too difficult and impractical.

All the IDC project's procedures occur simultaneously

The interviewees insisted that the project's phases are not linear but circular and that each step can be linked to other business ideas, especially in evaluations.

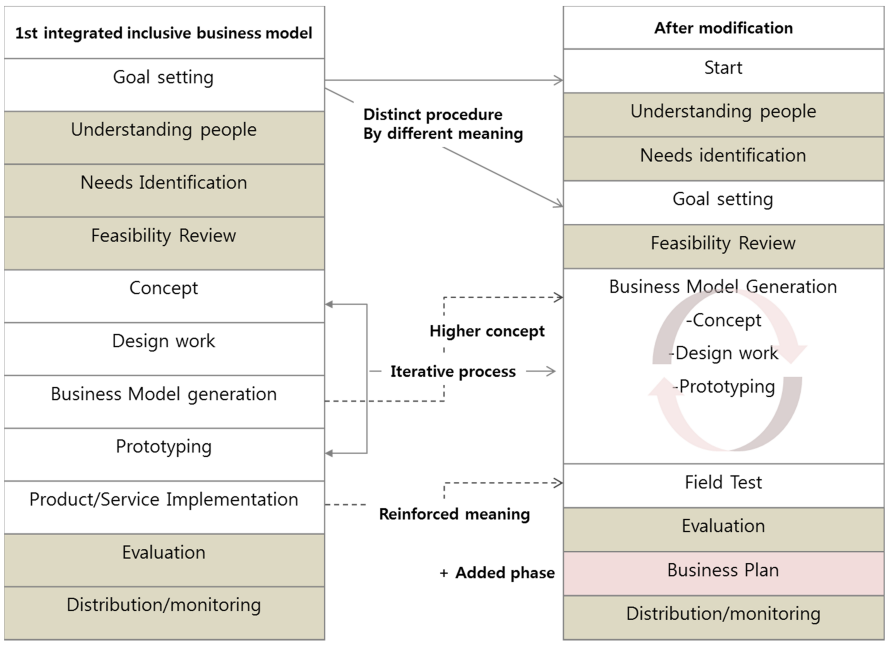


Figure 5.1: Major process changes

5.4.2 Modified Process

The Steps discussed below, flowing from the expert interviews, have modified our definition and represent the steps and activities that require integration into an inclusive business process. This study has found that each step and activities must be communicated to stakeholders in order to enable them to understand and participate in an inclusive and integrated business process

Step 0 Start As a minimum condition, issues such as the business' location, target market, team members, and hours must be established before a project begins.

Step 1 Understanding People On-site surveys reveal how people's opinions derive from their understanding and observation of their environment; they can also empower local people (as in a trial).

Step 2 Needs Identification The needs of stakeholders and local people must be identified and integrated into the business model through multiple methodologies. Data must be collected to explain those needs and their context (as in a trial).

Step 3 Setting Goals After identifying the needs, goals must be set in order to establish the inclusive business' objectives.

Step 4 Feasibility Review Information must be gathered, including data on local needs, with which to re-explore the potential of the business model. The model's viability must be verified through case reviews and expert interviews. A technology review must also be conducted on the business' products and services (as in a trial).

Step 5 Business Model Generation Business model generation is a key step that drives the entire process and occurs before business model development. Concept, design work, and prototyping are its steps.

Step 5-1 Concept The concept provides key direction and analyses; it drives solutions to problems concerning local needs. The concept is refined through the application of an ideation and concept filter (as in a trial).

Step 5-2 Design Work The design is elaborated in more detail according to the initial plan, and a prototype is created through iterative modifications based on feedback.

Step 5-3 Prototyping This process tests the effectiveness, usability, and sustainability of the products or services and modifies them until they attain an appropriate quality level.

Step 6 Field Test/Pilot Test The field test examines products and services in order to modify them. Usability and sustainability can be measured by observing local consumers. The pilot test examines the business model and its delivery of products and services to the market.

Step 7 Evaluation After model implementation, the effectiveness of the proposed business must be

evaluated in terms of its local suitability, and problems must be diagnosed.

Step 8 Business Plan After the evaluation, a business plan must be written to ensure the business' viability, as measured by the expected market potential. Funds must also be allotted to each phase.

Step 9 Distributions/Monitoring After the final evaluation, solutions are delivered to the market. Monitoring is conducted to maintain the model's sustainability (as in a trial).

5.5 The integrated process for inclusive business

Table 5.1: Steps and Specific activities of the integrated inclusive business model

	Steps	Activity
0	Start	
1	Understanding people	Target group identify Empowering people Observing patterns User context research
2	Needs identification	Needs collect Needs analysis Interpretation
3	Goal setting	
4	Feasibility Review	Studying past case Expert interview Product technology research Technological review
5	Business Model Generation	
	Concept	Ideation Design task Concept filter Decision
	Design Work	Formulation of means Fundamental design Embody Detail design
	Prototyping	
6	Field Test	Pilot testing
7	Evaluation	Diagnosis Documentation
8	Business Plan	
9	Distribution/Monitoring	

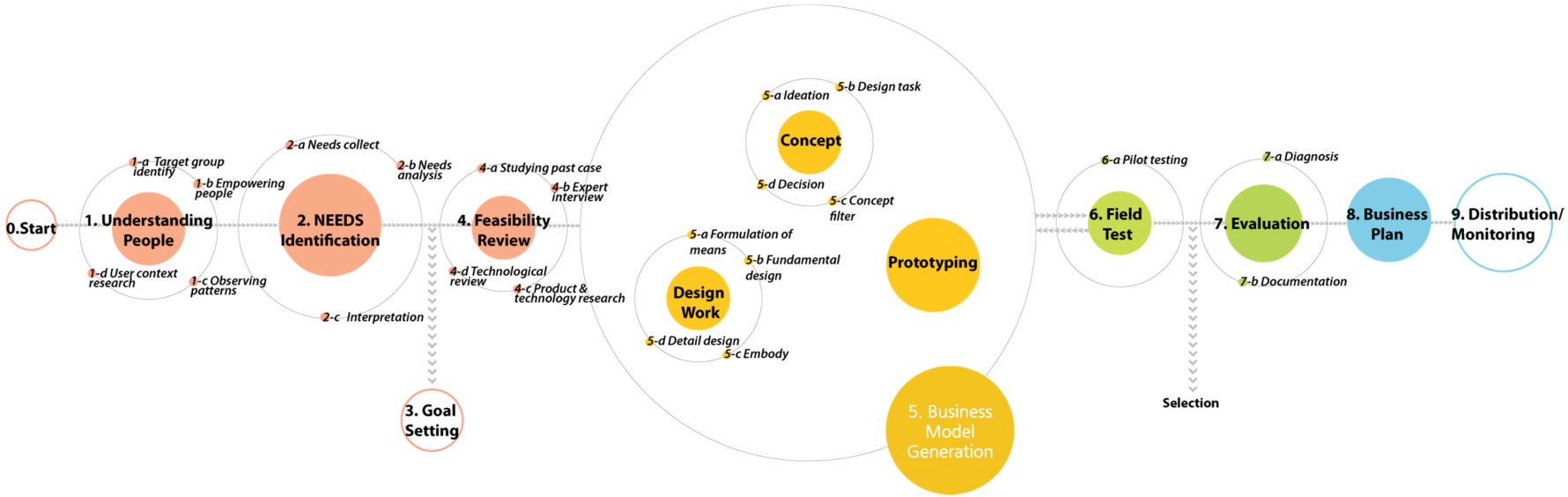


Figure 5.2: The integrated inclusive business process for inclusive business

6 DISCUSSION

6.1 Summary of main finding

The aim of this thesis is to investigate the integrated process for an inclusive business model and to overcome the limitation of recent research. In recent years, a number of papers have focused on the Bottom of the Pyramid (BoP) and conducted empirical research through case studies. Therefore, an academic framework is required to understand the holistic perspective of the emerging design issues in the field of international development cooperation (IDC). To achieve this aim, nine papers on BoP and Inclusive Business are studied to determine the process. Subsequently, expert interviews are conducted to examine and verify the process.

This study is conducted in the course of four steps, resulting in an integrated process.

First, IDC and inclusive business (which is the emerging direction for IDC) are examined from the perspective of an integrated process. Recent design activities and problems are addressed within the inclusive business definition.

Second, process elements and phases are extracted through a literature review. Subsequently, features of researchers, principle, process, and limitations are analyzed to understand process studies from various disciplines. Using qualitative coding, 11 steps and specific activities are derived from the literature review. A 1st integrated process for the BoP and inclusive business is suggested (please refer to the appendix).

Third, IDC experts from various disciplines are questioned. In expert interviews, they verify the viability and potential of the 1st process model. They also describe the present situation of design participations and suggest the potential role of designers in inclusive business.

Finally, common themes from the expert interviews are analyzed in order to modify the 1st process model. The process has four key characteristics: 1) “start” and “goal setting” concepts have different meanings; 2) Business model generation (BMG) occurs through an iterative process comprising the concept, the design work, and prototyping; 3) Field test and prototyping are distinct procedures; 4) BMG is distinguished from the business plan.

As a result, an integrated process for the BoP and inclusive business is suggested

6.2 Limitations

In recent years, some designers have studied and worked on the BoP concept. However, designers' participation in IDC is weak. While understanding of inclusive business has developed through case studies, there is rarely any academic research, which is a first limitation.

Second, the generalization of this derived process is partly limited. Only nine relevant studies could be found and they focus on the execution step of the process; the rest of the process is interpreted on the authority of qualitative research. Therefore, the process needs to be tested for its practical application.

Third, the participation of domestic designers in the field of IDC is lower than in other fields. In addition, all interviewees are Koreans who have worked in underdeveloped countries. Hence, the results of the expert interviews reflect Korean conditions, and inputs from other nationalities and conditions need to be considered.

6.3 Further Research

This thesis considers a multi-disciplinary investigative approach on the nature of IDC, combining various disciplines like business, design, and engineering. Likewise, comparing Growth Inclusive Market (GIM) strategies with the suggested process model seems to highlight phases that require greater empowerment of designers. Hence, the inclusive business process can be re-defined from a design perspective and can encourage greater contribution from designers. This would necessitate further education and training of designers to improve their participation in IDC. The suggested process model also needs to be verified with practical projects and under real conditions. In addition, subsequent studies could analyze successful inclusive business cases, such as GIM, for direction.

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APPENDIX: Expert interview Korean version

Common themes on Process

Difference between 'Start' and 'Setting goals'

[E] 앞 단에 골 세팅(goal setting)은 실제로 start(시작)의 의미가 강하다. 구체적인 골 세팅은 사실 needs identification이 끝난 다음 이뤄져야 한다. 앞 단계의 start는 팀을 구성하고 대략의 목표를 정하는 수준 정도이다. 실제로 니즈가 나와야 프로젝트의 구체적인 달성 목표인 골이 설정된다. 그래서 다서 구체적인 골 세팅이 컨셉 전에 이뤄져야 한다.

[A] 골 세팅은 하나의 가설로 적용된다. 여기서 말해지는 골은 가설을 밀고 나가기 위함이 아닌 하나의 방향성으로 작용한다. 이것이 없다면 팀이 왔다 갔다 하기 때문에 철저하게 해야 되는 부분이다. 이후에 다시 한번 바뀌게 되지만 대략의 방향성을 맞춰주는 direction setting정도라고 볼 수 있다. 실제 골이라는 것은 여기 컨셉에서부터 구체화가 된다. 'understanding people' 이후 community driven research 같이 다양한 시도를 해보면 명확해진다.

[F] 현장에서는 골 세팅을 먼저 할 수 없다 사람들을 이해하지 않으면 정말 어떻게 골(goal)을 설정할지 모르기 때문이다. 또 그런 골을 디자인 골이라고 할 수 없기 때문이다. 사람을 이해하는 부분이 가장 중요하고 선행되어야 하는 부분이다. 그 과정에서 이것들이 복합적으로 일어날 것 같다. (골이 명확히 되지 않는 상황에서)현장에서 느낀 점은 무엇을 위한 니즈지 라는 생각이 많이 들었다

Empowerment

[A] 말라위를 처음 갔을 때는 실패를 했었다. 기술의 축만 가져갔기 때문이다. 그래서 사람들이 어떻게 기술을 쓸 수 있을 까만 고민했다. 왜 그럴까 고민하면서 봤을 때 1단계에서 우리가 할 수 있는 최대의 기여는 몸에 힘을 빼는 것이라는 걸 알게 되었다. 어떻게 하면 그 사람들이 말을 많이 할 수 있게 만드느냐가 중요하다. 2주동안 말을 참아야 한다. 사람들이 예민해지면 말을 하지 않게 된다.

[F] 현지인은 참여자가 아니라 주체자가 되어야 된다. 그래서 스타트업(start-up)을 할 수 없는게 괴로움이다. 현지인 참여를 가장 우선시하지만 실제 주체가 되지 않으면 지속가능성이 없다. 현지 사람들이 먼저 일어나지 않으면 어려운 점이 많다. 이것을 깨보려고 기업가정신 교육 새마을 운동도 하게 된다. 하지만 이것도 역시 관점이 변하지 않으면 일어나게 하기 힘들다. 그래서 개입할 수 있는 부분이 상당히 한계가 있다.

Concepts of business model generation

Fund in prior step

[B] 비즈니스 모델 제너레이션(business model generation)이라는 것도 자체로 들어갈 수도 있을 것이고 중요한 부분이기 때문에 국제개발 협력에 있어서 fundraising structure가 중요하다. 이것이 없으면 뒷단이 넘어가기 힘들다. 이것이 프로세스상 잘 설계되어야지 넘어갈 수 있고 개발을 통해 프로토타이핑이 되고 개발까지 만들 수 있다.

[A] BoP도 일단 비즈니스 모델 제너레이션 수준에서 만족해야 한다. 여기서도 약하면 다음단계로 나아가지 못한다. 비즈니스 모델 제너레이션을 생각하면 어렵다 앞쪽에서 약하면 다음단계로 나갈 수 없다. 비즈니스 모델 제너레이션이 괜찮다고 하면 1차 합격을 한다.

[E] 컨셉도 비즈니스 모델 안에 들어가야 한다. 예를 들어 콜라병을 제작했는데 콜라병을 이동시킬 바스켓이 없을 때가 있다. distribution을 생각하면 컨셉 자체에서부터 비즈니스 모델이 고려되어야 한다. 그냥 제품이 아니라 제품과 연관 있는 모든 것들을 포함해야 한다. 또 현지에서 쓰는 운송방법이 다르므로 비즈니스를 만들기 위해서 먼저 고려하고 필터링(filtering)되야 한다. 디자인이 사람이 쓰기에도 좋지만 비즈니스가 되게 만들려면 필터링이 필요하다.

Importance of Field Test and Iteration

[E]가상으로 한번 시험으로 돌려보는 것이 가장 중요한 것은 성공요인이다. 예를 들어 WHO 돈이 많아서 약을 생산하지만 유통채널이 없어서 나눠 줄 수가 없다. 코가콜라 빈자리에 포장백 디자인에서 다뤄져야 된다는 것은 결국 현장에 available 하냐 이다. 이제는 적정기술이 아니라 적정디자인으로 가야 한다.

[B]일단 디자인 워크하고 비즈니스 모델을 하기전에 프로토 타입은 연속적으로 들어가는 것이 맞다. 디자인워크를 하면서 프로토타입을 하면서 수정이 많이 일어난다. 디자인 워킹을 하면서 이게 맞는지 아닌지 프로토타입으로 수정한다. 디자인은 컨셉이 아니라 디테일한 것을 수행시키려면 1단계에서 반복적으로 적용되야 한다. 디자인이라는 것은 프로젝트 전체에 대한 각 단계가 실제 디자인의 의미이다.

[E]마켓에 데몬스트레이션(demonstration)을 해야 한다. Show up해서 반응을 봐야 한다. 완전 최적화 시키기 전에 한정품으로 이것의 효과를 확인해야 한다. 이것이 생산까지 완전히 들어가버리면 수정의 기회가 없다. 또한 인클루시브 비즈니스에 다양한 제품이 많고 사실은 이미 그 사람들이 쓰고 있는 물건들이 있다.

[B]처음에 도메인 / 현지인 / 제품 텍스트에 대한 이해가 필요하다. 이를 바탕으로 요소가 잡히는 것이 중요하다. 니즈가 잡히고 해석이 되면 지난 사례와 비교해서 리뷰하고 컨셉을 도출한다까지는 대동소이하다. 실제 개도국이 개발되려면 디자인 워킹이라는 5단계에서 컨셉을 실체화 시키는 프로토타입이 연속적으로 실행되어야 한다. 이것을 통해서 수정되는 피트백 과정이 첨가되야 하고 5단계를 통하여 완연한 설계가 결과물로 나와야 한다. 그리고 나서 디자인에 대한 것은 이것이 비즈니스 모델 제너레이션이라는 것도 자체로 들어갈 수도 있을 것이다.

[F] 현장에서는 sequence라기 보다 복합적으로 일어나게 된다. 예측불가능한 flexibility의 종합선물처럼 3-6단계는 계속 순환된다. 리서치부터 비즈니스 모델 사이에는 순서 없이 일어나게 된다. implementation 단계에서 또 다른 problem/needs/다른 비즈니스 모델 아이디어가 생겨난다. 그럴 수 밖에 없는 것이 아무리 앞쪽에서 이해를 잘해도 현지사람들도 예측하기 힘들기 때문이다. 그리고 개도국의 발전은 굉장히 빠르다. 여기서 여러 가지 문제와 기회가 터져나온다. 전반적으로 정돈된 sequence가 아니라 순환되는 형태이다.

Evaluation

[I]제품의 내구성을 계속 실험한다. 사실 이 단계는 비즈니스 모델 제너레이션 전에 들어간다. 다양한 크기 모양 선호도 조사를 지역주민을 통해서 하고 계속 평가해보는 거다.

[A]파일럿 테스트 전에 필드 테스트를 수행한다. 그래야지 비즈니스 모델 윤곽이 나온다. 이렇게 될 경우 가설에 기반한 모델이기 때문에 깨질 위험이 엄청 높아지게 된다. 사실 프로토 타입의 단계가 있다. 초기 단계의 프로토타이핑을 하게 된다. 테크놀로지가 좋아도 현지에 적합하지 않으면 필드 테스트를 통해 걸러준다. 이후에 다시 컨셉과 디자인 워크의 순환을 통해 비즈니스 모델이 견고해진다. 1회-2회 계속 반복 이런 부분은 마켓의 역동성을 통해 활성화된다.

[D]프로젝트에 있어서 가장 중요한 점은 평가와 성찰이다. 그것이 잘 못되면 처음으로 다시 돌아가야 한다 이것을 두려워하지 않아야 한다. 이 부분에 있어서 여기까지는 시행착오를 겪을 수 밖에 없다.

[G]실제로는 왔다갔다 계속 돌게 된다. 첫 번째 고객을 만나서 구매가 될 때까지 계속 피드백이 되면서 재개발을 하게 된다. 세부적으로 들어가면 다 나오겠지만 타게팅(targeting)하는 것부터 리 타게팅(re-targeting)하는 것까지 들어가야 리서치가 될 것이라는 생각이 든다.

Understanding Current Design participation

Nonexistent of experience

[D] 총체적인 목표가 국제개발. 국제개발을 알아야 한다. 디자이너가 그냥 도와주는 마음으로 와서는 안 된다. 이 전문분야에 대한 서로의 지식이 필요하다. 기본적인 지식 없이 가면 부딪히게 된다. 내가 아무리 디자인을 잘해도 요구하는 것들에 대해 파악 할수 없다면 쓸모 없게 된다. 우리의 골은 내가 디자인을 잘하는 것 그리고 가져다 주는 것이 아니라, 그 사람들이 사용하고 자신의 것으로 취함으로써 그들의 삶이 나아지는 것을 바라는 것이다. 우리의 것을 잘 만드는 것이 아니다. 자신의 것보다 국제개발 전반과 그 나라에 대해 잘아야 한다

[D] 니즈가 필요해서 어떠한 제품을 개발해야겠다고 해서 형태가 나오는 디자인까지 갔다. 하지만 디자이너가 팀 멤버로 참여하지 않았다. 우리나라는 개발 쪽에서 디자이너가 참여하는 것이 제한적이다. 현재는 디자이너의 역할이 홍보에 머무르고 있는 것이 현황이다. 제품을 개발한다고 했을 때 보통 공학 엔지니어를 데리고 온다. 컨셉을 내고 제품 아이디어로 발전시키면 기술자들을 불러서 이런 기술 모양을 구현해달라고 말한다. 아직 디자이너가 주도적으로 참여할 자리가 없다.

[C] Q 디자이너들이 실제로 적정기술에 어떻게 참여하고 있는가? 지금까지는 디자이너들이 참여한 경우는 없다. 보통 사람들이 디자인이라 하면 UI쪽으로 생각하기 보다는 예쁘게 하는 것에 초점을 맞춘다. 적정기술은 실용성/간단명료/현지인들이 사용할 수 있는 적정성을 보기 때문에 심미성 부분에 있어서 디자이너들은 거의 참여하지 않고 있다. 시간과 비용면에서 처음부터 참여하기 어렵다.

Reasons of difficulty in participation

[A] 디자이너는 컨셉 중심의 일에 집중한다. 실제로 이것이 구현되지 않았을 때의 두려움이 존재하

는 것처럼 보인다. 상업, 비즈니스 컨설팅으로 가는 것에 대한 이해가 부족하다. 디자인의 역할을 충분히 이해를 하고 있지만 디자인 세계 자체가 가진 장벽과 한국 디자인 교육 특징이 가진 두려움이 있는 것으로 보인다. 아프리카로 가자고 하면 디자인이 과연 무슨 일을 할 수 있겠느냐고 되묻는다. 한국 디자이너들이 가진 툴(tool), 관점, 프로세스, 프레임, 방법론, 전략이 있으면서 참여하지 않고 있다. 프로세스가 부족하기 보다는 근본적으로 디자이너가 박제화가 되었다. 프로세스를 보여줘도 컨셉으로 이해하고 이것을 실제로 써야 할 methodology로 보지 않는다. 경험으로 느꼈던 것들이다.

[H]서로 같은 언어를 쓸 수 있도록 노력해야 할 것 같다. 여기에 대한 공감을 충분히 해야 한다. 서로 입장이 이렇다라는 팩트(fact)만으로는 부족하다. 디자인 프로세스를 엔지니어가 맡는 경우가 많다. 엔지니어는 기능에 집착을 한다. 디자이너는 형태 구현할 수 없는 것을 요구할 때도 있고 설명해주면 또 이해가 안될 때도 있다. functional한 레벨을 다룰 수 있는 디자이너는 잘 없다 기능적인 부분을 간과하지 않을 디자이너가 필요하다

[I]선진사회에서 디자이너의 역할은 부가적이고 사치라고 여겨지는 경향이 있다. 뭐냐면 디자이너라고 하면 자체에 대한 관심보다는 핵심 팀은 커피 맛을 높이는 데 집중을 한다면 디자이너는 커피 맛이 없다 하더라도 잘 팔리게 하는 역할을 한다. 그것이 국제 개발에서 문제가 된다. 실제적으로는 커피 맛에 관심이 있어서 커피 품질에 관심이 있는 사람들이 모여야 한다. 그것이 더 중요하다. 우리가 인식하는 디자이너의 역할은 포장에 집중하기 때문에 프로젝트에 대한 이해와 기본적으로 국제개발의 핵심에 관심이 있다는 것을 많이 표명해야 한다.

[A]물론 디자이너지만 기술이나 기업가 정신 부분이 강하면 다른 역할을 할 수 있다. 전문성의 차이가 아닌 관심과 역량의 차이이다. 디자이너가 아니라고 관찰 못하는 게 아니고 디자이너라고 하더라도 비즈니스 못하는 것도 아니다. 전공으로써 들어가기 보다는 관점, 디자인 띵킹(design thinking)이라고 말한다. 이런 개념이 강한 사람이면 가능하고 thinking이라는 부분을 전문분야나 직업으로 생각하지 않았다.

C. potential participation of design in the BoP and Inclusive Business process

Understanding people/ needs from in depth research.

[D] 프로젝트 상에서 처음에 현지인을 알고 그들의 니즈를 파악할 때 사회과학적으로 접근하다 보면 딱딱한 데이터로 나오는 경우가 많다. 만약 디자이너들이 이쪽에 참여해서 하게 되면 디자인띵킹(design thinking)과 같은 아이디어 도출함에 좋은 툴을 사용할 수 있다. 디자이너들은 사람들이 이야기 하는 것뿐만 아니라 비언어적인 언어 행동 파악이 가능하다. 사람들의 행동 패턴을 파악하는 것이 디자이너의 뛰어난 역량이라 생각한다. 현장에서는 이 사람들의 진짜 니즈를 파악할 수 있어야 한다. 보는 것뿐만 아니라 이것을 끌어낼 수 잇는 방법이 필요하다.

[F]홍보에만 참여하는 것은 협소하고 일차적 수준인 것 같다. 개발에서 기대하는 디자이너의 역할은 UX적인 측면이 강하다 서비스 디자인과 비슷한 개념으로 개발하는 사람들과 똑같이 리서치에 참여하고 그 모델을 만드는데 참여 하는 것에 디자인 띵킹(design thinking)이 필요하다 그 이후에는 참여의 여부는 크게 상관없다. 진정한 개발의 참여는 니즈를 찾아내는 리서치에 있다. 필요를 도출해내는 것부터 실제적인 니즈를 찾아낼 수 있는 경험이 있다. 문화인류학이나 인문학에서 바라보

는 것도 있겠지만 정말 실용적인 것은 산업과 닿아있는 디자인에서 다른 관점을 제시할 수 있을 것이라 본다. 정말 하다못해 기계 만들 때도 어떻게 만들어져야 쉽게 쓸 수 있는지는 2차 문제이고 그것보다 저 기계자체가 필요한지 아닌지 판가름하는 초개 리서치부터 디자이너들은 의견을 낼 수 있다. 디자이너가 그 때 참여했을 때 분명히 필요한 실제에 가까운 요소들을 뽑아 낼수 있을 것이라 생각한다

[I] 프로세스 상에서 참여할 수 있는 디자이너: 프로젝트에 기반해서 볼 때 예를 들어 사탕숯을 연소할 때 드럼통이 필요한데 우리(기술팀, 마케팅팀)가 만들었지만, 현지사람들이 지적해 준 것이 드럼통은 마을 사람들이 돌려쓰려면 자주 이동해야 하는데 여기에 손잡이가 없었다. 디자이너가 아닌 사람들이 만들 때는 사람들의 니즈를 100%반영하지 못한다. 프로젝트에서 디자이너가 그 문화에 대한 이해와 니즈 파악이 되었다는 전제하에 현지인에게 거부감을 덜 주면서 좀 더 실용적이면서 사용성 및 좋은 효율성을 부여하는 역할을 할 수 있을 것 같다.

Mediate among stakeholders by understanding context

[A]한계를 보완하는 것은 무엇인가 생각해 볼 때, 하나의 축이 기술이라 생각한다. 기술이라는 부분은 적정기술 및 다양할 수 있는데 해결하려면 기술적인 관점이 필수다. 또 다른 것은 마켓에서 어떻게 활용할 것 인가이다. 그래서 이런 삼각형 구도가 되어야 된다고 생각하는데, 이 시작은 디자인에서부터 시작된다고 생각한다. 그 이유 중 하나가 기술/비즈니스에서 시작한 사례는 실패할 확률이 높다. 물론 디자인에서 시작해도 실패할 확률은 있지만 나머지 두 개가 없을 경우 컨셉 디자인 정도이기 때문에 실제 이것 자체만으로는 실패 확률이 없어서 전 단계로 끝나게 된다. 그런데 비즈니스와 기술은 되든지 안되든지 현장에 나가게 되어 있다. 비즈니스와 기술에서 시작했을 때 실패하는 부분을 디자인에서 많이 감당해주고 있다. 이 모델이 100% 맞다 기보다 해볼 수 있는 가능성을 제시한다.

[B] 디자인 관점의 프로세스라면 처음부터 디자이너가 리딩(leading)해야 된다고 본다. 일일이 다 열거하면 다를 수가 있는데 디자이너가 전체를 조망해서 본다는 것은 분명하다. 단일적인 뷰(view)가 아니라 처음부터 끝까지 목표를 달성하고 그 과정을 이해하고 알고 있기 때문에 그것을 다 연결시켜 줄 수 있는 조율자가 된다고 생각한다. 단계 별로 처음에 맥락적인 이해, 사용자 조사 같은 부분은 사용자를 알아내는 정성조사에서 디자인방법론이 많고 강력하다. 그 이후 컨셉을 만들어내는 것 발전시켜서 섬세한 요소로 개발하는 것도 디자인의 역할이다. 비즈니스 개발에서도 디자이너가 아이디어가 발견되니까 이 전 과정을 통솔할 수 있는 디자이너가 필요한 것 같다.

[B] 현장에서는 이해관계자가 굉장히 복잡하게 얽혀있다. 이를 이해하는 것이 디자이너의 몫인거 같다. 전체를 보고 연결조정하면서 흐름을 맞춰가는 일이 필요하다. 이런 역할로서 리더가 디자이너가 되야 하는 게 중요하다. 국제개발 사업은 현장 주민들의 니즈를 중심으로 개발하는 것이 중요하다. 지금은 기술 기반으로 된다. 이렇게 되면 기술 자체에 집중하기 때문에 솔루션을 내는 것에 있어서 풀(full)과정으로 컨셉을 개발하는 것이 어렵다.

[F] 타 분야에 있는 사람들과 이야기 하면서 느끼는 한계와 관련해서, 개발해야 할 툴(tool)들은 다 가지고 있는데 왜 우리가 가져야 할 청사진에 대해 고민하고 있지 않은지 의문이 들었다. 특히 국제개발에 있는 사람들도 파리선언이나 수많은 declaration을 공부해도 우리한테 개발에 대한 청사

진이 없다는 것을 깨닫게 되었다. 청사진을 볼 수 있는 눈이 디자이너에게 있다고 생각했다. 그들이 다각도로 볼 수 있는 열린 눈이 있다고 믿기 때문이다.

Develop qualitative evaluation methods

[D]비즈니스 아이템을 평가하는 선진국의 학자/helper들은 현지 사정을 얼마나 알고있을까. 이 아이템에 대한 타당성에 대해 어떻게 실현화 될 것인지에 대한 의심이 생기기 시작했다. 현재 비즈니스 아이템에 자체에 대한 평가보다는 발표능력, 기획서의 우수성에 따라 많은 경우 평가된다. 아이템의 실효성, 분야에 대해서는 평가할 수 없는 단계라 의구심이 들기 시작했다. 사실은 정성적인 질에 대한 평가가 필요하다. 디자이너가 국제개발협력과 다른 점이 우리는 방대한 양의 데이터 베이스를 가지고 수적인 걸로 측정을 하게 된다. 그것을 바탕으로 평가를 하게 된다. 우리한테는 (정량적인 평가만이)좋지 않은 경우가 많다 디자이너는 이것뿐만 아니라 직관/감성적인 것도 들어가기 때문에 그런 평가들이 우리랑은 다르다고 느낀다. 그들이 정성적인 평가를 할 수 있을 것이라 생각해본다.

[F]결국에 이뤄야 될 원형의 모습은 사람들의 회복이다. 자급자족이 가능한 상태가 완벽한 상태라 본다. 법이 완벽하지 않지만 법을 통해서 지켜져야 할 것들이 지켜지는 것처럼 모니터링과 평가가 편의를 위해서 필요하다. 그 사람들의 마음이 먼저 움직이고 외부인들이 그것을 효과적으로 잡고 리소스(resource)를 잡아 주어야 한다.

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