



Norwegian University of
Science and Technology

Critical factors and challenges for building and managing marketing and distribution channels in rural, emerging markets

A case study on the Greenway cookstove
company in rural India

Laura Brodbeck

Master in Industrial Ecology

Submission date: April 2016

Supervisor: Luitzen de Boer, IØT

Co-supervisor: Malena Ingemansson, IØT
Kjetil Røine, Differ

Norwegian University of Science and Technology
Department of Industrial Economics and Technology Management

Summary

There are 2.7 billion people in today's world that do not have access to clean cooking facilities, leading to immense human and environmental costs in many developing countries. Cleaner, improved biomass cookstoves (ICS) could be an alternative to the traditional mud stoves that are contributing to these widespread problems. However, the dissemination of ICS models is still low worldwide, especially in the developing country of India. In a country where 170 million households—mostly rural—rely on solid fuel for cooking, only 4% have converted from a polluting mud traditional stove to a cleaner ICS model. After various failed initiatives by the government and multi-national corporations, private enterprises are now being called upon to drive the Indian clean cookstove industry. One of the most critical barriers to doing business in rural, emerging markets is distribution access. Furthermore, research on distribution channel design for developing markets has been widely ignored. Therefore, the purpose of this study is to identify critical factors and barriers for a company that has built a functional distribution channel for disseminating clean cookstoves in rural India.

Beginning with a literature review, theoretical ideas from both traditional distribution/marketing theory as well as bottom-of-the-pyramid (BoP) literature are examined. An analytical framework is built based on these different fields of literature in order to analyze the “on-the-ground” distribution channels of a successful case company. The company selected for this thesis is Greenway Grameen. This company is active in eight Indian states and is among the top-selling cookstove companies in the Indian cookstove industry. Data about this company is collected via interviews with two Greenway employees and with two representatives from third-party organizations active in the clean-tech industry in developing countries. Based on the results, this thesis has identified critical factors and barriers that the case company has faced both in its rural marketing and distribution channels.

This thesis contributes both to practice and theory. For practitioners, this thesis makes recommendations on how to effectively design marketing and distribution channels for rural areas. For a rural marketing channel, this thesis recommends a combination of above-the-line (ATL) and below-the-line (BTL) marketing channels, where ATL methods such as TV can increase brand legitimacy. Also recommended are BTL product demonstrations that utilize already-existent networks. This thesis also emphasizes that companies must learn to work within constraints caused by weak legal environments often found in emerging markets. Another important recommendation is that companies focus on creating a working balance of internalizing and outsourcing distribution activities. Consistent contact with partners is also recommended. Finally, not only is a customer-centric product design important, but also that this is in focus early in a business's development.

For researchers, this thesis recommends various useful frameworks for analyzing rural distribution channels. First both traditional distribution and BoP fields of literature should be referenced when analyzing aspects of rural channels. Additionally, this thesis recommends using the traditional 4Rs (Christopher, 2011) framework to study rural distribution. The 4Rs helps describe a channel's structure and its dynamic management. Finally, the thesis contributes a new, adapted version of the 4Rs framework that is specifically designed for analyzing rural distribution channels. Further development of this model is recommended.

Key words: developing countries, rural distribution, rural marketing, distribution channel, clean cookstove industry, ICS

Preface

This master's thesis is the work of Laura Brodbeck. The author is pursuing a Master of Science degree at the Norwegian University of Science and Technology (NTNU) Program of Industrial Ecology in collaboration with the Department of Industrial Economics and Technology Management. This thesis is based on research conducted from November 2015 to April 2016.

The master thesis was conducted in collaboration with Differ Group, a company located in Oslo, Norway and with the Centre for Sustainable Energy Studies (CenSES). Through a grant from the CenSES program and support from Differ, I was given the opportunity to travel to New Delhi, India to a clean cookstove conference. This allowed me to meet key players in the cookstove industry—among them being the CEO of Greenway. This personal connection served as the starting point to the collaboration with Greenway on this thesis work.

I would like to express just one problem that I faced in the data collection phase of my thesis. My previous contact person with Greenway found a new job in the middle of the data collection process. This information was not communicated to me, which put a pause on my contact with Greenway. Overall, this worked out because Ankit volunteered his time to talk with me, but it did delay my interview protocol by almost one month.

I want to thank my supervisors, Luitzen De Boer and Malena Ingemansson Havenvid, who have offered analytical insights and encouragement along the way. I would also like to thank Kjetil Røine from Differ, who supported me at the clean cookstove conference in India and also provided academic guidance throughout the writing process. Additionally, I am grateful to those who offered their time to be interviewed in this thesis, especially Ankit Mathur of Greenway, who shared many insights into the inter-workings of Greenway's distribution models. I am grateful also to Ellen Dobbs (Ashden), Stevie Valdez (GACC) and Varun Sahu (Greenway) for their valuable input.

Finally yet importantly, I would like to thank my supportive friends and family for their patience and support throughout this process. I could not have done it without my mom who has supported me all the way from the USA or without my samboer, Øyvind, who has always been by my side. Thank you, Øyvind, for your willingness to talk so much about cookstoves and for your overall support for anything that I choose to do.

Laura Brodbeck

Trondheim, Norway
April, 2016

Table of contents

List of Figures	vii
List of Tables	viii
Terms and abbreviations	ix
1 Introduction	1
1.1 Background	1
1.2 Socially beneficial goods in poor, rural markets	2
1.3 The key role of the small/medium-sized enterprise	4
1.4 Research objective.....	4
1.4.1 Distribution channels in rural markets	5
1.4.2 Case Study: India and the improved cookstove industry	5
1.4.3 Research questions.....	8
1.5 Structure of thesis.....	9
2 Literature review and initial construct.....	11
2.1 The traditional vs. the BoP marketing mix	11
2.2 Awareness: demand stimulation in a rural market	14
2.2.1 Barriers to effective marketing in rural markets	15
2.2.2 Marketing techniques for rural markets	16
2.3 Availability: creating a competitive supply chain.....	19
2.3.1 Relationships.....	20
2.3.2 Responsiveness	32
2.3.3 Resilience.....	34
2.3.4 Reliability.....	36
2.4 Summary of analytical framework.....	38
3 Methods	41
3.1 Case study design	41
3.1.1 Setting the case study context	41
3.1.2 India as the chosen context	42
3.1.3 Rural, informal markets in India	42
3.1.4 Clean cookstoves as the industry chosen	43
3.2 Selecting a case company.....	44
3.3 Data collection and interview structure.....	47
3.4 Enhancing the reliability of the study	49
4 Results	51
4.1 An introduction to Greenway	51
4.2 Greenway's stove design.....	54

4.3	Awareness	55
4.3.1	Barriers to promoting Greenway stoves	55
4.3.2	Greenway's marketing strategy	56
4.4	Availability	60
4.4.1	Greenway's two distribution channel models.....	61
4.4.2	Overall distribution channel performance	66
4.4.3	Considering other possible distribution models.....	67
5	Analysis and discussion.....	69
5.1	Awareness	69
5.1.1	Barriers to promotion.....	69
5.1.2	Marketing techniques.....	70
5.2	Availability.....	73
5.2.1	Relationships.....	73
5.2.2	Responsiveness	77
5.2.3	Resilience.....	78
5.2.4	Reliability.....	79
6	Conclusions	83
6.1	Implications.....	90
6.2	Limitations & recommendations for further research	92
7	References	95

List of Figures

Figure 1. Six categories of cookstove technologies and the corresponding ISO rating tiers.....	1
Figure 2. Use of solid and modern fuels, by country (2005 – 2012).	2
Figure 3. The potential market size for cookstoves in India.	6
Figure 4. Fields of literature selected for use in this thesis.....	8
Figure 5. Setting the scope for the “last-mile” distribution system.	13
Figure 6. Access to mass communication modes in rural India.	18
Figure 7. Porter’s value chain: primary and support activities.	23
Figure 8. Three types of business models.....	33
Figure 9. The supply chain risk management process.	34
Figure 10. Three levels of organization to which risk can occur.	35
Figure 11. The theoretical foundation used to analyze how the case company creates product awareness.	39
Figure 12. The theoretical foundation used to analyze how the case company makes its product available.....	40
Figure 13. Greenway’s two ICS cookstove products.....	46
Figure 14. Timeline of Greenway’s important historical events.	52
Figure 15. Map of Indian states and Greenway’s presence.	53
Figure 16. Visual depiction of Greenway’s sales management hierarchy.....	58
Figure 17. Percentage of Greenway’s total sales according to respective distribution models.	60
Figure 18. Visual depiction of Greenway’s “last-mile” distribution system and associated activities.	62
Figure 19. Greenway’s barriers to promotion and marketing strategy.	70
Figure 20. Adapted 4Rs framework to help describe the viability of a company’s distribution channel active in a rural, emerging market.....	90

List of Tables

Table 1. Traditional marketing mix vs. BoP marketing mix.	12
Table 2. The ‘4Rs’ for competitive supply chains.	20
Table 3. A summary of the Monitor Group’s two reports in the country of India and the regions of Africa.	24
Table 4. Relevant activities identified in downstream distribution models that are designed to serve the BoP.	26
Table 5. Partners and their associated role in market-based distribution channels active in BoP markets.	27
Table 6. Selection criteria for case company in this thesis.	45
Table 7. Greenway’s distribution activities and partners responsible for those activities.	75

Terms and abbreviations

1. 4As	= availability, awareness, affordability, access
2. 4Ps	= place, promotion, price, product
3. 4Rs	= relationships, responsiveness, resilience, reliability
4. ATL	= above-the-line marketing
5. B2B	= business to business
6. B2C	= business to customer
7. B2G	= business to government
8. BoP	= bottom of the pyramid
9. BTL	= below-the-line marketing
10. CTO	= chief technology officer
11. DC	= distribution channel
12. GACC	= Global Alliance for Clean Cookstoves
13. GHG	= greenhouse gas
14. ICS	= improved cooking solutions
15. ISO	= International Organization for Standardization
16. LPG	= liquefied petroleum gas
17. MFI	= micro-finance institution
18. MNC	= multinational corporation
19. NGO	= non-governmental organization
20. NPIC	= National Program on Improved Chulhas
21. R&D	= research and development
22. SME	= small and medium sized enterprise

1 Introduction

1.1 Background

In their latest estimates, the International Energy Agency (2016) found that more than 2.7 billion people--38% of the world's population--does not have access to clean cooking facilities, leading to immense human and environmental costs. The latest figures from the World Health Organization (WHO, 2016) show that indoor air pollution and black carbon from cooking contributes to more than 4.3 million premature deaths globally every year; these are caused by pneumonia, stroke and heart disease just to name a few. In addition, inefficient traditional cookstoves can have detrimental effects on the environment. For example, forest degradation can occur due to extensive fuel collection as well as increased levels of greenhouse gas (GHG) emissions due to inefficient fuel consumption (Putti, et al., 2015). Thus, there is a need for more energy-efficient cooking methods to overcome these innate problems with traditional cooking methods.

Introducing “improved cooking solutions” (ICS) may be a viable solution to these health and environmental problems. According to the World Bank, ICS cookstoves are defined as “solid-fuel stoves that improve on the traditional baseline biomass technologies in terms of fuel savings via improved fuel efficiency” (Putti, et al., 2015, p. xi). Figure 1 illustrates the evolution of cookstove technology and their corresponding ISO ratings.

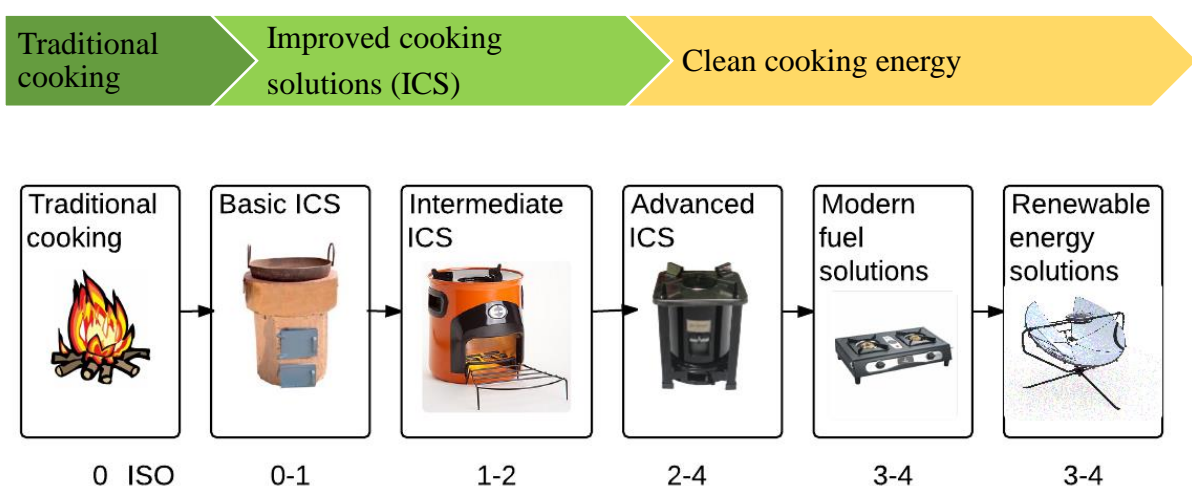


Figure 1. Six categories of cookstove technologies and the corresponding ISO rating tiers. Figure adapted from Dalberg (2013).

Most people in developing countries depend on biomass fuel for cooking (Figure 2), and according to a World Bank report (Putti, et al., 2015), biomass based energy for cooking is expected to remain significant for the next 30 years. If this is the case, improved cooking solution (ICS) stove models (Figure 1) should be encouraged to avoid the high number of negative health and environmental impacts. Indeed, many government and NGO-led initiatives have attempted to replace traditional stoves with ICS models, but very few have succeeded in the market (Shrimali, 2011).



Figure 2. Use of solid and modern fuels, by country (2005 – 2012). Figure copied from Putti, Mehta and Kammila (2015).

1.2 Socially beneficial goods in poor, rural markets

An improved, fuel-efficient smokeless cookstove is one of many products that can be considered a “socially beneficially good”, because of its great potential of improving the lives of people living in poverty. Other examples include solar powered phone chargers, non-electrified water filters or affordable solar lanterns. Despite the vast number of innovative product designs, these technologies have thus far generally failed to reach the millions of people they have been designed for (Garrette and Karnani, 2010). There are many reasons for the low rate of market penetration of innovative products in poor, rural markets, and they can be grouped into two interconnected categories: 1) the nature of selling a socially beneficial product and 2) the nature of the rural, emerging markets.

The nature of socially beneficial goods

Socially beneficial products, also called “push” products, often require business model strategies with a strong focus on marketing and awareness. This is due to the fact that an enterprise must persuade consumers that the product they have gone without before can change their lives for the better and that it is money well spent (Kubzansky, Cooper and Barbary, 2011). In comparison, “pull” products such as Coca-Cola often have strong brand loyalty and are already products in demand (Kotler and Keller, 2006). When an enterprise decides to sell a push product, it must also commit to investing more money into marketing approaches to reach rural customers. This extra investment in demand stimulation can often deter companies from even trying to bring their products to poor, rural communities.

The nature of poor, rural emerging markets

Emerging markets are playing an increasingly important role in the global economy, whose output contributes to over 35% of the world’s GDP (OppenheimerFunds, 2015). They are fast-growing, developing countries that are creating an expanding segment of middle class and rich consumers, but still have significant segments of “poor” consumers at the bottom of the pyramid (BoP) (Narasimhan, Srinivasan and Sudhir, 2015).

Many scholars have identified barriers for enterprises who wish to enter into these markets, including one comprehensive overview of these challenges compiled by Bland and Hamann (2015). The authors state that BoP populations often live in rural areas, so access to transportation infrastructure and to conventional retail outlets is limited. This lack of infrastructure often leads to higher transportation costs/work time for companies delivering their products to rural areas. The number of skilled staff and supplier availability is also a challenge especially when the head office is located far away. Financial constraints often limit the customers’ buying power, which renders the market volatile and dependent on an inconsistent cash flow. It is clear that there are many barriers to introducing a new product to a poor, rural market (Bland and Hamann, 2015), and it becomes even more difficult when there is very low demand for the product. This is often the case with “socially-beneficial” products.

1.3 The key role of the small/medium-sized enterprise

Considering the sizeable challenges associated with poor, rural customers and socially beneficial goods, it is hard to imagine what kind of company would want to invest in such a venture. In theory, commercial operations are more sustainable than subsidized efforts, because they aim to develop viable supply chains and customer-driven business models rather than relying on funding support (Shrimali et al., 2011). In the last two decades, business has been called upon to take on responsibility to serve the poor that had previously belonged to non-profits and the government (Kolk, Rivera-Santos and Rufin, 2013). The role of business in the BoP was first documented in literature in Prahalad and Hart's (1999) paper on finding wealth at the BoP. Once this concept was introduced, several multinational corporations (MNCs) have been especially active (Karamchandani, Kubzansky and Frandano, 2009). However, very few of these MNC endeavors have succeeded.

In the last years, scholars have begun to shift focus away from MNCs and toward small and medium sized enterprises (SMEs) in BoP markets. SMEs have several characteristics that make them suitable for the BoP market when compared to their MNC counterparts. For example, smaller enterprises typically have more internal flexibility and tighter communication (Batra et al., 2015) which is crucial for coordinating business operations in a volatile market. However, SMEs are more resource-constrained (Batra et al., 2015), which suggests that an SME must efficiently utilize resources by creating innovative business models to survive.

Despite the fact that the private sector is increasingly being called upon to help alleviate poverty, very few integrated frameworks have been developed and communicated to help reach that goal (Bland and Hamann, 2015). In fact, entrepreneurship literature in emerging economies is very limited. According to Bruton, Ahlstrom and Obloj (2008), only 43 of the 7,482 published articles on entrepreneurship were in the emerging economy domain. Because of the lack of study, there is limited understanding of exactly how to develop a sustainable SME business model in an emerging market.

1.4 Research objective

When working in poor, rural markets, companies must think creatively when building a business plan, as they must surmount multiple barriers at the same time (Karamchandani,

Kubzansky and Lalwani, 2011). One of the most critical barriers to doing business in rural, emerging markets is distribution access. Although several scholars point out the importance of creating innovative distribution channels for developing markets (Mishra, 2008; Karamchandani, Kubzansky and Lalwani, 2011), research in this area has been widely ignored (Vachani and Smith, 2008; Aithal, 2012).

1.4.1 Distribution channels in rural markets

The goal of most SMEs selling socially beneficial products is to become financially sustainable and to reach scale. The concept of reaching “scale” incorporates two fundamental aspects. First, is simple arithmetic—that the product reaches more customers. Second is simple economics; as an enterprise scales up, the average cost-per-unit sold decreases in cost (Karamchandani, Kubzansky and Frandano, 2009).

When designing a distribution channel, it must be viewed as a connecting point to a larger ecosystem (Kotler and Keller, 2006). Reaching scale in this ecosystem often requires cooperation with key stakeholders such as financing institutions, government, suppliers and distributors, as well as the end-users. How a company manages the partnerships with these stakeholders depends on the type of distribution channel. Great variation exists across countries, products, industries and consumer needs, so different distribution channel networks are likely to be necessary depending on the attributes of the market environment.

1.4.2 Case Study: India and the improved cookstove industry

To investigate the attributes of a successful distribution model in rural emerging markets, this thesis focuses on the cookstove industry in India. There has been extensive research on India’s cookstove industry in the past, but several papers have identified a knowledge gap in cookstove distribution models (Shrimali et al., 2011; Thurber et al., 2014). Therefore, this thesis aims to help fill this gap.

The Indian cookstove market is an interesting industry for study in this thesis for several reasons. The first reason is that there is great need for this socially beneficial product, therefore meriting further research. For example, the size of the cookstove market potential in India is massive compared to other developing countries (Figure 3). Despite the huge potential for ICS cookstoves (Figure 1), there has so far been little success in their dissemination; only 4% of the Indian customers using solid fuel (Figure 3) have converted

from their polluting traditional cookstoves to cleaner ICS models (Dalberg, 2013). Another reason that the cookstove industry in India makes for a relevant case study is that most of the market potential for ICS cookstoves lies in rural areas. For example, approximately 160 million Indian households still rely on solid biomass for cooking; of this number, 87% are rural while only 26% are urban (Dalberg, 2013). This is mainly due to the fact that liquefied petroleum gas fuel (LPG) is not yet available in India's far-flung rural areas. This high proportion of rural households that currently depend on solid fuel suggests that the market for improved biomass cookstoves in rural areas is much larger than in urban markets. In taking all of these points into consideration, further investigation of the Indian cookstove industry could provide useful insights on distribution channel models in rural, emerging markets.

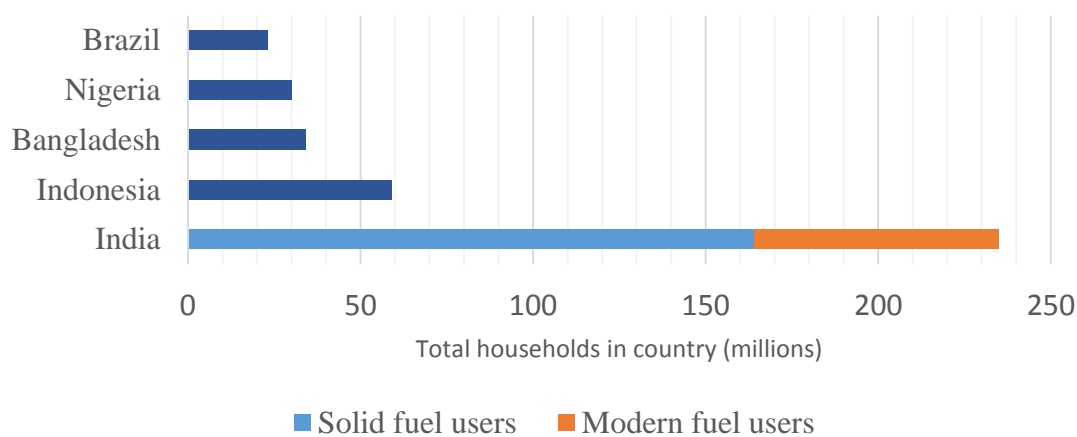


Figure 3. The potential market size for cookstoves in India. The dark blue color represents the total market potential (solid fuel and modern fuel use combined). India's market potential is divided between its solid fuel users (mostly biomass) and its modern fuel users (LPG etc.).

Within the Indian cookstove industry, one ICS cookstove company will be analyzed which has thus far achieved relative scale. Scalability in this thesis is measured by the number of stoves sold relative to the age of the organization (Rogers, 2003). By assessing the company's functioning "on-the-ground" rural distribution channels, this thesis aims to shed light on how the company has stimulated demand (i.e. marketing channels) and how it has designed its distribution channels to meet that demand in rural areas.

To help guide the case company analysis, an analytical construct built on literature is needed. First, it is important to clarify what kind of literature is available for describing distribution

channels in rural, emerging markets. Overall, literature referencing distribution theory usually refers to the developed world; the developing world and its rural markets are almost entirely ignored (Vachani and Smith, 2008). Of the literature that does exist for the developing world, most of it addresses the BoP market. Much of this BoP literature focuses on barriers associated with both consumer buying power and rural distribution. While the rural distribution is relevant in this thesis, the consumer buying power may not be. This is due to the fact that the buying power of consumers in the BoP is generally based on incomes of ~2 USD/day (The World Bank, 2011). According to a Global Alliance for Clean Cookstoves report, very low income groups in India may not be addressable; those with low and mid-high incomes in India are expected to increasingly purchase improved cookstoves (Dalberg, 2013). Furthermore, there is great need for clean cookstove technology not just in the BoP but also in the middle-income brackets of India.

In considering these points, a combination of two fields of literature are utilized to build an analytical construct for this thesis. General distribution channel literature is applied to highlight theory behind marketing and distribution channels for customers assumed to have buying power (middle-income). At the same time, BoP literature is used based on its marketing and distribution channel theory for customers living in far-flung rural villages in emerging markets. See Figure 4 below for a visual depiction of how these two fields of literature contribute to the goals of this thesis.

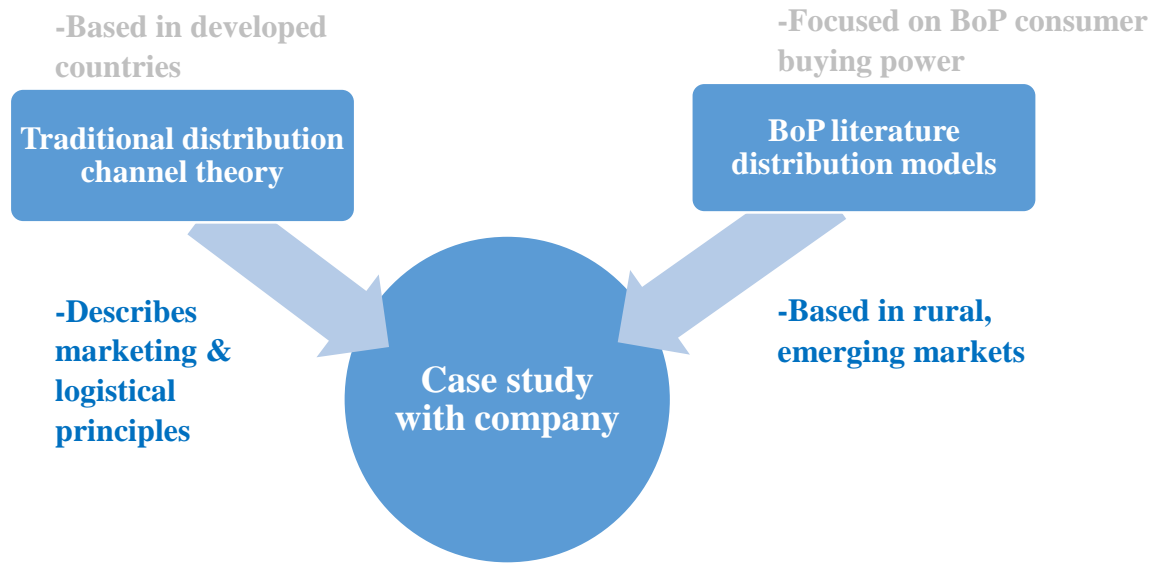


Figure 4. Fields of literature selected for use in this thesis. The bullet points in blue color represent elements of the respective literature that are relevant in the analysis of this thesis. The bullet points in gray color represent elements of the respective literature that are not relevant to this thesis.

1.4.3 Research questions

These two fields of literature enable the author to analyze the case company in the Indian cookstove market from two different perspectives. While the traditional distribution channel theory addresses customers assumed to have buying power, the BoP literature addresses customers living in rural areas. By using both fields of literature, an analytical construct can be built to address the following research questions:

(Q1) How does a clean cookstove company active in India's rural markets utilize the opportunities and address the challenges related to its marketing and distribution channels?

(Q2) How do the findings from the case company compare to literature and what are the implications?

(Q3) How can theory from traditional marketing/distribution and BoP literature be used to help analyze the viability of rural distribution channels?

To address these research questions, a clean cookstove company active in India's emerging market is analyzed. This analysis aims to identify methods used by the company for addressing the challenges and opportunities related to its rural distribution channels.

1.5 Structure of thesis

This thesis is structured as follows. First, the theory that forms the basis for guiding the research design is discussed. Within this section, frameworks from both general marketing/distribution literature and BoP literature are described. Secondly, the research design is presented and the methods for the case study are discussed. This is followed up by the presentation of the results and subsequent analysis. In the conclusion section, the findings are related back to the initial research questions.

2 Literature review and initial construct

Prahalad and Hammond (2002, p. 6) make the case that, “the critical barrier to doing business in poor, rural regions is distribution access, not a lack of buying power.” Although not all researchers fully agree on this point (Garrette and Karnani, 2010), the distribution access arguably plays a crucial role in serving poor, rural communities in emerging economies.

2.1 The traditional vs. the BoP marketing mix

One of the most well-known concepts in the field of traditional marketing theory is called the “marketing mix”, also known as the “four Ps of marketing”. The 4Ps model was originally introduced by McCarthy in the 1960s and popularized by Kotler and Keller (2006). This concept names four variables (4Ps) that can influence customer response that include product, price, place and promotion (Kotler and Keller, 2006). Their definitions are listed in Table 1 below. Despite its popularity, the 4Ps approach has received much criticism in the twenty-first century. One important point that many critics agree upon is that the 4Ps approach is too focused on the management of internal resources rather than being focused on the customer (Sridharan and Viswanathan, 2008).

In response, new “marketing mixes” have emerged that are more customer centric and applicable to different kinds of markets. Among these, one approach stands out as being very relevant to “consumption environments of scarcity”, or poor, rural environments (Sridharan and Viswanathan, 2008, p. 459). This approach is known as the 4As and includes the following four critical variables: affordability, acceptability, awareness and availability (Table 1). According to Prahalad (2012, p. 7), the innovation needed to successfully reach the BoP is “about working within constraints.” While most firms attempting to enter the BoP markets have failed, a select few have succeeded in reaching scale (Garrette and Karnani, 2010). Anderson and Billou (2007) suggest that these successful companies all share a common approach—the implementation of the 4As.

This BoP-centric framework has been selected for use in this thesis rather than the traditional 4Ps. The reasoning for this is that the BoP framework suggests creative distribution and marketing solutions for targeting the rural market, which is in focus in this thesis. By utilizing this BoP framework, two things can be achieved. First, the barriers and opportunities identified in the results can be compared to those in BoP literature. Secondly, the same results

can also be compared to the traditional marketing mix. These two reference points can then help provide insight into the level of innovation a company needs for distribution in a rural market.

Table 1. Traditional marketing mix vs. BoP marketing mix. Definitions copied from the following original sources: Kotler and Keller (2006) and Anderson and Billou (2007)

Marketing Mix (4Ps)	Definition	BoP Marketing Mix (4As)	Definition
Price	Amount a customer pays (list price, discounts etc.)	Affordability	The degree to which a firm's goods/services are affordable to BoP consumers
Promotion	The methods of communication used to provide information about the product (sales promo, advertising etc.)	Awareness	The degree to which BoP consumers are aware of a product or service. Firms must explore alternative promotion channels to increase awareness
Product	An item that satisfies what a consumer needs or wants (quality, product variety, design, features etc.)	Acceptability	The extent to which consumers or others in the value chain are willing to consume, distribute or sell a product or service
Place	Providing the produce at a place which is convenient for consumers to access (channels, coverage, transport etc.)	Availability	The extent to which consumers are able to acquire and use a product or service. Firms must explore alternative delivery methods to reach isolated BoP communities

Setting the scope

This thesis aims to describe how a company's working distribution channel in India is able to move goods from its factory to its final rural customers. Additionally, it aims to investigate how this distribution channel can help stimulate demand in these rural areas. To address these research questions, only the activities in the "last-mile" of the distribution channel will be analyzed (Figure 5). The scope of this thesis has been narrowed in order to produce an in-depth analysis within the given time constraints.

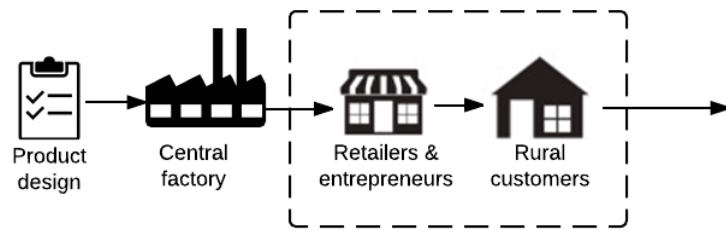


Figure 5. Setting the scope for the “last-mile” distribution system. The dashed outline represents the part of the distribution channel that lies within the scope of this thesis. This includes activities associated with moving the product from the factory to the final rural customer.

Within this scope, several aspects of the 4As (Table 1) are not wholly applicable to the analysis undertaken in this thesis. For example, “acceptability” considers whether or not a product/service is appropriate for a rural customer. To address this point, one must investigate the processes surrounding the “product design” stage, which lies outside the scope of this thesis (Figure 5). Another aspect of the 4As, “affordability,” considers whether or not a customer can afford to buy the product. The customers in focus in this thesis are rural customers who may or may not be poor. In addition, this thesis is not focused on whether a rural customer *can* buy the product but rather on *how* to get a rural customer to buy the product. Although both “affordability” and “acceptability” do play important roles in the dissemination of a product, these aspects lie outside of the defined scope of this thesis.

Awareness and availability

The latter two aspects in the 4As, “awareness” and “availability”, are especially relevant to establishing the “last-mile” distribution channel for rural markets. To start, awareness is defined as the extent to which customers are aware of a product or service (Anderson and Billou, 2007) and know how to use it (Prahalad, 2012). This differs from “promotion” in the 4Ps model in that traditional “promotion” strategies most often involve marketing channels used in developed countries, such as TV or social media (Kotler and Keller, 2006). In BoP areas, conventional advertising is not always possible. Therefore, the use of innovative marketing channels to reach rural communities is both necessary and can be more impactful than traditional marketing techniques (Sheth, 2011).

The second element discussed in this thesis is availability. Availability refers to the degree to which customers are able to readily acquire and use a product/service (Anderson and Billou,

2007). This differs from “place” in the 4Ps model in that “place” strategies are more focused on how its distribution outlets can affect a company’s image; for example, an exclusive strategy where few places sell only one brand (Kotler and Keller, 2006) can make a company like Gucci seem exclusive and therefore aspirational. As another example, an intensive strategy means that the product would be made available everywhere, which is often utilized by companies selling high volumes of products at low prices (Kotler and Keller, 2006). This latter example is more similar to “availability” in the 4As model, because companies in emerging economies must focus more on viability than on competitiveness. Companies in emerging markets, therefore, often aim to make their products available in any way possible. Distribution channels in rural environments can be fragmented and inefficient, which makes the task of delivering a product a major barrier for a firm to overcome (Anderson and Billou, 2007). Therefore, firms entering a rural market must often explore alternative methods for delivering their products to rural communities.

Structure for this chapter

The goal of this chapter is to develop a theoretical framework for analyzing the cookstove company case study. As the framework takes shape, a literature review is conducted to expand on topics that could be relevant to rural, emerging markets. For example, the following fields of literature have been utilized: traditional marketing theory, marketing in emerging markets, the clean cookstove industry, social entrepreneurship etc. In addition to literature, relevant reports are also utilized as a way to describe current on-the-ground distribution and marketing examples in developing countries.

This chapter is broken down into two sections based on the 2As for BoP markets as discussed above. First, elements to be considered when promoting product “awareness” are discussed in the context of rural, emerging markets. The second section will focus on how to make a product “available” in rural, emerging markets.

2.2 Awareness: demand stimulation in a rural market

In developed countries, traditional marketing techniques often focus on differentiating themselves from competition and on guaranteeing customer satisfaction (Prahalad, 2012). In BoP markets, however, marketing is often not about serving an existing market more efficiently; rather, marketing in the BoP is about converting non-users to users (Prahalad,

2012). More generally, in emerging markets, Sheth (2011) explains that a company must not merely assess a customer's expectations, but must actively shape them.

Within the context of the 4As, Prahalad (2012) explains that if a company wants to create product awareness in the BoP, it must first identify the barriers in the target BoP market. For example, a company must consider how to increase awareness in areas without access to radio or TV signals (Prahalad, 2012). For a company to succeed, it must "accept these constraints as real and work within them" (Prahalad, 2012, p. 7). Prahalad (2012) calls the concept the "innovation sandbox", where a company must learn to build creative solutions within BoP-specific barriers. This is an effective framework to use in this thesis, because one must first understand the challenges in the cookstove market before it can respond with appropriate innovative marketing solutions. This framework is therefore used to analyze the case company's marketing strategy in this thesis. In the following sections, this framework also serves as a guide for a literature review to identify potential barriers and marketing solutions discussed from various fields of literature.

2.2.1 Barriers to effective marketing in rural markets

It is important to point out that when a company introduces an innovative product, it must develop a market for it whether in a developed or developing country. However, one major difference is the type of barriers a company will face in the process. When a company commits to serving rural developing markets instead of urban markets, several factors must be considered including poor infrastructure and hard-to-reach customers (Anderson and Billou, 2007). This poor infrastructure refers not only to physical roads, but also to the lack of promotion enablers such access to TV or internet sources.

In addition to poor infrastructure, those living in rural areas can be hard-to-reach because of various macro-economic factors. First, populations living in rural areas generally have lower levels of education, which can make it more difficult for companies to effectively communicate the advantages of an improved cookstove. For example, the Government of India (2014) found that the proportion of persons having completed high school graduation and above was much less in rural areas (~3%) in comparison with urban areas (~15%). Low education levels can be a challenge for consumer awareness in the cookstove industry (Dalberg, 2013). In addition, across most of India, women do not have significant decision-making roles at home; this is especially the case for India's northern rural areas (Dalberg,

2013). India's patriarchal culture can make it particularly challenging for a company to sell a product like a cookstove. Even though women suffer most from indoor air pollution, they often lack buying power (Foell et al., 2011). On the other hand, even if a woman does have buying power, a cookstove may be a big purchase and might require her to consult a family member first (Ipe, Rosenbaum and Derby, 2015). Therefore, marketing messages must often focus on more than one stakeholder.

Another challenge is that rural populations are not culturally homogenous, which requires a company to adapt its promotion campaigns to many types of markets. For example, rural customers in India are dispersed over 3.2 million square kilometers (Anderson and Billou, 2007). With this physical distance also comes differences in culture, language, income and other variables that must be taken into consideration when classifying consumer markets (Mishra, 2008). In summary, when a company aims to design an effective promotion strategy, it must consider the education, patriarchal culture and cultural heterogeneity of each target region's population.

The type of product can also make it difficult to stimulate demand in rural markets. For example, research in rural India showed that when customers were given a choice between socially beneficial products (solar lanterns/cookstoves) and aspirational products (mobile phones), 85% of customers chose the latter (Karamchandani, Kubzansky and Lalwani, 2011). Because these kinds of products need more marketing to create demand, it requires that an enterprise have a higher financial margin to afford the "push." This potentially increases the final price to the end consumer, essentially making it even more difficult to sell the product.

It is important to note that this thesis aims to describe distribution channels that reach rural, middle-of-the-pyramid customers. Because the BoP population is not considered the target customer base in this thesis, a customer's income is not discussed as a direct barrier in this section. A customer's ability to pay is very different than a customer's willingness to pay. This thesis addresses the challenges associated with the latter.

2.2.2 Marketing techniques for rural markets

To sell an ICS cookstove, a company must build a creative strategy to reach its target customers (Ipe, Rosenbaum and Derby, 2015). This often involves creating an effective marketing message and strategy for positioning its product. According to a GACC report,

highlighting the functional, environmental or health benefits of a cookstove may not be in line with the customers' values (Ipe, Rosenbaum and Derby, 2015). It is important, therefore, to find a message that not only sounds good, but also sells.

Once a marketing message has been selected, a company must decide on its promotional channel. Marketing activities are typically based on two channel types: "above-the-line" (ATL) and "below-the-line" (BTL) (Putti, et al., 2015). Above-the-line approaches include traditional means of mass media like TV or radio. This method is heavily utilized in developed countries and has the potential to reach masses of people with minimal investment. The below-the-line approach, however, is more focused on personal connections with customers. The BTL approach can include, for example, activities such as road-shows, demonstrations, or door-to-door marketing.

A number of authors in BoP literature claim that BTL marketing techniques work best in rural populations. This is due to the fact that many rural customers often lack access to TV or radio, therefore limiting the effectiveness of ATL approaches (Chikweche and Fletcher, 2012; Beninger and Robson, 2015). In India, approximately 33% of rural households have access to TV while only 17% have access to radio (Figure 6). In consequence, rural populations often heavily rely on their social networks for information (Viswanathan, Rosa and Ruth, 2010), and BTL approaches should therefore actively target these social networks among villages. In the cookstove industry, for example, product demonstrations and user trials have been shown to be the most important drivers of cookstove adoption (Dalberg, 2013). Door-to-door demonstrations and informational pamphlets have also been effective in cookstove sales (Lewis et al., 2015). BTL activities not only help increase product awareness but can also enable the company to get feedback on their product due to these personal interactions (Chikweche and Fletcher, 2012).

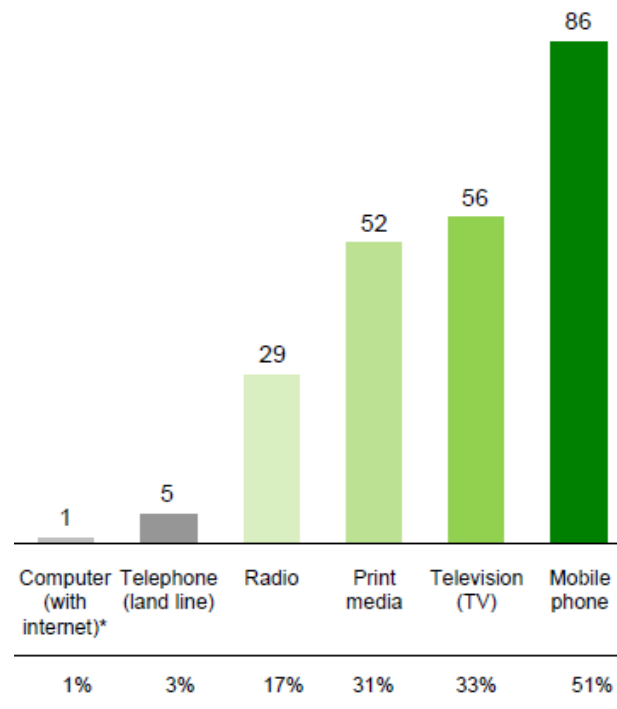


Figure 6. Access to mass communication modes in rural India. Numbers reported under bars represent percentage of total rural households in India; numbers reported at top of bars represent millions of rural households. Figure copied from Dalberg (2013) report.

While much of the BoP literature focuses on non-traditional marketing approaches, Beninger and Robson (2015) points out that, in reality, many companies use both traditional (ATL) and non-traditional (BTL) marketing forms in rural markets. A Monitor report (Kubzansky, Cooper and Barbary, 2011) makes the same conclusion based on a review of 47 companies in Africa's BoP; the authors claim that the most successful SMEs in rural markets employed both ATL and BTL approaches. Although an SME may heed this advice, the balance between the two marketing approaches depends greatly on the distribution model, product and customer base. Striking the right balance is challenging, yet crucial to succeeding in rural markets.

Many consumers world-wide are not aware of the health risks associated with burning solid fuels and their knowledge about clean burning stove alternatives is generally low. According to the World Bank (Putti, et al., 2015), the private sector cannot address this problem alone. Therefore, partnerships often play a very important role in a company's promotion activities. For example, direct sales agents, retailers, NGO representatives and government partners

have been known to take on various marketing responsibilities for SMEs selling socially beneficial goods (Kubzansky, Cooper and Barbary, 2011; Lewis and Pattanayak, 2012). Two reports by the Global Alliance for Clean Cookstoves (Dalberg, 2013; Ipe, Rosenbaum and Derby, 2015) also suggest cooperation with medical and insurance facilities to promote stove products as a way to encourage a healthier lifestyle. Cooperating with external organizations is especially helpful in facing cultural challenges such as gender barriers (Foell et al., 2011).

2.3 Availability: creating a competitive supply chain

According to the 4As, creating product “availability” means building trust and a loyal consumer base (Prahalad, 2012). One of the biggest challenges in ensuring availability in the BoP is that existing distribution channels are fragmented or non-existent (Anderson and Billou, 2007). According to the “sandbox innovation” concept (Prahalad, 2012), a company should first identify relevant barriers and then create an innovative distribution solution to make its product available to the BoP. While this framework could suffice in describing the case company’s distribution model in this thesis, the author has taken it one step further by also employing a more traditional distribution channel framework called the “4Rs”.

The principles in the 4Rs framework can help guide a modern supply chain manager in building a competitive supply chain (Christopher, 2011). As seen in Table 2, these 4Rs include responsiveness, reliability, resilience and relationships. The main reason for utilizing the 4Rs to assess availability in this thesis is that the framework takes the analysis one step further than just describing how an innovation has addressed a constraint. In using the 4Rs, one can also assess how the channel is managed and how it is designed to adapt to change. Shedding light on both the structure and the management of a dynamic distribution channel is arguably important in making a product “available” to a volatile, rural market.

Table 2. The ‘4Rs’ for competitive supply chains. Table adapted from Christopher (2011).

4Rs	General Definition
Relationships	Managing relationships in network
Responsiveness	Being able to adapt quickly as demand increases/decreases
Reliability	Managing processes that are efficient and accurate
Resilience	Being able to cope with unexpected disturbances

In the following sections, the 4Rs serve as a framework to help map out important aspects of rural distribution channels. Input from other fields of literature are utilized to fill in this overall framework. In addition, examples from “on-the-ground” distribution channels are also described where relevant. It is important to note that although the traditional 4Rs describe how to make a supply chain competitive, this is not always the goal in emerging, rural markets. Therefore, in addition to competitiveness, the viability and sustainability of a distribution channel design are also emphasized.

2.3.1 Relationships

Rarely do companies sell products directly from a factory to a customer. Rather, one or more intermediary makes up a supply chain to ensure that a product or service reaches a consumer base. In the past, competition was seen as “company against company”. Today, competitive advantage is often defined as supply chain against supply chain (Christopher, 2011). The phenomena of creating value with every activity in a company’s supply chain has been credited to the economist, Michael Porter (1985).

Today, supply chains are viewed as entire networks rather than a collection of separate entities. To manage the supply chain as a network, it is important that the suppliers and buyers focus on open communication and process alignment (Christopher, 2011). This means that they must agree on strategic goals and create plans together on how to achieve them. Rather than the traditional adversarial nature of buyer-supplier relationships, it is important to ensure that all partners are better off because of their cooperation (Christopher, 2011). These strategies should ultimately create win-win relationships based on mutuality and trust.

To enable this kind of relationship, a company must carefully design working incentives which are discussed in the follow section.

2.3.1.1 Partner incentives

It is crucial to correctly align incentives throughout a supply chain end-to-end. Although this may seem obvious, it is consistently overlooked by small-scale enterprises in emerging BoP markets (Kubzansky, Cooper and Barbary, 2011). The form of incentives can vary widely and depends heavily on the type of partner. In BoP supply chains, Karamchandani, Kubzansky and Frandano (2009) explain that margins should approach levels competitive with existing products sold.

In traditional distribution channels, Kotler and Keller, (2006) state that companies can use coercive power to threaten to withdraw business if a member fails to cooperate; alternatively, a company can offer a reward to a member for performing specific functions. For example, a producer may offer training or technical assistance to a distributor if the distributor cooperates in its promotion program. Legal contracts can also serve as incentives to cooperate.

2.3.1.2 Distribution channel activities in rural markets

As described above, incentives are important drivers for a well-functioning relationship with distribution channel partners. These drivers vary greatly depending on the type of partner chosen to complete an activity. However, before various types of partners are introduced, it is important first to understand the kinds of roles or activities needed in rural distribution channels.

Michael Porter, a Harvard Business School Professor, has created a well-known framework that helps map out and analyze a general firm's activities; this framework is called the "value chain" (Christopher, 2011). Porter (1985) explains that a company's competitive advantage cannot be understood as a whole; rather, each of its disaggregated activities related to designing, producing, marketing, delivering and supporting a product must be analyzed individually. He explains that if a firm can perform the required activities at a collectively lower cost than its competitors, then it can gain a competitive advantage (Porter, 1991). Therefore, Porter (1991, p.102) has defined an activity as the "basic unit of competitive advantage." Porter encourages firms to investigate each activity in their value chain to

determine whether they have a real competitive advantage in performing that activity (Christopher, 2011). If not, the activity should be outsourced. This value chain concept is useful as a framework in this thesis for two reasons. First, it provides a guide for identifying activities relevant in rural distribution channels models. Second, the framework encourages further assessment of the identified activities by questioning whether or not the activity creates a competitive advantage. The latter aspect can help analyze the case company's decisions to internalize or outsource its activities to partners in rural markets.

According to the value chain concept, a firm uses two types of activities to create a valuable product including primary and support activities (Figure 7). The first type of activity is a "primary activity", which are directly related to the product, the market and to the delivery of the product (Porter, 1991). The second type of activity is a "support activity", which supports each of the company's primary activities. Examples that lie within these two categories are illustrated in Figure 7 below.

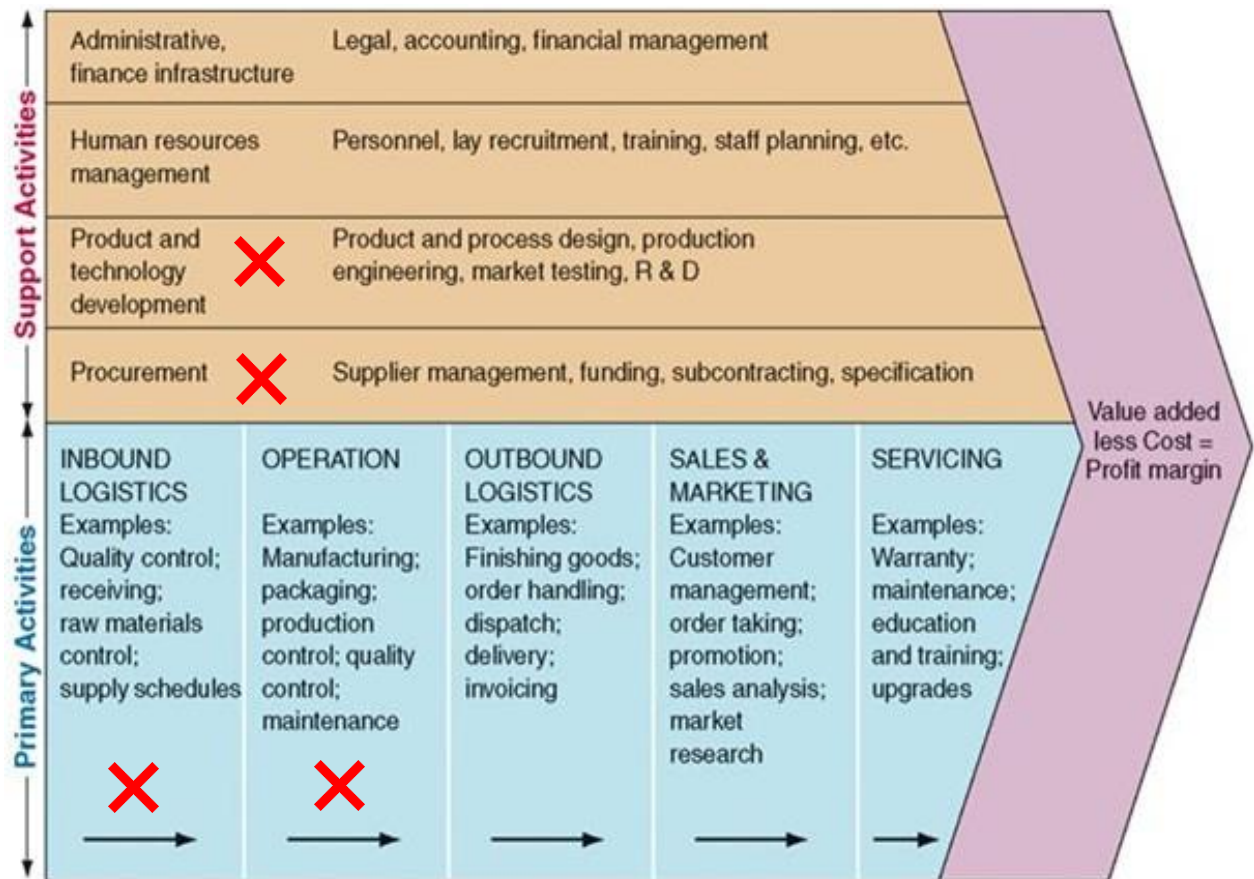


Figure 7. Porter’s value chain: primary and support activities. The red x’s signify the categories that lie outside the scope of this thesis. Figure adapted from MBA Skool (2016).

As previously explained, the scope of this thesis includes all “last-mile” distribution activities. This begins with the transport of the product from the factory and ends with the product in the hands of the end-consumer (Figure 5). Therefore, not all categories listed above in Figure 7 are relevant in this thesis. The categories excluded from this thesis involve activities that take place at Greenway’s factory site or activities that take place in the supply chain upstream from the factory. The excluded categories therefore include inbound logistics, operation, procurement and technology development. Those categories that do lie within the scope of this thesis include activities that occur in the distribution channel downstream from the factory.

This value chain framework provides a starting point for describing activities needed to serve rural markets. However, one cannot assume that all activities in this traditional framework are also applicable in rural markets. Additionally, rural markets may also require additional

activities not mentioned in Porter’s traditional framework. Therefore, a literature review is necessary to identify required activities for serving rural markets. As previously explained, specific literature in this context is lacking. Therefore, BoP literature has been utilized. Two reports, in particular, proved to be useful in identifying important activities in BoP channels. The Monitor Group consultants led two extensive studies--one in India and one in the African continent (Table 3). In both studies, the authors aimed to describe on-the-ground business models that are currently self-funding, operating at scale and successfully reaching BoP customers. The main difference in the findings in India vs. Africa was that the business environment was harsher in Africa than in India. For example, Africa’s rural populations were more spread out and the physical infrastructure was poorer than in India. However, the report’s authors found no major differences in the working business models between India and Africa. Therefore, both reports have been equally utilized in this thesis.

Table 3. A summary of the Monitor Group’s two reports in the country of India and the regions of Africa.

Region	Companies roughly assessed	Companies in focus (interviews, field visits)	Authors, year
India	270	36	Karamchandani, Kubzansky and Frandano, 2009
Africa	400	47	Kubzansky, Cooper and Barbary, 2011

Based on these reports, a number of activities contributed to more than one BoP distribution model. Therefore, instead of describing all possible activities in BoP distribution channels, only those that were repeatedly covered are analyzed in this thesis. These elements are summarized in Table 4 below. While some activities resemble those in Porter’s traditional value chain (distribution, storage etc.), others are unique to BoP markets. These include: “network access”, “after-sales service” and “financing.” In rural areas, partners that provide “network” activities to a firm can benefit the firm with its business or employment connections in the local community. For example, if a firm enters a rural area, it may need the help of a non-profit present in the area to suggest suitable retailers or entrepreneurs to support the firm. Gaining access to a social network in rural markets is key to gaining customer trust

(Beninger and Robson, 2015) and therefore key to creating business opportunities. The “after-sales service” refers to the repair of any technical problems that a customer may have with the product after the purchase within the given warranty date. In the cookstove industry, there are mixed opinions as to whether this kind of service is necessary; some argue that a product should be designed to minimize defects while others argue that proper maintenance of ICS cookstoves is crucial for delivering the advertised health benefits (Dalberg, 2013; Lewis et al., 2015). The “financing” activity refers to credit or loans offered by microfinance institutions (MFIs) in rural areas. For example, MFIs can provide loans to end consumers to help them purchase the product. Although this financing does not benefit the firm directly, it does financially support the “sales” activities in the firm’s distribution channel.

Table 4. Relevant activities identified in downstream distribution models that are designed to serve the BoP. Information collected from two Monitor reports (Karamchandani, Kubzansky and Frandano, 2009; Kubzansky, Cooper and Barbary, 2011)

	Category	Activities	Activity description
Support	Administrative	Management	Oversees financial and managerial activities of the company
	Human resource management	Recruitment and training	Recruits and trains employees and distribution channel partners
Primary	Outbound logistics	Storage	Provides physical space for storage
		Transport	Moves product from one distribution channel node to another
	Sales and marketing	Promotion	Employs ATL/ BTL marketing techniques to raise awareness
		Network access	Provides employment/business connections to enable other DC activities
		Sales	Performs point-of-sale transactions
		Financing	Provides finance to enable other distribution channel activities
	Servicing	After-sales service	Performs after-sales service to fix or maintain product

2.3.1.3 Distribution channel partners

Once a company has identified the activities required for “last-mile” distribution to BoP markets (Table 4), it is then necessary to select partners that can fulfill those job roles. In rural markets, traditional partners are limited due to the lack of established infrastructure (Sheth, 2011). Therefore, firms active in emerging markets must learn to create innovative business models (Chakravarthy and Coughlan, 2011). Choosing the right partners and their associated roles in the business model is crucial to a firm’s success. For example, Kubzansky, Cooper and Barbary (2011) found that despite openness to partnerships with NGOs and other parties, nearly 60% of companies serving the BoP noted that such partnerships were a source of difficulty. Therefore, to avoid such problems, each partner must be carefully considered.

This thesis aims to consider suitable partners for distribution channels set in rural, emerging markets. As previously introduced, the same extensive Monitor reports (Karamchandani, Kubzansky and Frandano, 2009; Kubzansky, Cooper and Barbary, 2011) are utilized to identify potential partners active in BoP channels. Rather than summarizing all business models mentioned in these extensive reports, this thesis highlights only the relevant partners (i.e. agricultural partners are not relevant to the cookstove industry). Based on the findings in these Monitor reports, relevant partners active in the BoP areas include: warehouse partners, distributors, a micro-sales force, informal retailers, SMEs, NGOs/non-profits and microfinance institutions. A summary of these partners and their capacity to fulfill the aforementioned activities—as described in the reports—can be found in Table 5.

Table 5. Partners and their associated role in market-based distribution channels active in BoP markets. Data collected from Monitor Group reports by Kubzansky, Cooper and Barbary (2011) and Karamchandani, Kubzansky and Frandano (2009).

	Activities	Ware-house	Distrib-utor	Micro-sales	Retail	SME	NGO	MFI
Primary	Storage	x	x		x	x		
	Transport	x	x	x		x	x	x
	Promotion		x	x	x		x	x
	Network access		x	x		x	x	x
	Sales		x	x	x		x	x
	Financing sale							x
	After-sales service				x		x	x
Support	Training & recruitment						x	x
	Administration						x	x

To further explore how these specific partner types are utilized in BoP markets, each partner is introduced in the following sections. Each is discussed in terms of their ability to perform a distribution channel activity as well as experience-based recommendations on how they should be managed from various fields of literature.

Warehouse & distribution companies

Warehouse companies generally provide storage services to companies. Their job roles are overall similar when serving traditional companies or companies serving the BoP. The main role of many distributors is to buy, transport and sell a product to partners in the distribution channel who are in contact with the end customer. In India, this role can be challenging because physical infrastructure remains weak--especially in the northern regions. For example, only 54% of all roads in India are paved (Dalberg, 2013). However, consumer goods companies have proven that it is possible to leverage road and railway networks in “hard to reach” areas of India, which suggest that cookstove companies can do the same (Dalberg, 2013).

Dedicated micro-sales force

Some companies use dedicated “micro-sales” partners to fulfill a variety of activities including sales, promotion, transportation and network access. These partners are local agents that are recruited and trained to bypass shops and sell directly to rural communities where there is no retail distribution network, no advertising coverage or inadequate transportation (Kubzansky, Cooper and Barbary, 2011). According to Sodhi and Tang (2014), this model can be explained with a metaphor called the “hub and spoke.” Here an enterprise can set up in a larger village known as the “hub.” From the hub, micro-entrepreneurs can travel out to more rural areas known as “spokes” to sell goods or services.

This micro-entrepreneurship model appears to be a win-win solution, because it provides an income to local, rural entrepreneurs while also providing sales to an enterprise. In reality, however, this model has experienced only limited success. One of the main problems experienced is that companies find it difficult to recruit and maintain qualified agents at scale (McKague and Tinsley, 2012). For example, HLL’s Shakti project in India has struggled to hang onto its micro-entrepreneurs, with turnover rates reaching up to 50% within 3 months (McKague and Tinsley, 2012). Micro-entrepreneurs are often involved with two or more sources of income at a time in rural areas and may therefore not be dedicated to the product. As a result, the agents may favor “fast cash” from other endeavors that is not achievable when selling a socially beneficial good (Kubzansky, Cooper and Barbary, 2011). Because of the in-depth training required for each micro-entrepreneur, this high turnover lead to great

financial loss for the company. Additionally, transport can be expensive in these areas especially if the product is large.

Taking into account the previous experiences, this model works best for simple products for which demand already exists (Kubzansky, Cooper and Barbary, 2011). It makes financial sense to carry products that require deep consumer education only if the margins make up for micro-entrepreneurs' time spent.

Informal retailers

In this cooperation, enterprises collaborate and build on existing informal distribution and sales channels. Contrary to the formal retail stores seen in urban centers, these small, informal shops deliver products to poor, rural communities (Kubzansky, Cooper and Barbary, 2011). As a whole, these shops generally rely on multiple suppliers and deal with low sales volumes. As a channel, they are fragmented and unorganized. They often lie outside the tax regulation systems, which makes it difficult to enforce contractual agreements (Kubzansky, Cooper and Barbary, 2011). Vachani and Smith (2008) emphasizes the important role that retailers can play in cookstove sales. Retailers should therefore be respected by the rural community because their reputation can greatly impact product sales. These retailers should also be well-trained to offer customers trustworthy advice and product recommendations (Kubzansky, Cooper and Barbary, 2011).

Managing these types of partners can be difficult, but companies generally have a common goal: to transform a broken system into an effective, commercially viable supply infrastructure (Kubzansky, Cooper and Barbary, 2011). To do this, the selection of high-quality retailers is crucial and should be guided by rigorous criteria. Once the retail partners are selected, incentives become especially important. For example, a company can offer an informal shop the opportunity to upgrade the shop's interior to attract more customers. A company can offer various training sessions (technology, business, specialist knowledge etc.) as a way to ensure that the shopkeeper does not feel overburdened by selling a specific product. Finally, informal shops often need attractive margins as motivation for cooperation (Kubzansky, Cooper and Barbary, 2011).

Other SMEs

This shared channel model depends on cooperating with already-existent distribution platforms (Kubzansky, Cooper and Barbary, 2011). India has an extensive rural and state-owned banking network, but law forbids the sale of physical goods (Karamchandani, Kubzansky and Frandano, 2009). However, partnering with other private firms remains a viable option for firms serving rural markets.

Piggy-backing on other SMEs offers financial sustainability, because the costs of the supply chain can be shared between multiple partners. Increasing product offerings also makes it easier to reach economies of scale, and therefore decreases the overall cost of distribution channel activities (Karamchandani, Kubzansky and Frandano, 2009).

A good example of this kind of partnership is a success story involving India's rural telecommunications companies. Major mobile carriers shared the cost of building rural communication towers which now reach millions of people (Karamchandani, Kubzansky and Frandano, 2009). This feat would have been impossible to do alone, yet together, all carriers won by expanding mobile markets and therefore increasing overall sales. Because the nature of all SMEs is to generate profit, partnerships between companies must be managed carefully as to increase cooperation and minimize competition.

NGOs and non-profits (excluding micro-finance)

NGOs can bring various competencies and resources into a partnership with a firm, especially in terms of social network access and access to subsidy programs. In regards to social network access, NGOs often have access to deeply-rooted resources, solid government relations and knowledge about the local community. These connections can be very beneficial to firms entering into new rural markets (Dahan et al., 2010). Rather than building its own network from the ground up, many firms opt to partner with NGOs to utilize their connections to potential employees and businesses. Because of their close relationship with the local community, NGOs have proven to be very valuable in promotion activities with firms. NGOs are adept in identifying target customers and are thus well-equipped in creating appropriate, non-traditional awareness campaigns (Dahan et al., 2010; Sheth, 2011). For these reasons, Lewis and Pattanayak (2012) recommend that local cookstove companies connect with local NGOs. This cooperation has historically proven successful in some regions of India during India's government cookstove program (NPIC) which ran from 1984 – 2001

(Barnes, Kumar and Openshaw, 2012). Especially in West Bengal, NGOs helped promote and service improved cookstoves across the state (Barnes, Kumar and Openshaw, 2012). Because of this precedent, other reports have pointed out that involving local grassroots organizations is key to selling ICS cookstoves (GIZ, 2013).

However, non-profit and for-profit partnerships can often be mismatched (Karamchandani, Kubzansky and Lalwani, 2011). This can be seen as result of conflicting priorities, with non-profits focusing on social impact and businesses focusing on profit (Bland and Hamann, 2015). In the case of the cookstove industry, a current debate exists around the use of subsidies; subsidies are often the foundation that NGOs or nonprofits rely on to sell improved cookstoves (Simon et al., 2014). The non-profit side claims that subsidies for cookstoves are needed in poor areas to reduce the health and environmental problems associated with traditional cooking. The for-profit side claims that direct subsidies can lead to a situation where consumers grow accustomed to a subsidy-priced cookstove and may refuse to pay more when the subsidy disappears (Simon et. al, 2014). In fact, this effect was also seen after the India's NPIC program (Shrimali et al., 2011).

Operational differences can also exist. While for-profit firms may be more adept at developing and scaling distribution channels, NGOs may be better at responding to inevitable setbacks associated with bringing products to rural populations (Shrimali et al., 2011). When working with NGOs, therefore, a company must balance two important factors: its customer reach and the control over its distribution activities (Shrimali et al., 2011). Overall, these kinds of partnerships must be carefully managed so that the goals and competencies are strategically aligned.

Micro-finance

It is important to note that many micro-finance institutions are also non-profit organizations, which means that attributes described in the previous section are also relevant here. The major difference is that microfinance institutions are also able to offer financing to customers in the distribution channel. In this partnership, microfinance institutions can help support entrepreneurs or customers with a loan to buy a firm's products. In the cookstove industry, microfinance institutions have played a key role in managing distribution logistics as well as serving as a trustworthy source of information to villagers (Shrimali et al., 2011; Lewis et al., 2015).

Although each level of the model is motivated by business success, some partnership attempts have been disappointments. In general, this was due to giving MFIs too much responsibility in the distribution channel—for example order fulfillment and after-sales service (Kubzansky, Cooper and Barbary, 2011). Therefore it is recommended that MFIs should be seen as “door openers” (Karamchandani, Kubzansky and Frandano, 2009). Based on past experiences in India, it is also recommended that microfinance institutions are monitored to ensure that they are not profiteering from their customers (Kubzansky, Cooper and Barbary, 2011)

2.3.2 Responsiveness

In the past, companies have coped with changes in demand based on partially accurate sales forecasts. In today’s dynamic marketplace, organizations must learn to adapt quickly to change. Therefore, rather than being forecast-driven, organizations must become demand-driven (Christopher, 2011). Agility is the key to making this transition. Christopher (2011) explains that an agile supply chain is able to respond rapidly to meet the precise needs of a market. Being able to respond rapidly is often based on the way a company collects information and acts on changes in the market. Being aware of the precise needs of a market means that a company collects and responds to customers’ preferences. The importance of customer feedback and information flow therefore are further discussed below.

Customer feedback

An SME has the opportunity to sell to three types of buyers. These include business-to-business (B2B), business-to-government (B2G) and business-to-customer (B2C). As seen in Figure 8, when a business sells its products to the government (B2G) or to another business (B2B), it no longer has direct communication with the end-consumer. This disconnect between the production company and the end-user can make it difficult for a business to collect feedback on the product’s functionality and design. Ultimately, this can hinder a company’s ability to respond to real customer demand. Therefore, this thesis focuses on the B2C business model in order to explore how a company builds a supply chain that is directly sensitive to market demand in an emerging economy.

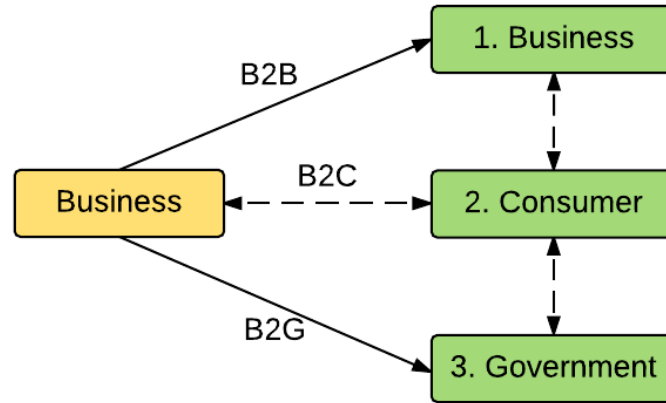


Figure 8. Three types of business models. The two-headed, dotted arrow flows represent 2-way communication between an entity and the end-consumer.

Within the cookstove industry, customer-centric design has become an important focus point in literature (Sinton et al., 2004; GACC, 2011). According to Ipe, Rosenbaum and Derby (2015), cookstove companies in the past have made the mistake of designing stoves focused solely on technological solutions to optimize combustion and efficiency. Over the years, however, companies have learned the value of also taking into account the end-consumers' preferences such as design, taste and cooking times (GACC, 2011). The government-led Indian National Programme for Improved Cookstoves (NPIC) illustrates this point very well. From 1983 – 2002, private companies sold their stoves to the government who then sold them to the end-consumers at a subsidized price. Although the program successfully distributed tens of millions of stoves, very few of the end-consumers continued to use them (GIZ, 2013). One of the major contributing factors was that the NPIC functioned in a top-down approach and did not take into account end-user feedback on the stove design/functionality (GIZ, 2013; Shrimali et al., 2011). Customer feedback never made it back to the production companies, who therefore continued to produce a stove design that did not fit customers' needs.

Information flow

Information is an important element in a company's ability to respond quickly to market changes. In developed countries, information now takes the form of digital data based on internet technology. For example, information on sales-quota attainment or average inventory levels (Kotler and Keller, 2006) can be sent back to company headquarters with the click of a

mouse. In emerging economies, however, many small informal shops lack access to internet or even electricity in some cases. This makes it difficult for manufacturers to obtain real-time data on sales and customer demand. Therefore, firms active in rural markets must consider alternative modes of communication between retailers and production companies.

2.3.3 Resilience

No matter how well a supply chain is managed, unexpected events are often impossible to predict. In these cases, there is a need for organizational resilience. Resilience refers to the ability of a supply chain to cope with unexpected disturbances (Christopher, 2011). To build a resilient distribution channel, an organization must learn how to manage supply chain risk. As seen in Figure 9, the management process can be broken down into several steps.

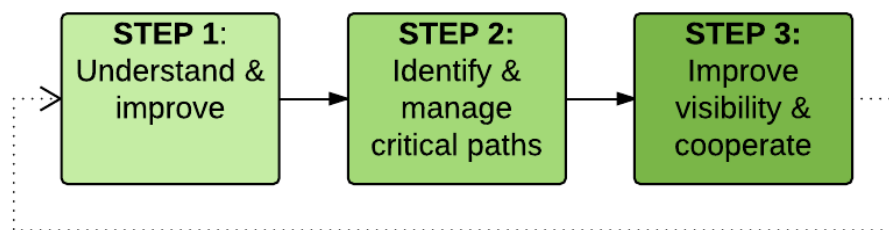


Figure 9. The supply chain risk management process. Information adapted from Christopher (2011).

In the first step, one must understand the company's internal infrastructure (processes, relationships, regulations etc.) and then improve, or simplify, the supply chain. In the second step, a company must identify nodes within the supply chain that are "critical paths." These are pathways that are necessary for the supply chain to function, yet also vulnerable to risk. According to Christopher and Peck (2004), potential risks that can threaten critical paths can be categorized into three groups: internal to firm, external to firm but internal to network and external to network, also known as environmental risk. A schematic of these three risk categories can be found in Figure 10 below.

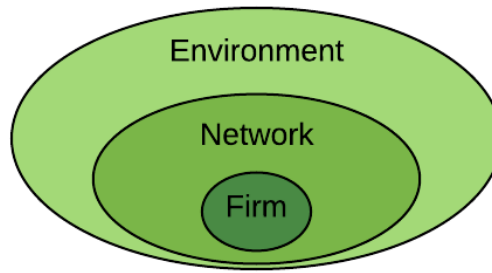


Figure 10. Three levels of organization to which risk can occur. Categorization information adapted from Christopher and Peck (2004).

The risks that lie within the firm-level category are associated with a firm's internal processes and controls. These risks can affect communication infrastructure or internal transportation (Christopher and Peck, 2004). For example, a sales manager is generally expected to follow-up with the company's front-line sales officers. If this communication does not occur, the sales manager is at risk of misguiding the company's overall sales strategy. Risks that lie within the network-level category are often associated with supply and demand (Christopher and Peck, 2004). A supply-related risk refers to disturbances that occur upstream affecting suppliers. Likewise, a demand-related risk refers to disturbances that prevent the product from satisfying market demand; these risks relate to processes and infrastructure dependences on organizations downstream or adjacent to the local firm (Christopher and Peck, 2004). In a rural market, for example, most retailers are considered "informal", which means their processes are often unorganized. As such, these unorganized retailers may not communicate their sales numbers to the central firm, which can leave a retail shop under-stocked therefore disrupting sales. Risks that lie in the last category, external to the network, may occur outside a firm's network, but subsequently cause carry-over effects that influence the firm (Christopher and Peck, 2004). These kinds of risks can be natural disasters or socio-economic disruptions. For example, in a rural market, natural disasters can wreak havoc on ill-designed buildings or transportation infrastructure to which a firm needs to sell its products.

Once a company identifies potential risks and subsequent "critical paths" in its supply chain, a company must then create a plan to manage them (Figure 9). The company has two options on how to approach this goal: first is to create contingency plans in case a crisis occurs and the second is to reengineer the supply chain to prevent these crises (Christopher, 2011). The final step of the supply chain risk management process (Figure 9) is improving the visibility

of the supply chain network. Increasing communication throughout the network is crucial to maintaining a continuously functioning supply chain. This requires cooperation among channel partners.

Rural markets in developing countries are still nascent, making them vulnerable to various risks (political, environmental, infrastructural). Identifying weak points in this volatile environment is a crucial step for a company to prevent crisis. An experience of a cookstove company in rural India can help illustrate this point. The company, Oorja Cookstoves, managed to sell over 400,000 improved cookstoves in India from year 2006 to 2010, but sales began to plummet after 2010 (Thurber et al., 2011). Upon investigation, Thurber et al. (2011) claimed that the main cause for this crisis was the fluctuating price of agricultural waste necessary for the stove's pelletized fuel production. In this example, a "critical path" therefore was the sale of biomass from farmers to Oorja's pellet producers. Oorja was swift in reengineering its supply chain and now sell their stove and fuel pellets to commercial kitchens, which can afford the fuel price fluctuations. As seen in this example, a firm can manage risk as long as vulnerabilities are identified and addressed effectively.

2.3.4 Reliability

Reliability in a supply chain context refers to a company's ability to consistently deliver high quality goods/services. One of the biggest threats to reliability is variability (Christopher, 2011). For example, if a company has a supplier whose lead times are always varying, it is difficult to guarantee exactly when a finished product will be available to the end user. This ultimately leads to poor service and therefore degrades reliability.

It can be argued that supply chain managers should be "complexity masters" (Christopher, 2011). The decrease of non-value adding complexity can ultimately minimize uncertainty and risk. To do this, a company must first assess a number of sources of complexity. For example, a company can target network complexity by minimizing the number of links in its supply chain. Other sources of supply chain complexity include: process, range, product, customer, supplier, organizational and information (Christopher, 2011). While there are many sources of complexity, BoP literature often discusses two problematic sources relevant in BoP channels; these include organizational and product offering complexity. These two points are discussed further in the following sections.

Minimizing organizational complexity

Having investigated 36 initiatives selling socially beneficial goods in India (Karamchandani, Kubzansky and Frandano, 2009), research showed that creating a custom channel was the single most frequently occurring mistake that often led a company to failure. In this context, a custom channel refers to a supply chain to which one company does everything from manufacturing to retail. This absolute control is expensive and time-consuming when serving rural, BoP markets.

As discussed previously, a company should assess whether each activity in its value chain adds a competitive advantage (Porter, 1985). If not, outsourcing that activity to a partner is a good option. However, a company must be wary of sending its activities out in too many directions, because outsourcing can also lead to an increase of complexity. This complexity can become detrimental if it begins to challenge a producer's control over the distribution channel. In rural markets, it is crucial to strike the appropriate balance between control and outsourcing. To ensure end-to-end control in BoP markets, for example, Vachani and Smith (2008) emphasizes the importance of establishing a strong centralized service design and supervisory systems.

Minimizing product offering complexity

A company that sells many different product types must learn to manage the associated increase in complexity and risk in its supply chains. In the Karamchandani, Kubzansky and Frandano (2009) report based in India, it was found that SMEs that were able to successfully reach scale in rural markets all began as highly specialized enterprises. Specializing in a narrow range of products allowed these SMEs to reduce cost by exploiting economies of scale (Karamchandani, Kubzansky and Frandano, 2009). Kubzansky, Cooper and Barbary (2011) also found that narrowing the product line also simplified the communication between a company and its retail partners. Overall, a company that limits its product line can more easily manage its distribution channels and retailers in rural markets.

2.4 Summary of analytical framework

In this chapter, different elements of traditional distribution/marketing theory and BoP literature were combined to build an analytical framework for this thesis. As discussed in the introduction, both fields of literature provide unique aspects for analyzing the Indian case company. In reference back to Table 1, the traditional distribution/marketing theory sheds light on basic driving principles of marketing and logistics for customers with buying power while the BoP literature highlights characteristics and specific models relevant to customers living in rural areas. In the following sections, two elements of Anderson and Billou's (2007) "4As" marketing mix are in focus: awareness and availability. The author describes how the case company will be analyzed according to the respective field of literature. A visual depiction of this analytical construct is then given.

Marketing

While companies marketing to developed economies must focus on "promotion" activities (Kotler and Keller, 2006), companies marketing in BoP markets must instead create "awareness" to stimulate customer demand (Anderson and Billou, 2007). As depicted in Figure 11, these concepts help build the analytical framework in this thesis. Where the traditional distribution/marketing theory serves only as a starting point (green), the BoP centric theory (yellow) serves as the guiding framework for analyzing the case company.

According to the BoP "sandbox innovation" concept (Prahalad, 2012), an SME active in rural BoP markets must take several aspects into consideration. First, the SME must identify the barriers unique to the BoP market they aim to supply. Based on the literature review (white), these barriers may be associated with the characteristics of customers living in rural markets or with the nature of selling a socially beneficial product. An SME must then address these challenges by creating a marketing channel strategy within the identified constraints (Prahalad, 2012). A literature review (white) suggests two types of marketing channels to stimulate demand including above-the-line (ATL) and below-the-line (BTL) approaches. The ideal balance between these marketing methods greatly depends on variables unique to each company and rural market. Together, the aspects derived from the literature review (white) are considered when analyzing the case company's marketing strategy for rural markets.

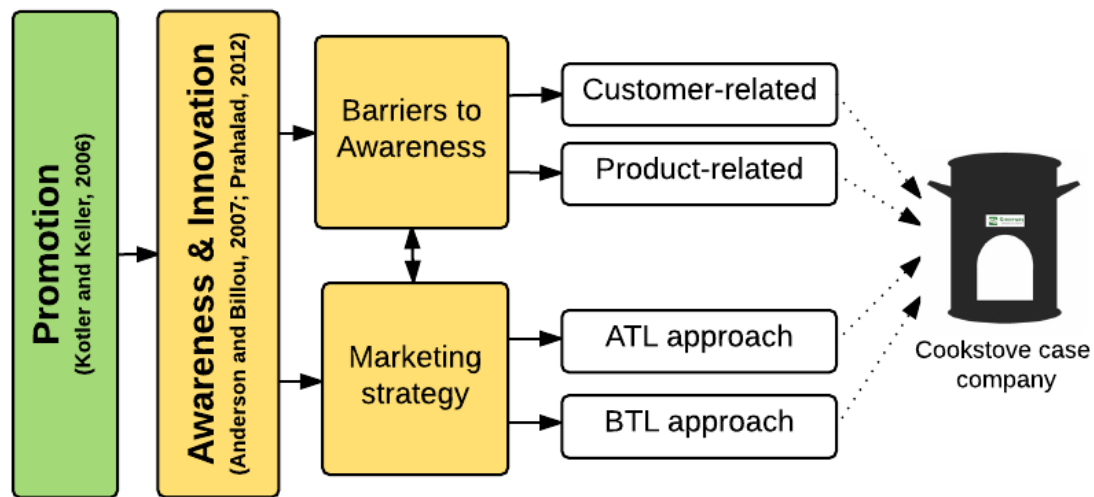


Figure 11. The theoretical foundation used to analyze how the case company creates product awareness. The yellow-colored boxes indicate elements that are explicitly covered in BoP literature whereas the green-colored boxes indicate elements that are covered in traditional marketing channel literature. The boxes with no color fill (white) indicate elements based on a review of various fields of literature.

Distribution

While companies distributing to developed economies must focus on “place”-related aspects (Kotler and Keller, 2006), companies serving BoP markets must instead focus on making its product “available” (Anderson and Billou, 2007) (Figure 12). Making a product available is based on a company’s ability to work within the constraints of the BoP market and build a distribution channel to reach as many customers as possible. In describing the case company’s distribution models, both the structure and the dynamic management of the channel are important factors to consider. Therefore a traditional distribution theory called the 4Rs model is utilized (Christpher, 2011). The principles investigated with the 4Rs include: relationships, responsiveness, resilience and reliability. Within each of these four broad categories, a literature review is conducted to identify aspects especially relevant for BoP, rural markets (white). These selected theoretical aspects are then considered when analyzing the case company’s distribution channel structure and management.

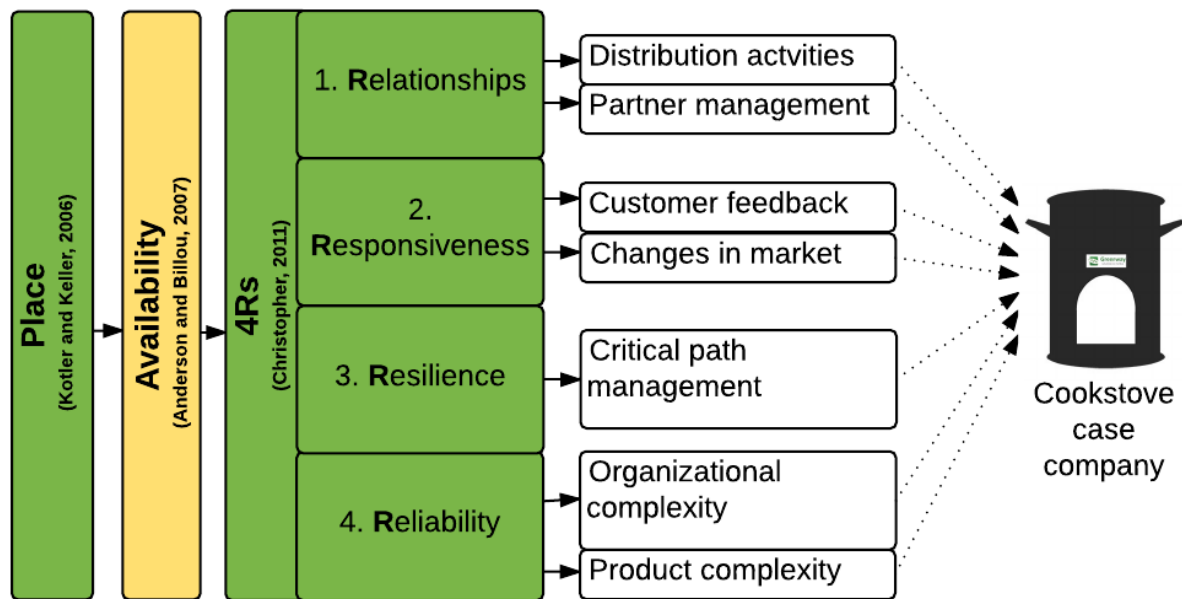


Figure 12. The theoretical foundation used to analyze how the case company makes its product available. The yellow-colored boxes indicate elements that are explicitly covered in BoP literature whereas the green-colored boxes indicate elements that are covered in more traditional distribution channel literature. The boxes with no color (white) fill indicate the elements that are relevant to the BoP markets based on a literature review.

3 Methods

From current literature, researchers agree that distribution channels in developing, rural markets should be designed with unique, tailored characteristics compared to those in developed countries. However, the strategy for setting up rural distribution channels in literature is highly variable. Additionally, there is a gap in empirical evidence as to how companies employ classical distribution theory in emerging markets. For example, how rural supply chains can be made to be responsive, resilient, relationship-based and reliable (4Rs). This thesis aims to use a case company to illustrate how a successful company markets and distributes its product in rural areas.

3.1 Case study design

The research questions in this thesis aim to uncover how elements from general supply chain theory and BoP literature are employed in on-the-ground rural distribution channels. This kind of investigation, therefore, seeks to answer a “how”-type question. The author has chosen to conduct an exploratory type study to address this question and to find out “what is happening” (Saunders, Lewis and Thornhill, 2009) on the ground in India.

Exploratory research can be based on a literature search or on conducting interviews with persons with embedded or expert knowledge of the topic in focus (Saunders, Lewis and Thornhill, 2009). Therefore, this thesis focuses on an in-depth single case study based on interviews with representatives active in the cookstove or clean-tech. industries. A single case study design is suitable, because it aims to provide insight into a phenomenon that few have considered before (Saunders, Lewis and Thornhill, 2009; Eisenhardt, 1989). The general field of rural distribution is currently an underexplored research area, which makes the single case study design suitable in this thesis.

3.1.1 Setting the case study context

According to Eisenhardt (1989), a case study is a research strategy that focuses on understanding the dynamics within a single setting. The “single setting”, or context, for this thesis is the clean cookstove industry in the rural markets of India. In the following sections, the context of this case study is described. First, the country of India is described to provide a general rationale as to why the country is a suitable environment for this case study. Next, the

rural market in India is introduced to illustrate the general profile of the target population. Finally, the current state of the cookstove industry and the case company within this context are described.

3.1.2 India as the chosen context

India provides ample opportunities for research on rural distribution channels for various reasons. Firstly, much of the BoP literature has thus far focused on Asian regions (Anderson and Billou, 2007; Bland and Hamann, 2015). This means that countries like India are often discussed in BoP market literature. Few published works have, however, specifically discussed rural distribution channels in India. This situation, therefore, creates an opportunity to fill in the gaps in literature.

Another aspect making India an attractive country of study is its economic profile. India belongs to the BRIC (Brazil, Russia, India, China), a group of developing countries believed to have advancing emerging markets and economies. Since India's Economic Liberalization Act of 1991, its economy has been liberalizing and becoming more open to privatization (Batra et al., 2015). As a result, entrepreneurship and small business activity in the country is on the rise (Batra et al., 2015). Taking into account both India's fast economic growth and its entrepreneur-friendly business environment, India is home to many SMEs functioning in rural distribution channels.

The final point making India an interesting research context is that it has a relatively large rural population. For example, about 68% of India's population lives in rural areas as compared to the rural populations of other BRIC countries including China at 46%, Brazil at 15% and Russia at 26% (The World Bank, 2016). According to the Global Alliance for Clean Cookstoves report (Dalberg, 2013), India's rural population is likely to remain rural over the next 10 years. This suggests that research on setting up successful rural distribution channels in India is well-worth the investment.

3.1.3 Rural, informal markets in India

This thesis aims to investigate how a cookstove can be delivered to rural markets throughout India. The distribution channels needed for the "last mile" therefore requires knowledge about the rural populations of India as well as the current infrastructure of India's potential informal retail sector.

As mentioned previously, most of India's citizens (68%) live in rural areas. The Indian National Census (Government of India, 2011) defines a rural area as an area that is not urban. That being said, an "urban" area must meet the following criteria: first, it must have a population of at least 5,000 inhabitants; at least 75% of the area's working males must work with non-agricultural related jobs; finally, the density of the area's population must be at least 400 sq. km (Government of India, 2011). The land areas in India that do not meet these criteria are therefore considered "rural." This National Census definition of the term "rural" is described here only to provide the reader with a general idea of what "rural" means in India. However, this thesis uses the term "rural" loosely, where the use of the word does not always reflect this National Census definition. This is due to the fact that the BoP and emerging market literature utilized in this thesis often use varying definitions of "rural." To consistently incorporate information from different sources, the definition for the word "rural" in this thesis must be kept flexible.

India's current retail infrastructure can play a large role in how a company chooses to distribute its products. As seen in many other developing countries, India's retail sector is marked by significant "informal" business activity. Informal employment in India is defined as unorganized workers who do not have employee social security benefits and work for a proprietary private company with fewer than 10 employees (Government of India, 2012). The informal shops in India, called *kirana*, often sell basic needs to the rural parts of the country (Dalberg, 2013). The share of labor input in this unorganized wholesale and retail trade is approximately 98% (Government of India, 2012). This high percentage indicates the importance of informal channels in India and suggests that a company may therefore consider this type of infrastructure when building its distribution channels.

3.1.4 Clean cookstoves as the industry chosen

The clean cookstove industry has been chosen for this study for various reasons. First is that the need and the demand for ICS cookstoves is much greater in the rural areas compared to the urban regions of India, therefore making research on rural distribution very relevant in this industry. According to the Global Alliance of Clean Cookstoves Report (Dalberg, 2013), approximately 400 million people are exposed to negative health impacts related to inefficient cookstoves. This number could be drastically reduced if households moved away from traditional cookstoves and toward improved cookstove models (Figure 1). This upgrade is especially important in India's rural populations.

The second reason that the cookstove industry in India makes an interesting case is that some companies have shown recent success in distributing stoves to rural areas in India. Over the last 25 years, a number of efforts to introduce improved cook stoves (ICS) to rural parts of India have largely failed (Shrimali et al., 2011; Lewis and Pattanayak, 2012). These failures have been subject to scrutiny, and several sources have concluded that insufficient supply chains were one of the main causes for failure (Lewis and Pattanayak, 2012). The Global Alliance for Clean Cookstoves (GACC, 2011) has also recognized the importance of rural supply chain infrastructure, and currently focuses efforts on strengthening ICS supply chains throughout India. In recent years, the knowledge and investment for companies in the clean cookstove industry has increased, leading to the growth of several SMEs active in rural areas.

3.2 Selecting a case company

A company called Greenway Grameen Infra—also known as Greenway—has been selected as the case company in this thesis for two reasons. First, the company is relatively new, and its business model has not yet been assessed in depth in academic literature. For example, Shrimali et al. (2011) has compared the business models of key players in the cookstove industry; however, Greenway was not a mature company at that time and was therefore not included in the study. Greenway is now among the top-selling cookstove companies in India (GACC, 2014), which makes it an interesting company to investigate further.

The second reason Greenway is an interesting case study for this thesis is that its distribution channel activity could help address the thesis's research questions. This is due to the fact that Greenway's company profile and business activities fit certain criteria relevant to this thesis. These criteria include: engages with rural Indian customers, is financially self-sustaining, sells an ICS cookstove and also operates at scale (Table 6). An explanation as to how Greenway fits each criteria is discussed in the following sections.

Table 6. Selection criteria for case company in this thesis.

Criteria	Description
1. Geography of target population	Must engage with Indian customers living in rural areas.
2. Business model	Must be a “for-profit” company that is not dependent on donor funding.
3. Product type	Must sell an intermediate or advanced ICS cooking stove model.
4. Scale	Must operate at a large scale relative to other companies in India’s clean cookstove market.

Geography & business model

The “geography” criteria of the company’s target population is important, because this thesis aims to describe distribution elements specific to rural customers. Greenway fits the “geography” criteria, because it actively engages with India’s rural population. As explained on Greenway’s company website, there is great business opportunity in these areas because rural consumption is on the rise (Greenway, 2016a). The CEO of the company also makes it very clear that Greenway is committed to bringing clean, affordable and desirable products to rural customers (Ashden, 2014).

For the “business model” criteria, a company must not rely on donor funding to survive and must therefore be self-sustaining. Greenway fits the criteria, because it is a “for-profit” product design and distribution company (Greenway, 2016a). Therefore Greenway does not rely on charitable donations or subsidies.

Product type

The third criteria, “product type”, requires the case company to sell a stove design that fits within the improved cooking solutions (ICS) category. In reference back to Figure 1, ICS refers to cookstove designs that are basic or intermediate level cooking solutions. The rationale for focusing on a company in this category instead of modern fuel (i.e. LPG) is that most of the rural population currently uses biomass fuel. As previously discussed, this is due to the fact modern fuel is not readily available in rural areas. Greenway fits this “product

type” criteria as it sells two intermediate ICS cookstove models (Figure 13). Both stoves are based on the well-known rocket design principle. This means that the stove’s “chimney” directs air from the base through burning wood and encourages gases and flames to mix above it.

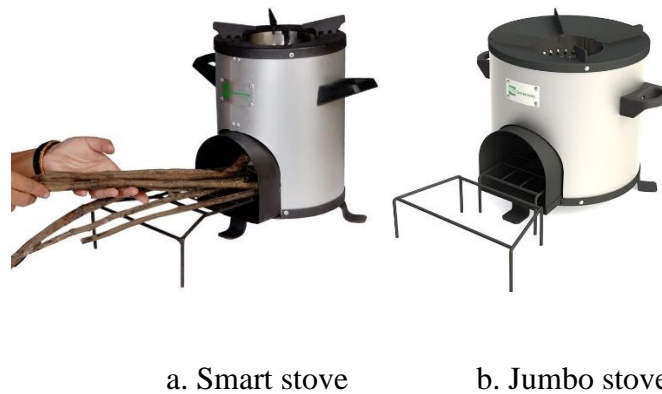


Figure 13. Greenway’s two ICS cookstove products. Photos copied from Greenway company website (Greenway, 2016b).

Scale

The final criteria, “scale”, is very broadly defined in (Table 6) and therefore requires further explanation. This criteria is important because reaching “scale” demonstrates that a company’s distribution channel is working well on-the-ground, therefore providing an interesting case for study. Defining “scale”, however, is not a straight-forward task, because it is highly dependent on the type of industry and national context. Karamchandani, Kubzansky and Frandano (2009) suggest that a company reaches “scale” in India only after serving at least 1 million customers. In the Indian cookstove market, however, relatively few improved cookstoves have been sold. According to a Global Alliance for Clean Cookstoves report (Dalberg, 2013), a *total* of 600,000 intermediate and advanced ICS cookstoves have been sold in India (as of the year 2013). This number is grossly small compared to India’s total population in 2013 of 1.3 billion people. Because of this small number, the “scale” criteria in this thesis is not defined according to this general definition as suggested by Karamchandani, Kubzansky and Frandano (2009). Rather, this thesis aims to select a case company that has reached “scale” relative to others in the specific Indian cookstove market.

Other companies were investigated to help analyze Greenway's relative "scale" in the Indian cookstove industry. The task of comparing companies and their level of "scale", however, was not easy. According to Rogers (2003), "scale" is simply calculated by considering the number of products sold relative to the age of the company ($\# \text{ stove sales} / \# \text{ years in business}$). Finding the age of cookstove companies is easily done, but it is not possible to obtain a company's sales data without personal cooperation. This is due to the fact that SMEs in India are not required to publish annual reports and therefore sales and business performance among competing cookstove companies are not available to the public. As an alternative, this thesis has assessed Greenway's relative scale based on descriptions in available reports published by the Global Alliance for Clean Cookstoves (GACC). Referenced several times in this thesis, the GACC is a public-private partnership hosted by the UN Foundation to create a thriving global market for clean cooking solutions. India is among the GACC's focus countries. These reports provide non-biased, valuable market research utilized in this thesis.

Information collected from GACC reports and other news sources therefore shed light onto Greenway's role in India's cookstove market. For example, in 2015, The Global Alliance for Clean Cookstoves stated that Greenway has established India's largest cookstove manufacturing facility that can produce 800,000 stoves per year (GACC, 2015). In addition to its large manufacturing capacity, Greenway has also received attention for its sales activities. In the 2013 GACC report, Greenway is considered a "key cookstove manufacturer" in India along with two other competing companies in the intermediate ICS cookstove design category. Greenway has also received several prestigious awards because it has been able to demonstrate excellent business potential. Just to name a few, Greenway has received the prestigious Ashden award as well as the GACC Spark Fund award. These awards not only recognize Greenway's achievements but also provide further financial investment to ensure Greenway's future success. For all of these reasons, this thesis considers Greenway a company that has reached relative "scale" in India.

3.3 Data collection and interview structure

Based on the interviews with the selected case company, the author seeks to draw qualitative inferences about how traditional distribution/marketing theory and BoP findings are practiced

“on-the-ground” in well-functioning rural distribution channels. This qualitative approach is chosen because it allows the author to study the company’s distribution channel model from the inside (Saunders, Lewis and Thornhill, 2009). An interviewer conducting a qualitative interview typically conducts a semi-structured type of interview. This means that the interviewer often encourages detailed, rich answers and may ask follow-up questions based on replies (Bryman, 2012).

Description of the interviewees

Interviews were conducted with two Greenway employees and two employees from third-party funding organizations. For more details about these interviews, see Appendix A. The first Greenway interviewee, Ankit Mathur, is one of Greenway’s co-founders and is currently serving as the chief technology officer (CTO). As the CTO, Ankit is responsible for ensuring that Greenway’s stove designs are adapted to the preferences of its rural customer base. As the co-founder, he also has a general overview of the company’s structure and is part the overall strategy-based decisions for the company. The second Greenway interviewee, Varun Sahu, is one of Greenway’s senior sales managers who is responsible for business development, especially in the northern and eastern Indian regions.

Interviews were also conducted with employees from two organizations that have awarded Greenway with development grants. Each employee represents a team of people who have carefully analyzed Greenway’s business model to assess the company’s viability and overall potential compared to other actors in the clean technology market. One interviewee, Ellen Dobbs, works as an international program officer at Ashden Awards. Ashden is a UK-based charity that rewards and supports organizations working with sustainable energy. Ashden granted its award to Greenway in 2014 and has followed up with the company with its business support program, which Ellen has been involved with. The second interviewee, Stevie Valdez, is a manager at the Impact Investing and Market Development group for the Global Alliance for Clean Cookstoves. The GACC has granted two awards to Greenway—the Pilot Fund in 2011 and the Spark Fund in 2014, which has helped support Greenway in building its manufacturing plant in Gujarat. Stevie has been involved with both grants, especially in the latter award where she contributed to the selection process and has since advised Greenway on their business development as well as other cookstove companies active in emerging markets.

Conducting the interviews

Before the interviews were conducted, the author became familiar with the subject area. For example, the author engaged in an extensive literature review and also attended a clean cookstove forum in New Delhi, India. As suggested by Saunders, Lewis and Thornhill (2009), this kind of preparation helps the interviewer understand the context of the interview questions and therefore can ask more useful follow-up questions.

The interviews were conducted with an interview guide based on open-ended questions; this structure allows for additional information to be presented (Bryman, 2012). The questions in the interview guide for the Greenway employees built on themes surrounding the company's distribution channel structure management and its promotional activities. The interview guide for the award organization representatives focused more on what factors related to distribution and marketing has made Greenway stand out from other cookstove and clean tech. companies. The respective interview guides can be found in Appendix B and C.

Skype-based phone calls were used because the cost of travelling to India, the UK and the US was too expensive. Greenway's cofounder was interviewed two times for a total of approximately 120 minutes. The Greenway salesman was interviewed for approximately 60 minutes. This difference in time duration was mainly due to the fact that the salesman is not involved in activities across the company compared to the cofounder, who has a much deeper understanding of the company's activities and therefore had more input. Each award organization representative was interviewed for approximately 45 minutes.

All interviews were recorded electronically using a tape recorder and were then fully transcribed. Before the interview started, the author introduced the terminology and gave an outline of the interview structure. The author also used the web pages belonging to or written about the case company to clarify details that were not discussed during the interviews. Email correspondence was also used to clarify topics or ask follow-up questions related to the research questions.

3.4 Enhancing the reliability of the study

Case studies are often criticized because of their lack of rigor. To address this issue, the author focused on standardizing the process of data collection. For example, replication logic was applied in that each interviewee of the same type (Appendix A) were asked the same

questions in the respective interview guides (Appendix B, C). In addition, the author established a chain of evidence by recording and transcribing each interview.

To ensure that the data collection was reliable in this thesis, different forms of triangulation were employed. According to Saunders, Lewis and Thornhill (2009), triangulation is “the use of two or more independent sources of data or data collection methods within one study” (p. 602). In this thesis, data were collected from interviewees representing three independent organizations: Greenway, Ashden Awards and the Global Alliance for Clean Cookstoves. Incorporating representatives outside of the Greenway company allows for a non-biased description of the company. Additionally, these representatives can provide insights into the factors that make Greenway stand out relative to other companies in similar industries and rural market environments. Another form of triangulation is called “informant verification”, which can be used to verify that the data match the interviewee’s intended meaning. In this thesis, the author employed this concept by sharing the “results” chapter with each interviewee to collect feedback.

Lastly, trustworthiness can also be an issue for case studies, because companies may not share all information. The author addressed this issue by constructing an interview guide that did not ask the case company questions that would reveal sensitive information. Also, the author interviewed two representatives from the case company independently, as a way to cross-check the collected data.

4 Results

In this chapter, the Greenway enterprise is described according to empirical data collected solely from interviews. Any information gleaned from alternative sources (company website, reports etc.), are indicated in the text.

In this chapter, Greenway is introduced in a general way by describing its history and providing an overview of its current activities. In the sections following, Greenway's promotion and distribution channel activities are described.

4.1 An introduction to Greenway

Greenway was founded in early 2010 by a group of young, recently graduated MBA students with a background in engineering. Without much business experience outside of their school work, they began designing a clean cookstove to sell to India's rural market. According to both the manager at GACC and the program officer at Ashden, Greenway's strong management team is one of the key factors leading to their winning the respective awards. Both co-founders, Neha and Ankit, have an educational background in engineering and business. According to the Ashden program officer, this combination of skills in the leadership team really stands out as a strength. The manager from GACC also stated that "although they were young, they were determined and proved willing to weather some of the challenges in their sector." She went on to explain that Greenway's leadership team sees the bigger picture; they are interested not only in selling Greenway products, but also in building a strong, trusted brand. According to the GACC manager, this kind of strategy-driven leadership team stands out to investors.

Creating a suitable cookstove model design took place inside and outside the lab for years, where they collected extensive customer feedback on many different prototypes. Since 2010, Greenway has sold 350,000 stove units. Of that number, 150,000 units were sold in the most recent financial year (March 2015 – March 2016). This indicates an upward trend of cookstove sales, and the co-founder predicts that Greenway will sell ~250,000 units next year. The co-founder partly attributes this increase in sales to Greenway's increased manufacturing capacity through the construction of India's largest cookstove factory in Gujarat. A visual depiction of Greenway's events associated with its growth can be found in Figure 14 below.

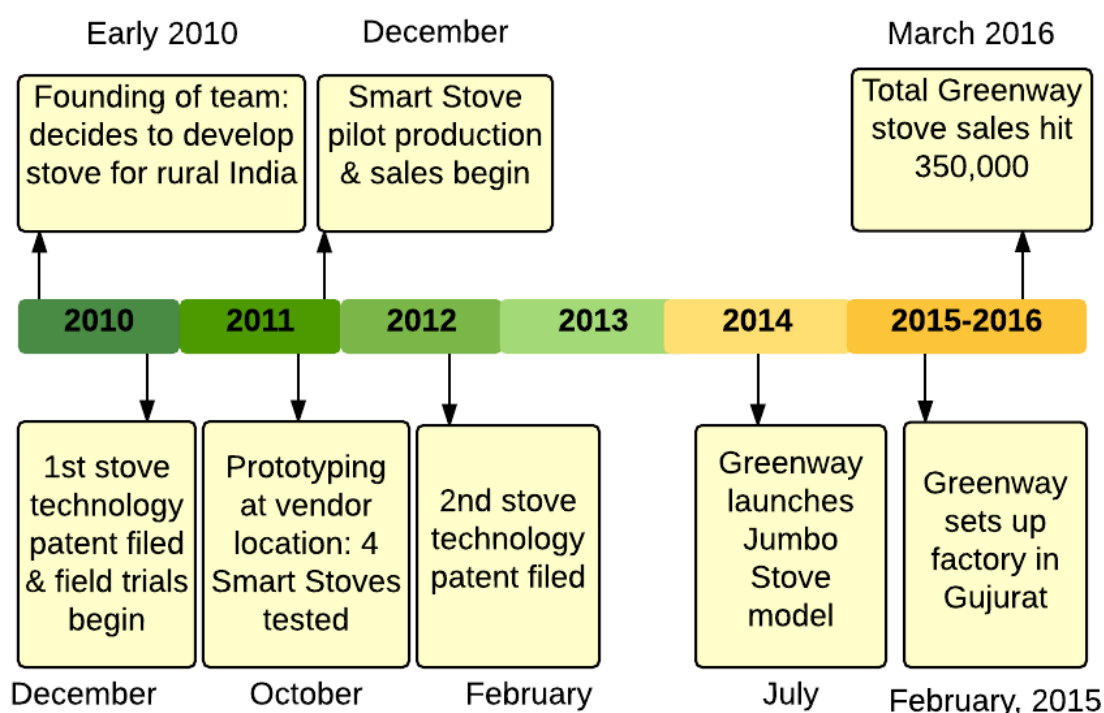


Figure 14. Timeline of Greenway’s important historical events. These events are related to business decisions and the development of Greenway stove designs. Information adapted from interviews and Greenway’s official company website (Greenway, 2016c).

Greenway currently targets mostly the rural and peri-urban populations of India. The GACC manager explained that when compared to cookstove companies of similar scale, Greenway generally reaches more rural customers than its competition. Part of the reason for this is that their MFI network often has extended roots in rural areas. However, it is difficult to know the exact ratio of rural-urban customers in its retail channels, because even rural areas have urban, market centers. A customer living far away in a rural village may come to these centers to buy food, and if they also buy a stove, it is difficult to track where the products are actually going.

The exact income bracket of Greenway’s customers is not well-defined. However, the co-founder estimates that their customers make approximately 1600 USD per annum. These customers are considered the “middle income” groups of rural India. The bottom of the pyramid rural population, therefore, do not make up a large proportion of their core customer base. According to the GACC manager, this is the case for most other companies of similar scale that are active in India’s clean cookstove industry. Before reaching into the BoP market,

she says, companies must first prove that the technology works and that they can build a customer base. Proving ability and willingness to pay at such a low income level is very difficult. The Ashden program officer also added that there is still a huge need for clean cookstoves in the middle of the pyramid in India.

Greenway's sales team is currently active in eight states of India including Kerala, Karnataka, Maharashtra, Tamil Nadu, Gujarat, Andra Pradesh, Telangana, and Jammu and Kashmir (Figure 15). Greenway sells stoves in other states on an ad-hoc basis. The co-founder also stated that one important competitive advantage of Greenway's supply chain is that their team has good control over Indian laws. He explained that India can be a very difficult place to do business, because there are no central trade laws. Instead, each state acts almost as its own country and value added tax can act as barriers to cross-state business.



Figure 15. Map of Indian states and Greenway's presence. Yellow-shaded states indicate which states Greenway employs an active sales team. Photo created with Maps of India (2013).

4.2 Greenway's stove design

Greenway currently sells two patented stove designs: the Smart Stove (23 USD) and the Jumbo Stove (37 USD). For a visual of the two stove designs, refer back to Figure 13. The co-founder explained that Greenway introduced its Smart Stove design first as a way to prime the market with a lower-priced product. Greenway aims to expand its product line, but it is very dependent on how much control it has over the supply chain in terms of manufacturing, distribution and price.

As mentioned previously, Greenway's founding team worked for a year and tested about 10 different stove prototypes. As a result, Greenway now boasts of a stove that is both good for women's health and fits well according to their preferences. The company did have to make some trade-offs, however, between a design that was user-friendly and a design with higher performance (higher efficiency). For example, a stove with a taller chimney would yield lower emissions, but customers prefer a shorter chimney so that they can sit while cooking. Making some trade-offs were key to designing a cleaner cleanstove that would, in fact, be used by the customers. According to the co-founder and sales manager, this adaptive process and the customer-centered design is what gives Greenway's stove its competitive advantage compared to other competitor cookstove designs in the Indian market. The Ashden program officer and GACC manager also pointed out that Greenway's design process was a differentiating factor in the award-decision process. Furthermore, both representatives stated that Greenway has been a market leader in that other stove companies are now emulating this iterative, customer-centric design process to create more user-friendly stove models.

Since the first patent in 2011, some incremental changes have been made such as redesigning the stove's handles or updating the instruction manuals. However, the fundamental design and functionality has essentially remained the same. The co-founder explained that because the designs are well-established, the company has since shifted its main focus to its distribution channel—making partnerships and creating “touch points” with customers.

While Greenway heavily focused on customer feedback in the design stages of the company, the co-founder explained that this is no longer the case. Greenway does not currently have a formal system in place for collecting customer feedback. The co-founder did recognize the value in collecting such feedback and expects Greenway to focus more in this area as the company matures. In the meantime, Greenway does advertise a toll-free call-in phone number

for customers all over India to call if problems arise with the product. This serves as a type of after-sales service. However, in reality, the number is primarily used by potential customers to make product inquiries rather than for giving feedback. Nevertheless, the manager at GACC pointed out that even if customers do not call in with concerns, it does send a strong message; this message is that Greenway is a trustworthy company that will stand by its product. She explained that this level of confidence is particularly important for customers tainted by bad experiences with companies/NGOs distributing poor quality cookstoves—and there have been many in India.

4.3 Awareness

First, the major barriers to increasing product awareness are described according to Greenway's experience. Next, Greenway's approach to overcoming these barriers is introduced in terms of above-the-line (ATL) and below-the-line (BTL) marketing strategies.

4.3.1 Barriers to promoting Greenway stoves

In Greenway's case, macro-economic factors and traditional culture of their target population play a large role in selling cookstoves. The co-founder explained that when a customer is highly educated, she is more likely to search for better sanitary solutions for the home—for example in cooking. In Greenway's experience, cookstove sales are relatively higher in southern states like Kerala, India's most literate state, compared to states like Andhra Pradesh, a state with much lower literacy rates and GDP levels.

In addition to macro-economic factors, patriarchal culture can also serve as a barrier to cookstove sales in India. A cookstove is traditionally used by the female in an Indian household, so Greenway's target customers are primarily rural women. Because India is a patriarchal society, women may not always have the freedom to buy a product when they want. According to the sales manager, women living in the northern/eastern parts of India are very dependent on men for income. For example, even if Greenway succeeds in demonstrating their product value to a woman through TV ads, it does not always lead to a sale if a woman has no financial independence. When asked how Greenway addresses this challenge, both the sales manager and co-founder admitted that Greenway is still struggling with this issue especially in the northern/eastern parts of India.

Both the co-founder and sales manager explained that cookstoves are generally considered “push” products, which means that Greenway must consistently stimulate demand. The manager at GACC explained that “Greenway is trying to create a product, a product category and a brand all at the same time”, which is of course challenging. Because a cookstove is a new, innovative product, it is much harder to convince customers of its value with text or pictures alone. The co-founder emphasized the importance, therefore, of creating many “touch points.” This term refers to promotional activities that allow customers to come into contact with the product themselves. However, the co-founder believes that this situation will soon change. He predicted that the sale of ICS cookstoves will reach a penetration point, where the stoves will evolve into pull product. The co-founder believes this shift will occur in 3-5 years in several geographies of India—therefore minimizing the barriers associated with selling a cookstove as a push product.

4.3.2 Greenway’s marketing strategy

Greenway employs both ATL and BTL marketing strategies to reach their target customers. The balance of these two strategies at Greenway is about 60-70% ATL and 20-30% BTL. The manager at GACC explained that Greenway generally engages in more ATL promotion activities compared to their competition. One reason for this is that many other companies cannot afford ATL ads. Greenway also differentiates itself through its marketing message. According to the program officer at Ashden, Greenway portrays its stove as an “aspirational” product, which has given them an edge in the market. The GACC manager explained that the company experimented with many other marketing messages (i.e. health benefits or fuel savings), but they were among the first to identify the aspirational message as being most effective in the cookstove market. Other companies have since followed suit.

Above-the-line activities

Greenway’s ATL activities mainly focus on television ads, especially local cable TV. The sales manager explained one incident where in just one week, a ~2-second TV ad with Greenway’s phone number attracted approximately 400 phone calls. The manager at GACC stated that Greenway has engaged in extensive market research in testing different colors and models to find a working combination. For example, one successful TV image is one featuring a young couple in wedding garb holding a Greenway stove. The GACC manager explained that the image signifies that this biomass cookstove should be part of your new

home—therefore portraying Greenway as an aspirational brand. A link to an example TV ad posted on youtube can be found in Appendix D.

ATL Promotion that has not worked well in Greenway's past include newspaper and radio ads. The co-founder explains that this is probably due to the fact that the performance of their stove product cannot be effectively explained in words; visuals are needed. Greenway's ATL activities are relatively expensive, but as the company grows and matures, the co-founder aims to increase the proportion of ATL activities. The manager at GACC explained that these ATL TV ads has helped Greenway become recognized as a legitimate company, and has therefore become a critical factor in building the Greenway brand.

Below-the-line activities

Greenway's BTL activities are heavily focused on demonstrations for target customers. Greenway salesmen and demonstrators participate in village-level activities to sell their product, for example village fairs or market places. Greenway's demonstrations have historically worked very well. The co-founder claims that when Greenway demonstrates its product to a group of interested customers, approximately 25 – 30% of those observers will want to know how to purchase the product. The sales manager also mentioned other methods Greenway uses to attract rural customers such as handing out pamphlets in the regional languages as well as putting up banners in village centers to raise awareness. The GACC manager explained that small, informal shops have very limited shelf space, but Greenway has learned what it takes to get their stoves on the shelves. Greenway supports retail shops by directing customers to the local shops after its demonstrations or through handing out physical pamphlets (Appendix D). This kind of cooperation leads to faster turnover of stock in the shops, and therefore retailers are more willing to sell Greenway's stoves.

The sales manager also described a cooperative model with doctors. While Greenway demonstrates their stove, doctors describe the stove design's health benefits. In one instance, this kind of cooperative demonstration led to 600 sales in just one week. Rural populations trust doctors, the sales manager explained, which is why Greenway is planning to expand this cooperative model.

According to the co-founder, one thing that has not worked well for Greenway is the in-store promotion activities. In the past, the company has tried having a Greenway demonstrator inside retail shops to show customers the product. However, this does not lead to many sales

because there are not a lot of potential customers inside a shop. As a result, Greenway now focuses its demonstration efforts in public areas with more foot traffic. The program officer at Ashden also commented that Greenway does a great job of piggy-backing on forums and other big public gatherings, therefore creating an opportunity to reach large numbers of people at one time.

Greenway sales infrastructure

In most cases, Greenway does not outsource promotion activities to external partners. Instead, Greenway hires its own employees to demonstrate the stove and stimulate demand. Greenway employs approximately 45 people in its sales hierarchy, including the sales managers and the sales officers in seven states. See Figure 16 below for a visual depiction of Greenway's general sales hierarchy. The head office is located in Mumbai, while the regional sales heads are currently active in India's southern and northern regions. The sales managers are present in each of the 8 states where Greenway is active.

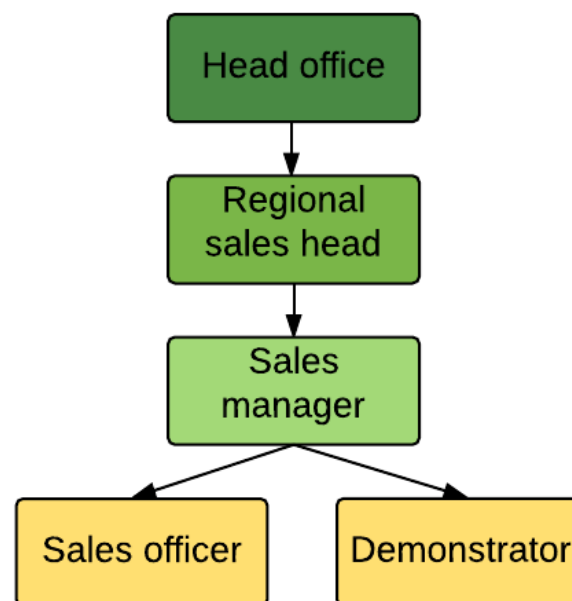


Figure 16. Visual depiction of Greenway's sales management hierarchy.

These sales managers play an important role when it comes to taking care of customer warranties and after-sales service. For example, if a customer is dissatisfied with the product's quality within the one or three-year warranty period (depending on the stove),

Greenway's partners will take contact with the Greenway sales managers through Greenway's toll-free number. This information is then passed on to the head office, so that design defects can be registered. However, Greenway has not had to deal with many dissatisfied customers. The co-founder attributes this to the fact that their stoves do not have moving parts and that Greenway now owns the manufacturing plant and therefore have more control over the stove quality.

These sales officers are often educated in the field of business and marketing and are expected to implement effective strategies to meet Greenway's sales targets. The co-founder explained that their "on-the-ground" force is very present in the community and thus gives Greenway a competitive advantage in the face of other cookstove companies without such an active ground force. Ashden's program officer also stated that Greenway puts a lot of focus on their first-contact with potential customers; the demonstrations are often well-resourced and performed to a good standard. Greenway aims to attract competitive salesmen by offering a 15-20% higher salary than the market rate. The co-founder explains that this rate is slowly decreasing, because Greenway is maturing and therefore the risk of joining the company is also decreasing. Offering very competitive salaries, therefore, is not as necessary to attract good salesman compared to Greenway's initial hiring stages.

The co-founder identified three major barriers that the salesmen face in disseminating Greenway's stoves. First, customers do not know the Greenway brand. Next, customers are not familiar with the stove product category. Finally, many customers cannot afford the product even at such a low price point. As the co-founder stated, Greenway salesmen "are handicapped on all three things." Greenway does offer the salesmen training to sell its stoves, but not through a formal training workshop. Instead, the new salesmen participate in a 2-week hands-on experience, where they are paired with a more experienced salesmen in the first week and a reporting manager the second week. Greenway does not incentivize its salesmen with sales margins, because in most cases, sales are too low to allow for that.

In addition to sales officers, Greenway employs 15 – 30 demonstrators. Their main role is to demonstrate the stoves and to direct customers to the nearest point of sale. This kind of work does not require high levels of education. The number of employed demonstrators varies a lot depending on sales numbers. For example, when the number of customers increase in a certain area, fewer demonstrators are needed to push sales.

4.4 Availability

As previously discussed, this thesis focuses on business-to-customer (B2C) distribution models (Figure 8). In this section, Greenway's two major B2C models are introduced along with the associated distribution partners. Where relevant, Greenway's management of key partners is discussed.

Greenway employs two major B2C distribution channel models, which are based on existing distribution channels. These include retail shops and microfinancing institutions. It is important to note that the co-founder and sales manager did say that some of their sales are made in cooperation with NGOs and non-profits. In these partnerships, the NGOs themselves sell Greenway's stoves or the NGOs just facilitate the sale—for example, they may connect salesmen to their social network. However, cooperation with NGOs in Greenway's B2C model is insignificant in terms of sales numbers when compared to the retail and microfinance. Therefore, only the retail and microfinance channels are explored further.

According to the co-founder, about 65-70% of Greenway's sales are made through the microfinance institution model while about 10-15% come from the retail model (Figure 17). The remaining 20% of total sales lie outside the B2C models and are based in B2B and B2G models. In the most recent financial year (April 2015- April 2016), most of these B2B/B2G sales were made to support Nepal after a devastating natural disaster.

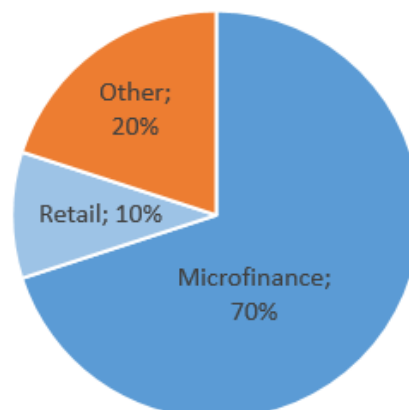


Figure 17. Percentage of Greenway's total sales according to respective distribution models. The B2C channels (retail and microfinance) are designated with blue color shades. The B2G and B2B (other) sales are marked by an orange color.

The GACC manager pointed out that Greenway's distribution channel is unique in India's cookstove market in that they were among the first companies to focus on market-based channels with any success. She went on to explain that investors are interested in companies that do not solely depend on NGOs to buy their stoves in big batches. These kinds of sales create unstable cash flows. Instead, the Global Alliance for Clean Cookstoves looks for companies with a consistent uptake of products. The diversity of Greenway's supply chain with retail and MFI channels allows the company cash flows from different sources. The GACC manager explained that MFIs are great channels, but they have really long cash cycles, so it takes some time to get your money back. Because Greenway diversifies its distribution with retail channels, its overall model is therefore more viable.

4.4.1 Greenway's two distribution channel models

As seen in Figure 18 below, both the retail (model 1) and microfinancing (model 2) distribution channels begin with the same initial steps. First, the stoves are driven from the factory in Gujarat and to the 8 states where Greenway salesmen are active. The number of shipped stoves depends on the demand, which means that the load size varies from one shipment to the next. For this reason, Greenway outsources this transportation to professional transport companies. These external companies have the flexibility of filling their trucks with Greenway's products as well as other companies' goods to be shipped long-distances, ultimately lowering the final cost of transportation. In both the retail and microfinance models, these transport companies drive Greenway's stoves to one central warehouse in each of the 8 states. Greenway pays rent to external companies for warehouse space, but the warehouses are used exclusively by Greenway employees. To move the stoves from the warehouses to the next destination, Greenway sales officers cooperate with distribution companies.

Distribution companies are very important in Greenway's business model, because they play a large role in the sale of the cookstoves. Greenway currently has about 45 distribution partners. The co-founder makes it very clear that "once you find the right distributors, you are good." According to the cofounder, distributors are a key player in their distribution models, especially the retail channel. Reasons for their importance will be discussed further in the "retail" section below. In some cases, Greenway has incentivized distributors to buy more

stoves by offering a marketing trade-off. More specifically, if a distributor purchases and delivers more stoves, Greenway engages in more promotion activities in the distributor's sales area to stimulate demand. Beyond this kind of deal and its margins, Greenway does not offer additional incentives or rewards for delivering or paying on time. Greenway's distribution partners are not allowed to do business with other competitor stove companies. Beyond the distribution partners in model 1 and model 2, activities begin to diverge. Therefore, each model is described separately below.

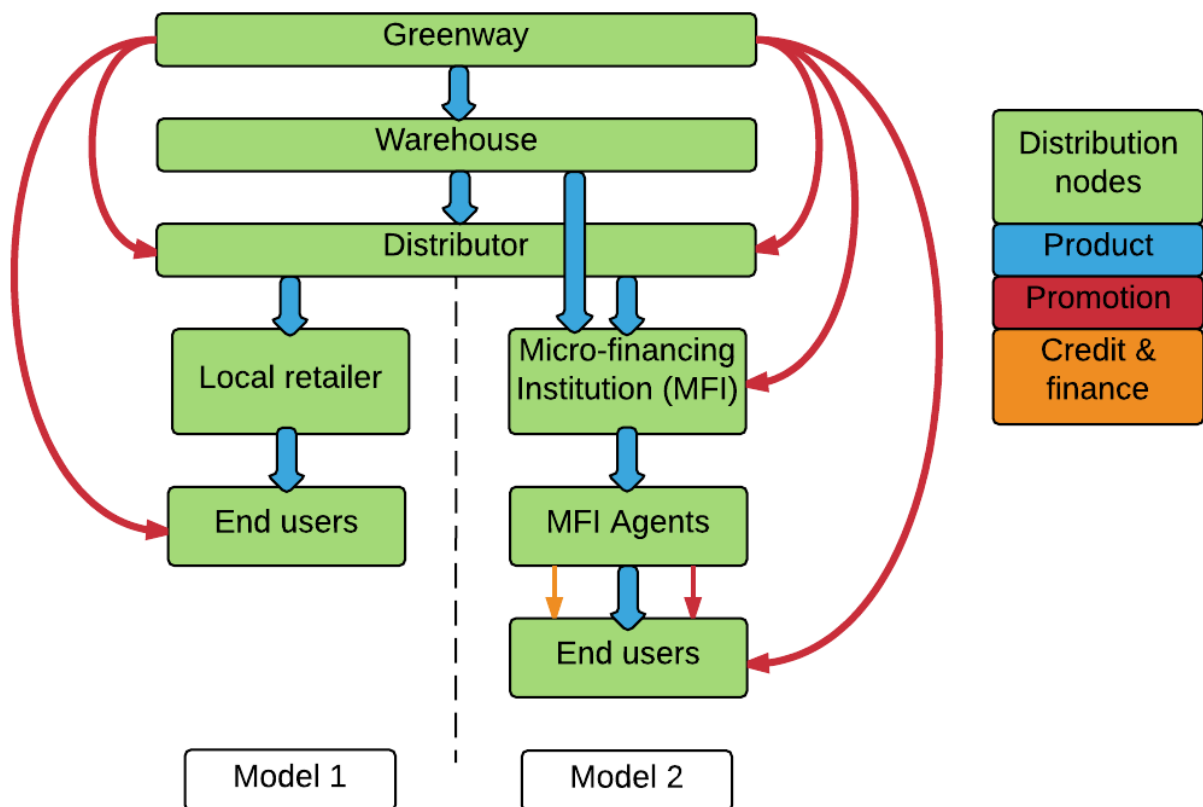


Figure 18. Visual depiction of Greenway's "last-mile" distribution system and associated activities.

Model 1: Retail

In the retail channel, Greenway sells a batch of stoves to its distribution partners who then deliver the stoves to the company's retail partners (Figure 18). The co-founder explained that Greenway sells the stoves to the distributors at a 30% margin. The distributors take the risk of buying the stoves, because they depend on Greenway's pre-selected retailers to buy them to stock their stores. The distributors generally sell the cookstoves to the retailers at a 10-12% margin. Distributors therefore act as an intermediary between Greenway and its retail channels, making them an important player in Greenway's retail distribution model.

These retailers range from small, informal shops to large multi-story shops. By 2016, Greenway has established approximately 2,500 points of direct sales which are mainly locally-owned, informal shops like appliance stores. To select appropriate retail shops, Greenway generally does not consult local NGOs or community non-profits. Instead, Greenway sales officers often go directly to a bazaar or large market to identify retailers already serving a target group similar to Greenway. Once selected, Greenway must ensure that their distributor will do business with the preferred retailers.

Greenway manages its retail partners based on a ranking system in which they label each partner as an A plus, A, B or C. The letter grade is a reflection of various subjective criteria as well as standard parameters—the area of the store for example. However, in all letter categories, Greenway interacts very little with its retail partners. Rather, Greenway's distribution companies act as “middle men” between Greenway and its retail partners. If a retailer is out of stock, he contacts the distributor who then takes the responsibility for ordering stoves directly from Greenway.

To collect sales data, retailers are asked to register every time a Greenway stove is sold in a notebook. From this point, the co-founder explained, the sales officers visit the retailers once or twice a month to collect this data and send it back to management. The co-founder stated that other companies like Unilever have managed to digitalize this kind of system, and Greenway hopes to do the same in the future. On these visits, salesmen also ensure that the Greenway stoves are displayed properly and inquire about any issues the retailer or distributor may have. These meetings are always in person instead of checking in by phone or phone app.

Due to this indirect relationship, neither Greenway nor the retailer bestows much responsibility on the other. For example, retailers are allowed to sell Greenway stoves as well as competitor stoves. In addition, retailers are not expected to promote Greenway products to customers. Rather, Greenway employees promote the products themselves. Greenway does not invest a lot of resources in incentivizing its retailers beyond the ~20% product margins. For example, Greenway does not train its retailers about the product nor does it offer additional incentives such as shop upgrades or business training. The co-founder explained that in most cases, a retailer would not invest in a product in the first place unless he understood the product's main selling points. In addition, the co-founder also pointed out that most retailers are too busy for such training sessions.

When asked if Greenway uses contracts to establish a business relationship with retailers, the co-founder explained that Greenway does not. Greenway only uses contractual agreements with its distributors, because they are the ones that buy the stoves from Greenway—not the retailers. Further down the channel, most distributors do not use contracts for managing its retailers. The co-founder explained that a retailer's reputation is very important, and a binding word agreement carries a lot of weight. If a retailer does not cooperate, however, distributors are charged with dealing with the situation—not Greenway.

Model 2: Microfinancing

The second type of distribution channel model that Greenway employs centers around micro-finance institutions (MFIs) (Figure 18). The type of distribution company used to deliver the stoves to the MFIs greatly depends on the size of the MFI. If an MFI is large, it will most likely have its own distribution company to carry Greenway's stoves; if an MFI is small, it will most likely depend on Greenway's distribution partners to get the stoves.

When selecting the MFI partners, Greenway considers various criteria to assess their credibility. For example, when considering an MFI, Greenway checks the default rate of the associated self-help groups (MFI agents). This default rate must be less than 5% for Greenway to consider doing business with the MFI. In assessing an MFI, Greenway also considers the number of associated agents and the expected revenue from the partnership. In regards to the latter criteria, MFIs in the northern region of India often ask for larger margins from Greenway than MFIs in the south. The sales manager explained that MFIs active in the southern region generally have better connections with the population and women generally

have more decision-making power. Therefore, the southern MFIs rely more on the number of sales for success. The MFIs active in the northern regions, however, are not as well-connected and work with a more difficult population in terms of gender equality and lower education levels; these northern MFIs, therefore, do not currently sell as many products and therefore must rely on higher margins. This margin can be difficult for Greenway to provide. In Greenway's experience, once a MFI is selected for a partnership, it has not been difficult to prove the quality of the product. The sales manager and co-founder stated that most of the time, MFIs agree that the Greenway stoves are good and a partnership is made.

Microfinancing institutions have two important roles at Greenway: selling stoves and offering credit to customers. An MFI helps find agents who can sell Greenway stoves and these agents are able to offer credit to customers, which increases their selling power. The co-founder pointed out that these partners are not strictly "entrepreneurs" because they are not always buying the stoves and selling them. Rather, they are more like "agents" because they collect orders first, and then purchase the stoves from Greenway to fulfill those orders while collecting the decided-upon margins. These agents are often employees of the microfinancing institutions themselves. In addition to selling Greenway stoves, these MF agents are often involved in many different kinds of business activities. They often have a tight network in different villages and different groups of people that they already know as a suitable customer base. According to the co-founder, the end customer essentially buys stoves from these agents based on trust. Sales data is most often relayed directly from the MFI head office or account manager back to Greenway's head office or regional sales head as orders are placed.

Mostly, these MFI agents sell stoves based on margins, but recently Greenway has been trying out new reward programs. For example, the sales manager described one reward program where MFI agents were given a variable payment if they achieved a large sale in a month--500 units, for example. However, on a more regular basis, their performance is assessed according to sales targets. These targets vary depending on variables such as regional barriers or a region's sales history. The co-founder points out that promoting a product for a margin and offering credit to a customer for financing the purchase could cause a conflict of interest. For example, a loan officer may convince a customer to buy a product that she does not necessarily want or need. The co-founder stated that these situations are very difficult because they happen "under the radar"; however, he doubts that a MF agent would risk ruining customer relations with a product worth only 1500 rupees.

The way in which Greenway manages its MF partners greatly depends on their relationship with the institution. Where in some cases, Greenway is allowed to interact directly with the agents, there are other cases in which the MFIs are much more controlling and do not allow any communication between Greenway and its agents. The co-founder pointed out that ideally, Greenway could contact the agents directly in order to have a closer relationship with the end customers. Providing basic product details also is very important. For example, the sales manager explained that in the past, some agents have told customers that they could burn anything in the Greenway stove—even plastics. To address this issue, Greenway makes sure to provide information to agents about the basics on how to *use* the stove. However, Greenway usually does not offer any training on how to *sell* the stove. The co-founder explained that villages are very different across India, and it would require a lot of resources to adapt official training modules for each population. Instead, Greenway offers an immersion experience to the agents by giving the agents an opportunity to use the stove themselves. Most of the MF agents that Greenway works with are women who often know the best way to sell to other women in their network without additional training. In the past, these MF agents have been promoted in the system to eventually becoming Greenway sales officers; therefore some MFIs can also serve as a type of recruiting system.

Overall, Greenway's co-founder believes that Greenway's relationships with MFIs are successful, because they have very similar incentives. Where Greenway aims to sell its stove, the MFIs aim to give out loans for the stove purchase. In the end, both parties benefit from the partnership.

4.4.2 Overall distribution channel performance

The co-founder and sales manager both stated that disruptions downstream from Greenway's factory have been minimal. Incidents related to poor infrastructure, power outages, political protests and natural disasters have not been a problem in rural areas for Greenway thus far. In Greenway's case, the disruptions downstream from the factory are relatively minor compared to disruptions upstream. For example, in 2014, Greenway had a lot of problems with vendors who were using sub-par materials to manufacture Greenway's stove. Essentially, these vendors were compromising quality and therefore threatening Greenway's brand. In response, Greenway decided to invest in its own factory to gain control of their upstream supply chain.

According to the co-founder, the most critical path downstream is making orders. He explains that if the company is able to collect orders, it is then possible to find a way to ensure that the order reaches the customer. The co-founder stated that he cannot remember any major communication problems with its partners in the distribution channel. However, it is very important that a salesmen stays in touch with the distributors and MFIs to maintain a reliable working relationship. When asked about internal communication, the co-founder stated that Greenway does not currently have a human resource-responsible staff member. They may consider creating this kind of role as Greenway matures.

When asked how the overall experience has been with managing its B2C channel partners, both the co-founder and sales manager responded that Greenway has not experienced many major problems. The co-founder pointed out that of course, there are problems with distributors for example paying late or delivering shipments late but he attributed the problems partly to Indian culture. In one instance, one of its warehouse partners held up shipments for various reasons. This did not make a big impact, however, because Greenway easily shifted its business operations to working with an alternative warehouse. The senior sales manager mentioned that when an occasional problem does arise, India's legal system is slow and ineffective. For example, one of Greenway's MFI partners has liquidated their stock of Greenway stoves, but have only paid Greenway back 20% of the earnings. He explained that the legal system is very slow in India, which means this payment from the MFI could be delayed indefinitely.

4.4.3 Considering other possible distribution models

The co-founder also explained why other models were not utilized by Greenway. For example, when asked why micro-entrepreneur partners are not used in Greenway's current model, he said that the answer was very simple—it is just too expensive to sell stoves door-to-door. The co-founder also commented on the reasons why it does not “piggy-back” onto other SMEs' distribution channels. He explained that this “piggy-back” model works if a company is already a mature brand and aims expand the product's reach. Greenway, however, is a younger company which must first differentiate its brand from others. The majority of Greenway's business model is not dependent on NGOs, and the co-founder explained that this is because for-profit and non-profit organizations have fundamentally different goals. The co-founder went on to say that if Greenway depended on others for many

distribution activities, it would most probably lose control over its own marketing and branding. Greenway chooses not to compromise on these issues.

When asked why Greenway does not employ a custom channel, the co-founder responded that it would be too expensive. He explained that if a retailer sold only Greenway's stoves, the sales would not cover costs. In addition, employing a limited number of exclusive Greenway retailers would limit the number of "touch-points", therefore minimizing promotion impact.

On the other hand, when asked why Greenway does not fully outsource the management of its distribution channel, the co-founder responded that having a central distributor would be an ideal option to oversee Greenway's stove distribution. However, he goes further to explain why this is not a viable solution in reality. Large distributors often require large quantities and high margins, which is something that a relatively small start-up like Greenway cannot yet provide. This kind of central distributor works well for other types of products like fast-selling commodities, but not for more innovative, new products like solar lanterns or cookstoves. A cookstove is a "push" product, which means that it is necessary to have people on the ground to increase the number of "touch points." The co-founder pointed out that although marketing and distribution channels are not directly related, it is a fact that the more a company markets, the easier it is to manage its distribution channel because the demand is more steady.

When asked subjectively about what Greenway's future supply chain may look like, the co-founder explained that Greenway must focus on building up a loyal group of distributor partners. He explains that as Greenway invests in promotion, sales will continue to increase which will ultimately lead to more distributors who want to cooperate with the company. In the long-run, Greenway aims to shift the proportion of sales from microfinance channels and more towards its distributor/retail channels.

5 Analysis and discussion

This thesis set out to investigate how the case company has marketed and distributed its products in a rural, emerging market. In this chapter, the author uses the theory-based frameworks (“sandbox innovation” and the 4Rs) to compare the results to recommendations from various fields of literature. The first section covers how the company has marketed its products (“awareness”), and the second section discusses how the company has distributed its products (“availability”) to rural areas.

5.1 Awareness

The “sandbox innovation” method (Prahalad, 2012) suggests that to create awareness for a product, a company must first identify potential barriers and then decide upon an appropriate marketing strategy (Figure 11).

5.1.1 Barriers to promotion

Based on the results, Greenway has experienced many of the same barriers in promoting its product as described previously in rural distribution channel literature (Figure 19). For example, Greenway faces challenges in reaching customers in rural areas with low levels of education, a barrier that was also presented in Dalberg (2013). It is important to note that Greenway’s co-founder emphasized the correlation between low GDP and low education levels. This combination made it difficult for Greenway both to reach and sell to target customers. Targeting rural populations with vast differences in culture and language is also a challenge for Greenway, which has been covered previously in Mishra (2008). In addition, Greenway’s cookstove product itself poses promotional challenges, because it is part of a product category that is not well-known in rural India—an issue described in Karamchandani, Kubzansky and Lalwani (2011). Finally, Greenway struggles to sell cookstoves to women in more patriarchal populations, because women do not have strong decision-making power—also described in Dalberg (2013). Based on the interviews with the co-founder and senior sales manager, Greenway continues to struggle in addressing the gender inequality issue especially in India’s northern, rural regions. Although the marketing techniques discussed below can help address the issue, it is very difficult to shift an entire culture. As suggested in literature (Foell et al., 2011), cooperation with third-parties on cooperative awareness campaigns may be the best option in tackling the effects of gender inequality on cookstove

dissemination. Although these identified challenges are not necessarily new findings compared with literature, the way in which Greenway addresses the challenges does in fact provide new insights.

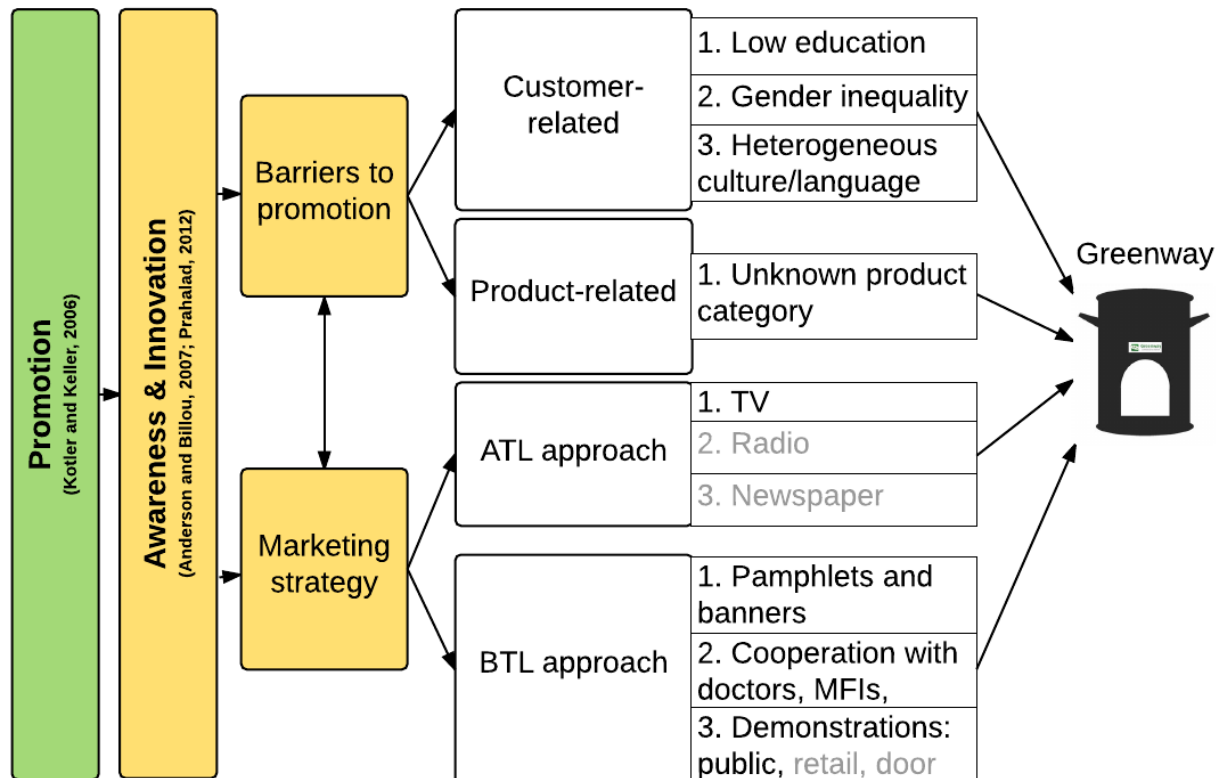


Figure 19. Greenway’s barriers to promotion and marketing strategy. The gray-colored text represent promotional activities described in literature that are not relevant in the Greenway case.

5.1.2 Marketing techniques

The interesting findings arise in studying the balance of marketing methods which Greenway has employed to address aforementioned challenges. Despite the emphasis that much BoP literature puts on BTL marketing approaches (Chikweche and Fletcher, 2012), Greenway generally employs a mix of both ATL and BTL approaches as suggested by Beninger and Robson (2015) (Figure 19). Greenway uses this mix of promotional activities not only to sell its products but also to build a strong brand as recommended by Ipe, Rosenbaum and Derby (2015). Based on an analysis of the results, its activities focus consistently on two main brand attributes: aspiration and trust. By establishing a relationship based on trust, Greenway aims

to reach and connect with customers on a fundamental level; this can therefore help Greenway overcome barriers related to low education levels or unfamiliarity with the product category. The promotional activities that support Greenway's brand attributes—aspiration and trust—are further discussed in the sections below.

Marketing an aspirational product

As explained by the GACC manager, Greenway has been the market leader in promoting its cookstoves as an aspirational product. As suggested by Ipe, Rosenbaum and Derby (2015), Greenway engaged in extensive marketing trials to find a message that would affect their target customers' willingness to pay. Greenway has observed that health and money-saving messages, for example, do not work well. The company has therefore adopted an “aspirational” product campaign to attract customers by depicting its cookstoves as a product that every household should want to own (e.g. wedding couple ad). In addition, Greenway engages in more ATL promotion activities compared to its cookstove competitors. By advertising on TV, Greenway is able to gain a competitive edge in two ways. First, it is able to reach more customers; second, it elevates the Greenway brand just by being seen on TV. This is due to the fact that, in general, only companies that can afford TV airtime are able to use TV commercials in their marketing strategy. As a result, most companies that sell products on TV are well-funded and often well-known entities. As mentioned by the GACC manager, Greenway is therefore building an aspirational brand just by using the TV as a means of promotion.

Marketing a trustworthy brand

Greenway uses various BTL activities to promote itself as a trustworthy company to its customers. Firstly, Greenway creates “touch points” for customers to interact not only with their products but also with their professional staff. These touch points, for example, can include handing out pamphlets or performing demonstrations. The Ashden program officer aptly pointed out that Greenway's demonstration activities are well-sourced and professional, therefore presenting Greenway as a trustworthy company upon first impression. The second way Greenway establishes trust is by providing a toll-free phone number for product inquiries or technical problems. As mentioned by the GACC manager, this contact number communicates to the customer that Greenway is available to help and will stand by its product if a problem should arise. The third way that Greenway establishes trust with its

customers is by cooperating with local partners (Figure 19). For example, cooperating with village-level doctors, as suggested by Dalberg (2013) and Ipe, Rosenbaum and Derby (2015), has been especially effective for Greenway for populations with low-education levels; in these areas, customers put great trust in doctors and their health advice. In Greenway's MFI channels, local MFI agents can effectively address the challenges associated with cultural differences among rural populations. This is due to the fact that MFI agents most often serve their own communities and are already part of their customers' social networks. This social integration, therefore, plays an important role among Greenway's target rural customers as suggested by Viswanathan, Rosa and Ruth (2010).

Not only do these promotional activities generate trust among its customers, but they also generate trust within Greenway's retailer and distributor cohort. Greenway supports sales in retail shops by promoting its product and directing interested customers to nearby retailers. Because these activities generate sales, retailers can trust that Greenway's products are worth stocking in their shops. These activities can also help convince distributors to buy and transport their products.

Promotion activities not utilized by Greenway

It is important to mention that Greenway does not utilize all marketing activities mentioned in BoP literature. Those unused marketing techniques are depicted (in gray) in Figure 19 above. These negative results are especially important to SMEs selling socially beneficial products, because of the extra investment required for demand stimulation (Karamchandani, Kubzansky and Lalwani, 2011). By identifying activities that do *not* work, companies can then divert investment into activities that *do* work—ultimately creating a more effective marketing strategy to sell more stoves.

Greenway's business model does overlap with literature on its cooperation with doctors (Dalberg, 2013) and MFIs (Shrimali et al., 2011; Lewis et al., 2015), but there are some promotion partners suggested in literature that Greenway does not employ. For example, Greenway does not depend on NGOs to gain access to local communities as suggested in BoP and other cookstove-specific literature (Dahan et al., 2010; Lewis and Pattanayak, 2012; GIZ, 2013). Greenway's co-founder explained that partnerships with NGOs often yield problems because of mismatched goals—a point previously discussed by Karamchandani, Kubzansky and Lalwani (2011).

Demonstrations are often mentioned in literature as effective marketing tools for cookstoves (Lewis et al., 2015; Dalberg, 2013), but a differentiating factor among demonstration types is the location of where they take place. Not all of the locations suggested in literature have worked for Greenway. For example, Lewis et al. (2015) recommends personalized door-to-door demonstrations, but Greenway's co-founder explained that this method is far too expensive to maintain. In addition, Vachani and Smith (2008) suggest that retailers play an important role in hosting demonstrations and leading other promotion activities. However, Greenway does not ask retailers to promote its product nor does it use retail space for leading its demonstrations. Instead, Greenway takes responsibility for all promotion in its retail channels and generally focuses on public areas and events that have the potential of attracting large crowds.

5.2 Availability

In today's market environment, four guiding principles known as the 4Rs (Christopher, 2011) can be utilized in building a competitive supply chain (Table 2). In the following sections, the 4Rs framework—including relationships, responsiveness, resilience and reliability—are taken into account when analyzing the Greenway case (Figure 12).

Before these four aspects are further analyzed, it is important first to discuss the overall advantages associated with Greenway's diverse distribution model. The manager at GACC emphasized that Greenway's model with its retail cooperation gives the company consistent cash flow, especially compared to other companies who rely on NGOs for big bulk payments. This is an important point to make, because Greenway's distribution channel model itself has been a key criteria for receiving grant funding. After receiving these funds, Greenway has been able to engage in growth-enabling activities such as building its manufacturing plant and upgrading to more ATL marketing activities. The combination of retail and MFI channels, therefore, give the company a competitive advantage not only in allowing for more stable cash flows, but also for securing more investment for growth from outside sources.

5.2.1 Relationships

As introduced in the analytical framework (Figure 12), Greenway's distribution partner relationships were analyzed based on two important factors: distribution activities and partner

management. In the following sections, these two aspects are discussed and Greenway's case is compared to previous findings in literature.

Greenway's distribution activities match up with those activities outlined in Porter (1991) and illustrated in Figure 7. One small exception is the "servicing" primary activity. Greenway does in fact offer customers a toll-free number to call to claim technical defects under a warranty period. However, very few customers have thus far experienced problems. Therefore, this "after-service" activity is not yet crucial in Greenway's case.

As suggested by Christopher (2011), Greenway is careful to select partners that create win-win relationships (Christopher, 2011). To assess a partner, Greenway first considers the financial outcome of the cooperation and also considers whether or not their fundamental goals are aligned. The third criteria is that Greenway assesses the trade-off necessary to cooperate with a partner, which has also been described by Shrimali et al. (2011). In this trade-off, a partner may be able to offer Greenway the benefit of expanding the company's reach, but the benefits can come at the cost of losing some control over the distribution channel.

As seen in Table 7 below, Greenway does not cooperate with three partners, because they do not meet these criteria. These partners include: micro-sales forces, NGOs, and other SMEs. Firstly, Greenway has chosen not to work with micro-sales officers, because the business model would simply be too expensive. This decision is in line with Kubzansky, Cooper and Barbary (2011), which suggested that the micro-sales model only makes financial sense to carry products where margins can make up for the agents' time spent. For Greenway's stoves, this is not possible. Secondly, Greenway's co-founder explained that partnering with an SME could reduce distribution cost due to the economy of scale. In this cooperation, Greenway may have to surrender its control over various distribution aspects such as setting its own price points or designing promotion campaigns. According to the co-founder, Greenway has avoided this kind of trade-off, even from the company's small beginnings when no sales network was in place. Finally, Greenway has chosen to avoid extensively working with NGOs for several reasons. From a financial standpoint, selling stoves in bulk to NGOs creates unsteady cash flows as noted by the GACC manager. Greenway does acknowledge the benefit of utilizing the local connections that NGOs may have to make cookstove sales as described by Dahan et al. (2010). However, Greenway recognizes the trade-off in that it would have no control after the stoves are sold to NGOs. Additionally, while non-profits and

NGOs strive mainly for social impact, Greenway must also aim for profit. Their foundational goals, therefore, are not well-aligned.

Table 7. Greenway’s distribution activities and partners responsible for those activities.

“RC” represent roles fulfilled by partners in the model 1 retail channel, and “MF” represent roles fulfilled by partners in the model 2 microfinance channel. The grey x’s represent roles fulfilled by potential partners as described in literature but are not relevant in either one of Greenway’s on-the-ground distribution models.

	Activities	Greenway	Ware-house	Distrib-utor	Micro-sales	Retail	SME	NGO	MFI
Primary	Storage	x	RC/MF	x		x	x		
	Transport	x	x	RC/MF	x		x	x	MF
	Promotion	RC/MF		x	x	x		x	MF
	Network access	RC/MF		x	x		x	x	MF
	Sales	RC		x	x	RC		x	MF
	Financing sale	x							MF
	After-sales service	RC/MF				RC		x	MF
	Training & recruitment	RC/MF						x	MF
Support	Adminis-tration	RC/MF						x	MF

It is evident in Table 7 that most of the responsibilities in Greenway’s distribution channels are implemented by Greenway employees and MFIs. Despite warnings in literature that MFIs should be seen only as “door openers” (Karamchandani, Kubzansky and Frandano, 2009), Greenway does give much more responsibility to its MFI partners than just as networking

tools. From the results, it is clear that Greenway's co-founder believes that Greenway's goals and those of MFIs are well-aligned; MFIs need Greenway's products to offer micro-credit to customers, and Greenway needs MFIs to sell its stoves. Table 7 also shows that other partners selected for Greenway's distribution channels are given tasks that fit within their traditional roles. For example, the warehouse partners provide storage space, the distributors buy and transport the stoves, and the retailers act as the point of sale for Greenway's products. These roles and chosen partners are not innovative, but rather, fit into similar market-based models found in more developed countries. Overall, Greenway is conservative in its distribution channel design despite the fact that much BoP literature suggests that an SME active in rural, emerging markets must be innovative (Mishra, 2008; Karamchandani, Kubzansky and Lalwani, 2011; Batra et al., 2015; Chakravarthy and Coughlan, 2011; Prahalad, 2012).

Partner management

Based on the results, Greenway does not heavily invest in incentivizing its partners using the more traditional methods as described in Kotler and Keller (2006). For example, Greenway does not offer training nor technical assistance to its partners. It does offer a rewards program in its MFI channels, but it is not applied consistently. Rather, Greenway focuses on offering competitive margins as the driving incentives throughout its distribution channel as recommended by Karamchandani, Kubzansky and Frandano (2009). Additionally, as an indirect incentive, Greenway's sales team offers to promote its stoves in certain regions as a way to stimulate sales for the local retailer and distributor partners. It is also important to note that Greenway's co-founder identified its MFIs and its distributors as the company's overall key partners. As such, he suggested that Greenway may look into creating more incentives for its distributors as the company matures.

One incentive mentioned by Kotler and Keller (2006) that is not often utilized by Greenway is legal contracts. This is in line with Kubzansky, Cooper and Barbary (2011) who pointed out that legal contracts in an informal economy are difficult to enforce. Greenway's sales manager explained that even if contracts are made between business partners, it is often hard to do anything if the contract is broken. This is mainly due to the fact that India's legal system is very slow and therefore essentially ineffective. Although Greenway has not had a lot of problems with partners who do not deliver, the lack of legal infrastructure does create vulnerability in the distribution channel.

5.2.2 Responsiveness

This thesis analyzes the “responsiveness” or agility of Greenway’s distribution channel by focusing on how Greenway responds to two important factors: customer preference and changes in customer demand (Figure 12). Before these factors are discussed further, it is important to acknowledge who Greenway’s target customers actually are in which they are responding to. As mentioned previously, a report found that most cookstove companies operating at scale in India were not specifically targeting the BoP (Dalberg, 2013). This is still the case in 2016 according to the GACC manager. However, there is still great need for clean technology in India’s “middle of the pyramid” according to the Ashden program officer. According to the results, Greenway does in fact design its distribution channels for rural markets, even though the exact urban-rural ratio is not known.

Customer preference

According to all interviewees in this thesis, the designs of Greenway’s stoves are among the company’s most important competitive advantages. They attribute this to the initial prototype phase, in which Greenway spent many months gleaning feedback from user trials. Since then, two stove models (Figure 13) have been created based on customer-centered design. As suggested by Sinton et al. (2004) and GACC (2011), customer-centric design is crucial. Understanding the user needs is now understood as critical to success in the clean cooking sector (Ipe, Rosenbaum and Derby, 2015).

Today, Greenway’s current business model is conducive to collecting customer feedback. This is due to the fact that ~80% of Greenway’s business activities belong to the B2C category (Figure 17). In a B2C model, Greenway’s employees and close partners sell directly to customers (Figure 8), and therefore create an opportunity for constructive interaction. However, Greenway is not currently taking full advantage of this opportunity. No official feedback system is in place, and only minor changes have been made to the stoves’ original designs. Although the co-founder does agree that Greenway should focus more on customer feedback, it is not a top priority right now. However, even without a well-organized feedback system, Greenway is experiencing an increase in sales with only minimal negative customer feedback; these complaints have been mostly related to technical defaults and not to the design or user experience itself. As a market leader of this design process, other cookstove companies are now following Greenway’s example. This suggests that Greenway’s method

of investing heavily in research and development (R&D) and feedback collection in the early stages of the company rather than later can be an effective strategy for scaling up.

Customer demand

The flow of information plays an important role in how quickly a company can respond to market changes (Christopher, 2011). In the case of its retail channels, cookstove sales data are recorded in a physical notebook and collected once or twice a month by Greenway's sales officers. In Greenway's MFI channels, these sales numbers are reported immediately to Greenway, which is necessary because an MFI agent must report a sale in order to get a stove delivered. Overall, Greenway's system is not currently built to respond quickly to changing customer demand in the retail channel. However, this may change as their sales volumes increase and sales data becomes more time-important. Digitalization as seen in Unilever's model could also increase the speed of responding to demand changes.

5.2.3 Resilience

This thesis investigates the resilience of Greenway's distribution channel by focusing on how the company manages its critical paths in the downstream distribution channel (Figure 12). One of Greenway's most critical paths is the node responsible for collecting orders from customers through retail and MFI partners. As Greenway is still a relatively small SME, it has the flexibility to respond to orders using alternative modes if necessary. According to the co-founder, no communication breakdown or other incidents have occurred that directly threaten this path. However, incidents that affect other Greenway activities have occurred. Because a distribution channel is an interconnected network (Christopher, 2011), these incidents could indirectly impact order collection.

Before Greenway's distribution channel management is discussed, it is important to consider what disruptions have occurred in Greenway's history. In this way, relevant risks can be identified. According to both the co-founder and sales manager, Greenway has experienced very few disrupting incidents in its downstream activities. For example, a communication breakdown at the firm-level or external political or natural incidents at the environment level have not occurred in Greenway's history (Figure 10). Those incidents that have occurred, often occur at the network level, meaning that the problems are associated with its network partners and affect the company's supply or demand (Christopher and Peck, 2004). For

example, Greenway has had some problems with its warehouse, distributor and MFI partners. In these cases, the warehouse held up Greenway shipments, the distributors do not always pay or deliver on time and one of Greenway's MFI partners has not paid Greenway for its stoves after liquidating its stock. The way in which Greenway has dealt with these problems sheds some light on their risk management performance.

Managing these partner-related incidents mentioned above is crucial for Greenway to maintain control over its business operations. Overall, Greenway does two things to help prevent these incidents from happening in the first place. First, Greenway selects its partners according to strict criteria to ensure that they will be reliable partners. Secondly, Greenway's sales staff consistently checks in with its partners to maintain a good business relationship and also to monitor their performance. As suggested by Christopher (2011), this communication can help a company more effectively manage risks and respond to incidents should they arise. When these preventative measures do not work, as described in the instances in the previous paragraph, Greenway's flexible business model comes into play. For example, in response to the warehouse partner incident, Greenway simply shifted to working with new warehouse partners. Greenway responds to poorly performing distributors in the same way. Greenway can easily make this shift, because it does not require special skills or knowledge from its partners. The last instance involving the MFI partner, however, has proven more problematic for Greenway. If one of its partners does not pay, it is very difficult for Greenway to respond in a productive way. Greenway cannot rely on legal support, because as mentioned previously, the legal system is very slow and ineffective (Kubzansky, Cooper and Barbary, 2011). Preventing these situations is therefore the most effective strategy.

5.2.4 Reliability

This thesis analyzes the "reliability" of Greenway's distribution channel by focusing on how Greenway manages the organizational and product complexities within its distribution channel (Figure 12). For each point, the way in which Greenway minimizes variability (Christopher, 2011) will be discussed.

Organizational complexity

To create a reliable distribution channel, a company must find a working balance between the number of activities it internalizes and the activities it outsources. As introduced in the value chain concept, activities that do not create a competitive advantage for the firm should be outsourced (Porter, 1991).

In line with Karamchandani, Kubzansky and Frandano (2009), Greenway avoids a custom distribution channel design, because it is too expensive and time-consuming. Greenway does not outsource all of its distribution activities either (Table 7). Rather, Greenway has built its distribution channel by incorporating a number of external partners while at the same time managing end-to-end control as recommended by Vachani and Smith (2008).

Greenway's on-the-ground sales force plays an important role in maintaining Greenway's control over the distribution channel by keeping consistent contact with its partners and community needs. It is important to note that in the company's beginnings, Greenway did offer its sales team a salary above the market average to attract a dependable team. The overall leadership by the co-founders, Ankit and Neha, also play a very important role in orchestrating Greenway's distribution activities. Both the GACC manager and Ashden program officer emphasized the importance of their leadership not only for guiding the company's activities but also for attracting investors who see their potential as leaders with good control over the company.

To create a distribution channel with the right balance of custom activities, Porter (1985) suggests that a company should internalize only the activities that create a competitive advantage. Based on the results, Greenway's distribution model was designed according to this logic in a number of ways. For example, in the retail channel, Greenway's own sales staff promote its stoves; these sales officers are arguably better at marketing the technical innovations of Greenway's stoves compared to its retailers. Another example involves Greenway's transportation companies. The transportation of goods across state borders in India requires extensive amounts of paperwork and logistical details. Instead of outsourcing this responsibility to its transportation partners, Greenway internalizes this task as the company is more suited to this kind of work. Overall, Greenway has made many outsourcing decisions based on this logic. In reference back to the "relationships" section, Greenway utilizes the competitive skills of its partners (warehouse, distribution, etc.) to fulfill

appropriate tasks within the Greenway distribution channel. In this way, Greenway's distribution channel design decreases organizational complexity while at the same time generating a competitive advantage.

Product offerings

Greenway began as a highly specialized company in 2011 selling only one improved cookstove design. Later in 2014, the more expensive Jumbo stove was introduced. According to the co-founder, this choice was a matter of priming the market with a lower-priced stove. The plan was to introduce the more expensive stove after populations became familiar with the Greenway brand. Selling one product undoubtedly simplified communication within Greenway's distribution channel as described by Karamchandani, Kubzansky and Frandano (2009); however, minimizing complexity was not the key motivation for introducing one product at a time in Greenway's case.

6 Conclusions

In this thesis, Greenway was used as a case company to shed light on the challenges and opportunities related to rural distribution channels in India. The discussion in the previous chapter has helped address the three over-arching research questions in this thesis. These questions are addressed in the following sections.

(Q1) How does a clean cookstove company active in India's rural markets utilize the opportunities and address the challenges related to its marketing and distribution channels?

Marketing channels

Based on the analysis of Greenway's marketing channels, the company faces many challenges in reaching its target rural customers. These include low education levels, effects of a patriarchal culture, a heterogeneous mix of culture and language among villages, and the fact that the product belongs to a brand new product category. Greenway has learned to address most of these challenges on its own, but the effects of a patriarchal society have proven difficult to surmount; this has been especially true in the northern/eastern Indian states.

Overall, Greenway has addressed these marketing barriers by building an aspirational, trustworthy brand based on a combination of ATL and BTL channels. Overall, most of its promotion activities are not outsourced. In its ATL channel, Greenway has utilized TV ads and effectively identified an aspirational marketing message that reaches rural customers. In its BTL channel, Greenway employs a strong sales and demonstration force which builds trust in the company's brand. They also take advantage of public spaces that maximize outreach—for example, piggy-backing on public forums. Cooperation with MFIs and doctors has also increased the company's reach into communities' social networks.

Distribution channels

Several challenges exist within the context of Greenway's distribution models. Firstly disruptions in Greenway's distribution channels are mainly caused by problems with its partners. However, India's legal system is essentially ineffective in dealing with bad business partners. Legal contracts, therefore, do not act as incentives. Secondly, India's tax and export

laws vary from state to state, which requires Greenway to invest a lot of time into paperwork and logistical details. Finally, communication can be slow in rural areas due to the fact that internet is not a viable means of communication. This limits how quickly Greenway can respond to changes in demand or can collect feedback from customers. Although this kind of communication has not proven problematic for Greenway yet, this could change as the company matures and works at a larger scale.

Despite these barriers, several critical factors have helped Greenway manage effective distribution channels in rural areas. First, Greenway employs a working balance between internalizing and outsourcing its distribution activities. Those activities that do not give Greenway a competitive advantage are outsourced to partners. Secondly, because Greenway cannot rely on contractual agreements with partners, the company focuses on fostering good partner relationships. Greenway does this by selecting suitable partners and keeping consistent contact with them. The third critical factor is Greenway's flexibility in its partner relations. Because Greenway does not invest in training or depend on special skills of any one partner, it is easy to replace low-performing partners. The final critical success factor is Greenway's customer-centric distribution model. For example, in regions where Greenway actively engages with its customers, the local retailers and distributors are also more willing to carry their products. Greenway's stove designs are also very customer-driven. Because Greenway focused on collecting design-based feedback early in its business development, it no longer needs to maintain an official feedback system in its downstream distribution channels.

(Q2) How do the findings from the case company compare to literature and what are the implications?

Marketing channels

The marketing challenges experienced by the case company are very similar to those mentioned in literature (Mishra, 2008; Dalberg, 2013; Karamchandani, Kubzansky and Lalwani, 2011). It is interesting, however, to highlight the patriarchal effects on cookstove sales. As noted by Foell et al. (2011), these effects are generally difficult to address without the help of third party groups (government, NGOs etc.). Therefore, the effects of a patriarchal culture on sales could be a driving factor for a company to seek third-party partnerships. This

also highlights the importance of market research to uncover such cultural aspects (i.e. north vs. south India).

Overall, Greenway's marketing strategy is a combination of elements found in various fields of literature (Figure 19). Greenway's ATL activities do in fact make up a large percentage of its rural marketing strategy, which is contrary to recommendations in BoP literature (Chikweche and Fletcher, 2012; Prahalad, 2012). Greenway's TV ads not only increase the company's reach (Kotler and Keller, 2006), but also send a message to rural customers that the company is legitimate. The latter point was not emphasized in BoP literature, but should be considered by companies when prioritizing ATL or BTL marketing channels. The case company's BTL activities generally fall in line with those suggested in BoP and cookstove literature, where demonstrations are among the most effective outreach strategies (Dalberg, 2013). However, the locations of these demonstrations differ in literature. While Greenway takes advantage of public marketplaces and events with large audiences, BoP sources also recommend models that focus on personal, door-to-door demonstrations (Lewis et al., 2015). This highlights the importance of utilizing already-existing outreach channels that are much less cost-intensive than door-to-door models.

Distribution channels

One of the most critical challenges that Greenway faces in its distribution channels are problems with its partners. In reference back to Figure 10, these risks lie in the "network" category (Christopher and Peck, 2004). Legal contracts are not an effective tool in informal economies, which is also noted by Kubzansky, Cooper and Barbary (2011). Therefore, companies serving rural, emerging markets must therefore be aware that external legal infrastructure cannot help mediate problems within their network of partners. The other two barriers that Greenway faces—high state border taxes and lack of internet infrastructure—are only briefly mentioned in BoP literature (Karamchandani, Kubzansky and Lalwani, 2011). These barriers are not necessarily addressable by companies but rather by policy-makers and governments. Overall, a company active in rural, emerging markets must learn to adapt alternative methods to work within these policy/legal-related constraints, because change at high levels is relatively slow in emerging economies.

Greenway's successful distribution strategy is a combination of recommendations from traditional distribution theory, BoP and cookstove-focused literature. For example, according

to the traditional value chain concept, companies should internalize only the activities that give them a competitive advantage (Porter, 1985). As seen in Table 7, Greenway internalizes most of its own promotional and managerial activities, especially in its retail channels. Greenway's well-trained sales force is one of the company's competitive advantages in two ways. First, their sales team is dedicated to the product and therefore very qualified for reaching customers. Second is that Greenway's on-the-ground sales presence and customer-centric focus (Figure 8) simultaneously builds trusting relationships with local retailers and distributors in the area, ultimately leading to stronger partnerships. This latter point is not emphasized in BoP literature. Greenway's experience therefore suggests that companies in rural markets should consider internalizing its own promotion activities not only to effectively reach customers but also to establish better partner relationships.

Another point is that Greenway outsources activities to traditional partners (distributors, warehouse etc) who are carefully selected and whose incentives are well-aligned (Kubzansky, Cooper and Barbary, 2011). This also means that no extra training or investment is needed for the partner to fulfill the outsourced tasks. BoP literature, however often recommends innovative NGO or micro-entrepreneur partnership models (Karamchandani, Kubzansky and Frandano, 2009; McKague and Tinsley, 2012) to help promote or sell a SME's socially beneficial product. This often requires investment and training. Because Greenway avoids this kind of dependence, it remains flexible and can easily find a new partner if a current one is not performing well or quits. Therefore, companies active in rural markets should consider outsourcing tasks to partners who traditionally perform the activity as a way to lower investment and increase the company's flexibility in the face of partnership difficulties.

Finally, Greenway's focus on customer-centric design in the initial stages of the company has proven to be a very effective strategy. Because customers are generally satisfied with the design, Greenway does not have to focus on collecting and implementing design-related feedback in its downstream distribution channels. This frees up time to focus rather on growth-enabling activities such as increasing manufacturing capacity or increasing sales. While much cookstove literature emphasizes the importance of user-centric design (Sinton et al., 2004; GACC, 2011), the timing of this process is also important. Therefore, companies serving rural markets should focus heavily on customer feedback at the beginning stages of the business rather than later.

(Q3) How can theory from traditional marketing/distribution and BoP literature be used to help analyze the viability of rural distribution channels?

In the previous “analysis and discussion” chapter, both BoP literature and traditional distribution/marketing literature was used to build a framework to analyze Greenway’s case. In both fields of literature, some elements were relevant while others were not. A summary of the main points are discussed below.

The traditional 4Ps and the BoP 4As

In this thesis, the overall analytical framework used to analyze the case company was guided by the BoP’s 4As (Anderson and Billou, 2007) instead of the traditional 4Ps Marketing Mix (Kotler and Keller, 2006). Based on the results, the 4As did, in fact, prove to be a useful framework for analysis, but the 4Ps could have also been utilized to produce a more well-rounded analysis. This is due to the fact that some assumptions in the 4As framework are not wholly applicable to this case study. For example, in the “awareness” category, the 4As assumes that customers do not have access to marketing channels like TV or radio. In serving the middle-income populations of rural India, however, the case company did in fact use a relatively high percentage of TV ads to reach its customers. In this example, the 4Ps construct could have provided a useful framework for further analyzing the effectiveness of the company’s more traditional ATL activities.

In analyzing the BTL activities of the case company, however, the 4As did in fact provide a very useful framework. This is due to the assumption in the 4As framework that social connections with customers and partners are critically valuable in BoP populations. This assumption also applies to the rural, emerging markets where demonstrations and social partnerships also proved to be effective marketing strategies. In this case, the 4As was a useful framework for analyzing the case company’s BTL activities. Overall, these findings imply that both traditional (4Ps) and BoP (4As) frameworks should be utilized together in assessing a company serving rural, emerging markets. This would allow for a broader, more in-depth analysis into the company’s distribution model instead of only analyzing select elements that fit into the assumptions of one framework.

The 4Rs and “sandbox innovation”

To analyze the case company’s distribution model in rural markets, the 4Rs (Christopher, 2011) proved to be a useful framework. Likewise, the “sandbox innovation” method (Prahalad, 2012) of identifying relevant constraints to enable appropriate innovation also proved useful in analyzing the company’s marketing channels. Based on the results, however, the 4Rs yielded a more dynamic picture of the case company’s distribution activities. For example, in addition to describing the kinds of partnerships utilized in its distribution network (Table 7), the 4Rs also shed light on how the partners were selected and incentivized at every level. This kind of framework, therefore, allows for a more complete understanding of how the parts work together as a whole. Frameworks like the traditional 4Rs could be utilized for analyzing other companies active in rural, emerging markets. In comparing other companies’ models with this kind of framework, it is then possible to identify not only innovative partnerships, but also innovative ways that companies monitor, manage and communicate internally and externally.

When applied to the case company, the 4Rs often helped describe how the company has established a viable distribution channel rather than a particularly competitive one. This is especially the case for the clean cookstove industry, because the market is still very young. Companies are in the process of not just branding themselves, but also building an entirely new product category at the same time. Therefore, the goal of the 4Rs framework may be different depending on the environment. In developed markets, the 4Rs aim to describe the competitiveness of a distribution channel (Christopher, 2011). In rural, emerging markets, however, the 4Rs may be used instead to describe the viability of a distribution channel.

Another important point is that some Rs receive more of Greenway’s focus depending on Greenway’s stage of development. For example, in the company’s beginnings, collecting customer feedback was much more important than it is today (responsiveness). Now that Greenway has created a strong stove design, customers are generally satisfied, so Greenway does not focus on maintaining a formal feedback system. However there are two elements of “responsiveness” discussed in this thesis. In addition to customer feedback, responsiveness to changes in demand are also important. As demand increases, companies must increase its ability to respond quickly; therefore, this focus becomes important later in the company’s development. Right now, Greenway is in a growth phase as it continues to expand to new regions of India. Therefore, focusing on building a new network (relationships) while still

maintaining organizational control (reliability) is very important for success. This organizational control becomes exceedingly more important as the company scales up and incorporates more partners. The last R—resilience—seems to be built into Greenway’s supply chain from the start. This is due to the fact that Greenway has built its distribution network based on very flexible partners. For example, if one distributor is not performing well, Greenway can easily shift the responsibility to a replacement. In this way, Greenway can continuously maintain and build a resilient distribution channel.

If the 4Rs should be considered in creating a viable distribution channel in rural, emerging markets, it could be argued that there is an “R” missing. This missing “R”, or principle, is “attractiveness to investors.” Both Ashden and GACC representatives pointed out similar aspects of Greenway’s business model that led to their winning the respective investment awards. These elements include, for example, a strong leadership team and a distribution channel with consistent and diverse cash flows. After Greenway won its awards, it was able to engage in growth-enabling activities which have kick-started its sales numbers. Therefore, when assessing the viability of distribution channels in a rural market, it is crucial to recognize the importance of attracting investment. This is especially important in a company’s initial stages, because as the company matures and increases in scale, its activities generate more revenue and investment is therefore not as necessary.

As discussed above, two general recommendations have been made to help adapt the traditional 4Rs to a more rural-focused framework. First is that the 4Rs should receive varying levels of attention depending on the stage of a company’s development. Second is that an R may be missing in the context of rural markets; this missing R represents a company’s attractiveness to investors. By taking these two recommendations into account, an illustrative framework has been created (Figure 20). It can be seen in Figure 20 that “resilience” receives consistent focus in building a distribution channel, while the other Rs are employed in a more step-wise function (as described previously). Take note that responsiveness is employed during the product design stages to collect customer feedback and then put in focus again later to respond to increased customer demand. This framework serves only as a starting point. The author, therefore, recommends future researchers to test this framework on other case companies based in rural markets. This research could shed light on further adaptations needed for the rural-focused framework.

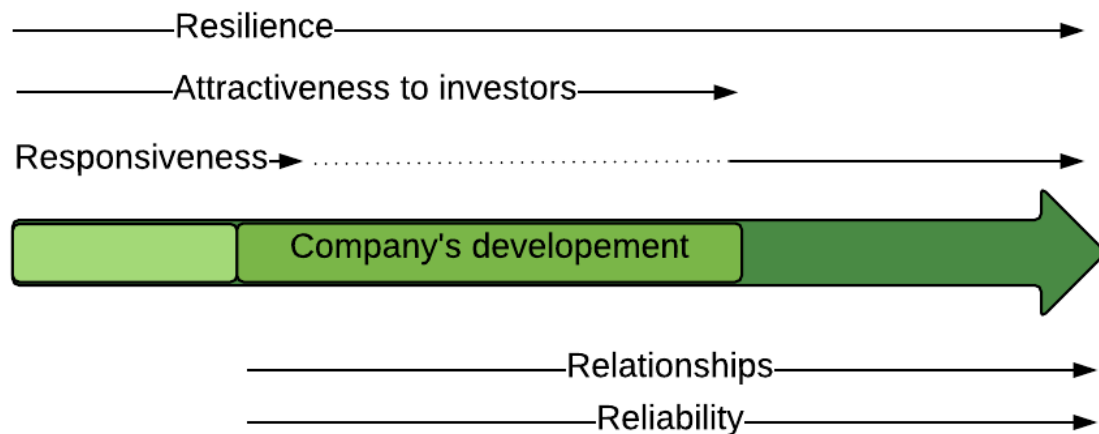


Figure 20. Adapted 4Rs framework to help describe the viability of a company’s distribution channel active in a rural, emerging market. The green, shaded arrow represent different phases of growth that a company experiences as it matures (from the design stages to reaching scale). The small black arrows represent the “R” principles in focus during the respective growth phases.

6.1 Implications

Based on an in-depth analysis of the case company, this thesis has highlighted critical success factors for its marketing and distribution channels in rural, emerging markets. While many aspects of the company are in line with recommendations in literature, various new points have been introduced. Findings from a single case-study cannot be used to recommend generalized best practices. However, the case company analysis has shed new insights that could be of interest to both researchers and practitioners interested in serving rural markets. These insights are expressed below.

Practitioners

Based on the case-company’s experience, several factors should be considered before a company begins marketing to rural, emerging markets. For example, if a company is selling a product that is predominantly used by women (i.e. a cookstove), it must first assess the patriarchal culture in the target region. If women lack household buying power, a third-party organization may be needed to support sales in that area. When choosing appropriate marketing channels (ATL vs. BTL) for promoting the product, a company should consider various factors. This thesis highlights the important point that ATL (i.e. TV) activities not

only increase reach in rural areas but also increase the legitimacy of the company's brand. In BTL activities, it is recommended that a company utilize already-existing channels for demonstrating for large numbers of people (i.e. market centers/events) compared to more cost-intensive activities with minimal reach (i.e. door-to-door sales).

Based on the case company's experience, this thesis also highlights important points to be considered in designing and managing rural distribution channels. Firstly, the most common problems in the downstream distribution channel stem from problematic partner relationships. Companies active in emerging economies cannot rely on the ineffective legal system to protect them from bad business deals. Therefore, companies must work within these constraints by managing its partners on its own. First, a company should focus on selecting suitable partners with well-aligned goals. A company should also outsource activities to partners who traditionally fulfill those tasks (warehousing/distribution). In this way, a company can avoid extra training or other investment in its partners. This gives the company the flexibility to replace poor-performing partners without causing a disruption in its distribution channel. In addition, this thesis recommends companies active in rural markets to internalize its own management and promotion activities. This can give a company a competitive advantage in a couple of ways. First, its dedicated sales force can be well-trained to effectively reach customers. Second, by increasing its on-the-ground force, the company can also build stronger relationships with local retailers and distributors in the target region. Finally, this thesis recommends that not only should a company focus on collecting customer feedback to design its product, but it should also make sure to do this in its early business stages. This allows a company to focus on growth-enabling activities downstream in the distribution channel instead of having to collect feedback and consistently return to the drawing board.

Researchers

Based on the results of this thesis, various recommendations can be made to researchers interested in studying rural distribution channels. First, it is recommended that researchers should utilize frameworks from both traditional (4Ps) and BoP (4As) literature. This is due to the fact that attributes in rural, emerging markets fit some of the assumptions in both types of frameworks. The second recommendation is that researchers utilize the 4Rs for studying distribution channels in rural, emerging markets. Similar to its functionality in developed markets, the 4Rs framework has allowed the author to analyze not only the structure of the

distribution models but also the more dynamic management of the channels. Additionally, the author recommends that various adaptations could be made to the 4Rs to increase the framework's usefulness. The suggested framework (Figure 20) recommends that an additional R should be added and that the "R" principles should be applied in a step-wise function. This thesis therefore contributes to literature with a newly adapted framework for analyzing rural distribution channels. This provides future researchers an opportunity to test this framework on other case companies. This could lead to further model adaptations and, consequently, further insights into the nature of rural distribution channels.

6.2 Limitations & recommendations for further research

In this thesis, only two employees from the case company were interviewed, and both came from managerial positions in the company's hierarchy. It is important to note that the author would have liked to conduct more interviews with representatives working further down in the company's hierarchy or with Greenway's partners—for example, sales officers, distributors or retailers. However, interviews were limited by a language barrier, as most workers in these areas do not speak English. Therefore, interviews with these employees were not possible within the time limits of this thesis.

It is also important to point out that the exact ratio of Greenway's rural/urban customers is not known. This is a critical point, because this thesis uses the Greenway case company to uncover insights of a successful rural distribution channel design—not an urban one.

Although the exact percentage is not known, there are several reasons why Greenway's model remains useful in this thesis. First is that all interviewees in this thesis (including third-party representatives) emphasized Greenway's dedication to serving rural populations. In the Indian clean cookstove industry, this goal is not a noble cause but rather a smart business decision. The reason for this is that the majority of people that rely on biomass for cooking reside in rural areas. Therefore, it is logical that Greenway should design its distribution channels to focus on these areas, because that is where the majority of their potential customers reside. Designing distribution channels to specifically reach urban areas, where LPG is available, would only limit the company's potential. Additionally, Greenway's employees did not identify any differences between its rural and urban distribution channel designs. Therefore, even if Greenway does serve some urban markets, its channel design remains appropriate for rural areas. For these reasons, even without numerical evidence, it is

reasonable to assume that Greenway's channels are designed predominantly for rural markets and is therefore useful in this thesis.

The scope in this thesis was limited to the downstream distribution channel from the factory to the customer (Figure 5). Based on this scope, only two of the 4As were used to analyze Greenway's marketing activities. Likewise, several activities in Porter's value chain were excluded in this thesis (Figure 7). These decisions were made in order to produce a more in-depth, focused discussion. However, aspects of "affordability" and "acceptability" did—in fact—prove to be relevant based on the results. For example, the cookstove's design (acceptability) process upstream successfully created a customer-centric stove design which has consequently lessened the pressure downstream for collecting customer feedback. The activities upstream and downstream, therefore, can be strongly linked. Based on these results, the author suggests future research to use a more inclusive analytical framework that investigates all of a case company's supply chain activities in the context of rural, emerging markets. In this way, one can account for inter-connected distribution elements.

To a large extent, this thesis has not taken into account the differences between Indian states. As in the Greenway case, building marketing and distribution channels in northern India vs. southern India may involve different barriers and critical success factors; this is largely due to their differences in GDP, education levels and state of infrastructure. Due to these potentially wide variations, the author recommends that future research could look into region-specific factors.

The author chose specific literature-based frameworks to analyze the case company. These included traditional distribution literature (i.e. 4Rs, 4Ps, Porter's activities) and BoP (4As, "sandbox innovation" method) literature. However, many other constructs could have been used and may have resulted in different insights. Future work could build on the current analysis by utilizing other literature sources—for example, frameworks from last-mile distribution channels after natural disasters or from social entrepreneurship literature to name a few.

Finally, this thesis focused on a case company selling a biomass cookstove. It is important to point out that cleaner cooking fuels exist in India (LPG, solar alternatives). Therefore, further research could implement similar studies in these industries to help support India's ultimate shift towards cleaner cooking alternatives (Figure 1).

7 References

Aithal, R.K., 2012. Marketing channel length in rural India: Influence of the external environment and rural retailer buyer behavior. *International Journal of Retail & Distribution Management*, 40(3), pp.200-217.

Anderson, J. and Billou, N., 2007. Serving the world's poor: innovation at the base of the economic pyramid. *Journal of Business Strategy*, 28(2), pp.14-21.

Ashden, 2014. Case study summary: Greenway Grameen, India. [online] (May 2014) Available at: <https://www.ashden.org/files/case_studies/GREENWAY%20GRAMEEN%20case%20study.pdf> [Accessed 18 January 2016].

Barnes, D.F., Kumar, P. and Openshaw, K., 2012. *Cleaner hearths, better homes: new stoves for India and the developing world*. New Delhi: Oxford University Press and World Bank.

Batra, S., Sharma, S., Dixit, M.R. and Vohra, N., 2015. Strategic Orientations and Innovation in Resource-constrained SMEs of an Emerging Economy. *Journal of Entrepreneurship*, 24(1), pp.17-36.

Beninger, S. and Robson, K., 2015. Marketing at the base of the pyramid: Perspectives for practitioners and academics. *Business Horizons*, 58(5), pp.509-516.

Bland, C. and Hamann, R., 2015. Obstacles to Firms' Adoption of Socially Embedded Approaches to BoP Markets. In: Bitzer, V., Hamann, R., Hall, M. and Griffin-EL, E.W. eds., 2015. *The Business of Social and Environmental Innovation: New Frontiers in Africa*. Switzerland: Springer. p.105-126.

Bruton, G.D., Ahlstrom, D. and Obloj, K., 2008. Entrepreneurship in emerging economies: Where are we today and where should the research go in the future. *Entrepreneurship theory and practice*, 32(1), pp.1-14.

Bryman, A., 2012. *Social Research Methods*. 4th ed. Oxford University Press.

Chakravarthy, B. and Coughlan, S., 2011. Emerging market strategy: innovating both products and delivery systems. *Strategy & Leadership*, 40(1), pp.27-32.

Chikweche, T. and Fletcher, R., 2012. Revisiting the marketing mix at the bottom of pyramid (BoP): from theoretical considerations to practical realities. *Journal of Consumer Marketing*, 29(7), pp.507-520.

Christopher, M. and Peck, H., 2004. Building the resilient supply chain. *The international journal of logistics management*, 15(2), pp.1-14.

Christopher, M., 2011. Logistics and supply chain management. 4th ed. Great Britain: Financial Times Pearson.

Dalberg, 2013. *Global Alliance for Clean Cookstoves: India cookstoves and fuels market assessment*. Dalberg Global Development Advisors.

Dahan, N.M., Doh, J.P., Oetzel, J. and Yaziji, M., 2010. Corporate-NGO collaboration: Co-creating new business models for developing markets. *Long range planning*, 43(2), pp.326-342.

Eisenhardt, K.M., 1989. Building theories from case study research. *Academy of management review*, 14(4), pp.532-550.

Foell, W., Pachauri, S., Spreng, D. and Zerriffi, H., 2011. Household cooking fuels and technologies in developing economies. *Energy Policy*, 39(12), pp.7487-7496.

GACC, 2011. *Igniting Change: a strategy for universal adoption of clean cookstoves and fuels*. Global Alliance for Clean Cookstoves.

GACC, 2014. Case Study: Greenway Appliances—Manufacturing. [online] Available at <<http://cleancookstoves.org/resources/430.html>> [Accessed 2 February 2016].

GACC, 2015. Partner Spotlight: Greenway. [online] Available at <<http://cleancookstoves.org/about/news/07-20-2015-partner-spotlight-greenway.html>> [Accessed 15 December 2015].

Garrette, B. and Karnani, A., 2010. Challenges in marketing socially useful goods to the poor. *California Management Review*, 52(4), pp.1-19.

GIZ, 2013. *Ingredients for Sustainable Cookstove Interventions: lessons learned from the Indian National Programme for Improved Cookstoves (NPIC)*. New Delhi: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Government of India, 2011. Census Terms. [online] Available at <http://censusindia.gov.in/Data_Products/Library/Indian_perceptive_link/Census_Terms_link/censusterm.html> [Accessed 25 January 2016].

Government of India, 2012. *Report of the Committee on Unorganized Sector Statistics*. National Statistical Commission Government of India.

Government of India, 2014. *Key Indicators of Social Consumption in India Education*. New Delhi: Ministry of Statistics and Programme Implementation.

Greenway, 2016a. Greenway: The Rural Consumer. [online] Available at <<http://www.greenwayappliances.com/rural-consumer>> [Accessed 2 Feb 2016].

Greenway, 2016b. Greenway: Greenway Smart Stove. [online] Available at <<http://www.greenwayappliances.com/greenway-smart-stove>> [Accessed 2 Feb 2016].

Greenway, 2016c. Greenway: Our Journey. [online] Available at <<http://www.greenwayappliances.com/our-journey>> [Accessed 2 Feb 2016].

International Energy Agency, 2016. Energy access database. [online] Available at <<http://www.worldenergyoutlook.org/resources/energydevelopment/energyaccessdatabase/>> [Accessed 2 February 2016].

Ipe, J., Rosenbaum, J. and Derby, E., 2015. Market Research in the Clean Cooking Sector: tools and tips. Global Alliance for Clean Cookstoves.

Karamchandani, A., Kubzansky, M. and Frandano, P., 2009. *Emerging markets, emerging models: Market-based solutions to the challenges of global poverty*. Monitor Group.

Karamchandani, A., Kubzansky, M. and Lalwani, N., 2011. Is the bottom of the pyramid really for you. *Harvard Business Review*, 89(3), pp.107-111.

Kolk, A., Rivera-Santos, M. and Rufín, C., 2013. Reviewing a decade of research on the “base/bottom of the pyramid” (BoP) concept. *Business & Society*, XX(X) pp. 1-40.

Kotler, P. and Keller, K.L., 2006. *Marketing Management*. 12th ed. New Jersey: Pearson Prentice Hall.

Kubzansky, M., Cooper, A. and Barbary, V., 2011. *Promise and Progress: Market-based solutions to poverty in Africa*. Monitor Group.

Lewis, J.J., Bhojvaid, V., Brooks, N., Das, I., Jeuland, M.A., Patange, O. and Pattanayak, S.K., 2015. Piloting improved cookstoves in India. *Journal of health communication*, 20(sup1), pp.28-42.

Lewis, J.J. and Pattanayak, S.K., 2012. Who adopts improved fuels and cookstoves? A systematic review. *Environmental health perspectives*, 120(5), p.637-645.

Maps of India, 2013. My Custom Map. [online] Available at <<http://www.mapsofindia.com/editable-maps/customise-your-map.html>> [Accessed 15 February 2016].

MBA Skool, 2016. Porter Value Chain. [online] Available at <<http://www.mbaskool.com/business-concepts/marketing-and-strategy-terms/2516-porter-value-chain.html>> [Accessed 25 January 2016].

McKague, K. and Tinsley, S., 2012. Bangladesh's Rural Sales Program: Towards a scalable rural sales agent model for distributing socially beneficial goods to the poor. *Social Enterprise Journal*, 8(1), pp.16-30.

Mishra, D.P., 2008. FMCG distribution channels in India: Challenges and opportunities for manufacturers and retailers. *Journal of Global Business Issues*, 2(2), p.175-182.

Narasimhan, L., Srinivasan, K. and Sudhir, K., 2015. Editorial: Marketing Science in Emerging Markets. *Marketing Science*, 34(4), pp.473-479.

OppenheimerFunds, 2015. *Emerging Markets: Seizing transformational growth*. New York: OppenheimerFunds Distributor.

Porter, M.E. and Millar, V.E., 1985. How information gives you competitive advantage. *Harvard Business Review*, 63(4) pp. 149-152.

Porter, M.E., 1991. Towards a dynamic theory of strategy. *Strategic management journal*, 12(S2), pp.95-117.

- Prahalad, C.K., 2012. Bottom of the Pyramid as a Source of Breakthrough Innovations. *Journal of Product Innovation Management*, 29(1), pp.6-12.
- Prahalad, C.K. and Hammond, A., 2002. Serving the world's poor profitably. *Harvard business review*, 80(9), pp.48-59.
- Prahalad, C.K. and Hart, S.L., 1999. Strategies for the bottom of the pyramid: creating sustainable development.
- Putti, V.R., Tsan, M., Mehta, S. and Kammila, S., 2015. *The State of the Global Clean and Improved Cooking Sector*. Washington: The World Bank.
- Rogers, E.M., 2003. Elements of diffusion. *Diffusion of innovations*, 5, pp.1-38.
- Saunders, M., Lewis, P. and Thornhill, A., 2009. Research Methods for Business Students. 5th ed. England: Pearson Education Limited.
- Sheth, J.N., 2011. Impact of emerging markets on marketing: Rethinking existing perspectives and practices. *Journal of Marketing*, 75(4), pp.166-182.
- Shrimali, G., Slaski, X., Thurber, M.C. and Zerriffi, H., 2011. Improved stoves in India: A study of sustainable business models. *Energy Policy*, 39(12), pp.7543-7556.
- Simon, G.L., Bailis, R., Baumgartner, J., Hyman, J. and Laurent, A., 2014. Current debates and future research needs in the clean cookstove sector. *Energy for Sustainable Development*, 20, pp.49-57.
- Sinton, J.E., Smith, K.R., Peabody, J.W., Yaping, L., Xiliang, Z., Edwards, R. and Quan, G., 2004. An assessment of programs to promote improved household stoves in China. *Energy for Sustainable Development*, 8(3), pp.33-52.
- Sodhi, M.S. and Tang, C.S., 2014. Supply-Chain Research Opportunities with the Poor as Suppliers or Distributors in Developing Countries. *Production and Operations Management*, 23(9), pp.1483-1494.
- Sridharan, S. and Viswanathan, M., 2008. Marketing in subsistence marketplaces: consumption and entrepreneurship in a South Indian context. *Journal of Consumer Marketing*, 25(7), pp.455-462.

The World Bank, 2011. Poverty headcount ratio at \$1.90 a day (2011 PPP). [online] Available at <<http://data.worldbank.org/indicator/SI.POV.DDAY>> [Accessed 4 February 2016].

The World Bank, 2016. Rural population (% of total population). [online] Available at <<http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>> [Accessed 2 February 2016].

Thurber, M.C., Phadke, H., Nagavarapu, S., Shrimali, G. and Zerriffi, H., 2014. 'Oorja' in India: Assessing a large-scale commercial distribution of advanced biomass stoves to households. *Energy for sustainable development*, 19, pp.138-150.

Vachani, S. and Smith, N.C., 2008. Socially responsible distribution: distribution strategies for reaching the bottom of the pyramid. *California Management Review*, 50(2), pp.52-84.

Viswanathan, M., Rosa, J.A. and Ruth, J.A., 2010. Exchanges in marketing systems: The case of subsistence consumer-merchants in Chennai, India. *Journal of marketing*, 74(3), pp.1-17.

WHO, 2016. Household air pollution and health. [online] Available at <<http://www.who.int/mediacentre/factsheets/fs292/en/>> [Accessed 5 February 2016].

Appendix

Appendix A: Information about interviewees.

Name	Type	Company, duration of employment	Job title	Earlier relevant work	Date of interview(s)
Ankit Mathur	Case company	Greenway Grameen; since 2010	Co-founder and current CTO, MBA and bachelor of engineering	Co-founded Greenway just after finishing MBA.	29/02/2016 07/03/2016
Ellen Dobbs	3 rd party award organization	Ashden Awards; since 2014	International Program Officer	3 years experience at Global Action Plan; Master's in sustainable development	24/03/2016
Stevie Valdez	3 rd party award organization	Global Alliance for Clean Cookstoves; since 2013	Manager of Impact Investing & Market Development	Worked for Relief International; Master's in social enterprise	24/03/2016
Varun Sahu	Case company	Greenway Grameen; since Jan. 2016	Sales manager, Greenway Grameen	6 years work experience as consultant and engagement manager at Earnst & Young, Kuwait	17/03/2016

Appendix B: Interview guide with Greenway employees

Introduction to interview

1. **Face questions**
 - a. Age & background?
 - b. How many years with Greenway?
 - c. How many years work experience?
 - d. Position & role in supply chain management?
2. **Target Group**
 - a. Who are your target customers?
 - b. What is your target geography? (which states, how many villages)
3. **Performance:**
 - a. What is your sales record? (Per month/total to date)?
4. **Competitive advantage:**
 - a. What do you feel gives your company its overall competitive advantage? (Supply chain, product design, etc.)
 - b. What do you feel gives your supply chain in particular a competitive advantage?

Availability

1. **Reliability**
 - a. Has your company always sold 2 stove designs? Did you start with one? If this has not always been the case, can you tell me what has happened in the past?
 - b. What is the main reason for selling only 2 designs now?
 - c. Why has Greenway chosen not to sell using a proprietary channel—in other words, control its supply chain at every level?
2. **Relationships**
 - a. Can you explain your rural distribution channel—the different models and partners you use?
 - b. Are there some partners you avoid? Why?
 - c. What criteria was used in selecting your current outsourced partners (For example)? (critical characteristics). What do you avoid typically/bad experience?
 - d. Are your partners offered incentives? What about training?
3. **Resilience:**
 - a. Can you explain a scenario where Greenway has experienced a major interruption in its rural distribution channel? What were the causes? (weather, labor, transportation infrastructure, informational break down etc.)
 - b. If you were to sit down and look at a map of Greenway's rural supply chain downstream from the factory, which pathways would you consider "critical paths." In other words, if these paths broke down, it would threaten all supply chain operations.
 - i. What would be the "nightmare scenario"?
 - ii. What has been done to prevent this? Examples? (Re-engineer/make a contingency plan?)
 - iii. Are all employees aware of these weaknesses and trained to respond accordingly?
4. **Responsiveness**

- a. What is Greenway's sales balance between B2C, B2G and B2B?
- b. Is there a system in place to collect customer feedback? (form, call, through salesmen etc)
- c. Do you have a specific example of a case where a customer gave feedback on Greenway or its products, and this feedback was taken into serious consideration?
- d. Information: Suppose a retailer needs more stoves to stock his shop. How is Greenway notified (phone, email, in-person etc.)? How are sales number collected? Have there been any problems with this system?

Awareness

1. **Barriers:** In Greenway's experience, when trying to raise product awareness-- are there characteristics that make it difficult? If yes, can you describe them? Exactly how has Greenway addressed them?
2. **Marketing techniques:**
 - a. Can you describe examples of how Greenway uses each type of marketing in rural areas? Who does the marketing? (Above-the-line marketing/Below-the-line marketing)
 - b. What is your company's balance between ATL and BTL techniques (%)?
 - c. Have you tried any promotional activities that has NOT worked well?

Appendix C: Interview guide with representatives from award organizations

Introduce myself: bachelor in biology in Canada and now studying industrial ecology at NTNU in Norway.


1. **Interviewee questions:** What is your current position at _____? How many years have you worked with _____? Do you have previous experience in this field before _____?
2. **Overall:** Why did _____ see Greenway as a company worth investing in? What critical factors stood out?
3. **Scale:** What critical factors do you think has allowed Greenway to scale up so quickly?
4. **Distribution channel:** Most of Greenway's sales (80%) come from its retail and MFI channels and relies very little on NGOs for sales.
 - a. Is Greenway unique in that they do not depend a lot on NGOs for sales compared with other sustainable cookstove companies or SMEs in general?
 - b. Did anything about Greenway's distribution channel design stand out from other companies? Any competitive advantage due to a particular aspect?
5. **Promotion:** ~65% BTL (demonstrations) and ~35% ATL (TV)
 - a. Is this a balance that you often see in companies selling socially beneficial products to rural markets?
 - b. Are there aspects about Greenway's marketing strategy that are unique?
6. **Literature:** Greenway is selling to rural areas—but not targeting the BoP. I found the same trend with other companies in the Global Alliance Market Report from 2013.
 - a. Are most cookstove companies in India targeting rural customers in the same way as Greenway? (not necessarily BoP)?
 - b. Is this changing?

Appendix D: Examples of Greenway's marketing approaches

Link to one of Greenway's TV ads:


https://www.youtube.com/watch?v=hqi5rzCv0jo&feature=em-share_video_user

One of Greenway's English pamphlets:



Bring home the Smarter way of Cooking

- ▶ India's No.1 biomass cookstove
- ▶ 70% less smoke*
- ▶ 65% less fuel*
- ▶ Burns wood, dry - dung, dry crop residue, etc
- ▶ Light weight & portable
- ▶ Government certified



Smart Stove

Hot line: 8080 323 023

www.greenwayappliances.com