



# Business Model Development at the BoP

*Creating a Business Model Canvas for the sub-Saharan African BoP region & drawing on findings to develop suggestions for the Frugal Thermometer*

Master Thesis

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*Creating a Business Model Canvas for the sub-Saharan African BoP region  
& drawing on findings to develop suggestions for the Frugal Thermometer*

Thesis By

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In partial fulfilment of the requirements for the degree of

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# Master Thesis Project

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# Acknowledgement

As a proud Indian, my aspirations in life have always been focused on contributing in some way or form to my country. With India being the land of frugal innovation or “jugaad” as it is commonly known, the temptation to do a research study on frugal innovation and Bottom of the Pyramid is what eventually steered me to a meeting with Prof. Dr. C.P. van Beers who kindly led me to this thesis topic. The topic itself was a very interesting one, one that required me to explore how firms develop their business models to suit the mostly chaotic market conditions of the Bottom of the Pyramid. I hope my contributions through this thesis project can help entrepreneurs, firms and others in better dealing with these conditions and ensuring that the Bottom of the Pyramid gets the due attention it deserves.

My masters in ‘Management of Technology’ journey began in February 2015, when Dr. R.M. Verburg kindly permitted me to enter the program in the middle of the year and I cannot thank him enough for his contribution over the last year and a half. The journey culminating with this thesis report has been a long and arduous one, one that would not have been possible without the contributions of the people to whom I would like to take this opportunity to recognize.

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Sincerely,

Venkatesh Ramakrishnan

26<sup>th</sup> October, 2016.

# Executive Summary

The Base of the Pyramid or the 'BoP' refers to the 3 – 4 billion people that constitute the income category of less than US\$ 2.50 per day. They represent the bottom tier of the world economic pyramid and predominantly belong to those countries that are developing, have a high population and have relatively low quality of living standards. A major chunk of this population remains relatively inaccessible to traditional commercial and business activities leaving the BoP to be termed as one with a very high market potential due to its unsaturated nature but remains a market that has seen very slow socio-economic growth in the past decade.

Businesses from the other end of the spectrum, i.e. the top of the world economic pyramid or ToP have tried numerous times to capture the vast potential the BoP promises but remain relatively unsuccessful due to the chaotic and unregulated nature of the market conditions, the lacking of basic infrastructure and the apparent lack of a framework to base their business model development on. Business from the ToP that managed to find success in the BoP, seem to point out towards a need to innovate and develop their business models to better suit the local market characteristics and thus, this research project aims to contribute to this innovation by showcasing a new framework that can help firms in the process of developing their business models to combat the unique characteristics and flaws that exist in the sub-Saharan African Base of the Pyramid regions. This exploratory research thus deals with the problem of business model development at the sub-Saharan BoP regions and to ensure this goal is reached it follows primarily a three step process.

Step one – the literature study. Here, the main aim is to uncover the theoretical background details needed to understand the concepts and definitions involved within this research project. It deals with the concepts of the Base of the Pyramid (BoP), Business model and frameworks and the Business Model Canvas (BMC). Alexander Osterwalder and Yves Pigneur's 'Business Model Canvas' is a tool that was developed as a framework to guide firms with business model development. In this research, it was chosen as an ideal framework to base the new framework on due to its established and well accepted nature. The BMC's building blocks are elaborated and discussed in terms of literature available for the BoP conditions. Step two – the empirical study. This aspect of the research project involved semi-structured interviews of the cases chosen as part of the sample. The cases chosen were firms based out of the Netherlands who undertake their business activities, more specifically business to consumer or B2C, in the sub-Saharan African BoP markets. The main aim within this step was to gather the knowledge and know-how gained by these firms with respect to their business models, how they overcame the hurdles operating in the BoP creates, and gain information with respect to specific elements of the new framework. Also within this aspect of the research, the case of the 'Frugal Thermometer' was introduced. The frugal thermometer was conceptualized and developed by Prof. Ria Reis from the Leiden University Medical Center and the students at the Industrial Design

Faculty at the Delft University of Technology (TU Delft) under the guidance of Dr. J.C. Diehl. The frugal thermometer product is used to showcase how individual building blocks can work in creating the business model and in lieu of this; suggestions were made with respect to each building block from the new framework. It was concluded from the empirical analysis that firms do indeed adopt their business models to better suit the local characteristics of the BoP. Step three – a comparative analysis. This step of the research involved comparing the literature and the empirical findings and eventually led to the formulation of the adapted BMC framework for the sub-Saharan African BoP markets. The findings from the literature and empirical study allowed us to better understand the unique characteristics and needs of the BoP market and translate these findings into new building blocks for the BMC. The findings highlighted the need for firms that operate in the BoP to ensure socio-economic development of the local population along with traditional revenue generating activities while revealing new building blocks such as sustainability, creating awareness, external stakeholders, market environment and time. Sustainability signified a need to involve the local population in inclusive networks and also, the need for firms to use the available resources in a sustainable manner. Awareness essentially signified the need for firms to showcase its business as a social enterprise to promote business and improve availability of resources that can translate into cost effective value proposition at the BoP. External stakeholders signified the enhanced role they play in the BoP market when compared to the ToP while Market Environment is a consequence of the need to consider the drawbacks with weak institutions, high competition and corruption. Finally, Time signified the need for firms to ensure that the available time to them is well utilized before market entry in terms of planning and strategizing the ideal approach to tackle the BoP market.

In conclusion, the result of the thesis is the formulation of the new business model development framework based on the BMC. The framework in conjunction with the findings showcase the ideal approach a firm should undertake in the unique BoP market while also ensuring that profit generating activities occur in combination with socio-economic development of local communities. These results are important for practitioners and academician alike. ToP managers and firms can learn from the findings and utilize the framework to develop business models that enable it to capture the vast market potential of the sub-Saharan BoP. Academically, the findings can attempt to fill the gap in literature that exists on business model development at the BoP while promoting further research opportunities. While certain limitations are relevant to this research project, future research opportunities can focus on B2B and B2G, apart from B2C operations in the BoP markets while ensuring that a large sample is utilized with cases from different industries to improve generalizability across regions.

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## List of Abbreviations

BoP – Bottom of the Pyramid
ToP – Top of the Pyramid
BMC – Business Model Canvas
BM – Business Model
B2C – Business to consumer
B2B – Business to business
B2G – Business to government

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## Chapter 1 - Introduction

There are close 3-4 billion people living in this world with incomes that do not generate more than US\$ 2.50 per day and estimates state that close to 1 billion people live in extreme poverty stricken conditions that do not even earn as much (The World Bank, 2013). The world economic pyramid is a schematic and demographic representation based on purchasing power parity that divided the world into four logical tiers. Tier 1 and 2, towards the top of the world economic pyramid; represent the upper and middle class population while tier 3 represents the lower middle class population and finally, tier 4 or the 'Base of the Pyramid' or the BoP, represents those people that are living with low incomes, poor standards of living and more generally, a clear lack of opportunities.

The numbers mentioned not only do they signify an economic issue but in the larger picture signify an ethical standpoint, common business beliefs that operating in the BoP markets is not fruitful in terms of opportunities for businesses to grow and make money are mere misconceptions as firms and people who have approached this market point out to the fact that the BoP is one with a large market potential due to the untapped growth in the region and its large target base of customers. They state that business operations here can have the added benefits of relieving millions out of problems such as poverty, discrimination, inequality and thereby improve the standards of living for the local communities at the BoP (Agnihotri, 2013; Banerjee & Leirner, 2012; C.K. Prahalad & Hart, 2002). The Base of the Pyramid (BoP) was for a long time ignored as a major market segments by more developed economies. Its market potential has only been noticed in the past decade due to its considerably large volume and the clear lack of businesses that cater to basic needs in fields such as energy, transportation and healthcare amongst others. Also, the western or the developed markets themselves were reaching points of saturation and this played a major role is forcing businesses to look elsewhere for significant growth opportunities (Hart, 2010).

The inherent characteristic of the BoP markets is that firms that do operate in them can enable a scenario where the firms' business activities can lead to a mutually beneficial partnership with the local communities and customers. The reality is that the people living at the BoP have vastly different socio-economic conditions to their counterparts from the developed world and the ever increasing consensus is that businesses need to operate with a view of enabling poverty alleviation, creating job opportunities and providing education. This requires a change in the mindset and the way of working for firms in the BoP to follow a more inclusive and sustainable approach to undertaking business operations.

This change of mindset translates into the need for business models to adapt and cater to the local requirements and characteristics at the BoP in order to help ensure businesses and communities are mutually beneficial to each other. The ever increasing consensus among academicians, businesses and

entrepreneurs is that business model development is key in a scenario like this and vital to the firm's performance. There is a focus on developing a greater understanding of the business models to ensure a sustainable and successful approach to operating in the BoP markets (Zott & Amit, 2010; Zott, Amit, & Massa, 2010). This research project thus, focuses on business model development for the BoP.

The research utilizes existing literature based on business model development from the ToP and focuses on one of the frameworks that enable business model development. This framework is the Business Model Canvas, developed by Osterwalder and Pigneur in conjunction with others. The framework enables us to focus on the different aspects that are needed to be looked into in order to develop a business model from a ToP perspective and therefore, enable us to focus on adding elements that are unique to the BoP markets into the canvas to create a new framework that can be utilized by businesses to develop unique business models for the BoP markets. Due to the lack of availability of business models that deal with BoP operations, research initially deals with literature focused on the ToP. While traditional definitions and inconsistencies with the business model have been elaborated in the literature study sections 3.2 and 3.3; this section is used to justify the need to use Osterwalder and Pigneur's 'Business Model Canvas'.

With an estimated 500,000 copies sold around the globe, Osterwalder & Pigneur's (2013) work is an established best-seller. The literature developed by Osterwalder and his Ph.D. supervisor Pigneur, is co-authored with inputs by more than 470 experts from around the globe that offers a business model framework that makes it more accessible and structured. This sophisticated but simple framework enables a visualization of all key elements of a business model and hence, provides for a broad overview. The utilization of the BMC can be justified in four ways; One, it enables a firm to focus on individual elements of their business and hence, improves the understanding of the interlinking and interlocking of the said elements. Two, the BMC is a focus on speed and agility. It helps focus the business on quality rather than quantity. Three, It uses a common language and this visual representation of the elements of the business model can be articulated to suit the requirements as and when the need arises. Four, the authors of the BMC licensed the canvas as a "Creative Commons", thus ensuring a free distribution of the canvas and inviting others to share and remix the original canvas. Due to the fact that the business model canvas is well accepted, popular, adaptable, its suitability and its degree of respect, this framework would serve well as the underpinning for the research needed to be carried out and hence, will be used as the foundation for this master thesis project.

The research also aims to explore the effect or the role of external stakeholders, if any, on the business operations of firms in the BoP. While at the ToP, evidence points out that the external stakeholder effect is somewhat limited due to the presence of strong institutional elements and factors such as

corruption, that are rampant in the BoP markets, being relatively absent. This research aims to uncover these claims and thus, explore if the role of external stakeholders does have an effect on the business model of firms operating in the BoP markets.

This research project primarily aims to contribute to the business model development at the BoP market, more specifically the B2C or business to consumer mode of operations for businesses. This is due to the fact that this mode is the most predominant and enables us to directly showcase the relationships between the people at the BoP and the business that operate in it. In lieu of this, the case of the frugal thermometer is discussed within this research project as well. The frugal thermometer is a product that intends to be deployed in the BoP markets soon and this research, as a consequence of working with B2C business model development at the BoP, shall contribute to it suggestions or instructions the case needs to keep in mind when developing its business model.

In conclusion, this research project aims to explore business model development at the BoP by utilizing the business model canvas as a tool to base a new framework for the BoP on. As a consequence, the findings from this research project will be used to explore if external stakeholders have an effect on business operations and hence, the business model of firms operating at the BoP as well as providing suggestions towards the case of the Frugal Thermometer in terms its business model development based on the new framework explored.

## 1.1 - Problem Statements

This section of the report deals with the main issues or problems those are directly responsible for contributing to the need for this research project. The aspects of business model development at the BoP, the effects of external stakeholders and the case of the frugal thermometer is discussed.

### *Business Model Development at the BoP*

The essence of this research is based on the fact that entering a new market by itself is an uncertain experience, but venturing into a market that is essentially the bottom rung of the world economic pyramid presents any firm with numerous challenges. Companies interested should understand the dynamics in play within these markets as well as the course that the process of innovation follows. Within the low-income segment of the market, research done (C.K. Prahalad & Hart, 2002; E. Simanis & Hart, 2008b and others) seems to focus on the issues of technology, of infrastructure, of legislation and of intellectual property rights, the key issue of concern however may in fact be that of business model development and innovation. The differences between the BoP markets and the top of the world economic pyramid (ToP) markets is quite large, which would naturally indicate that the business model to be followed at the BoP need to be different or adapted from those utilized at the ToP in order to be successful and sustainable in the long term. Many seem to agree that till date, the analysis of business models has been done mostly without a conceptual framework. Also, it has been widely noted that the difference between business model and business strategy are a source of ambiguity. (Hart, 2010; Shafer, Smith, & Linder, 2005)

The sub-Saharan African market is expected to grow at a pace of 5.1% in 2016, with an average growth rate exceeding 5% since 2010, making it one of the fastest growing economic regions in the world. This in itself is an indicator of valuable business opportunities present in this region and within the continent of Africa (International Monetary Fund, 2015). Most information available on BoP initiatives, research and case studies seem to indicate that studies have originated from major developing markets like India, Brazil and China while, in comparison there exists a lack of empirical evidence originating from the African continent. The various governments within the sub-Saharan Africa seem to face a common set of problems; large population in poverty, lack of employment opportunities, poor education systems, poor healthcare systems, inadequate infrastructure amongst others (Wike & Simmons, 2015). This increases the need for governments to pursue economic policies that will not only increase growth but also sustain high levels of growth for a longer time, while making it inclusive and justifiable for all its people (UNECA, 2015)

Thus, the primary problem that can be attributed towards the need for this research is that business model development at the BoP needs to tackle certain characteristics of the BoP that are completely irrelevant to an extent to firms that are based in the TOP markets and that these characteristics are not

completely considered by firms due to the apparent lack of a framework that helps or guides them in developing their business models to better suit the BoP markets. A framework that encompasses all elements of the business model to be considered while engaging in B2C operations at the BoP is to be explored.

### *External Stakeholders*

External stakeholders and their influence on business model development and innovation is an area of relative ambiguity within the BoP. The external stakeholders, according to most literature based on the ToP are included into the 'Key Partnerships' element within the Business Model Canvas; which is not the case in reality as key partners are those who have a vested interest, from within the firm or those who are official partners to the firms such as suppliers, in the firm's actions. While external stakeholders form a part of the market environment in most cases, their level of influence in the BoP remains relatively unexplored. What this entails is that external stakeholders, who are not direct partners, have either a positive or negative effect based on the way the firm deals with them. Within the BoP, due to factors such as weak institutional elements and corruption, an external stakeholder who may have a vested interest in the firms operating at the BoP can affect the day to day operation in some significant way.

While this argument may be biased, it cannot be concluded to be false either. Hence, this research tries to explore whether the external stakeholders at the BoP, in conjunction with other elements of the business model canvas, do indeed have an effect when it comes to the question of a firms' business model. The role of the government, regulatory bodies, competitors, pressure and interest groups along with the communities involved and society at large needs to be explored in order to paint a better understanding of the business model canvas for regions such the BoP of the sub-Saharan Africa.

### *The case of the Frugal Thermometer*

The frugal thermometer was an idea conceptualized Prof. Ria Reis during her research studying attitudes of people and children to fever. The idea of the frugal thermometer stems from frugal innovation which is essentially developing products and services that are simplified versions that are adapted to the local circumstances and are a low-cost alternative. The frugal thermometer was conceptualized and developed by the students from Industrial Design at the Delft University of Technology (TU Delft) under the guidance of Dr. J.C. Diehl of the Industrial Design department and Prof. Ria Reis from the Leiden University Medical Center.

With prototypes of the thermometer developed, the Center for Frugal Innovation in Africa (CFAI) plans to introduce this product into the BoP market of sub-Saharan Africa. This medical device was primarily developed to help those living in extreme poverty with limited or no access to basic healthcare facilities within their immediate vicinity. The next major step for the team developing the



device will be market introduction and hence, the development/innovation of a business model that supports their objectives of societal contributions while maintaining a profitable enterprise, is crucial. The main area of focus for the team will be to explore the various avenues of opportunity by which a business can achieve profitability while at the same time contribute to improved health conditions for the people living in these regions, within the 'Base of the Pyramid' conditions. The contribution of this research project in terms of the frugal thermometer is that, as the new framework to be explored is to be based on B2C operations, which the frugal thermometer product can utilize, the framework explored can be applied to the case by offering suggestions or instructions that the team can utilize when the time comes to valorize their product.

In conclusion, it can be established that the primary problem this research project aims to tackle is the aspect of business model development taking into consideration the unique challenges of operating in the sub-Saharan African BoP region. As a consequence of this, the research also aims to explore whether external stakeholders have any effect on the business models of the firms operating in these regions and also, aims to provide enough information to the team developing the frugal thermometer as to how the new framework can guide them in developing their business model to cater to the BoP markets of sub-Saharan Africa while ensuring a sustainable, inclusive approach to business and enabling profitability.

## 1.2 - Research Area

The lack of a business model framework upon which a firm or business can base its operations in the BoP market, especially in terms of the African continent, highlights the necessity for research within the field of business model development. The main aim of this research is to formulate a business model framework that encapsulates the distinctive circumstances and characteristics around the BoP market and sets up any potential company that wishes to operate there for success. The research conducted focuses on literature analysis and empirical evidence gathered from Dutch companies operating the sub-Saharan African BoP market. Over the course of the research project, evidence gathered will also contribute towards explaining the impact of external stakeholders on the business models of the companies and how they contribute to the success of the company in the BoP market. This enables us to develop a business model development framework that can be used by ToP companies when they considering doing business in the BoP markets of sub-Saharan Africa.

During the empirical study, attention will also be placed on the Frugal Thermometer, wherein the industry experts interviewed as part of the empirical study will be asked to give their views and opinions on the ideal path of success for a team that can take the product to the local markets in the sub-Saharan African BoP.

Taking the above statements into consideration, the primary and secondary research questions developed for this research project are as follows:

***How can firms from the Netherlands adopt their business models in order to meet the requirements and opportunities within the sub-Saharan African BoP market?***

The secondary questions that are explored are as follows:

1. *What is known about the way current businesses operate in the BoP?*
2. *Is there an impact of external stakeholders on the business model of a firm in the BoP?*
3. *Are there suggestions that can be drawn towards the introduction of the 'frugal thermometer' in the sub-Saharan African BoP market?*

### 1.3 - Research Structure

This research towards the master thesis will make use of two steps in order to answer the research question and the ensuing sub questions drawn from the problem statement; a comprehensive literature review followed by an empirical study.

The structure of the thesis can be better described in three stages; they are as follows: Stage one involves; the concepts relating to the BoP markets is reviewed in order to explore the research gaps presents and to inspect who is best fitted to operate in and tap the market potential at the BoP. Sub-Saharan regions are analyzed as the basis upon which empirical research is carried out. Stage two involves; business model theories are explored and the Business Model Canvas (BMC) from Osterwalder & Pigneur (2013) is used as an primary base to structure, discover and advance relevant BoP literature. Within this step, literature towards each building block of the BMC is identified. And finally within Stage three; the literature review results are tested by interviewing Dutch companies that are currently operating in the sub-Saharan regions of Africa within the BoP markets. The main aim in interviewing these companies is to find out how they individually have adapted their respective business models with the requirements of the BoP and to explore the relevance and influence of external stakeholders in conjunction with other elements, within their business models. The results from these steps should provide an adequate pool of information needed towards a new modified framework that better encapsulates the BoP markets.

The following schematic diagram represents the structure of this thesis project:

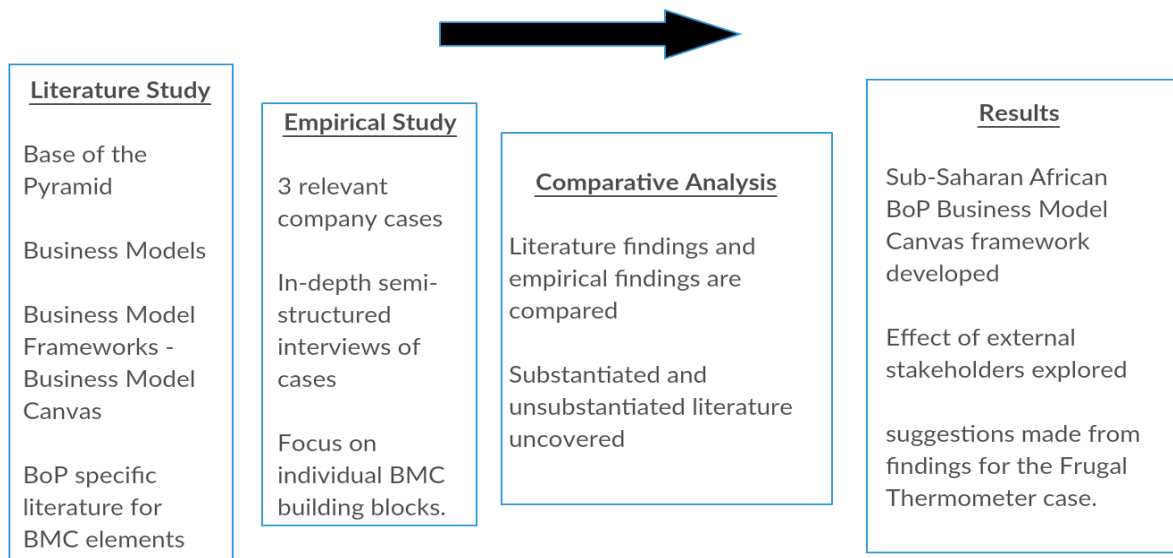


Figure 1: Research Structure Framework. Source: Author.

## Chapter 2 - Research Methodology

This master thesis contains research that is principally explorative in nature; this pooled with empirical case studies was deemed to be the ideal way to proceed in answering the research questions. This approach was preferred to ascertain and study how Dutch companies operate in sub-Saharan African BoP. The empirical study about the various challenges, key opportunities and solutions in the sub-Saharan African markets are compared and differentiated against the findings from the BoP literature study. The main intention of doing this research is to discover how Dutch companies have adapted their business models according to the prevailing BoP market conditions in countries across the sub-Saharan African region, to ascertain the differences between the literature study results and the ground reality, to explore the influence of external third-party stakeholders on these business models and to finally, suggest an ideal business model approach for the 'frugal thermometer'. The use of real life companies in this regard is vital as it helps to gain awareness of the various barriers that these companies have overcome in order to adapt to the market. This research will predominantly aim to develop a new business model canvas that is suited to the market conditions at the sub-Saharan African BoP using qualitative and interpretive explanations.

### 2.1 - Research Approach

According to (Yin, 2009) The selection of the research method, i.e. qualitative or quantitative research, depends upon the type of the research questions, the degree of focus on contemporary rather than historical events and the amount of control the researcher has over the behavioral events. Osterwalder & Pigneur's (2013) BMC is used as a basis to structure the literature review and by comparing how Dutch companies presently operate in the sub-Saharan African BoP at the ground level to how the literature portrays it, is essential in order to get a thorough understanding of the business model innovation and development at the BoP.

As, according to Coimbatore K. Prahalad (2006), business operations within the BoP markets are a complex social phenomenon comprising of multiple stakeholders, both internal and external, and the lack of clear boundaries, the research will be carried out in a qualitative method through explorative and open ended questions. This is primarily done in order to gain information via insights, experiences and objectives of the Dutch companies that are operating in the region. The reasoning behind this method of research is that it enables us to elucidate the various assumptions and also to scrutinize the relationships between the concerned variables. Also, this research method provides the researcher with flexibility while conducting research, this is vital as it allows for deviation of focus into new areas as and when they are revealed during data collection (Sekaran & Bougie, 2010).

Quantitative research method is not used in this case as it primarily encompasses measurement of certain treatment effects on the variables of interest (Sekaran & Bougie, 2010), this type of research require a large amount of data to provide any sort of conclusive result and as such, the number of Dutch companies that operate within the BoP market are relatively less in number. Also, most quantitative research is focused on testing theoretical findings based on the relationships between the dependent and independent variables and hence, conforming to a particular hypothesis (Creswell, 2003). Hence, a qualitative approach for this research is reckoned to be a better fit as it aims to explorative rather than deductive.

## 2.2 - Research Design – Collection of Data

According to Yin (2009), for case studies the literature review is an essential part of the design phase. The literature review conducted in chapter 2 is viewed as the groundwork of information and knowledge that is required to conduct the empirical study that follows. In order to choose the right research design, it is essential to classify the type of research question being put forward. “Why” and “How” questions usually portray a research that endorses experimentation, case studies and “What” questions usually endorse exploratory research or ascertain prevalence. Yin (2009, p.4) refers to the “holistic and meaningful characteristics of real-life events”; which would imply that the relationship between all the elements in the business model needs to be analyzed and hence, requires a study that would enable the analysis of multiple variables. Thus, this research will follow the path of an explorative and empirically grounded case study as the region of interest is too complicated to be analyzed by a survey or any other strategy.

Case studies are useful as they encompass all aspects of an organizational or managerial process including the social underpinnings into the area of research and in this manner provide a holistic and meaningful comprehension of the real world effects. Yin (2009) characterizes case studies as using multiple sources of data such as literature analysis, interviews, amongst others and as such this research conforms to the same in trying to understand business model innovation and development. Yin (2009, p.15) also states that the main goal of a case study is to “expand and generalize theories” and hence, it can be understood that case studies are generalizable to the theoretical proposition and not the whole population.

## 2.3 - Composition of Interview

According to Sekaran & Bougie (2010), data collection methods are based on the type or source of data. There are majorly two types of sources for data, Primary and Secondary data. Primary sources of data refer to information obtained first hand by the researcher on the variables of interest for the specific purpose of the study whereas, Secondary sources of data refer to information gathered from sources that already exist, i.e. from the literature review.

Secondary data is gathered by conducting a literature review, accessing public information and through annual reports. This study was done on various sources, such as articles, scientific papers, magazines, books, thesis reports amongst others. Primary data is gathered by conducting interviews with companies that are presently operating in the sub-Saharan African BoP market in order to gain a deeper understanding of the individual success factors within the business models and how they interact with one another. According to Sekaran & Bougie (2010), “One method of collecting data is to interview respondents to obtain information on the issues of interest. Interviewing is useful data collection method, especially during the exploratory stages of research”.

Interviews themselves are divided into unstructured and structured. Unstructured interviews are those where the interviewer does not enter the interview setting with a planned sequence of questions to be asked to the interviewee, this type of interview is useful to bring up basic issues to the surface and helps determine which issues need further investigation on the part of the interviewer. Structured interviews are the ones which are conducted when the interviewer knows exactly what kind of data or information he or she is looking for. Usually, this involves a preset number of questions framed according to the area of interest and is sent to the interviewee's in advance to help them prepare the detailed answers.

This research will follow a third alternative type of interview, Semi-structured interviews. Semi-structured interviews can be briefly described as conversations in which you know what you want to find out about and so have a set of questions to ask and have a basic intuition of what areas or topics will be covered. The conversations are free to vary and may change from one interviewee to another. They are different from structured interviews, where there are a pre-determined set of questions, by administering these questions verbally and from unstructured interviews where the area of interest is delineated to an extent, but there is no preset order of questions and very little in terms of boundary of the area to be covered. Semi-structured type of interviews are useful when you want to find out *Why* something happens or happened due to their flexibility, rather than ‘*How many*’ or ‘*How much*’. This enables semi-structured interviews to be used to answer a more complicated research question and hence, develop a deeper understanding of the research question by exploring the contradictions (Miles & Gilbert, 2005).

A systematic sample combined with highly structured interviews with close-ended questions serve the purpose of revealing information about large populations (Yin, 2009). Open-ended questions are generally known to give the interviewees more flexibility with regards to their responses to the questions and hence, the semi-structured interviews in this research will eventually hone in on the questions that are most relevant in answering the research question as the interview progresses. In conclusion, mostly open-ended questions will be used to allow for flexibility and freedom to the interviewee. The interview protocol will be available in the appendix.

## 2.4 - Approach to the Interview

The interview is considered to be the most challenging and rewarding forms of measurement and as such the interviewer is considered to be the most vital instrument in this measurement. The interviewer is important as it is he or she who holds the responsibility of collecting the right information required towards the research and as such requires a personal sensitivity, adaptability and the ability to stay within the confines of the designed interview protocol (Trochim, 2006).

The interviewees or the respondents are what the results of the empirical research depend on and hence, it is vital to ensure that the interviewee themselves are comfortable and forthcoming with their responses and hence, the interviews are conducted in English as it is considered the official language for business worldwide.

According to Bygnes (2008), Interviewees with high-level positions within the company are more suited to be interviewed as they have access and better understanding of the topic of research and hence, interviewees with good positions within the companies are approached. The interviewees from Firm A, B and C that were part of the empirical study within this report held positions such as Co-founders, Program Managers and Chief Operations officers as discussed in section 2.6 of this report. These high-level interviewees are also perceived as highly demanding and do not like to be put at the end of close-ended questions (Aberbach & Rockman, 2002) and hence, open-ended questions is utilized in order to satisfy the need for a better conversation resulting in maximum information being gathered from the interviewee. The researcher therefore, is not only advised to be well-prepared, well-informed and socially skilled, but also able to offer interesting and open-ended interview questions to fill the interviewees' requirements for a credible conversation partner. The interview guideline developed follows this advice by entertaining open ended and semi-open ended questions in order to extract the most amount of information regarding individual building blocks of the business model canvas.

The interviewee is hence, given the opportunity to convey his/her views for most of the interview duration while the interviewer ensures that all elements of the interview guideline, which contains all elements of the business model that need to be discussed, are covered over the same duration. Mostly, the interviews will occur in a face to face manner but in the circumstances that the interviewee is not available, a video-conference based interview or Skype interview will be preferred. This advice was taken by the researcher. All three cases interviewed were done on a face-to-face basis over durations lasting on average 1.15 hours.

Access to the interviewees is gained by accessing the Netherlands-African Business Council (NABC) and the BoP Innovation center database; which contain information on all the companies that

currently operate in the sub-Saharan African BoP market. Access is also gained by directly contacting the companies that operate in the region of interest.

## 2.5 - Quality of Interviews

According to Berry & Browne (2002), The quality of interviewing high-level positioned interviewee is based on the fact that the research should enable the interviewees to challenge the researchers own viewpoints regarding the research topic. Also, the validity of the company based case studies should comply with four quality elements. The quality elements are: Internal validity; the validity of the causal relationship under no external disturbances, External validity; the ability of the research to be generalized in the real world, Construct validity; the documentation of the right measures for the concepts studied and finally, reliability; the ability of the research findings to be repeated giving the same results (Yin, 2009).

## 2.6 - Interviewees

In order to capture the essence of the research project at hand, it was important to select companies that would fit the model being explored. With respect to this, three cases were chosen and these companies all operate in the BoP region of sub-Saharan Africa while being based in the Netherlands. The companies will be referred to as A, B and C from here on in order to respect their privacy and to protect any company specific information from being published.

All three cases discussed as part of the empirical study was done in a semi-structured manner. These interviews are guided by a certain pre-determined set of questions that entertained a conversational approach to extract as much information as possible based on elements of interest to the research. The interviews themselves were arranged by directly contacting the interviewee to arrange for an interview and these lasted on average 1.15 hours. The data collected from the empirical study will initially be summarized and then a comparative analysis will be carried out with the data learned from the literature study.

### *Company A*

Company A is based in the Netherlands and works within the healthcare industry in the BoP regions of sub-Saharan Africa. The company primarily operates in Rwanda, Burundi, Democratic Republic of Congo and Uganda at present and has further plans of expansion into other sub-Saharan African countries and regions around the world as and when opportunities arise. The company itself is successful in ensuring an effective last mile distribution of healthcare products and services to areas and communities that need them the most. They have managed to bring more than 2.6 million people in the BoP regions of Africa closer to affordable healthcare products and services. They state that in the previous financial year they have managed to affect more than 300,000 people in terms of



educating them, offering counseling and distribution of products and services. Their business model constantly seeks partners that can enable an effective distribution of the products and services on offer.

The representative from company A holds the position of ‘Program Manager’ within the organization and is responsible for implementing and managing the social business model in the BoP region. This company was chosen to be a part of the empirical study due to its business operations within the BoP regions of sub-Saharan Africa being in line with the research objective. One further benefit of involving company A in the research study is due to their involvement in the healthcare industry at the BoP, the company was involved in the product development phase of the ‘frugal thermometer’, this may be considered to be useful if indeed the suggestions towards the frugal thermometer yield any importance.

### *Company B*

Company B, also based in the Netherlands, is a lifestyle and energy industry product manufacturer. It primarily makes clean cooking stoves and its mission is to reduce the health risks involved with cooking on an open-fire, which has large emissions of both indoor and outdoor pollutants. Their clean and affordable product aims to reduce the number of fatalities due to pollution and therefore, improve standards of efficiency of cooking stoves. The company primarily operates in Nigeria and Zambia; and aim to expand into other countries of the sub-Saharan African region as their business grows. They are a relatively new organization to enter the market and as of the day of the interview, a fresh order of 10,000 clean cooking stoves was placed by their local partners in the BoP markets.

Towards the empirical study, the co-founder & COO of the organization was interviewed. His role as the founder and chief operations officer is essential with respect to the business model and its development hence, was deemed to be an ideal interviewee. The motive behind involving company B in the empirical research is purely based on its areas of business. As it primarily operates within the BoP region and in a customer centric operation, their understanding of the challenges and opportunities present in this paramount to the study being conducted. Also, as this company grew from a start-up, their experiences as a young company aiming to enter the BoP market can shed light on the objectives for valorization of the case of the ‘frugal thermometer’.

### *Company C*

Company C is a company that operates from the Netherlands, primarily in the same industries as company B. It manufactures affordable and clean cooking stoves for the BoP regions. This company operates in Lesotho and Uganda region of sub-Saharan Africa and also in Cambodia in south-east Asia, with its headquarters based in Amsterdam. The reasons for operating in the region are similar to those of company B, aiming to reduce the fatalities caused due to unhealthy and inefficient ways of

cooking in the BoP regions. Their business, as of the day of the interview, was steadily growing at a decent pace according to the interviewee. Also, they had recently received funding from BMW as part of their corporate social responsibility initiatives as learned from the interviewee.

Towards the empirical study, the representative from the company who is the co-founder & operations manager was interviewed. His views on the BoP market and the business model to be applied there were studied. The company itself was a start-up founded in the Netherlands and hence, faced a multitude of hurdles to enter and set up its market in the BoP regions and hence, the interviewees views and suggestions enabled for a rich understanding of how business model operations actually work in the real world.

## 2.7 – Justification of sample cases

The rationale behind sampling the above cases is described within this section. It is important to note that this research primarily focuses on business model development at the BoP and hence, it was important to interview companies that would have an ideal understanding of the operations within the BoP and the differences between the ToP business model and the business model needed for the BoP as it would contribute towards a better comparative analysis performed as part of the research study.

The companies interviewed all operate within the target area of research, i.e. the sub-Saharan African BoP. Hence, it served an important reason for their selection as part of the empirical study. Also, all three companies primarily operate in the B2C business operation and hence, create the foundation for research to contribute to B2C operations which is considered as the main area of operations within the BoP for this research. All three cases offer products and services to their customers, which in this case are the BoP population in sub-Saharan Africa. The companies that form the sample in this research operate within the healthcare and lifestyle and clean energy industries, the industry they operate in was given a comparatively lesser regard as long as their objectives matched with that of this research where business model development is analyzed especially considering the fact that the target customers for these samples are the people who live in the sub-Saharan African BoP. Hence, the focus on B2C operations is established to better guide future companies wishing to target the large population that exist in the BoP regions of the African continent. All in all, it can be said that the validity of these interviews is limited when talking generalizability on a large scale but as this research is explorative in nature and the fact that certain limitations were beyond the control of the research, the sample cases chosen were the most ideal cases to explore BoP oriented business model development.

It is important to note here that the chosen sample does indeed lead to a few limitations to this research which are elaborated in section 7.2

## Chapter 3 - Literature Study

The literature review or study is a tool that enables us to analyze existing material on a research topic. It is established as a guide to the researcher to determine the gaps in research material and further help in establishing the answer to the research question. The following literature review analyzes the various literature that are applicable towards the concepts of 'Base of the Pyramid' markets, Sub-Saharan African markets, business model frameworks, the business model canvas and external stakeholders.

### 3.1 - Base of the Pyramid

#### 3.1.1 - Concept and definition

The Base of the Pyramid or the 'BoP' is a term that is often used in recent business literature and in the developing world. Most frequently the term BoP refers to a certain group of the population without giving much meaning to the concept.

The term "Base of the Pyramid" was first coined by C.K. Prahalad and Stuart L. Hart, who can be considered among the first to give meaning to the BoP concept. Within the journal *Strategy+Business*, they explained in more detailed what the concept really meant. They utilize the world economic pyramid that in essence categorizes people on the basis of the purchasing power parity, this term shows the ratio of the prices in national currencies of the same good or service within different countries (Education at a Glance: OECD Indicators, 2012). In order to understand the Base of the Pyramid, it is important to start from the very top. The top of the world economic pyramid or the ToP is a category of people that represent close to 75 to 100 million consumers that are predominantly from the upper to middle class income category belonging to mostly cosmopolitan and developed countries of the world. In the middle of the pyramid, that is tier two and three, are poor customers from the developed countries as well as the rising middle class customers from the developing world. Tier two and three was the target for most multinational companies in their emerging market based strategies. Tier four is the most populous part of the pyramid. Roughly four billion people are part of the BoP with their annual capita income being less than \$1,500, the minimum amount considered to be necessary in order to sustain a decent life. For almost one billion of the four billion that are a part of tier four, the per capita income is less than \$1 a day. (C.K. Prahalad & Hart, 2002)

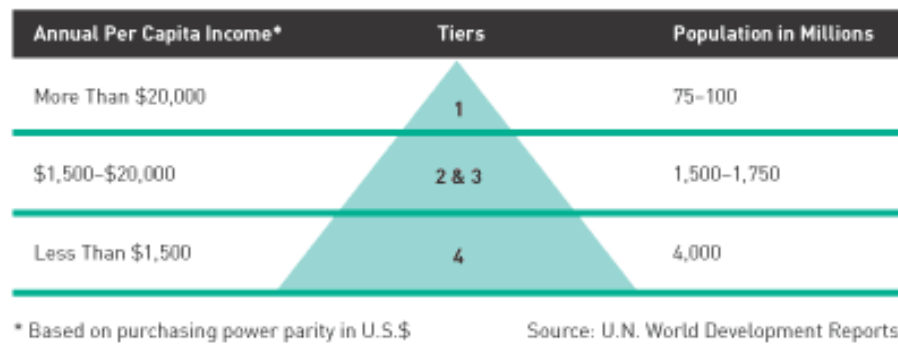


Figure 2: World Economic Pyramid.

He states that the BoP contains significant purchasing power that can lead to significant opportunities for approaches in the BoP market that can ensure that the available demand and needs in the region are met. This will not only improve local markets but pave the way for BoP to be better integrated in to the global economy.

Prahalad argues that companies and their managers look at the developing world or the BoP with a certain set of assumptions that prove detrimental to their success in that market. The first assumption implies that the poor people are not the target customers as the revenue structure of the companies does not allow them to be profitable. Second assumption states that managers believe that consumers in the BoP cannot afford to use products meant for tier one and two consumers. Third assumption implies that the poor have no need for new and latest technology but rather need older generations of the same technology. Fourth assumption is that companies view the BoP market with having no long term viability. The fifth assumption is that it is difficult to find managers for BoP markets who are excited to tackle humanitarian challenges and finally the sixth assumption is that intellectual excitement lies predominantly in the developed markets and hence, it is hard to find managers willing to work in the BoP. (Coimbatore K. Prahalad, 2006)

In summary it can be said that Prahalad and Hart view the integration of the BoP market as win-win situation for all parties involved. On one hand, large corporations and companies can become new market entrants by selling their products and services to people at the BoP who are considered no longer as just “poor” but as “value-conscious” consumers. The sheer size and untapped potential of the BoP markets creates vast opportunities for companies to be profitable and on the other hand, the integration of the BoP people into the world economy can have an uplifting effect on them in the fight against poverty. Prahalad and Hart argue that this isn’t the only solution to the problem and that private enterprises need to recognize this value and consequently a large shift in perception is required to integrate the efforts made by the public sector, the civil society and the private sector. (C.K. Prahalad & Hart, 2002)

Hammond et al. (2007) also do offer a portrait of the BoP stating their characteristics as: 1. having significant unmet needs: People living in the BoP tend to have relatively lesser access to modern

institutional services like banks, telecommunications amongst others. These people live in settlements that are informal at best and lack basic infrastructure. 2. There is a dependence on informal or subsistence livelihoods: people in the BoP usually are lacking in terms of access to markets where they can earn a livelihood and hence, take to informal job offerings that tend to exploit them. As subsistence and small-scale farmers and fishermen, they are also in a unique position where threats to these natural resources can cause them to have severe repercussions (World Resources Institute and others 2005). 3. Impacted by a BoP penalty. Many people that live in the BoP end up paying significantly higher amounts for basic goods and services when compared to the wealthier population and end up with mostly inferior quality goods.

### 3.1.2 - Criticism of the BoP concept

The authors make the above statements on the basis that they believe companies and corporations from around the world (multi-national enterprise -MNE's) should capitalize on the BoP markets; this has been questioned and critiqued by many authors including those who are proponent of the concept such as London, Sheth, & Hart (2014). Researchers such as Karnani (2007) even question the fact that there does exist potential at the BoP according

Prahalad's book "The Fortune at the Bottom of the Pyramid", the BoP concept and his arguments have been met with steady criticism.

Jem Bendell (2005), in his work deals with four criticisms of the "Base of the Pyramid"; First, to question whether that doing business that generates profits while targeting low income markets is really evidence towards engaging those people in poverty ridden circumstances. The argument made by Prahalad that the wealth generated by business activities in the BoP will eventually trickle down does not seem to correspond with that the wealth will trickle down does not correspond to the experiences in many countries, the economic development in many countries has led to a situation where the wealth has been accumulated by the top one percent of the elite. Bendell (2005) argues that concerns with regard to power in supply chains and patterns of ownership are more important in order to determine where the incomes are collected. Second, he questions the type of 'development' being promoted by the concept; there exists a conflict by virtue of promoting the buying potential of the poor while at the same time reaffirming their identity as the deprived. Third, there is an assumption of different perspective with regards to sustainable development, where environmental issues are solved using technical and financial advancements. And finally the fourth area of concern is with respect to ownership. It is unclear whether the growth within the BoP facilitated by the business models of the MNEs will promote or undermine the local capital ownership.

Annel Karnani is one such critic who argues that the BoP proposition is "at best, a harmless illusion and potentially dangerous delusion" (Karnani, 2007 p.106). According to him, the BoP concept is

damaged due to presence of many inaccurate claims. Firstly, the potential market at the BoP fails to meet the claimed size. Karnani argues that Prahalad calculates market size based on purchasing power parity (PPP) and not on market exchange rates that are more accurate for companies. He also argues that not only is the market size inaccurate, it is also less profitable due to the fact that BoP markets tend to have relatively poor infrastructure, geographical dispersion, amongst other drawbacks. Secondly, there exist a negative trade-off with respect to the environment due to the reduction of prices to the extent of what was proposed by C.K. Prahalad & Hart (2002). Thirdly, it is a very infrequent occurrence that the price of the product has been reduced while maintaining high levels of quality. He argues that low quality products do not harm the consumers in the BoP as long as they understand the trade-off with regards to safety. Fourthly, he argues that medium to smaller sized local enterprises are better suited to serve the BoP market due to their better understanding of the customer needs and requirements when compared to large corporations. Fifthly, he points to the fact that many advocates of the market based solution view the customers at the BoP as rational to which he argues that it is not the case. He believes that BoP customers are more likely to take bad decisions due to the poor quality of education, lack of information amongst others and hence, cannot afford to compensate for their errors when compared to the richer population. Lastly, Karnani argues that BoP authors excessively “romanticize the poor” (Karnani, 2009).

Karnani’s work also corresponds with the work of Crabtree (2007) and Jenkins (2005) who argue that the “Base of the Pyramid” concept places sole importance on business and its structure whereas the role of the local governments and other external stakeholders are downplayed. They also argue that some of the cases used to promote the concept by Prahalad fall prey to invalid sampling, where the study only focusses on successful cases which can also be seen in most business literature (Walsh, Kress, & Beyerchen, 2005). The cases used indicate that the success stories are mostly prevalent in the top level of the BoP market themselves and in most real cases the bottom line stays in the red and as Karnani argues, the only low level cases that manage to be positive are local-grown initiatives within the BoP market.

Multinational enterprises, according to Simanis & Hart (2008), have certain inconsistencies in the way they perceive the BoP market, the consumers within these markets and the real needs for the consumers. Also, the timespan does not specify the long-term approach needed for MNEs to successfully learn and cater to the market; where MNEs with their capitalist approach are always on the lookout for short term success. They argue that for a MNE to be successful at the BoP a strategic overhaul is necessary and this should be reflected in the business model of the firms entering the market. Simanis & Hart (2008) also argue that there exists an ethical dilemma in the BoP market due to the fact that ill-advised choices consumers make within BoP markets can lead to more severe consequences when compared to say the ToP market and hence, the sensitivity of the markets require better care in terms of products and business models employed.

The following table indicates in brief the various critiques by researchers and authors on the concept of “Base of the Pyramid” by C.K. Prahalad & Hart (2002).

<b>Critique</b>	<b>Authors</b>
Cases used do not validate the theory mentioned	Crabtree (2007), Karnani (2007), Walsh et al. (2005)
Multinational enterprises are not generally suited to operate in BoP	Karnani (2007), Karnani (2009)
More weight given to top level of BoP	Crabtree (2007), Karnani (2007)
No integration of BoP consumers in product design	Erick Simanis, Hart, & Duke (2008), Karnani (2007)
Overestimation of actual market size and potential and downplaying role of government and other external stakeholders	Karnani (2007), Crabtree (2007), Jenkins (2005), Bendell (2005)

Table 1: Critiques of the BoP.

### 3.1.3 – Frugal Innovation and the BoP

Before elucidating later the case of the ‘frugal thermometer’ it is important to explore what frugal innovation implies. Frugal innovation can be considered to be a relatively new term; it has risen to prominence only in the last decade and has a growing importance on day-to-day activities around the world. Various authors have different interpretations of the term ‘Frugal’ innovations; some call it resource constraint innovation and other call it ‘Gandhian’ based innovation. But, in essence, frugal innovation can be briefly described as the process of producing a good or a product with a reduction in its complexity, i.e. reducing non-essential parts, and then selling it to the customer; this usually happens in the emerging economies like India where high value is required at low price.

According to C.K. Prahalad (2006), frugal innovation is described as “Gandhian Innovation”, because at the core of this kind of innovation lies two of Mahatma Gandhi’s tenets: “I would prize every invention of science made for the benefit of all,” and “Earth provides enough to satisfy every man’s need, but not every man’s greed.” Affordability and sustainability were Mahatma Gandhi’s touchstones six decades ago, and Indian and western companies have recently discovered their power. He also states that there exist three kinds of frugal innovation. They are: Firstly, disruptive business models: where technology from developed countries is utilized but the innovation is created in the business models that have completely altered the industry’s economics. Secondly, modifying organizational capabilities: where the companies have created or synthesized new technologies and hence, used those to alter their capabilities such as design, skills or deployment of resources at a large scale. Thirdly, Creating or sourcing new capabilities: the focus here has not only been on disruptive

business models and sharpening one's capabilities but also on sourcing capabilities from other places when required, as collaboration and partnerships, to create or develop frugal products and services (C.K. Prahalad & Mashelkar, 2010).

Frugal innovation can be distinguished from other forms of innovation with respect to its means and its ends. Frugal innovation primarily is used to respond to limitations and constraints in resources, whether financial, material or institutional, and using a range of methods, turns these constraints into some sort of an advantage or a breakthrough. Frugal innovation, through its ability to minimize the utilization of resources in the development stage, production stage and the delivery stage, or by leveraging them in new ways, results in dramatically lower-cost products and services. Successful frugal innovations can be said to be not only cost effective, but also outperform some of the alternatives, and can be made available at large scale. Often, but not always, frugal innovations have an explicitly social mission (Bound & Thornton, 2012).

According to Tiwari et al. (2014), frugal innovation products and services reduce the costs involved anywhere between 58% and 98% based on an analysis conducted on 13 different entry-level product categories. They also note that, in frugal innovation the process of using inventive analogies is done by transferring solutions from one industry domain to other or by transferring solutions from nature. They are hence, characterized by an enhanced need to offer an attractive value proposition to ensure that the product or services produced undergoes the process of diffusion (Zeschky, Widenmayer, & Gassmann, 2011). Tiwari et al., also state describe important characteristics of frugal innovation which are: First, the reduced overall cost of ownership: It can be said to be not just the price point at the time of purchase, which is said to be a crucial success factor for frugal innovation. Rather, it is the significantly lower costs in terms of ownership which is achieved by low costs of usage, maintenance and repair from acquisition till disposal (Bhatti, Khilji, & Basu, 2013). Second, robustness: frugal innovation products are usually targeted at consumers living in the rural and semi-urban areas in mostly emerging economies and hence need to be able to cope with the available infrastructure, lack of power, extreme temperatures and other shortcomings. Third, user friendly: many new consumers of frugal innovations products and services tend to be from a rural background and hence, may have a lack of information or understanding of how the product functions and hence, it is important that these products are user friendly, intuitive in nature and mostly fault-free in order to enable a smooth understanding and usage of these products (Jha & Krishnan, 2013). Fourth, economies of scale: the need for a significant reduction in costs and small profit margins necessitate the need for reduction in development and product costs and this is achieved with economies of scale (Tiwari et al., 2014).

As mentioned in the magazine, COO Insights, published by Roland Berger Strategy Consultants, The phenomenon of Frugal Innovation is termed as “jugaad” in Hindi, which when translated to English means the act of being resourceful, making do with what you have or “resourcefulness”. Managers of



western companies have been adopting this idea and translating this into a new business model for their corporations, the new products and services created using this philosophy have yielded products that are simpler, more affordable and offer pretty much the same value, if not more, in terms of functionality when compared to the conventional products. Low cost innovation or engineering is usually mistaken as poor quality or knock-offs but frugal innovation aims to change that ideal by offering the simplest solution with the same value proposition of existing means. (Roland Berger Strategy Consultants, 2014)

### *The case of frugal thermometer*

The frugal thermometer is a product of frugal innovation; developed at the industrial design faculty of the Delft University of Technology in association with Leiden University, Erasmus University Rotterdam and the Centre for Frugal Innovation in Africa (CFIA). The product in itself is a medical device, a clinical thermometer, which aims to help those in the BoP regions of Africa to better differentiate the common illness of “fever” from other illnesses such as malaria. Also, typical thermometers that are available in the ToP regions are considered to be far too fragile and complex for the rough environments of Africa. The aim of this product is to provide an easy, understandable solution to a very common and systemic problem while at the same time creating a business around the ‘frugal thermometer’ that can be socially sustainable and profitable at the same time.

The next step for the ‘frugal thermometer’ is market introduction. With respect to this stage, the product development team is working together with the Rotterdam School of Management at Erasmus University to explore the business strategies, the business models and the various business processes that are required for an effective introduction into the market. This thesis aims to contribute to the effort by developing a BMC that is suited to the BoP regions of sub-Saharan Africa, suggestions towards the project will be made after a thorough literature review and after gathering expert opinion during the empirical research.

### 3.2 - Business Models - Concept and Definitions

Business Models (BM) have existed since the pre-classical times (Teece, 2010) but their importance and relevance only started to increase with the advent of the internet (Zott, Amit, & Massa, 2011). BM definitions have constantly evolved according to interpretation by various researchers and business practitioners according to the business needs and the financial climate of the times. Over the last decade and a half, these BMs have increasingly gained more attention and importance for companies with respect to their business strategy (Sandstrom & Osborne, 2011). In today's competitive and global business environments, firms need to maintain a BM which will aid them in gaining a competitive advantage over rivals in order to succeed. BMs have generally lacked theoretical literature and its understanding has been vaguely limited. According to Zott et al., (2011) who in their study describe the BM being referred to as a statement, description, a representation, an architecture, a concept or model, a structural template, a framework, a pattern or as a set, which clearly points to ambiguity in terms of what a Business Model in essence is.

According to Amit & Zott (2001, p.4), *“a business model depicts the design of transaction content, structure, and governance so as to create value through the exploitation of new business opportunities.”*

According to Alexander Osterwalder et al. (2005, p.10), *“A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value relationship capital, to generate profitable and sustainable revenue streams.”*

Definitions for BM that have been utilized over the years have been briefly categorized in table 2 below:

Authors	BM definition	Basis of definition
Timmers (1998, p.4)	Architecture for products, services and information flows, including a description of various business actors and their roles; A description of the potential benefits for the various business actors & sources of revenues.	Based on product architecture, value proposition and revenue streams
Amit & Zott, (2001, p.4)	A business model depicts the design of transaction content, structure, and governance so as to create value through the exploitation of new business opportunities.	Based on value proposition
Linder and Cantrell (2001, p.1-2)	The organization's core logic for creating value. The business model for a profit-oriented enterprise explains how it makes money.	Based on value proposition and revenue streams
Magretta (2002, p.4)	The business model tells a logical story explaining who your customers are, what they value, and how you will make money in providing them that value.	Based on value proposition and revenue streams

Camponovo and Pigneur (2003, p.4)	A description of roles and relationships of a company, its customers, partners and suppliers, as well as the flows of goods, information and money between these parties and the main benefits for those involved, in particular, but not exclusively the customer.	Based on collaborative transactions and value proposition
Leem et al. (2004, p.78)	A set of strategies for corporate establishment and management including a revenue model, high-level business processes, and alliances.	Based on organizational strategy
Rajala and Westerlund (2005, p.3)	The ways of creating value for customers and the way business turns market opportunities into profit through sets of actors, activities and collaborations.	Based on collaborative transactions and value proposition
Osterwalder et al. (2005, p.10)	A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value relationship capital, to generate profitable and sustainable revenue streams.	Based on collaborative transactions, organizational structures and business logic utilized

Table 2: Definitions of Business Models

### 3.3 - Business Model frameworks

#### 3.3.1 - Kaplan's Business model story elements:

Kaplan (2012) describes the business model concept by using three simple “business model story elements”- these elements are value creation, value delivery and value capture. Value creation describes how the organization creates value for both itself and its customers. Value delivery can be described as the next step of the business model story, where it describes how the organization delivers that value, in essence elaborates on the operating business model. Finally, value capture describes how the organization makes money captures profits from the value it delivers. These three story elements form the basis for most business model frameworks and their similarities will be tabulated while comparing all other frameworks for a better understanding.

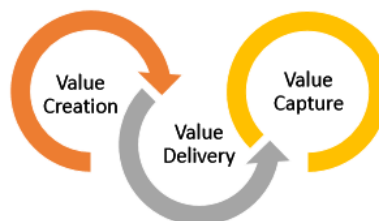


Figure 3: Kaplan's Business Model Story Elements.

### 3.3.2 - Chesbrough and Rosenbloom's business model functions:

Chesbrough and Rosenbloom (2002) state that the importance of a business model is on the basis that it is vital for the transfer of innovations in technology into the market and thus, playing a mediating role between technological innovation and value creation. Chesbrough (2010) in his later work also emphasizes on the importance of innovation within the business model itself, it is not enough to just have innovations in technology but to also develop a business model around these innovations in order to create and deliver value. Chesbrough and Rosenbloom (2002) thus define six functions of the business model and they are briefly elaborate in table 3 as follows:

Function	Description
1	Communicate the value offered to customers
2	Segments of markets are determined while also exploring revenue streams
3	The chain of value generated is determined and factors that affect the value created by the firm is established
4	Evaluation of the cost structure and the potential for profits are determined
5	Here, the position of the firm within the network of value created is determined while considering the relationships between different external stakeholders such as customers, the competitors and the complementors
6	Here, the strategy for business is determined whereby competitive advantage is gained and sustained.

Table 3: Six functions of a Business Model by (Chesbrough & Rosenbloom, 2002).

### 3.3.3 - Johnson, Christensen and Kagermann's business model elements:

Johnson, Christensen, & Kagermann, (2008) in their work describe a road map that organizations should follow to see past borders and enter the land of the new. Three steps are mentioned as part of this road map. One, success starts by not concentrating on the business model right from the onset but rather by focusing on the opportunity to satisfy a real customer who needs a job done. Two, is to construct a blueprint that the organization must follow in order to fulfill the customers' needs at a profit and this blueprint has four elements customer value proposition, profit formula, key resources and key processes. Three, is to compare the existing business model of the organization in order to decide if a new model is required, The four steps are further described briefly as: One, the value proposition for the customers include the customer target segments, the work to be done and also the offerings that enable the work to be done. Two, the definition of the profit formula essentially describes how the firm or organization creates value for itself. The profit formula is akin to a blueprint for the making of business models, profit margins, the cost structures implemented, the revenue generation streams and the resources availability. Three, the key resources are those resources than be essentially be used to deliver the promised value proposition to the customers. The resources may include partners, distribution channels, equipment's available and personnel. Four, the key processes

aspect when put together with key resources aspect, enable the organization to define how the promised value proposition can be delivered. It may include aspects like rules and regulations, certain norms or metrics that the organization follows amongst others. The above four elements hence form the basis for any business. The complexity in the formula lies in the interdependencies of the four elements, any change in one can have an effect on the others and most successful businesses have a stable system where these elements are bonded together in a consistent and complementary way.

### 3.3.4 - Osterwalder and Pigneur's business model canvas:

According to Osterwalder et al. (2005), who studies on BMs have yielded nine major building blocks, that have been noticed across various authors, to be considered while formulating a BM. These blocks have been divided into four regions; Product, Customer Interface, Infrastructure Management and Financial Aspects. The respective building blocks have been briefly described in table 4.

Region	Building Block	Description
Product	Value Proposition	It essentially showcases what the value offered to customers is. This value can be offered via products or services and hence, can describe firms' offerings to its customers.
Customer Interface	Target Customer	It describes essentially the audience a firm wishes to sell its value offerings.
	Distribution Channel	Describes the various methods by which the value offerings reach the end customers.
	Relationship	Describes the various methods by which the firm can reach and deal with its target audience for its products and services.
Infrastructure Management	Value Configuration	It essentially showcases how the key activities and resources are arranged to create value.
	Core Competency	Describes the essential competencies necessary to ensure that the business model is executed.
	Partner Network	Describes the network of cooperative agreements with other stakeholders to ensure that the value generated is captured.
Financial Aspects	Cost Structure	Describes the monetary dealings and consequences to acquire the value offerings from the firm.
	Revenue Model	Describes the various methods through which a firm can generate and maintain money or revenue.

Table 4: Osterwalder's Business Model Building Blocks.

#### 3.3.4.1 - Business Model Canvas (BMC)

According to Osterwalder, the nine building blocks of the business model have been integrated into the tool called the "Business Model Canvas", this canvas represents a painter's canvas and enables the firm or decision maker to analyze existing or new business models via this graphical representation. This tool helps the decision maker understand the business model, fosters collaborations and

discussions and also aides in coming up with creative solutions. (Osterwalder et al., 2005)  
(Osterwalder & Pigneur, 2004)

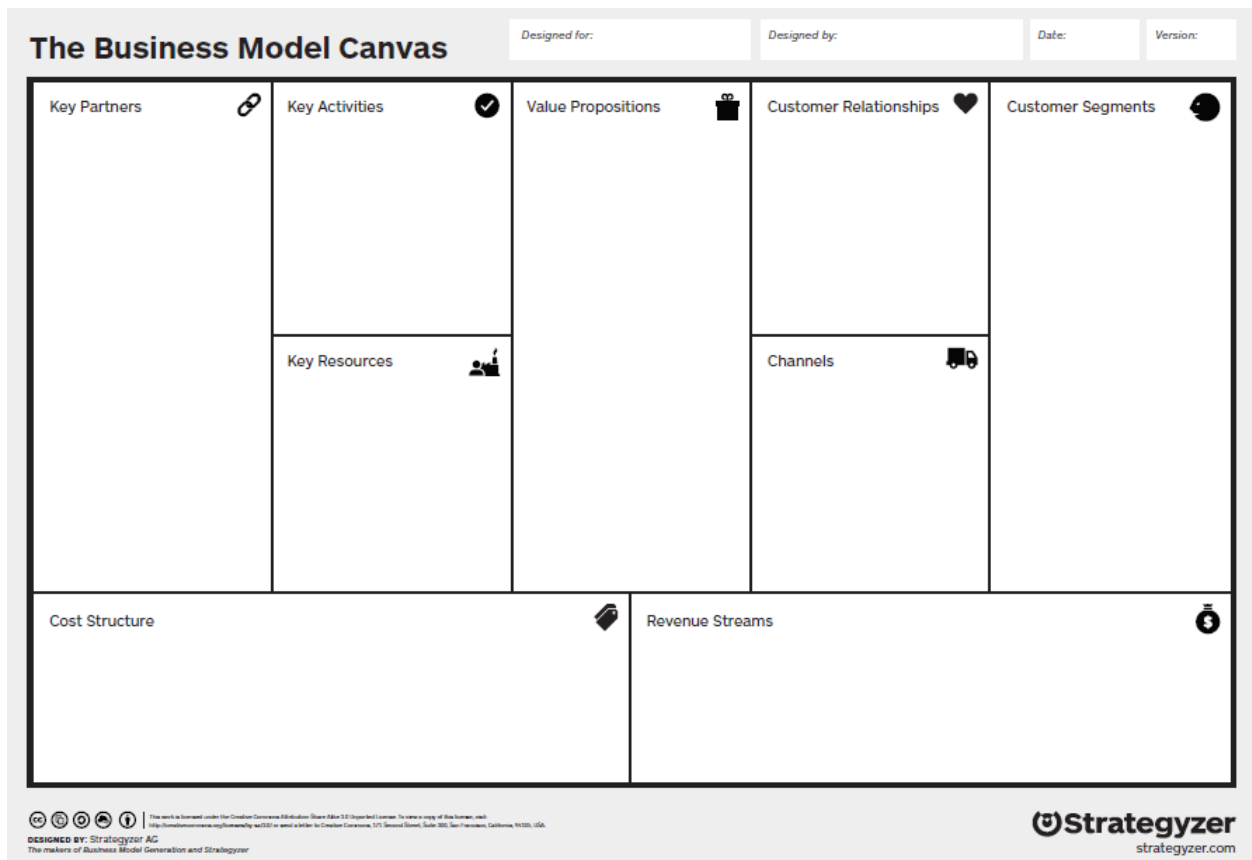


Figure 4: Business Model Canvas (BMC); Source: strategyzer.com, (Osterwalder et al., 2005)

### 3.3.4.2 - Key Partnerships

Partnerships can be considered the cornerstone for most business models and are created by companies to optimize their capability, improve competency, and reduce risk amongst others. Mainly four different types of partnerships can be distinguished; strategic alliances between non-rivals, strategic alliances between rivals, joint-ventures to co-develop a new business and buyer-seller network or relations to build an efficient supply structure.

Osterwalder & Pigneur (2004, p.89) define partnerships as “a voluntarily initiated cooperative agreement formed between two or more independent companies in order to carry out a project or specific activity jointly by coordinating the necessary capabilities, resources and activities”. The motivation for firms to get into partnerships with other firms has been mainly limited to the following causes, the need for optimization: concepts like economies of scale need optimization techniques which may not be available to all firms equally. The need for reducing risk: there always exists an element of risk and uncertainty in business and firms tend to form partnerships to reduce the risk element in order to distribute the damages caused if a business endeavor does not go as planned. And

finally, the need for acquisition: most firms rely on their suppliers for input materials and resources that are vital to their business and hence, some of them form partnerships to eliminate competition and gain a competitive advantage over other firms. (Osterwalder et al., 2005)

### 3.3.4.3 - Key Activities

Actions firms perform in order to do business and achieve their objectives and goals is the definition of key activities according to Osterwalder & Pigneur (2004). They describe this as one of the more important parts of the business model for a company to meet its objectives and is hence also termed as the value configuration of a firm. It is stated that a business model may comprise of any number of key activities and needed in order to create and offer value, enter markets, build customer relationships and bring in revenue.

It can be described as the arrangement of one or more activities of the firm which is used in order to provide value proposition. Activities here refer to the actions the firm undertakes in order to do business and achieve its targets. Value configuration relies on the capabilities and competencies of the firm and is usually distinguished in three types, the value chain, the value shop and the value network (Osterwalder & Pigneur, 2004).

According to Porter (2001), the logic behind the value chain lies in the fact that the firm is viewed as a system with subsystems and transformation processes that convert the input into output. The firm performs hundreds and thousands of activities daily in order to transform input into output and most of these activities can be categorized into primary and secondary (support) activities as shown in table 5.

<b>Primary Activities and their Description</b>	
Inbound Logistics	Involves the relationship with the suppliers and also includes the activities involved in the unloading, storing and distributing inputs
Operations	The activities involved in the transformation of inputs into outputs
Outbound Logistics	Involves the relationship with the distributors and also includes the activities involved in the assortment, stowing and distributing outputs
Marketing and Sales	Involves all the activities that a firm undertakes to inform its customers about its outputs, i.e. its products and services and activities that facilitate the purchase of its products and services
Service	Involves the activities that a firm undertakes to keep its products and services functional over its lifecycle.
<b>Support Activities and their Description</b>	
Procurement	These activities include acquiring the required inputs, resources or any other item required by the firm
Human Resource Management	Involves activities that deal with the human resource such as hiring, training, compensation, laying off etc.

Technological Development	Involves activities that contribute to the transformation process of inputs into outputs such as equipment, hardware & software requirements, standards and any other technical data
Infrastructure	All other activities that are required to keep the firm functioning is done here. Activities such as financing, accounting, planning, public affairs, government relations, quality assurance and general management amongst others.

Table 5: Porter's Value chain activities; source: Porter (2001)

These activities, the primary and support activities then form part of the value chain as represented by figure 3.



Figure 5: Porter's value chain. Source: Porter (2001)

The value shop is that part of the value configuration where the firm discovers what the customer wants and needs, finds out how to deliver this need (value), checks whether the customer needs are being met and repeats this process iteratively. The activities in the value shop include mostly problem solving tasks such as problem acquisition, problem solving and finally problem elimination control and evaluation. Solving problems of its customers is where the value is generated in the value shop. (Osterwalder & Pigneur, 2004)

The value network is the network outside of the firm which is used to create value through intermediaries, who focus on promotion of the network, management of contracts, service provisioning and infrastructure operations. Here the value is generated for the firm by the links generated within customers. (Osterwalder & Pigneur, 2004)

#### 3.3.4.4 - Key Resources

They are described as the inputs towards the value creation and hence, the activities that a firm needs towards the value proposition it offers. Osterwalder & Pigneur (2004) describe this element to be vital towards the business model of a firm and also state that according to the sort business model, different



resources may be required. Key resources can be categorized in many forms such as human and intellectual resources, financial resources, physical assets amongst others; they can be owned, leased or brought in by partnerships.

#### ***3.3.4.5 - Value Proposition***

According to Bagchi & Tulske (2000), the value proposition of a firm can be explained to be the statements of benefits that a firm can deliver to its customer base which associate themselves with a particular value requirement. The value provided by a firm to its customers may be categorized as qualitative or quantitative. Qualitative values are those values that are gained by the customer in terms of the experience of buying, using the product, the product design amongst others whereas quantitative values are those that can be measured such as the price, delivery times, service time amongst others.

The value proposition can be described as the overall view of a firm's bundle of products and services that together represent a value for a specific customer base or segment. It represents the value offered to the customers based on the capabilities of the firm. It can also be used to describe how a firm gains a competitive advantage over its rivals and provides reasoning as to why customers tend to gravitate towards one firm over another. (Osterwalder & Pigneur, 2004)

The value proposition is said to be composed of one or more 'offering(s)' that describes a part of the firm's bundle of products and services. Each offering by the firm is typically characterized by five properties, they are: description, reasoning, life cycle, value level and price level. Description is usually a clarification of what value a particular product offers to a customer. Reasoning is when the firm illuminates why it thinks a particular product offers value to the customer. An offering's value proposition is usually debated in terms of its entire life cycle, right from its conception to its design, realization and service. Value level is the measure of the value provided by a firm and enables it to compare its value offering to its competitors and finally, price level reflects is the measure of the value proposition price compared to its competitors. (Osterwalder & Pigneur, 2004)

#### ***3.3.4.6 - Customer Relationships***

Apart from distribution channels, the firms must place vital importance on the nature of interaction as they are crucial to the relationship that firms tend to build with customers from the target market. The customer relationships are the lifeblood of any organization as it contributes to the customer equity, which is the total discounted lifetime value of all the firms' customers (Marketing91, 2015).

To maximize the customer equity is the objective for most companies and it can be further divided into three areas, acquisition, retention and add-on selling. Acquisition is the process of acquiring or attracting customers to the firm's value offerings in order to do business. A firm must continuously acquire new customers as customer retention rates fluctuate while it is also important to note that the

acquisition of customers is expensive and that it also has a strong influence on both the retention and add-on selling. Retention of customers is important for the company so as to leverage the investments made in the acquisition of customers. The duration of retention is usually longer than that of the acquisition period and hence, makes more sense for firms for them to ensure higher retention rates. According to Blattberg, Getz, & Thomas (2001), the following are the mentioned drivers that have an influence on customer retention: One, the level of expectation of the customer versus the actual quality delivered to them. Two, the inherent value that the product or service possesses. Three, the ability of products and services to stay unique and different from others while being suitable to the requirements. Four, the mechanisms that instill a sense of loyalty to the offerings. Five, the ease with which purchases of these products and services can be made. Six, the after sale customer service provided and seven, the ease with which a customer can exit. Add-on selling is the process or activity associated with selling any other additional products or services along with the primary product or service to your customers (Blattberg et al., 2001).

#### ***3.3.4.7 - Customer segments***

Customer segments or target customers are the audience to which a firm sells its products to i.e. the consumers of the value proposition offered by the firm. Firms usually choose to focus their efforts on two major segments, Business-to-business (B2B) and business-to-consumer (B2C). Selecting the right target customer is vital for the survival of the firm and this is achieved by the process of segmentation. The segmentation process is essentially a marketing strategy a firm follows in order to identify and segregate the broad target market into smaller subsets in terms of geography, demography, cultural difference amongst others. An effective segmentation effort by the firm can lead to increased investment and resource allocation towards those specific target customers that are likely to have the most interest in the value proposition provided by the firm's products or services. (Osterwalder & Pigneur, 2004).

#### ***3.3.4.8 - Channels***

The distribution channels are in essence is the link between the firm's value proposition offering and the target customers. This is done either directly, via partners, through retail stores or e-commerce via websites or indirectly, such as through authorized resellers and license holders. The channel is further decomposed into its respective channel links and each link is considered to be a part of the value proposition of the entire offering. It is also said to possess the same attributes as the offering such as reasoning, value level and price level and is thus vital to a firm's profitability with potential customers (Osterwalder & Pigneur, 2004).

### 3.3.4.9 - Cost structure

Cost structure generally describes all the costs that a firm incurs in its day to day operation of its business model. Almost all elements of the business such as creating and delivery value to the customers, maintaining customer-firm relationships and revenue generation all incur expenses to the firm. Such expenses can be calculated by defining the key resources, activities pursued by the firm and partnership models. (Osterwalder & Pigneur, 2004) (Osterwalder et al., 2005)

### 3.3.4.10 - Revenue Model

The revenue that a company or firm generates from its target customer segment is represented by the revenue model element within the Business Model. There are mainly two kinds of revenue streams that a company generates; Transaction revenues and Recurring revenues.

Transaction revenues are those that are as a result of the one-time payments made by the customers and recurring revenues are those generated by the certain ongoing payments that are made in order to deliver a value proposition to the customers or those made by providing customers with certain post-purchase support. The firm analyses what the value offered to the customers is worth and also what the customers themselves are willing to pay for the value proposition offered to them. Some of the methods by which the firm can generate revenue are via sale of assets, subscription charges, lending/leasing charges, usage fees, licensing, amongst others. (Osterwalder & Pigneur, 2004)(Osterwalder et al., 2005)

### 3.3.4.11 - Criticism of the business model canvas

Proponents of BMC such as Jonkers, Quartel, & Blom (2012) tend to agree the BMC provides an opportunity for its users to be hands-on in its approach. This not only aids in understanding of the various elements that form a part of the business model in a visual and corporal sense, but also promotes debates, ingenuity and aids in analysis during creation of a new business model. They also agree that the BMC is widely applicable to a majority of industries and this is a major asset in terms of gaining popularity amongst the masses.

The BMC concept is relatively new but it does have its critics. The literature available on business model indicates that a wide range of components can be integrated into a business model and thus, not all elements that are described in Osterwalder and Pigneur's (2013) BMC concept may suit ventures across different industries. The variation in elements is more clearly described by Im & Cho (2013) and is detailed using the component matrix shown below in figure 6.

	Value proposition	Customer	Resource	Partner	Channels	Revenue model
Timmers (1998)	Architecture for product/service/information flows			Business actors and their roles	Architecture for product/service/information flows	Sources of revenue
Stewart (2000)	Value capture	Customer selection			Scope and value chain	
Mahadevan (2000)	Value stream				Logistical stream	Revenue stream
Hamel (2000)	Value network	Customer interface	Strategic resources			
Rayport and Jaworski (2001)	Value cluster		Resource system			Financial model
Petrovic et al. (2001)	Value model	Customer relations model	Resource model	Production model		Revenue model,
Afuah and Tucci (2002)	Customer value		Capabilities, implementation	Connected activities		Price
Li (2009)	Value proposition	Target markets		Value network	Internal value chain structure	Cost structure and profit model
Johnson et al. (2008)	Customer value proposition		Key resources	Key processes		Profit formula
Moore (1993)	Offering factors		Personal/investor factors	Internal capability factors		Economic factors
Teece (2010)	Value capture and sustained competitive advantage	Market segments	Features/technologies and how they can be best assembled and offered	Features/technologies and how they can be best assembled and offered		Revenue and cost structures
Osterwalder (2004)	Value proposition	Customer segment, Customer relationship	Key resources	Key partners	Channels	Revenue streams

Figure 6: Business Model Component Matrix (Im & Cho, 2013)

Research conducted by Solaimani & Bouwman (2012) also criticize the BMC concept for existing in isolation. They argue that the BMC lacks the definition towards implementation which they believe to be crucial to the business as a whole, leading to the argument that the business model of a company should align with the business processes involved, which is disregarded in the Osterwalder and Pigneur's (2013) BMC concept. It is also noted that most firms have undergone instances where there is clear break between the strategy of the firm and their day-to-day operations at the ground level (Jonkers et al., 2012). According to Solaimani & Bouwman (2012), both the strategy of business for a company and the various business processes that are utilized in order to meet the strategy should be integrated with the BMC leading to a more holistic business development approach. Their ideology is represented in figure below:

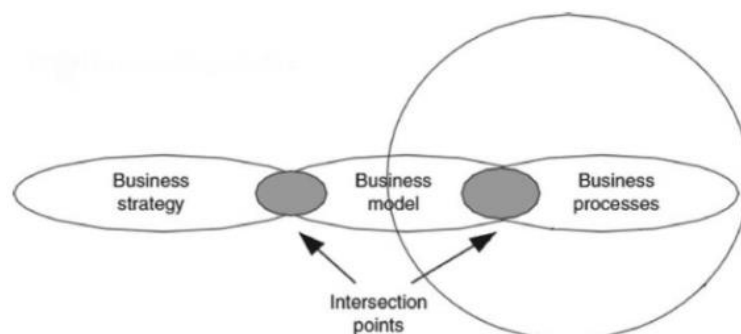


Figure 7: Integration of business strategy, business model and business processes, source: (AL-Debei & Avison, 2010), (Solaimani & Bouwman, 2012)

Chesbrough (2010) also criticizes the BMC, stating that it lacks emphasis on the ability to develop more innovative solutions with respect to the business models. He further states that there exist obstacles in innovation of the business models for companies; the use of tools such as the BMC are supportive to an extent but states that these tools by themselves are not enough to sustain development.

In essence, the strengths and weaknesses of Osterwalder and Pigneur's (2013) BMC concept, from the available literature, has been shown in table 6.

Strengths	Weaknesses
<p>User friendly and visual representation of all elements of the canvas</p> <p>Promotes debates, ingenuity, creativity and aides in analysis of the various elements</p> <p>Covers most important dimensions of a business such as value channel, distribution, customers, revenue, etc.</p> <p>Value stream – creation, delivery and capture is held central to all.</p> <p>(Jonkers et al., 2012; Osterwalder &amp; Pigneur, 2013)</p>	<p>External factors may be ignored such as market, substitutes and competition.</p> <p>Lacks clear elements describing surrounding market environment, influence of external stakeholders and sustainability.</p> <p>The building blocks may not hold the same level of abstraction for every business.</p> <p>The human element of the business is taken out in this scenario and may affect the value chain</p> <p>(Chesbrough &amp; Rosenbloom, 2002; Karnani, 2009; Solaimani &amp; Bouwman, 2012)</p>

Table 6: Strengths & weaknesses of the Business Model Canvas.

The strengths and weaknesses of the BMC are taken into account while exploring the new framework and help in establishing the right direction when it comes to choosing the new elements to be added to the BMC when it is being developed with the BoP context in mind. These factors have been dealt with indirectly, as the objective of this research is to explore the business model development within the BoP and not the BMC itself, within the new framework developed by the author.

### 3.4 - Literature Specific to the BoP for BMC elements

Within this section, the objective is to find literature pertinent to the BoP market with respect to each individual element of Osterwalder & Pigneur's (2013) BMC. This is done to aid the creation of a framework for the business model that takes into consideration all the relevant BoP specific conditions that may affect the business model of a company operating in that market. The primary motive in doing this is to elucidate the specific information of which elements need to be replaced or modified according to the local requirements and to what extent are the BMC elements all-encompassing or even ambiguous within the BMC in order for a business model to operate effectively in the BoP market.

#### 3.4.1 - Literature Specific to the BoP for 'Key Partners'

Findings from literature have suggested that key partnerships are one of the more important elements within the BMC canvas and hence, continue to be one of the major tests for companies wishing to operate in the BoP market.

Simanis & Hart (2008), argue that the BoP strategies used by companies, which they term “BoP 1.0” strategy, have “implicitly imposed a narrow, consumption-based understanding of local needs and aspirations” (Simanis & Hart, 2008. p. 7) which is reflected in the business strategies the company follow. These strategies simply use the poor as consumers and hence, lose the plot when it comes to the fundamental needs of poverty alleviation and sustainable development. They state that in order for enterprise-based approach to poverty alleviation to flourish, there is a need for a significant change in the companies deal with business strategies within the BoP region. This “second generation” of BoP strategy employs the model of co-invention and co-creation of businesses that brings companies operating in this region closer to communities within the BoP. This partnership promotes the inclusion of local partners such as NGO's and local communities in developing business models that can achieve more together than with each individualistic stakeholder. Simanis & Hart (2008, p.7) further state, “building a BoP business that creates enduring community value, while establishing a foundation for long-term corporate growth and innovation, requires an entirely new strategic process and corporate capability”.

In essence, the major difference between the two strategies is that within BoP 1.0, the poor were treated solely as consumers and products/services were either redesigned or price points reduced which was clearly not an efficient solution in terms of business strategy. BoP 2.0 on the other hand, promotes a more inclusive approach where the consumers in the market are viewed as business partners or potential business partners with collaborations encouraged with respect to capabilities and the commitment to be mutual beneficial. The differences between the two strategies are shown in the figure below.

BoP 1.0	BoP 2.0
<ul style="list-style-type: none"> <li>• BoP as consumer</li> <li>• Deep listening</li> <li>• Reduce price points</li> <li>• Redesign packaging, extend distribution</li> <li>• Arm's length relationships mediated by NGOs</li> </ul>	<ul style="list-style-type: none"> <li>• BoP as business partner</li> <li>• Deep dialogue</li> <li>• Expand imagination</li> <li>• Marry capabilities, build shared commitment</li> <li>• Direct, personal relationships facilitated by NGOs</li> </ul>
"Selling to the Poor"	"Business Co-Venturing"

Figure 8: Differences between first and second generation BoP strategies.

Karnani's (2007) criticizes the BoP markets in terms of offering very limited profitability due to the fact that the consumers in these regions have low income. This ties in with what Simanis & Hart (2008) state with respect to BoP 1.0 where the business is producer oriented and hence, limits profitability for companies that followed this strategy. BoP 2.0 however answer Karnani's (2007) critique by being more consumer oriented and hence, potentially more profitable for companies and beneficial to the people in the BoP.

Authors concur that in order to be successful in the BoP, actors and all parties involved need to share the accountability and their respective obligations rather than have one or two authoritarian stakeholders (Reficco & Marquez, 2012). This form of involving all those involved has led to the formation of the term 'inclusive business models'; here, the inclusive models require a long term commitment from all parties involved and requires the need for schooling, enabling empowerment of the people and the knowledge spill off that happens due to inclusiveness. They argue that building trust is down to having relationships that are unique to each actor and having an active participation of all those actors involved in the system. Authors argue that these kind of partnerships must be built through a system where shared understanding, trust and collective interests (Chesbrough & Rosenbloom, 2002; C.K. Prahalad & Mashelkar, 2010; E. Simanis & Hart, 2008b).

Schuster & Holtbrügge (2012), conducted research oriented at partnerships in the BoP markets and uncovered details regarding what kind of partnerships are optimized to deal with varying hurdles in these regions. They based their research on three elements customer needs, market conditions and the institutional environment. The results from their findings state that; One, customer needs are only met by the firm in the BoP with the assistance of non-governments organizations as partners. Two, with regards to the market conditions, both the non-governmental or civilian society and the official business partners dealing with the firm in question can assist it in dealing with the BoP market conditions. Three, the institutions associated within the BoP market requires the need for governmental partners to step in as it can be a slow and tedious process otherwise for the firm in question within the BoP.

Literature on the ToP suggests that the partnerships involved in the ToP markets are very resource based in nature and that these partnerships usually occur within the same sector. The same ideology can be applied to the BoP markets as well but authors suggest that the partnerships in the BoP should not be restricted to the operations sector alone but instead utilize cross-sector partnerships with other actors such as NGO's and the government. The support for this logic stems from the fact that different actors bring different capabilities and resources to the table while at the same time reducing the fissures caused due to the institutions or the lack thereof (Anderson & Markides, 2002; Schuster & Holtbrügge, 2012; Svendsen, Boutilier, Abbott, & Wheeler, 2001). These cross-sector partnerships can be seen across various low-income markets where firms competing require partnerships with the local society, enterprises, NGO's and the government. This is relevant as when compared to the ToP; these partnerships play a more vital role in the survival and eventual profitability from BoP based business for the firms involved. There are many occasions where these partners can enable a company to survive in the harsh playing field of the BoP market (Chesbrough, 2010; E. Simanis & Hart, 2008b).

Authors Simanis & Hart (2008) provide us with information regarding how these partnerships proceed in accordance to the BoP 2.0 strategy. They indeed help us recognize the phases that a firm must undergo in order to create a business in the BoP market that is sustainable for the long term. It is also vital to note from their theory that the process of creating and maintaining partnerships in the BoP is not a direct process but rather one that involves multiple continual assessments of partnerships according to the characteristics and requirements of the markets. The identification of such partners though is still a rather vague area of interest where the literature does not provide us with enough information to gather information.

### *Conclusion 'Key Partners'*

Literature with respect to the key partner element provides us with one clear ideology; that partnerships in the BoP count for far greater amounts and are more vital to the success of the firm in the BoP market than perhaps they will be in the ToP market. Partnerships in the BoP are important to tackle the various societal, business and institutional hurdles that a firm may face once it has decided to establish its business. To tackle these partnership requirements, firms are encouraged to follow an inclusive approach in their business model and thereby create cross-sector partnerships that will aid not only the company in question but also create opportunities for the local society to gain via employment, education and skill, knowledge spill over. It is also important for the firms to build and maintain these partnerships via trust, having a very individual relationship with each of them and making sure that the goal or aim is common. These partnerships however need to follow a very situational and non-linear approach as the understanding and requirements might change as and when there is more information available to all those who are involved.



It is necessary to note here that key partners may also include external stakeholders. External stakeholders themselves are those stakeholders that influence the firms' actions from outside of the confines of the firm itself. External stakeholders therefore, in terms of this research project are those stakeholders who are not considered as key partners and this is further elaborated in section 3.5.3.

### 3.4.2 - Literature Specific to the BoP for 'Key Activities'

Johnson et al. (2008) define key activities as those operational and managerial processes that contribute towards the firm delivering value. These processes may include responsibilities such as planning, selling, servicing, development, budgeting amongst others. The processes that form a part of the key activities element are vastly different for different companies, they may differ with respect to products or services offered, the industry the company operates in and even the market within which the company operate all affect the activities that a company performs in order to scale its business.

Within the BoP, the literature points out to the fact that the activities that are performed by companies in the ToP market need to be revised and adapted to the local requirements and conditions. Osterwalder & Pigneur (2013), state that it is up to the firms to decide on which activities are necessary in order to meet its core business objectives. Literature also elucidates on how key partnerships are a contributing factor in terms of value creation and value creating activities for both the company itself and also the local population, this is in tune with the BoP ideology of sustainability in terms of business and also creating societal value (Simanis & Hart, 2008). Jagtap, Larsson, & Kandachar (2013), also state that the key activities of the firms in the BoP need to be organized in such a manner that these activities are in sync with the ground realities and conditions in order to better cope with the hurdles of operating in the BoP market; they also state that the key activities of a firm are echoed in all other building blocks of the business model.

There exists a clear lack of direction and literature guiding companies with respect to key activities in the BoP market; it is in essence only visible in conjunction with all other elements of the business model that would shed light on the key activities necessary for companies to meet their objectives.

#### *Conclusion 'Key Activities'*

From the BoP literature it can be concluded that there exists a large literature gap in terms of analyzing the key activities that a firm must perform to operate effectively and efficiently in the BoP market. Some of the information revealed point out the following: Firstly, from ToP based literature it is evident that it is indispensable that a company performs a wide range of activities according to the products or services it offers and the industry it operates in. Secondly, within BoP markets the correlation of other elements that form a part of the business model of a company become vital in determining the key activities. Lastly, the distinct conditions that firms operate in within BoP regions

when compared to the ToP markets need to be critically evaluated and considered in order to determine the most effective and efficient business activities.

### 3.4.3 - Literature Specific to the BoP for 'Key Resources'

For any company wishing to operate in the BoP market, it is vital to understand that resources within these regions are seldom adequate, resources in terms of money, infrastructure, institutions, networks, human capital, raw materials amongst others can all be considered to be rarely available. This is concurred by most literature that discusses key resources in the context of the BoP. C.K. Prahalad & Mashelkar (2010) state that due to the great size of the market and the very limited resources available, it is essential for companies to develop solutions that are sustainable. This also ties in with the fact that the consumption of available resources also needs to be effectively controlled, a sustainable environmentally friendly solution to resources such as fuel need to be developed. Strategies for business need to take into account this deficiency in order to be efficient in this market as is evident with the resource of human capital. Human capital and its management plays a vital role in business strategies developed for BoP markets and it is essential to introduce local involvement thereby creating a sustainable and progressive solution to a critical problem. (Krause, 2012)

#### *Conclusion 'Key Resources'*

Resources within the BoP are available at a premium and hence, the most logical and sound solution to tackle this problem is to be sustainable. Sustainability of resources can have much iteration according to the resources required by the company and the industry it operates in. Employing local population and integrating local human capital, sourcing locally produced raw materials, reducing and recycling waste, utilizing renewable sources of fuel amongst others are all strategies that a company operating in the BoP market can consider towards being sustainable towards its key resources.

### 3.4.4 - Literature Specific to the BoP for 'Value Proposition'

The value proposition aspect of the business model brings its own set of hurdles and opportunities for companies operating in the BoP market. According to Ramani, Ghazi, & Duysters (2012), value proposition is only created when the company manages to deliver what the customers' needs are and only then do customers perceive this as value. Value proposition cannot be changed by simply offering it in a new package, but it requires a conscious effort by firms to deliver on products and services along with capturing revenue from the same in union with all other parties involved in the value chain (C K Prahalad & Hart, 2002). More specifically within the BoP markets, firms are to consciously engage with parties such as the customers, distributors, suppliers, employees in order to better integrate into the local market (Karnani, 2007; Goyal, Sergi, & Kapoor, 2014; Nidumolu et al., 2009).

Sustainability is the key to creating value within the BoP market. Literature on BoP all seem to point to the fact that value when shared, both economically and socially, creates a much better scenario for businesses to survive within this market (Nidumolu et al., 2009; Goyal et al., 2014). Goyal et al., (2014) point out that this shared value involves the companies to develop the necessary skills and systems required in order to better engage with the BoP market and communities; this entrenchment of business operations not only serves them well in the initial part of establishing a business but also ensure long-term success for the companies.

According to Dahan, Doh, Oetzel, & Yaziji (2010), Non-governmental organizations (NGO) involved in the BoP markets are one way to recreate a firms' value proposition in BoP markets. These partnerships with NGO's can enable a firm to quickly embed itself into the local business environment and hence, create value (Goyal et al., 2014; London et al., 2014). NGO's possess capabilities that can complement the new firms' value proposition and hence, create and deliver further value and at the same time help in reducing the costs and risks involved in such markets. NGO's offer firms a quick access to knowledge on the market and also, help in accessing the network and distribution channels within the BoP market that can prove to be vital as accessibility to them is a rather arduous task for any new entrant to the market (Goyal et al., 2014).

#### *Conclusion 'Value Proposition'*

As seen with other building blocks of the business model canvas, any block applied to the context of the BoP market presents its own set of challenges and opportunities. Due to the way markets in these regions work, firms operating in BoP markets must develop partnerships with entities such as NGO's and include the sustainability element by creating local capabilities and resources that will aide in creating and delivering a better value proposition.

#### **3.4.5 - Literature Specific to the BoP for 'Customer Relationships'**

According to Esposito, Kapoor, & Goyal (2012), even though the potential market opportunities for firms wishing to capitalize on the same may seem vast in the BoP, the multifaceted and complex customer outline presents firms operating here with multiples hurdles to cross. Customers within these regions are known to have irregular incomes, lack much savings and face trouble with various infrastructural requirements such as transportation, education amongst others. The authors also argue that there is generally lesser information available on the population within the BoP regions and this is directly due to the lack of government involvement, support of their respective legislatures and the varying population densities across these regions. Due to the uncertainties prevalent in these regions, the approach taken by firms with respect to customers should be detailed and effective (C.K. Prahalad & Hart, 2002). The overall lack of literature on the customer relationships within BoP markets does not discount the fact that the companies involved in these markets need to focus on building a level of trust with their customers, help forge awareness, accessibility, affordability and availability in order to

sustain a successful relationship with their customers (Esposito et al., 2012). Esposito et al., (2012) suggestions to companies include embracing an inclusive method and attitude to create a level of transparency that will aid in engaging with the local people while also perhaps creating new income opportunities for the local communities in the BoP regions. The spillover effect of an inclusive approach to business in the BoP is widely recognized by many authors for its positivity and this is delivered only via the trust from the customers.

Awareness, accessibility, affordability and availability, commonly referred as Prahalad's 4A's, are highly valued elements to build customer relationships in the BoP markets. These elements are important to managers who have the responsibility of increasing business by gaining customers and improving revenue streams while having the opportunity to provide some of the most underserved people around with goods and services that can bring a significant impact to their lives. The 4A's involve the following: One, by creating awareness you are directly supplying your potential customers with information on the goods or service you are offering and also to convey or remove any apprehensions or misunderstanding customers may have. Two, providing access to the goods and services involves making it easy for the customers to get their hands on the products. This can involve setting up distribution links, supply chains amongst others. Three, affordability is probably one of the more important aspects of managerial decision making. It is important to bring to the market a product or service that is affordable to the customers in the BoP while at the same time ensuring that this product or service does not compromise much on efficiency, quality and reliability. There are many modern techniques that can be used to make sure that affordability is maintained. Services like micro-financing can greatly aid companies looking to sell in the BoP market. Four, availability of the product at all times can help create loyalty and trust amongst customers and hence, is a valuable element in managerial decision making (Esposito et al., 2012).

### *Conclusion 'Customer Relationships'*

From the literature, it is evident that there needs to be further research on the relationship between the firm and the customers within the BoP markets. The customers within these regions are segregated by such vast measure both in distances and socio-economically that they pose a distinctive challenge to firms. One start that companies can muster is following Prahalad's 4A's to build a rapport with the customers eventually creating trust and a loyalty thus, enabling better relationships between the parties involved.

### **3.4.6 - Literature Specific to the BoP for 'Channels'**

The lack of access to and for the customers in the BoP markets has been relatively well documented. It is regarded as one of the major hurdles for firms wishing to exploit the vast market potential of the BoP region. One may argue that more than half the world population lives in so called BoP regions but it is to be noted that most of these people live in tiny groups in remote and relatively inaccessible

places which lack basic infrastructure in terms of transport, communication amongst others. (Karamchandani, Kubzansky, & Lalwani, 2011; Nakata & Weidner, 2012; Coimbatore K. Prahalad, 2006)

The authors also argue that the topography of these locations further increases the areas of concern for the firms involved thus, complicating issues in distribution, communication and strategies that sales teams would follow are vastly affected.

Channels in the BoP markets when compared to more developed regions of the world show a starkly different view in terms of development, infrastructure and investments required to maintain such channels. The literature on channels in the BoP all talk about how an entrant firm or a firm with available resources is the one to take initiative and develop new channels or allay the inadequacies (Karamchandani et al., 2011; Schuster, 2014).

Authors suggest the following methods to allay the inadequacies of the BoP; the firms involved in the BoP need to develop strategies that facilitate the creation of basic market infrastructure. This involves building communication, distribution and sales channels in the local network, most of which are taken for granted in the western markets (Anderson & Markides, 2002; Karamchandani et al., 2011; Schuster & Holtbrügge, 2012). Certain authors suggest a two pronged approach to development: One, to develop the required distribution channels. Two, to create the necessary demand for the products or services being offered by the firm (Anderson & Markides, 2002). Furthermore, partnerships are important in such scenarios where the entrant firm is unaware of how to tackle the lack of infrastructure in the BoP markets (London et al., 2014).

Some authors also suggest that tackling the BoP markets lack of infrastructure can be done by transforming the existing infrastructure that currently exists in these regions. They state that combination of formal and informal channels is a necessity; in fact, literature shows that informal channels are more likely to be used in these regions as they have the ability to decrease negative effects of distribution, allow for greater accessibility to products and services as well as providing local and sidelined population with employment opportunities; all this is done in conjunction with formal channels (Banga & Mahajan, 2005; Karamchandani et al., 2011; London et al., 2014; Schuster & Holtbrügge, 2012). Some of the formal and informal channels used by firms operating at the BoP are shown in Appendix B (Chikweche & Fletcher, 2012).

Another interesting solution to the problem is the concept of atomized distribution. This involves the channels being put together in such a way that the products and services offered by the firm are at their closest proximity to the target customers and this is achieved using mobile distributors whose operations are usually small in size and volume (Nakata & Weidner, 2012). Nakata & Weidner (2012) lay out four methods to achieve atomized distribution. These methods all work in conjunction with existing infrastructure and are laid out as follows: First, use available and reachable channels apart

from firms' retail shops such as post offices, police stations, amongst others. Second, by employing local population in hiring independent personnel that can sell the product or service from their home or using a mobile office. Third, remove the intermediary or the middle man to be more effective in terms of costs involved and Fourth, to employ the model that uses micro-franchise based sales and distribution (Nakata & Weidner, 2012).

### *Conclusion 'Channels'*

Before entering the BoP market, firms must realize the vast differences between the ToP markets and the BoP. The literature states channels for communication, distribution and sales of products and services need to be well analyzed in advance of entering the market. The most appropriate solutions should be capable of being extremely cost-effective, fast and involve the least amount of risk for the entering company. Even though the customers are plenty, the nature of their distribution across distances and population creates an area of concern, especially due to the fact that the infrastructure is clearly underdeveloped or not present altogether. Literature on the same suggests that companies interested in setting up proper channels in these regions, should consider an approach that involves working with existing or available infrastructure networks or create new ones on their own initiative. Most apparent solution from the available literature on the matter is the use of atomized solutions that involve the use of existing informal and formal channels. Also to be noted is the fact that there exists no guideline in literature with respect to how the firms can either create or develop their own channels or utilize existing and available channels.

### **3.4.7 - Literature Specific to the BoP for 'Customer Segments'**

As is evident from all literature based on BoP markets, defining customer segments is peppered with complications and challenges for firms. Firms who are not aware of the intricacies of this market tend to erroneously view the entire BoP region as a sole developing market rather than a market where its customers segments are vastly fragmented with very different and sometimes explicit needs and requirements (Egan & Ovanessoff, 2011; Karnani, 2007; Sehgal, Tse, Bhattacharya, & Panneer, 2010). Differentiating customer segments on the basis of demography is an inefficient method of customer segmentation according to some authors who believe that segregation on the basis of behavior and characteristics of need is essential to have any relative success in the BoP market. Also, if firms can effectively segregate their potential customers in terms of scalability and hence be able to transport services or products across different countries, the local cultures and the local languages. Adaptability, when it comes to the BoP market, is an important success factor for most firms competing for market share and this has been mentioned in Prahalad's 12 principles for success (Egan & Ovanessoff, 2011; C.K. Prahalad & Hart, 2002; Sehgal et al., 2010).

### *Conclusion 'Customer Segments'*

Customer segmentation in the BoP region depends mostly on how firms integrate the approach based on the customer behavior and customer characteristics. Also, this approach should incorporate scalability and an efficient transportation model that enables the firm to use the approach across countries, regions, cultures and languages.

### **3.4.8 - Literature Specific to the BoP for 'Cost Structure'**

When you mention the BoP market, one of the major questions that pop up quite frequently in managerial discussions within firms is how can the customers afford the product or service with such low available incomes? This is considered to be one of the biggest hurdles for firms wishing to cater to the BoP audience and strategies used in the ToP markets are ill advised to be used in the BoP.

Authors well versed with the BoP market state that traditional approaches used in the ToP which require strategies to have high profit margins and its pursuit is not a viable option in these low income markets. Instead, firms have to strive to make money elsewhere. More precisely firms have to strive to increase volumes of sales in order to gain from economies of scale and also pursue capital efficiency (Hart, 2010). Others state that variations with the relationship of price to performance resulting in new improved or radical price models are an optimized solution with respect to serving the customers in the BoP market (Nidumolu et al., 2009; C.K. Prahalad & Hart, 2002). The cost structure in this regard has significance as it implies that costs involved with the product or service needs to be reduced or lowered in order to be able to provide the same at a price point that is acceptable and affordable to the customers in the market. Also, as the case with customer segmentation, the cost structure needs to be scalable as well. The cost structures developed for the BoP market need to ensure a scenario where it can be easily applied in other BoP markets across different regions, languages and cultures.

Certain authors claim that the issue with scalability is the primary reason for failure of products and services that are specifically developed for the BoP customers in relatively underserved communities. Any firm or organization that lacks the resources or any other requirements towards achieving scalability usually fails to sustain the product or service offered to the customers (Egan & Ovanessoff, 2011; C.K. Prahalad & Hart, 2002).

It is also vital to note for firms, to make sure that the products or services offered to the customers at the BoP matches their cash flows. The irregularity of their incomes need to be considered as customers may be daily wage earners, weekly wage earners or even those who only earn money seasonally, say farmers. Certain authors propagate that in all the cost reduction it is important not to forget that the products and services being offered need to be of sufficiently high quality and this in accordance with a low cost solution is the ideal bracket for gaining a piece of the BoP market (C.K.

Prahalad & Hart, 2002). Other authors also argue that the most appropriate solution to the problem of providing low cost solution is to innovate in a disruptive manner (Hart, 2010).

### *Conclusion 'Cost Structure'*

Firms entering the BoP market need to take into account various factors when it comes to setting up the cost structure of their product or service. One, they need to take into account the irregularity in the incomes of the majority of the population within these BoP regions. Two, they will have to abandon high margin strategies used in the ToP markets and instead focus on increasing volumes and strategies that facilitate scalability across different BoP markets in order to avail benefits of economies of scale. Three, compromise in quality is not an ideal fix in terms of cost structure. The quality of the products should be high enough to entertain customer trust in the products and services which will only improve loyalty towards the firm.

### **3.4.9 - Literature Specific to the BoP for 'Revenue Streams'**

The BoP market came into relevance for the western capitalist society as they deemed it a potential market to do business in. The market potential of the region was recognized but the revenue streams block of a business model for the BoP creates one of the bigger hurdles firms experience. The literatures on the specificities are unclear to a large extent but there are a few authors that propagate the view that, businesses in the region should strive to align profit maximization with service towards relief of poverty and societal empowerment (Ansari, Munir, & Gregg, 2012; Chatterjee, 2013; Coimbatore K. Prahalad, 2006). Many authors agree that new entrants should enter the market with a view of improving the prevailing societal situation in these regions while chasing profits. They elucidate the need for focus to be shifted to longer term results rather than short term figures such as those with respect to profit (C.K. Prahalad & Hart, 2002).

Certain authors propagate the view of hybrid models of business where societal welfare is carried out in conjunction with regular business activities and its corresponding revenue generation models. There are many challenges to this type of model as the system in which both can be carried out in conjunction may not be developed initially but one can argue that these hybrid models may provide us with ideal scenarios where innovation can take place (A. Hammond & Prahalad, 2002; C.K. Prahalad & Hart, 2002).

### *Conclusion 'Revenue Streams'*

There exists a large literature gap concerned with the revenue streams block of the business model; more specifically, with respect to how hybrid revenue models can be developed and implemented in the BoP. Authors that do have an opinion with respect to revenue streams do suggest that societal welfare should be prioritized and done in conjunction with traditional methods of revenue generation with a focus shift to longer term success and not short term gains.



### 3.5 – Proposed elements to be added to the Business Model Canvas in the context of ‘Base of the Pyramid’

This section deals with the prospect of introducing new elements to the BMC in order to make it more suitable for companies that intend to operate in the BoP market. One of the more important elements that will be discussed is sustainability. Sustainability here proposes to include the aspect of social empowerment or benefits to the society from the business activities of the company. Furthermore, the importance and need for elements such as local market environment and external stakeholders will also be looked at.

#### 3.5.1 - Sustainability

With respect to the BoP market, it is essential to include societal emphasis to the value proposition element of the BMC. According to Yunus, Moingeon, & Lehmann-Ortega (2010), in order to incorporate the BoP market into the BMC instead of the conventionally ToP orientation, it is necessary to include a societal element to the canvas. This in essence was concurred by Osterwalder & Pigneur (2013), who in order to improve the canvas towards social entrepreneurship businesses incorporated the elements of social and business costs, and benefits, to the traditional canvas thus reiterating the need for a societal oriented element in the BMC within BoP markets.

Literature available towards sustainability states that for a business to operate in a profitable manner, it is essential for the firm to be sustainable. This in essence translates into the empowerment of the local population, which in the BoP are generally considered to be poor and downtrodden. The effect of operating sustainably is that it creates opportunity for these people by creating jobs, having knowledge spillover and helps to reduce poverty in these regions over the long term (C K Prahalad & Hart, 2002). Furthermore, it has been suggested that if firms that are involved in the BoP having an operating model of meeting local and societal needs, their ventures are usually positive in terms of profitability. The element of sustainability refers to a more inclusive and social approach to business models that not only enables creation of economic opportunities for the local communities but also enables repayment of invested capital, enables economic and social wealth creation and enables the inclusion of broad stakeholders (George, McGahan, & Prabhu, 2012; George, Rao-Nicholson, Corbishley, & Bansal, 2015).

The value proposition offered by these firms is an important indicator towards sustainability as it shows if the firm is contributing to society apart from maintaining its own profitability. Also, on the flipside, it is argued that if a firm fails to operate in a sustainable manner it runs the risk of losing support of the institutions, severing of partnerships with local business partners and NGO's, and eventually leading to a situation where it is impossible for the firm to operate in the region (Esposito et al., 2012; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; E. Simanis & Hart, 2008a).

From the evidence collected on the ground however, authors seem to argue that most companies that enter the BoP market looking for profits and a large customer base tend to do more harm than good. The benefits of these companies cannot be guaranteed and that their impacts on local society towards alleviating more important problems such as lack of jobs, poverty etc. are negligible at best (Hart, 2010; Erick Simanis et al., 2008). Also, it has been argued that external involvement in terms of foreign aid is aimed at the short term rather than a long term impact (Erick Simanis et al., 2008).

### *Conclusion 'Sustainability'*

In conclusion, sustainability and sustainable development are the need of the hour in the BoP and any firm that is not successful in this regard will mostly fail to tap the potential market. Social empowerment is an undertaking that the firm must include in its core business model in order to be even remotely successful in the BoP market. While it is usually agreed that sustainability is an important concept with respect to the BoP; it is still unclear as to how the firms should realize this ploy at the ground level. The sustainability element of the BMC will be explored further with the help of empirical research, which should provide a more detailed elucidation on the importance of sustainability or sustainable development of the business model within the context of the BoP market.

### **3.5.2 - Market environment**

With respect to the market environment, there exist a major difference between the ToP market and the BoP market. From the literature available on the region, it is clear that BoP regions around the world and especially sub-Saharan African regions clearly lack the basic infrastructure required for businesses to operate. The economic system, education system, transportation networks are all major elements for success in any business and due to the lack of the same, creates unique challenges and hurdles for companies. While authors like Prahalad and Hart (C K Prahalad & Hart, 2002) propagate the view that a large population that is yet to be tapped exists in the BoP for companies from across the globe, there have also been detractors of the same who argue that the profitability from these regions does not warrant the risk that is to be taken by companies (Karnani, 2007; London et al., 2014; Rivera-Santos & Rufin, 2010).

Authors Rivera-Santos & Rufin (2010) suggest that in terms of stark difference to the ToP, it can be noted that the major differences lie with respect to the institutions and the competitive environment in which the firms exist. According to Reficco & Marquez (2012), the institutions or rather the lack thereof creates major hurdles for firms wishing to operate in the BoP as it deters or hampers firms from setting up commercial ventures and therefore, preventing them from creating value for their customers, society at large and themselves due to the high or escalated costs involved by operating in such scenarios.

Within the ToP it is, to an extent, general knowledge that institutions are generally formal in nature and that firms operating in the ToP have a clearly defined pathway to carry out business related and other activities. With respect to the BoP however, many authors seem to agree that a combination of both informal and also formal institutions are utilized towards conducting any commercial or business activities and this in essence forces the firms involved in the BoP to be more aware of the surrounding market environment due to the fact that laws and regulations do not seem to hold that much of an importance relative to the ToP. Also, it is widely reported that corruption in the system is a major factor or deterrent towards firms from the ToP in investing in the BoP markets (London et al., 2014; Coimbatore K. Prahalad, 2006; Rivera-Santos & Rufin, 2010).

Authors also note that within the competitive environment of the BoP market, local firms and companies seem to have a far greater impact on the entrant firm than at the ToP and hence, it becomes vital for new firms to acquire or partner with these existing intermediate players and engage in more market building actions (Rivera-Santos & Rufin, 2010). Furthermore, it is noted that players such as suppliers, distributors etc. play a far different role as external stakeholders in the BoP than they do in the ToP markets (Esposito et al., 2012).

### *Conclusion 'Market Environment'*

In conclusion, many authors from the literature available on the market environment seem to agree that there is an enormous difference between the ToP and BoP markets and this plays a major role with respect to the business model of firms wishing to operate in the BoP. Firms need to engage in far more market building activities in the BoP, partnerships with local firms and entities with power becomes far more vital to gain a competitive advantage in the market but, the flipside is the rampant corruption in both the formal and informal institutions in the BoP. This impact of the market environment on business model of the companies operating within the BoP region is explored during the empirical research.

### **3.5.3 – External Stakeholders**

According to Harrison & St. John (1996), Stakeholders are described as those individuals or parties that can significantly affect or are significantly affected by an organizations actions. Mostly within the ToP markets, the focus of management has usually tended to side towards the internal stakeholders rather than the external ones and the reasoning given in this regard is that the management can create boundaries over the internal stakeholders in order to gain direct supervisory control over them.

These organizational boundaries made by the management of companies is based on the intrinsic assumption that external stakeholders cannot be controlled or managed by them due to the lack of any leverage and due to an absence of management hierarchy within the external stakeholders (Harrison & St. John, 1996).

In terms of Osterwalder & Pigneur's (2013) BMC, it can be argued that it follows a boundary-less structure with respect to its stakeholders. Here, the distinction between the internal and external stakeholders of the company is blurred and hence, makes it easy for the development of the BMC concept. It is clear that most stakeholders that are considered as part of the network of individual elements that make up the BMC are internal stakeholders. Entities like the local governments, regulators, competitors, pressure groups, unions, NGO's etc. are not given a clear identity within the BMC and hence, they are lost in the vagueness that the canvas creates.

In terms of the BMC, certain external stakeholders are given higher preference compared to others. External stakeholders such as customers and suppliers are considered to be partly included within the boundaries of managerial control as they may be termed as "key partners" during the development of the BMC. Solaimani & Bouwman (2012) critique of the BMC of not working in tandem with the business strategy and the various business processes that are required for implementation makes it clear that the BMC in isolation does not involve the other external stakeholders that may play a vital role in the success of the company, and more crucially within the BoP regions of sub-Saharan Africa.

#### *Conclusion 'External Stakeholders'*

As evident from literature on market environment, external stakeholders play a major role in the gaining of competitive advantage for firms entering the BoP market. External stakeholders are likely to have diverse and varied objectives as well as varying levels of influence on the firm operating in the BoP. With respect to the BoP markets, it is vital that any business model incorporates the element of external stakeholders as they have the power to make or break the organization and the environment the company operates in.

It is important to note here again that some external stakeholders such as suppliers, customers, amongst others may be considered a part of the 'key partners' element of the business model. While others are mostly those which operate in conjunction within the market environment element as seen in section 3.5.2. Hence, those stakeholders who are not considered as key partners and whose influence remains unknown in the BoP are further explored in terms of any existing influence in the empirical study conducted in this research.

Some of the external stakeholders that are described in literature are shown in the below table, table 7.

<b>External Stakeholder</b>	<b>Interests/Needs/Drivers</b>	<b>Influence/Contribution</b>
Suppliers	Profitability, employment, long-term contracts.	Supplier involvement in product/service development, integration of network and employees.
Customers	Value for money, product and services themselves,	Can be integrated into the product/service developmental

	alleviation of living conditions, contribution to development.	cycle, can be used to promote the product/service.
Government and Regulatory bodies	Corporate tax revenue, health economic activity, compliance with legislations and regulations.	Power to influence/enforce regulations, legislations, penalties, controls taxations and grants, support for business
Pressure groups and Interest groups (e.g. Non-governmental organizations, Greenpeace, unions, consumers associations)	Promotion and increase awareness of a cause or issue, protection of rights and interest of its members, sponsorships and donations.	Can affect policy formulation, influence public opinion against the company, source of information for companies, potential partner for collaboration, power to mobilize protests or boycotts.
Local communities and Society at large.	Access to products/services and employment opportunities. Product safety. Affordability of product/services, socially responsible business, environment issues and practices.	Pool of current and potential customers, suppliers, employees. Power to mobilize governmental policies and consumer opinion.
Competitors	Profitability, business opportunities, supplier and distribution networks, employees.	Affect business strategy and business processes of the company, can influence public and government opinions

Table 7: List of External Stakeholders, adapted from (CIPS Knowledge, 2016).

In terms of the BMC, the influence of external stakeholders on the business model of a company will be analyzed through the empirical research. The figure below indicates what the new BMC specific to the BoP markets of sub-Saharan Africa will include.

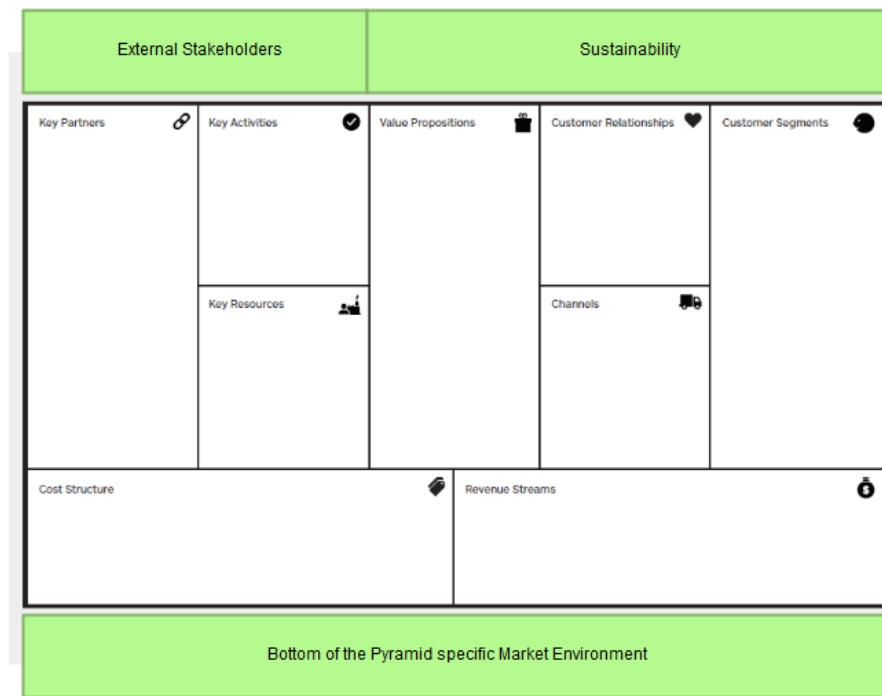


Figure 9: BoP Specific Elements added to Osterwalder and Pigneur's BMC.

### 3.6 – Summary of Literature Discoveries

The following table, table 8, is a summarized representation of all the findings reported from the literature study aspect of this particular research. The discoveries are represented via bullet points corresponding to the respective building block of the business model canvas. This enables an easier understanding for the reader and also aids the researcher in conducting the comparative analysis between the literature discoveries and the empirical findings.

BMC Building Blocks	Literature Discoveries from the BoP
<b>Key Partners</b>	<ul style="list-style-type: none"> <li>• Innovation needs to be made local and more all-encompassing. BoP market deficiencies should be offset by building networks that share assets, resources and enhance capabilities of all involved. BoP market potential cannot be reaped without partnerships. (Esposito et al., 2012; Hart, 2010; Karnani, 2007; Nidumolu et al., 2009; Coimbatore K. Prahalad, 2006; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012)</li> <li>• Sharing of accountability, individual obligations while ensuring no authoritative stakeholders; Long term commitment from all parties involved is required along with the need for schooling, enabling empowerment of the people and knowledge spill off. (Reficco &amp; Marquez, 2012)</li> <li>• A need for producer orientated tactic. (Karnani, 2007)</li> <li>• A need for considering the phases of business development and ensuring a nonlinear approach due to various changing elements with continuous feedback. (E. Simanis &amp; Hart, 2008a)</li> <li>• A need for partnerships across sectors to enhance access to resources and capabilities. (Anderson &amp; Markides, 2002; Ramon Casadesus-Masanell &amp; Ricart, 2007; Rivera-Santos &amp; Rufin, 2010)</li> <li>• NGOs can help in developing the business model to better suit the local</li> </ul>

	<p>environment by helping in training and developing aspects of the business. (Chesbrough &amp; Rosenbloom, 2002)</p> <ul style="list-style-type: none"> <li>• Civil partners can lead a helping hand in dealing with varying market conditions and also governmental organizations can help firms deal with the prevailing institutions. (Schuster &amp; Holtbrügge, 2012)</li> </ul>
<b>Key Activities</b>	<ul style="list-style-type: none"> <li>• A need to revise and or adopt ToP strategies to suit the BoP market; firms responsible in dealing with these activities. (Johnson et al., 2008; Osterwalder &amp; Pigneur, 2013)</li> <li>• Partnerships determine the value creating activities in BoP. (E. Simanis &amp; Hart, 2008b)</li> <li>• Need for focus on local conditions to deal with the unique conditions of the BoP. Key activities are echoed in all other blocks of business model. (Jagtap et al., 2013)</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>• Resource availability in the BoP is a luxurious commodity in the BoP. Thus, sustainable solutions and sustainability is important in terms of resources. (Esposito et al., 2012; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008)</li> <li>• Key resource availability in the BoP is a constrained phenomenon (London et al., 2014)</li> <li>• A need for efficient use of resources; important to utilize local resources as much as possible and there exists a need to be self-sustainable. (Hart, 2010; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008b)</li> <li>• Local resource utilization while minimizing nonrenewable use of resources. (Krause, 2012)</li> </ul>
<b>Value Proposition</b>	<ul style="list-style-type: none"> <li>• Need to deliver what the customers' needs are in order for them to perceive the product or service as value. Need for focus on shared value in terms of economic and societal. (Esposito et al., 2012; A. Hammond et al., 2007; Ramani et al., 2012)</li> <li>• Firm can capture value and revenue by engaging with the market segments. (Karnani, 2007; London et al., 2014; C.K. Prahalad &amp; Hart, 2002; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012)</li> <li>• Repackaging and cost cutting in terms of quality is not encouraged. (C.K. Prahalad &amp; Hart, 2002; Ramani et al., 2012)</li> <li>• Product or service of sufficiently high quality is needed to ensure trust of the customers. (C.K. Prahalad &amp; Hart, 2002)</li> <li>• Value can be created through a conscious effort to involve locals, customers, distributors, suppliers and other external stakeholders that may be considered as non-traditional. (Esposito et al., 2012; Goyal et al., 2014; Karnani, 2007; C.K. Prahalad &amp; Hart, 2002)</li> <li>• A need to build necessary skills and systems to better engage with the BoP community along with necessary innovations in value proposition and sustainability. (Goyal et al., 2014; London et al., 2014; Nidumolu et al., 2009; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008b)</li> <li>• NGOs and partnerships with these organizations can help a firm to enhance its value proposition. (N. M. Dahan, Doh, Oetzel, &amp; Yaziji, 2010; Goyal et al., 2014; London et al., 2014)</li> </ul>
<b>Customer Relationships</b>	<ul style="list-style-type: none"> <li>• Need for an approach that is detailed and effective with respect to the BoP customers. (C.K. Prahalad &amp; Hart, 2002)</li> <li>• Need for focus towards building trust. Embracing inclusive methods and attitude. Need for a level of transparency. (Esposito et al., 2012; Reficco &amp;</li> </ul>

	<p><a href="#">Marquez, 2012</a>)</p> <ul style="list-style-type: none"> <li>• There is a level of unavailability of information about the customers; they have irregular incomes, lack savings mentality and most importantly lack basic infrastructure such as transportation, institutions, and education amongst others. (<a href="#">Esposito et al., 2012</a>)</li> <li>• Engage the local community in educative environment; creating employment and income opportunities. (<a href="#">Esposito et al., 2012</a>)</li> <li>• Awareness, accessibility, affordability and availability need to be sustained. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> </ul>
<b>Channels</b>	<ul style="list-style-type: none"> <li>• A clear lack of access to and for the customers. Regarded as a major hurdle for firms wishing to enter the BoP market. Lack of basic infrastructure in transportation and communication. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Nakata &amp; Weidner, 2012</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Location of customers is relatively un-documented with their dispersed populations across long spans and varying topography of these locations all create further hurdles for firms. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Nakata &amp; Weidner, 2012</a>)</li> <li>• Need for initiation and development of new channels by the firm. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Schuster, 2014</a>)</li> <li>• Utilization of atomized distribution channels. (<a href="#">Nakata &amp; Weidner, 2012</a>)</li> <li>• Need for firms to utilize both formal and informal distribution channels. (<a href="#">Banga &amp; Mahajan, 2005</a>; <a href="#">Karamchandani et al., 2011</a>; <a href="#">Schuster &amp; Holtbrügge, 2012</a>)</li> </ul>
<b>Customer Segmentation</b>	<ul style="list-style-type: none"> <li>• A mistake to take the BoP market as one big entity. (<a href="#">Karnani, 2007</a>)</li> <li>• Firms should segment their customers on the basis of behavior and the characteristics of the customer needs. (<a href="#">Egan &amp; Ovanessoff, 2011</a>)</li> <li>• Need for segmentation to be done in a manner that enables transcending across different regions, social structures, languages and cultures. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>; <a href="#">Sehgal et al., 2010</a>)</li> </ul>
<b>Cost Structure</b>	<ul style="list-style-type: none"> <li>• Need for firms to review and restructure traditional ToP approaches of high profit margins. Counteract low margins by ensuring high output volumes. (<a href="#">Hart, 2010</a>)</li> <li>• Radical price models optimized to the relationship of price to performance for the customers in the BoP. (<a href="#">C.K. Prahalad &amp; Mashelkar, 2010</a>)</li> <li>• Cost structure should ensure scalability transcending across different regions, social structures, languages and cultures. (<a href="#">Egan &amp; Ovanessoff, 2011</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Relatively high quality to be ensured at a low price point; this can be achieved using innovation that is frugal or disruptive in nature. (<a href="#">A. Hammond &amp; Prahalad, 2002</a>; <a href="#">Hart, 2010</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Consideration towards the irregularity of incomes. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> </ul>
<b>Revenue Streams</b>	<ul style="list-style-type: none"> <li>• Need to align profit maximization with services towards relief of poverty and improved societal empowerment. (<a href="#">Ansari et al., 2012</a>; <a href="#">Chatterjee, 2013</a>; <a href="#">Coimbatore K. Prahalad, 2006</a>)</li> <li>• Need for a change in mentality focused towards the long term. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Hybrid models of business can be utilized in the BoP (<a href="#">Ansari et al., 2012</a>; <a href="#">Chatterjee, 2013</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>).</li> </ul>



<b>*Sustainability</b>	<ul style="list-style-type: none"> <li>• Need for societal element in the business models of firms operating in the BoP (Esposito et al., 2012; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; Osterwalder &amp; Pigneur, 2013; C.K. Prahalad &amp; Hart, 2002; Yunus et al., 2010)</li> <li>• Sustainable operations by firms creates opportunities, jobs, knowledge spillovers and empowerment of local communities (Esposito et al., 2012; Hart, 2010; C.K. Prahalad &amp; Hart, 2002).</li> <li>• A sustainable inclusive operation enable creation of economic opportunities for the local communities but also enables repayment of invested capital, enables economic and social wealth creation and enables the inclusion of broad stakeholders. (George et al., 2012, 2015)</li> <li>• Operating in a non-sustainable manner induces a risk of losing support of partners and institutions in the BoP (London et al., 2014)</li> <li>• Benefits of firms operating in the BoP are deemed to be negligible (Hart, 2010; Erick Simanis et al., 2008)</li> <li>• Literature gap exists on how firms should proceed with respect to sustainability (London et al., 2014)</li> </ul>
<b>*Market Environment</b>	<ul style="list-style-type: none"> <li>• Major differences exist between ToP and BoP with respect to the market environment (C.K. Prahalad &amp; Hart, 2002).</li> <li>• Large population and market potential. (C.K. Prahalad &amp; Hart, 2002)</li> <li>• Profitability from the BoP does not warrant the risks involved for the firms. (Karnani, 2007; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> <li>• Institutions or the lack of it creates major hurdles and thus, propagates the need to use whatever formal and informal institutions existing in the BoP. (Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010)</li> <li>• Corruption in the BoP is a major deterrent for firms. This affects the contractual and other agreements firms need to make in the BoP. (Chesbrough &amp; Rosenbloom, 2002; London et al., 2014)</li> <li>• Local firms and communities have a far greater impact in the business at the BoP when compared to the ToP. (Hart, 2010; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> <li>• Market building activities need to be taken on by firms in the BoP. (Rivera-Santos &amp; Rufin, 2010)</li> <li>• Profitability of the BoP as a whole is questionable. (Karnani, 2007, 2009; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> </ul>
<b>*External Stakeholders</b>	<ul style="list-style-type: none"> <li>• External stakeholders cannot be controlled or managed by the firms. (Harrison &amp; St. John, 1996)</li> <li>• BMC tends to not involve external stakeholders in the business strategy and ultimately in the success of the firm. (Solaimani &amp; Bouwman, 2012)</li> <li>• NGOs, governments and other institutions are not considered as essential cogs in the business model but rather as an external issue as part of partnerships. (Chesbrough &amp; Rosenbloom, 2002)</li> <li>• Need for external stakeholders to be directly involved in business strategy. (Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010)</li> </ul>

Table 8: Summary of Literature Discoveries.

## Chapter 4 – Empirical Study

In this chapter of the master thesis, the results from the empirical study conducted via interviews will be studied in accordance to the findings from the literature study conducted in prior. The findings are in accordance to the sub-Saharan African region alone as it is not possible for all BoP markets to exhibit relatively similar characteristics across the world; this is supported by literature confirming the fact that BoP markets across continents differ.

In order to examine the information available on the sub-Saharan BoP markets, the interviews conducted will be reviewed in the following sequence. We will firstly explore BoP literature that is being substantiated by the interviewees followed by BoP literature that is unsubstantiated; along with any other special or unique characteristics that the literature does not explicate. This process will enable us to get a clearer understanding of the BoP market to better develop a BMC for the sub-Saharan African region and crucially; provide a framework for the team working on the Frugal Thermometer project.

### 4.1 – Key Partners

#### 4.1.1 – Substantiated BoP literature

From the interview process it was clear that any new entrant firm that wishes to establish itself in the BoP market cannot do so without the support of ‘key partners’. This fact has been mirrored across the literature available and is also echoed in the empirical discoveries from A, B and C. Thus, one can confirm that the firms wishing to operate in the BoP should do so with a business model that integrates the building block of ‘key partners’ where, the BoP market deficiencies should be offset by building networks that share assets, resources and enhance capabilities of all stakeholders involved. With respect to the partners themselves, it was noted that the approach to finding key partners in the BoP market is very different to the ToP market. The interviewees stated the need for a combined informal and formal approach to selecting partners while ensuring that the institutional aspects can be taken care of by these local partners. (Esposito et al., 2012; Hart, 2010; Karnani, 2007; Nidumolu et al., 2009; Coimbatore K. Prahalad, 2006; Reficco & Marquez, 2012; Rivera-Santos & Rufin, 2010; Schuster & Holtbrügge, 2012)

An interesting aspect to note is that of the companies interviewed only one focused on being consumer oriented while the others agreed that a producer oriented approach was taken in most cases. (Karnani, 2007)

When it comes to the question of an inclusive business model; all companies interviewed are said to utilize an inclusive business model where, there exists a sharing of accountability of all parties involved while also ensuring that no authoritative stakeholders exist. This trend is shown as BoP 2.0

strategy in the literature, where the business models tend to shift towards a more inclusive approach (Reficco & Marquez, 2012). The partnerships created in the BoP are meant for the long term and are built on the principle of mutual trust and understanding between the partners. Interviewees stressed that creating partnerships is a time consuming process that is done by building relationships that are very personalized to each partner. (Chesbrough & Rosenbloom, 2002; Rivera-Santos & Rufin, 2010)

It is to be noted that company A mentioned the fact that local partners themselves can sometimes be deceiving; they were led on a wrong path during one of their negotiations where the potential local partner had stated false capacities and ambitions thereby, giving us a situation where corruption plays a role within partnerships too.

#### 4.1.2 – Unsubstantiated BoP literature

BoP literature that states that partnerships across sectors to enhance access to resources and capabilities remained relatively unproven. The interviewees all seemed to regard partnerships within their operating sector as more influential in overcoming the hurdles within the business requirements and the BoP market as a whole. It was also noted that partnerships with NGOs was considered a big risk and usually the companies do not enter into agreements with them unless absolutely necessary contrary to the BoP literature where partnerships with NGOs are encouraged to combat local requirements. (Anderson & Markides, 2002; R Casadesus-Masanell & Ricart, 2010; Chesbrough & Rosenbloom, 2002; Rivera-Santos & Rufin, 2010)

#### 4.1.3 – Reflection on ‘Key Partners’ & towards the Frugal Thermometer

While it is widely recognized that partnerships and local partners are absolutely crucial for any firm wishing to operate in the BoP market, the partners themselves are relatively hard to find. According to the companies, it generally takes a long time to establish partnerships due to the fact that information on these partners is not readily available, there may be instances of corruption and generally, they struggled to find competent partners who possessed the capability and the resources needed to operate in an efficient manner, the interviewed companies A, B and C generally used multiple partners in the same sector to do a particular job as a counterbalance the above mentioned hurdles in the sub-Saharan African BoP market. On the flipside, one of the companies, company C, mentioned that local partners that have the capacity and capabilities required to partner with them can also eventually break the partnership to create their own rival firm. As usually local partners have a better understanding of the local institutions and can find ways around corruption; this is a very high risk when you go into partnership with them.

This takes us back to the scenario where the literature on the BoP fails to comprehend how these partnerships are to be found or established (Chesbrough & Rosenbloom, 2002; C.K. Prahalad & Mashelkar, 2010; Reficco & Marquez, 2012; E. Simanis & Hart, 2008b). With respect to the NGOs,

the companies interviewed stated that they avoided collaborating with them due to the fact that these NGOs do not seem to operate with the urgency and efficiency a profitable business venture requires. They are however invited onboard when there is a requirement of training or demonstrating the product to the local customers as mentioned by company A.

For the case of the ‘frugal thermometer’, the following reflections were made. As the project is oriented towards the customers especially in a B2C approach, utilization of existing and established stakeholders is recommended. The firm can partner with private hospitals in the healthcare sector to initiate the process of demonstrations and trials while eventually utilizing common resources to help get to the regions where the need for such devices exist critically. This is based on the assumption that the frugal thermometer team does indeed create an independent organization/firm that aims to sell its product to the consumers at the BoP while considering different partnership opportunities.

## 4.2 – Key Activities

### 4.2.1 – Substantiated BoP literature

According to the literature on the BoP with respect to the ‘Key Activities’ element of the BMC, it is important to note that local business activities that are done in the ToP market and the BoP market are vastly different but the core activities of a business remain relatively same (Johnson et al., 2008; Osterwalder & Pigneur, 2013). This was confirmed by the interviewees who all stated that the local market oriented activities in the BoP were different to what the ToP market would require as they claimed that the partnerships established by them paves the way for the key activities of business model. They stated that the local partnerships directly establish the value creating activities for the firm confirming with BoP literature stating the same (Simanis & Hart, 2008).

Also confirmed was the literature stating the need for ensuring key activities are tuned to the local conditions of the BoP and that these activities are tied to each element of the BMC (Jagtap et al., 2013). All companies interviewed, company A, B and C, concurred to the same for the sub-Saharan African BoP regions.

### 4.2.2 – Unsubstantiated BoP literature

There were no unproven BoP literatures in the empirical study of ‘key activities’.

### 4.2.3 – Reflection on ‘Key Activities’ & towards the Frugal Thermometer

The empirical study revealed what was known from the BoP literature. The companies A, B and C all agreed that the key activities of the firm were focused on the sub-Saharan African BoP and its local conditions to deal with the unique set of problems a BoP market brings. These local conditions are very different to those conditions found in the ToP. Also, all three companies interviewed seemed to

agree that the partnerships established by the firm in the BoP market dictates the activities for the firm.

With respect to the ‘frugal thermometer’, there are no additional recommendations. It is advised that the team ensure that the local context of the BoP and its unique characteristics are taken into account when the business activities elements are considered. As the evidence points out, these activities are integrated in the other building blocks and hence, the team should consider the same.

### **4.3 – Key Resources**

#### **4.3.1 – Substantiated BoP literature**

The BoP literature, which states that resource availability is a constrained phenomenon (London et al., 2014), is reflected by the arguments made by all interviewees. They state that all key resources, from financing to electricity and fuel, are not easily or readily available. Company C had a tough time finding investors to finance their project and eventually started their operations under debt financing. Company B stated that being independent of bureaucracy of dealing with banks and other institutions was vital for them to establish themselves in the sub-Saharan African market. All three however echoed the need to keep overhead costs down to a bare minimum, this involved being strict with usage of electricity, fuel, printing costs amongst others while ensuring that the resources that are available to them locally were to be preferred, be it tangible or intangible resources. (Esposito et al., 2012; Hart, 2010; C.K. Prahalad & Hart, 2002; E. Simanis & Hart, 2008a)

Company A and C stated the need for being sustainable and ecologically friendly in terms of resources and stated that they encouraged use of renewable sources of energy wherever possible along their value chains thus, complementing the arguments made in the literature. (Hart, 2010; Krause, 2012)

Literature states that the availability of raw materials of a high quality and resources in terms of production capacities are lacking in the BoP (London et al., 2014), while to an extent all three interviewees agreed with the claim but they argued that with the advent of globalization and the ability to source material from different parts of the world at a much cheaper rate of expense negates this argument made in the literature. All three companies source material from outside of the sub-Saharan African BoP region to ensure minimal expense in terms of material and production costs. Companies B and C do confirm however that assembly of their products occurs within the BoP region.

#### **4.3.2 – Unsubstantiated BoP literature**

There were no unproven BoP literatures in the empirical study of ‘key resources’.

### 4.3.3 – Reflection on ‘Key Resources’ & towards the Frugal Thermometer

Resource availability, as most literature suggests, is scarce. The firms involved in the sub-Saharan African BoP all seem to confirm with the literature in that resource constraint places an impetus on them and their local partners to be more efficient and sustainable in terms of resource utilization. Utilization of local resources is encouraged while ensuring that firms can be self-sustaining. A major point made in this regard by Company A and B was the reduction of all overhead costs involved to a bare minimum as this ensures that the firm is aware of its own resource utilization and ensures the local partners proceed in a manner that is as efficient as possible.

With regards to the human capital, firm A, B and C all rely on local partners, the youth of the region and students. Company B states that the youth are employed as partners within the local firm to ensure that the next generation is well looked after in terms of opportunity and empowerment. The workforce for these companies are tapped locally to ensure that the wealth created by business activities goes back into the sub-Saharan African BoP region thereby helping the local communities in getting out of poverty.

As far as the ‘frugal thermometer’ is concerned, the key resources element is an important aspect they would consider when it comes to formulating their business model. From the key partnerships we determined that partners play a major role in resource availability be it financial, human capital or other resources. Hence, for the frugal thermometer it is recommended that the team pursue backing from international organizations such as universities, corporate social responsibility teams and not-for-profit organizations that are interested in social enterprises. Also, the local partners bring their own set of resources and capabilities which are usually different the firms’ and hence, when combined create a more rounded solution to tackle the problem of key resources in the BoP.

## 4.4 – Value Proposition

### 4.4.1 – Substantiated BoP literature

The empirical study conducted on the firms A, B and C revealed the following when it comes to literature discussing the building block of ‘value proposition’, considered by many as the most important aspect of the business model.

Firms involved in the BoP market need to deliver value via their products and services by ensuring that they meet the customers’ needs and interests by focusing on propositions that are shared, both societal and economic (Esposito et al., 2012; A. Hammond et al., 2007; Ramani et al., 2012). This is a critical element for a firm to be successful in the BoP market and the same has been confirmed by the interviewees. All companies in the empirical study have created their value proposition based on the market needs and customer needs.

Firm A has put together its business in the healthcare industry; where its mission is to contribute to the access of reliable and affordable healthcare products and services for families in the BoP thus, tackling an area of critical need and necessity in the sub-Saharan African region which is well documented for having far and few between healthcare centers that cater to its communities. Firm B and C both operate in the clean energy market; where there is a critical social, economic and environmental issue at stake. According to them, almost 4 million people die in the sub-Saharan African region due to the use of open-fire based cooking. Their products aim to tackle the issues of health concern (such as smoke inhalation, loss of eye sight, burns, lung disease amongst others), economic concerns (such as expenditure on fuel, health problems amongst others) and environmental concerns (such as deforestation, greenhouse gas emissions amongst others). The firms argue that the value proposition offered by them promises to reduce the burden on the people living in the BoP. Their products and services tackle the issues of fuel requirements, health concerns, and environmental concerns amongst others. They do so as their offerings contribute to the critical needs of the people that is saving money in terms of fuel expenses, reducing medical expenses and have a spillover effect in terms of reducing deforestation to an extent and contributing to lower pollution.

According to literature, quality and price points are major challenges for the firms involved. It is encouraged to have a sufficiently high-quality product or service to gain the trust of the customers in the BoP markets and this is confirmed by the empirical study where the interviewees admitted to facing a tremendous hurdle in ensuring that their price points are justified by the quality of the products and services offered. (C.K. Prahalad & Hart, 2002; Ramani et al., 2012; E. Simanis & Hart, 2008b) They mentioned the need to educate the local population about the advantages and use of their products and services before they could sell and this is in confirmation with literature which states that firms must prove the quality of its products and services via demonstrations that are educational in nature. (Coimbatore K. Prahalad, 2006)

BoP literature claims that firms are to consciously engage with local parties such as the customers, distributors, suppliers, employees in many different and innovative ways in order to better integrate into the local market environment (Karnani, 2007; Goyal, Sergi, & Kapoor, 2014; Nidumolu et al., 2009) and these claims are confirmed by the empirical study findings where the firms A, B and C make a conscious effort to involve locals and other nontraditional external stakeholders. The companies predominantly capture value by creating and delivering products and services through their local partners and having sustainability as one of their priorities. (Esposito et al., 2012; Goyal et al., 2014; Karnani, 2007; C.K. Prahalad & Hart, 2002)

Literature also claims that there is a need to build necessary skills and systems to better engage with the BoP communities along with necessary innovation in value proposition and sustainability (Goyal et al., 2014; Nidumolu et al., 2009; C.K. Prahalad & Hart, 2002; E. Simanis & Hart, 2008a). There is

overarching evidence from the empirical findings that the companies in the BoP confirm to the literature. The element of sustainability has been given greater priority in terms of the building blocks due to the same reasons.

Firms A, B and C, all three also stressed on the importance for the value proposition to remain relatively same across regions in sub-Saharan Africa. They state that the scalability factor is important as a majority of the target customers in the BoP markets have similar local conditions while any anomaly in these conditions can be tackled more efficiently by making minor changes to their approach. They argue that by ensuring scalability across multiple regions, they are able to reduce costs involved in the products and services offered and hence, it enables them to translate these savings in terms of value proposition by lower purchasing and maintenance costs directly to the customers themselves. This scalability of the value proposition is vital for the firms to grow and is confirmed from the literature available.

#### 4.4.2 – Unsubstantiated BoP literature

BoP literature that state that firms operating in the BoP market can enhance the value proposition by partnering with local NGOs (N. M. Dahan et al., 2010; Goyal et al., 2014; London et al., 2014) is not satisfactorily proven by the empirical findings. Firm A was strictly against going into partnerships with local NGOs as they found their way of doing business to be slow, resource consuming and not effective enough thereby, taking away value rather than adding to it and this was also reflected in section 4.1.3 of this report.

Firms B and C echoed a similar picture whereby they stated that partnerships with NGOs in terms of business operations was almost considered to be a last option and that they were brought into the picture only for educational or demonstrational purposes at the sub-Saharan BoP region.

#### 4.4.3 – Reflection on ‘Value Proposition’ & towards the Frugal Thermometer

The learning from the empirical study on ‘value proposition’ is that firms involved in the BoP markets should ensure a cost effective solution for the customers while ensuring that the quality levels remain relatively high for the price point. More value is created by a multiplier effect of the product or service offered. Firms also create value by roping in nontraditional external stakeholders as part of the value chain and ensuring that the local communities are well educated on how the product or service can be beneficial to them. In its essence; the value proposition is what makes a firm tick in the BoP and hence, the greater the proposition offered to the customers, the greater the chances of success in the sub-Saharan African BoP market.

With respect to the ‘frugal thermometer’, the evidence gained from the empirical findings did not paint a pretty picture. The interviewees when quizzed about the value proposition that a device like the frugal thermometer might offer to the people at the BoP were not too keen on the product and its



value proposition. They stated that the fields of energy, food and water, transportation, mobility and disease prevention were far ahead in terms of critical need to the BoP communities that a device that can ensure basic measurements of temperature. While the frugal thermometer still sits in its nascent stage in terms of its overall value proposition; it is important to note here that the frugal thermometer needs to ensure as high a value proposition to the people in the BoP to stand any chance of successful deployment. The empirical findings seem to point towards a negative outlook for the frugal thermometer if it is offered as a stand-alone product and hence, suggestions were made by interviewees to incorporate more features, uses and/or having a wider range of complementary services as part of the product itself. This will at the very least ensure that the customers have a wider array of interest in the product and maybe prove to be a deciding factor in terms of success.

## 4.5 – Customer Relationships

### 4.5.1 – Substantiated BoP literature

The BoP literature on the element of customer relationships which states the need for firms to employ strategies and approaches that focus on building trust, ensuring an inclusive attitude and a level of transparency in dealing with the customers at the BoP which were unanimously confirmed by the empirical findings. (Esposito et al., 2012; C.K. Prahalad & Hart, 2002; Reficco & Marquez, 2012)

Firms A, B and C all confirmed that a detailed approach is needed to establish the customer relations and to be able to sustain these relationships; while stating that information about their customers was initially unavailable. Firm C stated that the information on their target customers though available; did not encompass the detailed information required to operate their business. They stated that information on spending patterns and on savings practices were learned along with time rather than being available from the start. This fact was echoed by the other interviewees as well.

All firms confirmed the BoP literature on engaging with the local community in an educative environment; creating opportunities for the society. Firm A and C, employed students and youngsters from the local villages in the sub-Saharan African region to educate them about the products and train them to be able to demonstrate the same at various villages across the region. (Esposito et al., 2012)

Firm B also confirmed the literature that speaks about creating awareness, improving accessibility, being affordable and being available (Coimbatore K. Prahalad, 2006). More implicitly, the interviewee mentioned that these four elements were taken very seriously in terms of dealing with their customers in the sub-Saharan African BoP region. They took strong measure to ensure that their product is accessible and available by having atomized distribution centers in faraway village while affordability was ensured right from the design aspect of the product. In terms of awareness of the product, all three firms showed a clear motivation to test their products in so called “test markets” and

then ensuring that clear demonstrations of their products and services are given to the local customers in the region to create a market where the consumers are aware of the product.

#### 4.5.2 – Unsubstantiated BoP literature

There were no unproven BoP literatures in the empirical study of ‘Customer Relationships’.

#### 4.5.3 – Reflection on ‘Customer Relationships’ & towards the Frugal Thermometer

The empirical study revealed to us that information on the target customers takes time to collect; this information is vital in ensuring that the product or service that the firm chooses to sell matches with the capabilities and requirements of the customers. The relationships with these customers are important to the firms especially since an inclusive approach built on trust is preferred in the BoP market. The relationships are further strengthened by making sure that the customers are involved in the product development aspect and their feedback is gained during testing and demonstrations that the firms pursue in the BoP market. With respect to opportunities for local communities, some firms made a conscious effort to hire employees from distant villages and most predominantly students and youngsters who the firms view as bearers of change in the empowerment of the sub-Saharan African BoP region.

It is also interesting to note that the interviewees felt the need to gather information on target customers were relatively longer for them as they were involved in predominantly B2C (business to consumer) operations rather than B2B (business to business); where their opinion is that information on business customers is relatively readily available. As for the frugal thermometer case; it is interesting to note that as the approach assumed in the case of this research project is B2C, the team has to ensure that customer involvement in the product development cycle is utilized. An inclusive approach of doing business is recommended to any firm that is set up to bring the product to the ground level.

### 4.6 – Channels

#### 4.6.1 – Substantiated BoP literature

The overarching findings from the empirical study seem to confirm that certain parts of the regions within the sub-Saharan BoP market comply with the notion that there is lack of access to the customers, lack of basic infrastructure such as transportation networks and this issue is a major hurdle for establishing the channels element in the BoP. (Karamchandani et al., 2011; Nakata & Weidner, 2012; C.K. Prahalad & Hart, 2002)

All three interviewees conveyed this point in some way; that the lack of connection to far away customers forced them to either ensure partners have access to these location or create new channels and connections themselves. Firm A established a mobile entrepreneur scheme where each village

would have a person contracted with the firm to supply the local village with the product and he or she would be the sole channel of access for the firm to that particular village. Company B established an atomized distribution network in their scheme of developing new channels to access previously inaccessible regions in the sub-Saharan African BoP. They predominantly also confirm the literature on the need to utilize any channel available to them, be it formal or informal until they can set up their own channels and also, the levels of un-documentation of people in faraway villages with dispersed populations across various geographical and topographical locations. (Banga & Mahajan, 2005; Karamchandani et al., 2011; Nakata & Weidner, 2012; Schuster & Holtbrügge, 2012)

#### **4.6.2 – Unsubstantiated BoP literature**

There were no unproven BoP literatures in the empirical study of ‘Channels’.

#### **4.6.3 – Reflection on ‘Channels’ & towards the Frugal Thermometer**

The literature on channels element of the BMC towards the BoP are all seemingly confirmed by the interviewees; they do however also add that these issues are only valid when you go deeper into the interior of the BoP region. Places like Gambia and Uganda provide far greater hurdles within the channels than say Nigeria or South-Africa. But since a vast majority of the countries in the sub-Saharan African BoP displays similar characteristics to Gambia and Uganda, the claims are reflected in the field.

Atomized distribution channels seems to be a logical choice of integrating formal and informal channels to reach the customers in faraway places in the BoP regions while vertical integration was realized as key factor in improving the distribution channels in the sub-Saharan African BoP. Hence, it is recommended that for the case of the ‘frugal thermometer’, the firm ensures that a novel way of distribution, such as atomized distribution, of its product is implemented. This method will not only enable the firm to create greater access to its products but also help in opportunities for the local communities.

### **4.7 – Customer Segments**

#### **4.7.1 – Substantiated BoP literature**

The empirical study findings were all in alignment with the literature findings for the element of ‘Customer Segments’ at the sub-Saharan African BoP market. All firms interviewed stated that, as their business operates on a B2C basis, the need for identification of target customers is vital. Firm B and C, established as social enterprises with a target population in mind right from the start; where their goal was to target the women in the region as they were deemed to be the primary users of their products and hence, targeted them right from the developmental phase of their products to better integrate them into their ecosystem.

Firm A argued that as it operates in the healthcare industry; the primary motivation for customer segmentation for them was to split the behavioral and need requirements users have based on the region they live in which goes hand-in-hand with the BoP literature (Egan & Ovanessoff, 2011).

All interviewees agreed that the entire sub-Saharan African BoP was too big a playing field to treat it as one big BoP market (Karnani, 2007). They stated that each region within this market has its own unique qualities and need characteristics while at the same time allowing for firms to strive for scalability across regions, countries, languages and cultures. They argued that while people's cultures may be different from country to country, the overarching situation they find themselves in terms of being marginalized, embedded in poverty and having basic needs and wants is the same to enable a firm to grow and scale-up in the long term.

#### **4.7.2 – Unsubstantiated BoP literature**

There were no unproven BoP literatures in the empirical study of 'Customer Segments'.

#### **4.7.3 – Reflection on 'Customer Segments' & towards the Frugal Thermometer**

From the empirical findings, it is clear that companies operating in the region do follow a segmentation process where target consumers are segmented on the basis of characteristics of need and behaviors; but this is applicable only in the scenario where the firm is deal in a B2C environment. B2B and B2G environments have completely different segmentation characteristics which are not considered as part of this research project.

Hence, for the case of the frugal thermometer it is more relevant to consider findings from the B2C business operations and take into account the ability to segment customers on the basis of their need behaviors and also to ensure that there is an element of scalability that needs to be considered if at all they plan to take their product beyond a few regions in the sub-Saharan African BoP.

### **4.8 – Cost Structure**

#### **4.8.1 – Substantiated BoP literature**

The findings from the empirical study confirm the literature on the BoP, which states a need to shift from high-margins approach of the ToP to a more high-volume approach to be successful in the BoP. (Hart, 2010) Firms B and C, both clearly demonstrated this in their cost structure wherein high output volumes of their products in the market enabled them to keep the cost of the product down. Firm B and C's mission is to reduce the cost of the product over time as the effects of economies of scale are seen and this reduction in price naturally opens up the product to a larger group of people within the BoP region.

The firms also confirmed the importance of having the cost structure ensure scalability transcending across different regions, social structures, languages and cultures (Egan & Ovanessoff, 2011; C.K. Prahalad & Hart, 2002). The argument firms B and C give for this is that production and variable costs are going to remain the same for them across regions in the BoP hence, it becomes important that the structure implemented in terms of cost is scalable. Consideration toward irregularity of income was also noticed during the empirical study where Firm C employed different methods of micro-financing solutions to help people in the BoP regions be better positioned to buy their products and services.(C.K. Prahalad & Hart, 2002)

Also, it is interesting to note from the findings that while the price and quality parameters were strictly maintained, wherein for the price the product quality was deemed to be way beyond the price point, the literature on the BoP suggests that innovation of the product is key in ensuring the cost structure (A. L. Hammond, Kramer, Katz, t. Tran, & Walker, 2007; Hart, 2010; C.K. Prahalad & Hart, 2002). The evidence for this was seen in the products themselves; all firms focus on creating products that are not necessarily radical in nature but the efficiency levels and the comparative benefits to be gained from these products are greater than any incumbent technology.

#### **4.8.2 – Unsubstantiated BoP literature**

From the empirical findings, it proved demanding to find evidence against the use of radical price models that are optimized to the relationship between price and performance (C.K. Prahalad & Mashelkar, 2010). While the price models being utilized severely undercut the firms' profit earning capacity to ensure that the product gets to the ground level and also, high volumes ensure advantages to the firms from the economies of scale aspect but it was difficult to pinpoint any radical price models being used.

#### **4.8.3 – Reflection on 'Cost Structure' & towards the Frugal Thermometer**

Cost structure is an important aspect of operating in the BoP market. While it is established that cost structures in the ToP and BoP markets are vastly different; the cost structure is what determines the customers' interest in the product or service and hence, it needs to offer high value for a relatively low price point. This is echoed by the empirical findings. Also, costs element is structured in such a way that it enables the firm to offer scalability across countries and regions within the BoP, which is an important factor that firms consider at the time of developing the product itself. Strong interest was also taken to ensure that customers are afforded the opportunity to access the product via models such as micro-financing, which according to the firms' evidence proved to be an important factor in establishing the product in villages across the BoP market.

As far as the frugal thermometer is concerned, the learning from the comparative analysis can be applied to its case. A high quality product should be the priority and access to this product should

indeed be made at a relatively low cost. The team needs to figure out markets where the product can be used in high volumes to be profitable and this might prove to be their biggest challenge yet. The ability of a social enterprise to be profitable as well creates its own set of hurdles and establishing a cost structure that caters to these requirements may prove to be the biggest hurdle.

## **4.9 – Revenue Streams**

### **4.9.1 – Substantiated BoP literature**

Literature on the BoP market states that firms that wish to operate in the BoP market need to ensure that activities related to profit maximization are aligned with services towards societal welfare. This is also echoed in further literature that encourage the use of hybrid business models which essentially combine both social welfare and profit making activities and also a need to realize this process in the long term rather than a short term mentality for the firms involved in the BoP markets (Ansari et al., 2012; Chatterjee, 2013; C.K. Prahalad & Hart, 2002; Coimbatore K. Prahalad, 2006).

Firms A, B and C all echo these facts. The findings are in line with the literature where all firms exhibit a social element to their business. Firm A operates within the healthcare industry, where along with selling affordable healthcare products they strive to educate the local communities about potential diseases and other health concerns by organizing demonstrations and information sessions in pockets of villages that are limited drastically in terms of accessibility. Firms B and C, along with offering clean cooking and energy solutions operate on a social mission to reduce the total number of fatalities that are reported every year due to cooking on open stoves. Apart from providing health benefits to the local communities; the benefits extend to environmental benefits as well by reducing greenhouse gas emissions. These firms also play a role in empowering the local communities by offering the youth employment opportunities and educating the local communities about various aspects of clean cooking.

### **4.9.2 – Unsubstantiated BoP literature**

There were no unproven BoP literatures in the empirical study of ‘Revenue Streams’.

### **4.9.3 – Reflection on ‘Revenue Streams’ & towards the Frugal Thermometer**

While the literature establishes the revenue streams as an important element of success for firms operating in the BoP; it is also interesting to note that firms who do not follow a social oriented revenue model seems to face considerably more issues when it comes to dealing with institutional elements affecting their streams of revenue. Firms A, B and C all stressed on the importance of starting their ventures as social enterprises first and a profit making ventures second to ensure that their revenue streams are established. This is reflected in the literature; firms also encourage the involvement of the local communities in the revenue stream to help societies in overcoming chronic

problems such as access to good services and poverty. The advantage of using this approach of societal welfare along with traditional revenue generation is that over the long term, societal welfare and its eventual outcome, i.e. poverty alleviation, will improve and increase the purchasing power of the people in the BoP. This increase in purchasing power can be tapped as revenue but can be done only in the long term.

As mentioned during the building block of ‘cost structures’, the frugal thermometer team needs to ensure that the aim of their venture initially should only focus on establishing itself as a social enterprise. This will create a sense of inclusiveness and build mutual trust amongst the customers as well as institutional elements such as local governments which may be exploited later on when the appeal for the product is good and can be scalable across different across regions and achieves certain volume throughputs that enable the firm to make a profit.

## **4.10 – Sustainability**

### **4.10.1 – Substantiated BoP literature**

Sustainability is considered to be an important aspect of operating in the BoP market; literature points to the fact that firms need a societal element in their business models wherein their sustainable operations creates opportunities, jobs, spillover of knowledge and empowerment of local communities in the BoP region (Esposito et al., 2012; George et al., 2012, 2015; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; C.K. Prahalad & Hart, 2002; Yunus et al., 2010). This is reflected in the empirical findings where sustainability was an important aspect to how firms run their daily business. Societal and also environmental sustainability is considered an important aspect by these firms. It is also learned that operating in a non-sustainable manner, in terms of societal and environmental, risks inviting the wrath of the local population and especially the local institutional elements as aligned with literature (London et al., 2014). Some regions of the sub-Saharan African BoP market also deem it necessary by law to ensure that firms operating in these regions are sustainable.

### **4.10.2 – Unsubstantiated BoP literature**

Literature states that the benefits of firms’ sustainable operations in the BoP are negligible and some even state that firms in the BoP do more harm than good. While the operations of the firms in the empirical study was shown in a positive light; evidence regarding ground level improvement of societal situations and problems such as poverty eradication, job creation and other opportunities for the people in the BoP are deemed to be questionable still. Hence, it is neither confirmed nor denied that the spillover effects of firms operating in the BoP is positive in nature.

#### 4.10.3 – Reflection on ‘Sustainability’ & towards the Frugal Thermometer

Sustainable operations are important for firms in the BoP; they enable a firm to create a relationship with local communities due to the positive spillover effects of the firms’ activities. Firms argue that the social impact of their products is immense and this enables them to grow at a steady rate in an otherwise highly competitive environment. A sustainable inclusive approach enables creation of not only economic opportunities for the local communities but also enables repayment of invested capital, enables economic and social wealth creation and enables the inclusion of broad stakeholders.

Also, sustainability in terms of utilization of available resources is also encouraged due to the fact that invariably within the BoP, infrastructure and basic resources is lacking. This was reflected in the interviews where firms stated that they could not afford to spend money where it was not deemed necessary, they usually had a system or check in place to avoid unnecessary spending on basic utilities that are taken for granted in the ToP such as electricity, fuel, and other tangible and intangible resources. The same scenario is applicable to the case of the ‘frugal thermometer’. The team needs to ensure that any firm that takes the product to the BoP markets take sustainability as a main priority along with other business related elements as both literature and empirical findings prove that without the element of sustainability in the business model; most enterprises are heading towards a slow demise.

### 4.11 – Market Environment

#### 4.11.1 – Substantiated BoP literature

The literature on market environment at the BoP points to a scenario which is vastly different when compared to the ToP; in the BoP, the local communities, partners and other external stakeholders play a much more of a major role than at the ToP and this is echoed by all interviewees. (Hart, 2010; London et al., 2014; Rivera-Santos & Rufin, 2010)

Finding from the empirical study also revealed the issues with institutions or the lack thereof in the BoP regions. Institutions create a lot of hurdles for firms in the BoP, especially to those firms who are not local. Corruption is also a major problem in the BoP region and hence, laws and regulations change in strength as and when the situation suits the local authorities. This creates a need for firms to pursue access to any informal or formal routes needed to access institutions. Corruption is also a major deterrent when partnerships are concerned as contracts and other legally binding documents are affected by it (Chesbrough & Rosenbloom, 2002; London et al., 2014; Reficco & Marquez, 2012; Rivera-Santos & Rufin, 2010). Firms stated feeling pressurized and duped when some of the contractual agreements were not held up by local partners and the loss was written off due to the weak institutional elements. Firms also stated that not all regions in the BoP faced the issues with the



institutions. Countries like South Africa, where the institutions are well established and less corrupt enable a smoother process of integrating the firms into the market environment.

Also stated in the literature was the fact that the sub-Saharan African BoP region and other BoP regions across the world are a market with a large population and market potential, a fact which is proven by both statistical and empirical findings. (C.K. Prahalad & Hart, 2002)

The literature also dwells into the fact that the firms involved in the BoP need to undertake market building activities (Rivera-Santos & Rufin, 2010). The empirical findings clearly point out the various market building activities that a firm must undertake to establish itself; cases like infrastructure, distribution channels, creating human capital are all important activities that the interviewees mentioned over the course of the study.

#### 4.11.2 – Unsubstantiated BoP literature

With respect to literature that states that the BoP markets and the profitability in them are questionable is relatively unproven. While literature states that the profitability of the BoP markets does not warrant the risks needed to be taken by companies, it does not translate into a poor market (Karnani, 2007; London et al., 2014; Rivera-Santos & Rufin, 2010). Findings from the empirical study indicate that while the risks of operating in the BoP context remain high; the rewards remain high too. This encourages companies to discount literature on the BoP market and tackle the issues head on.

#### 4.11.3 – Reflection on 'Market Environment' & towards the Frugal Thermometer

While the empirical study reveals that the market environment in the BoP is a vastly different proposition to that in the ToP; the risks and issues involved within the BoP are relatively moderate factors when considering the massive potential market. Firms do face problems with corruption and weak institutional elements at the BoP but having the right people working for you such as local partners invariably helps the firms navigate around the issues. The impact of the local communities in the market environment is also much higher than at the ToP; they truly are a measure of the success or failure of the firm at the sub-Saharan African BoP region.

The market environment within the sub-Saharan BoP will play a major role in the development of the business model that the team will eventually operate in the market. As with sustainability, this element is all encompassing and plays a factor in each decision. One key finding from the empirical study states that the frugal thermometer team should focus on gathering partners that are experienced in the healthcare industry, say private hospitals and clinics, which are established in the local market to aid the firm in tackling issues such as weak institutions, corruption, dealing with external stakeholders amongst others.

## 4.12 – External Stakeholders

### 4.12.1 – Substantiated BoP literature

The findings from the empirical study with respect to the involvement of the external stakeholders within the business model of a firm operating in the BoP market seem to all point to the fact that external stakeholders have a much bigger role to play in the BoP than at the ToP markets. While external stakeholders are traditionally discounted from business strategy, the interviewees all echoed the need for them to be included in the formation of business strategy for the BoP as claimed by literature (Reficco & Marquez, 2012; Rivera-Santos & Rufin, 2010).

### 4.12.2 – Unsubstantiated BoP literature

Literature claims that external stakeholders cannot be controlled or managed by firms in the BoP (Harrison & St. John, 1996); this fact was discounted by the learning from the empirical study where firms argued that conscious efforts to bring in these external stakeholders into the business strategy enabled them to know what their requirements were and hence, enabling them to have a notion of control over their actions.

Also discounted from the literature was the fact that external stakeholder such as NGOs, Governments, competitors, suppliers, distributors are not considered to be essential cogs in the business model but rather external issues of partnerships (Chesbrough & Rosenbloom, 2002). While this claim seemed to create an element of uncertainty amongst the interviewees; they did entertain the positive effects of involving these external stakeholders as part of the business model of firms operating in the BoP, stating that certain surprises can be avoided if all external stakeholders are aware of the firms' actions.

### 4.12.3 – Reflection on 'External Stakeholders' & towards the Frugal Thermometer

The findings provided a better understanding for the element of external stakeholders to be included as a separate element the BoP oriented BMC. The findings from the study point out to the fact that the businesses operating would have been well served if all involved external stakeholders had a voice in the business model of the firm. This is due to the fact that it is recognized that external stakeholders, apart from those who are already partners of the firm, have a greater level of impact on the business in the BoP when compared to their level of influence in the ToP markets. It is also important to note here that from the traditional definition of external stakeholders, which comprise of suppliers, customers, governments and regulatory bodies, pressure and interest groups, local communities and competitions, most are already included in the business model elements in some form or the other as learned from the empirical findings. Hence, it can be established to an extent that external stakeholders are a factor in the BoP and can be represented as a separate element to be considered by firms or in conjunction

with other elements such as the market environment and elements of sustainability which facilitate more inclusiveness of stakeholders.

While there are both positive and negative directions that this inclusion may take, the overall feeling is the fact that the firm operating in the BoP will be better aware of its external stakeholders and their requirements and the same can be applied towards the case of the ‘frugal thermometer’.

#### 4.13 – Summary of Empirical Findings

The following table, table 9, is a summarized representation of all the findings reported from the empirical study aspect of this particular research.

The empirical study was conducted on three cases and the companies chosen were interviewed for their views and opinions on the individual building blocks of the BMC to ensure a deeper understanding of the BMC would differ in the BoP when compared to ToP operations. This table is thus a visual representation of sections 4.1 - 4.12.

Empirical Findings	BMC Building Blocks
<b>Key Partners</b>	
<b>Substantiated BoP literature</b>	<ul style="list-style-type: none"> <li>• Innovation needs to be made local and more all-encompassing. BoP market deficiencies should be offset by building networks that share assets, resources and enhance capabilities of all involved. BoP market potential cannot be reaped without partnerships. (Esposito et al., 2012; Hart, 2010; Karnani, 2007; Nidumolu et al., 2009; Coimbatore K. Prahalad, 2006; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012)</li> <li>• Sharing of accountability, individual obligations while ensuring no authoritative stakeholders; Long term commitment from all parties involved is required along with the need for schooling, enabling empowerment of the people and knowledge spill off. (Reficco &amp; Marquez, 2012)</li> <li>• A need for producer orientated tactic. (Karnani, 2007)</li> <li>• A need for considering the phases of business development and ensuring a nonlinear approach due to various changing elements with continuous feedback. (E. Simanis &amp; Hart, 2008a)</li> <li>• Civil partners can lead a helping hand in dealing with varying market conditions and also governmental organizations can help firms deal with the prevailing institutions. (Schuster &amp; Holtbrügge, 2012)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• A need for partnerships across sectors to enhance access to resources and capabilities. (Anderson &amp; Markides, 2002; Ramon Casadesus-Masanell &amp; Ricart, 2007; Rivera-Santos &amp; Rufin, 2010)</li> <li>• NGOs can help in developing the business model to better suit the local environment by helping in training and developing aspects of the business. (Chesbrough &amp; Rosenbloom, 2002)</li> </ul>
<b>Key Activities</b>	
<b>Substantiated BoP</b>	<ul style="list-style-type: none"> <li>• A need to revise and or adopt ToP strategies to suit the BoP market; firms</li> </ul>

<b>Literature</b>	<p>responsible in dealing with these activities. (Johnson et al., 2008; Osterwalder &amp; Pigneur, 2013)</p> <ul style="list-style-type: none"> <li>• Partnerships determine the value creating activities in BoP. (E. Simanis &amp; Hart, 2008b)</li> <li>• Need for focus on local conditions to deal with the unique conditions of the BoP. Key activities are echoed in all other blocks of business model. (Jagtap et al., 2013)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Key Resources</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• Resource availability in the BoP is a luxurious commodity in the BoP. Thus, sustainable solutions and sustainability is important in terms of resources. (Esposito et al., 2012; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008)</li> <li>• Lacking availability of good quality raw materials and production capabilities in the BoP (London et al., 2014)</li> <li>• A need for efficient use of resources; important to utilize local resources as much as possible and there exists a need to be self-sustainable. (Hart, 2010; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008b)</li> <li>• Local resource utilization while minimizing nonrenewable use of resources. (Krause, 2012)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Value Proposition</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• Need to deliver what the customers' needs are in order for them to perceive the product or service as value. Need for focus on shared value in terms of economic and societal. (Esposito et al., 2012; A. Hammond et al., 2007; Ramani et al., 2012)</li> <li>• Firm can capture value and revenue by engaging with the market segments. (Karnani, 2007; London et al., 2014; C.K. Prahalad &amp; Hart, 2002; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012)</li> <li>• Repackaging and cost cutting in terms of quality is not encouraged. (C.K. Prahalad &amp; Hart, 2002; Ramani et al., 2012)</li> <li>• Product or service of sufficiently high quality is needed to ensure trust of the customers. (C.K. Prahalad &amp; Hart, 2002)</li> <li>• Value can be created through a conscious effort to involve locals, customers, distributors, suppliers and other external stakeholders that may be considered as non-traditional. (Esposito et al., 2012; Goyal et al., 2014; Karnani, 2007; C.K. Prahalad &amp; Hart, 2002)</li> <li>• A need to build necessary skills and systems to better engage with the BoP community along with necessary innovations in value proposition and sustainability. (Goyal et al., 2014; London et al., 2014; Nidumolu et al., 2009; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008b)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• NGOs and partnerships with these organizations can help a firm to enhance its value proposition. (N. M. Dahan et al., 2010; Goyal et al., 2014; London et al., 2014)</li> </ul>
<b>Customer Relationships</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• Need for an approach that is detailed and effective with respect to the BoP customers. (C.K. Prahalad &amp; Hart, 2002)</li> <li>• Need for focus towards building trust. Embracing inclusive methods and attitude. Need for a level of transparency. (Esposito et al., 2012; Reficco &amp;</li> </ul>

	<p><a href="#">Marquez, 2012</a>)</p> <ul style="list-style-type: none"> <li>• There is a level of unavailability of information about the customers; they have irregular incomes, lack savings mentality and most importantly lack basic infrastructure such as transportation, institutions, and education amongst others. (<a href="#">Esposito et al., 2012</a>)</li> <li>• Engage the local community in educative environment; creating employment and income opportunities. (<a href="#">Esposito et al., 2012</a>)</li> <li>• Awareness, accessibility, affordability and availability need to be sustained. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Channels</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• A clear lack of access to and for the customers. Regarded as a major hurdle for firms wishing to enter the BoP market. Lack of basic infrastructure in transportation and communication. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Nakata &amp; Weidner, 2012</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Location of customers is relatively un-documented with their dispersed populations across long spans and varying topography of these locations all create further hurdles for firms. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Nakata &amp; Weidner, 2012</a>)</li> <li>• Need for initiation and development of new channels by the firm. (<a href="#">Karamchandani et al., 2011</a>; <a href="#">Schuster, 2014</a>)</li> <li>• Utilization of atomized distribution channels. (<a href="#">Nakata &amp; Weidner, 2012</a>)</li> <li>• Need for firms to utilize both formal and informal distribution channels. (<a href="#">Banga &amp; Mahajan, 2005</a>; <a href="#">Karamchandani et al., 2011</a>; <a href="#">Schuster &amp; Holtbrügge, 2012</a>)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Customer Segments</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• A mistake to take the BoP market as one big entity. (<a href="#">Karnani, 2007</a>)</li> <li>• Firms should segment their customers on the basis of behavior and the characteristics of the customer needs. (<a href="#">Egan &amp; Ovanessoff, 2011</a>)</li> <li>• Need for segmentation to be done in a manner that enables transcending across different regions, social structures, languages and cultures. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>; <a href="#">Sehgal et al., 2010</a>)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Cost Structure</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• Need for firms to review and restructure traditional ToP approaches of high profit margins. Counteract low margins by ensuring high output volumes. (<a href="#">Hart, 2010</a>)</li> <li>• Cost structure should ensure scalability transcending across different regions, social structures, languages and cultures. (<a href="#">Egan &amp; Ovanessoff, 2011</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Relatively high quality to be ensured at a low price point; this can be achieved using innovation that is frugal or disruptive in nature. (<a href="#">A. Hammond &amp; Prahalad, 2002</a>; <a href="#">Hart, 2010</a>; <a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> <li>• Consideration towards the irregularity of incomes. (<a href="#">C.K. Prahalad &amp; Hart, 2002</a>)</li> </ul>

<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>No evidence of the ‘Radical’ price models being used but rather traditional price models adapted to the BoP. (C.K. Prahalad &amp; Mashelkar, 2010)</li> </ul>
<b>Revenue Streams</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>Need to align profit maximization with services towards relief of poverty and improved societal empowerment. (Ansari et al., 2012; Chatterjee, 2013; Coimbatore K. Prahalad, 2006)</li> <li>Need for a change in mentality focused towards the long term. (C.K. Prahalad &amp; Hart, 2002)</li> <li>Hybrid models of business can be utilized in the BoP (Ansari et al., 2012; Chatterjee, 2013; C.K. Prahalad &amp; Hart, 2002).</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>None</li> </ul>
<b>Sustainability</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>Need for societal element in the business models of firms operating in the BoP (Esposito et al., 2012; George et al., 2012, 2015; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; Osterwalder &amp; Pigneur, 2013; C.K. Prahalad &amp; Hart, 2002; Yunus et al., 2010)</li> <li>Operating in a non-sustainable manner induces a risk of losing support of partners and institutions in the BoP (London et al., 2014)</li> <li>Benefits of firms operating in the BoP are deemed to be negligible (Hart, 2010; Erick Simanis et al., 2008)</li> <li>Literature gap exists on how firms should proceed with respect to sustainability (London et al., 2014)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>Sustainable operations by firms creates opportunities, jobs, knowledge spillovers and empowerment of local communities (Esposito et al., 2012; Hart, 2010; C.K. Prahalad &amp; Hart, 2002).</li> </ul>
<b>Market Environment</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>Major differences exist between ToP and BoP with respect to the market environment (C.K. Prahalad &amp; Hart, 2002).</li> <li>Large population and market potential. (C.K. Prahalad &amp; Hart, 2002)</li> <li>Institutions or the lack of it creates major hurdles and thus, propagates the need to use whatever formal and informal institutions existing in the BoP. (Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010)</li> <li>Corruption in the BoP is a major deterrent for firms. This affects the contractual and other agreements firms need to make in the BoP. (Chesbrough &amp; Rosenbloom, 2002; London et al., 2014)</li> <li>Local firms and communities have a far greater impact in the business at the BoP when compared to the ToP. (Hart, 2010; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> <li>Market building activities need to be taken on by firms in the BoP. (Rivera-Santos &amp; Rufin, 2010)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>Profitability from the BoP does not warrant the risks involved for the firms. (Karnani, 2007; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> <li>Profitability of the BoP as a whole is questionable. (Karnani, 2007, 2009; London et al., 2014; Rivera-Santos &amp; Rufin, 2010)</li> </ul>
<b>External Stakeholders</b>	
<b>Substantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>BMC tends to not involve external stakeholders in the business strategy and ultimately in the success of the firm. (Solaimani &amp; Bouwman, 2012)</li> </ul>

	<ul style="list-style-type: none"> <li>• Need for external stakeholders to be directly involved in business strategy. (<a href="#">Reficco &amp; Marquez, 2012</a>; <a href="#">Rivera-Santos &amp; Rufin, 2010</a>)</li> </ul>
<b>Unsubstantiated BoP Literature</b>	<ul style="list-style-type: none"> <li>• External stakeholders cannot be controlled or managed by the firms. (<a href="#">Harrison &amp; St. John, 1996</a>)</li> <li>• NGOs, governments and other institutions are not considered as essential cogs in the business model but rather as an external issue as part of partnerships. (<a href="#">Chesbrough &amp; Rosenbloom, 2002</a>)</li> </ul>

Table 9: Summary of Empirical Findings.

## Chapter 5 – The Sub-Saharan African Business Model Canvas

From the literature study and the empirical findings, and their comparative analysis towards this research has yielded in some necessary changes to be made towards the BMC to tailor BoP conditions. The building blocks of the BMC have been analyzed thoroughly to better fit the BoP conditions and hence, changes deemed necessary are revealed as follows. The findings from the comparative analysis are divided into 3 sections. While Section 1 deals with building blocks that can be combined or disregarded with respect to the BMC in the BoP context. Section 2 and 3 deal with building blocks that can be considered to be stable across the ToP and BoP markets and new building blocks that will aid in better understanding of business model development in the BoP context respectively.

### 5.1 – Combined BMC Building Blocks

As this research is tailored towards understanding the business model development in the BoP context in the sub-Saharan African region, Osterwalder and Pigneur's BMC building blocks need to be adapted to the same. The blocks that are combined does not mean they are representative of one single element but rather that the respective elements are differentiated from the ToP elements to show more in detail as to how the local conditions affects the building blocks.

#### 5.1.1 – Cost Structure and Revenue Streams

Within the sub-Saharan African BoP market; the importance of the cost structure and revenue streams has been highlighted from both the literature study and the empirical findings. The literature on these two elements states that firms need to restructure their ways of doing business to better serve the BoP market.

Literature towards the cost structure element states that in the BoP context firms must ensure high volumes and low margins, use of radical price models, ensure scalability; quality cannot be compromised to lower price and consideration toward low income of customers amongst others are reflected in the empirical findings as well (Egan & Ovanessoff, 2011; A. L. Hammond et al., 2007; Hart, 2010; C.K. Prahalad & Hart, 2002; C.K. Prahalad & Mashelkar, 2010). While literature towards the revenue streams element states that firms must ensure profit maximization activities in conjunction with societal empowerment, focus their mentalities towards longer terms and ensure the use of hybrid business models are confirmed in the empirical findings (Ansari et al., 2012; Chatterjee, 2013; C.K. Prahalad & Hart, 2002; Coimbatore K. Prahalad, 2006).

The need to offer products and services that are high value at a relatively low price point to ensure that the customers are interested in the offering itself hence, activities that ensure this cost structure by



taking into account all other factors such as fixed and variable costs are vital. It is also advised to offer these products and services using models such as micro-financing, leasing, amongst others. While cost structure of the firm attracts the customers to the firms' product or service, the revenue streams aspect ensures that after the initial introduction the revenues from the services offered ensure profitability and sustainability over the long term. This is advised in the learning's where society oriented activities such as education, job opportunities and poverty alleviation of local population. By doing so the firm initially establishes itself in the local BoP market thereby increasing mutual trust and furthering long term commitments between the firm and the BoP regions. This not only maintains the revenue stream generated from the products and services but also increases the prospects of increasing revenue due to scalability and sustainable activities. Also, by using sustainable operations in terms of societal welfare, the consequence is that over the long term, the purchasing power of the people in the BoP will improve which can directly translate into revenue. While this scenario is ideal; it is only fruitful if the approach is ensured as a long term one.

Hence, this provides an opportunity to integrate both the elements into one building block termed 'Commercial Activities' for the BMC aimed at the BoP context. The commercial activities in this context represent a building block that enables a proper reflection of activities that ensure the required cost structure for the firm to establish itself and revenue streams to expand in the future.

## 5.2 – Stable BMC Building Blocks

From the comparative analysis between the literature study and the empirical findings, the following building blocks are deemed to be stable. Here, being stable is an indication that the building block in question while adapting to the BoP context does not exhibit changes in terms of importance and necessity as a business model building block and hence, are kept the same across the ToP-BMC and the BMC for the BoP context.

### 5.2.1 – Key Partners

From the Literature it was determined that the partnership element of the business model was an important piece of the puzzle in terms of the final success of a business in the BoP. Literature states that partnerships are an essential cog in building networks where resources and assets can enhance capabilities of all stakeholders involved. Partnerships formed where the accountability is shared amongst all parties while having individual obligations over a long term is advised amongst other findings (Esposito et al., 2012; Hart, 2010; Karnani, 2007; Nidumolu et al., 2009; Coimbatore K. Prahalad, 2006; Reficco & Marquez, 2012; Rivera-Santos & Rufin, 2010; Schuster & Holtbrügge, 2012). While the empirical findings do not always agree with the literature, it was indeed established that in a B2C business environment; partnerships and the type of partners a firm has are absolutely essential elements to be even remotely successful. A firm without local contacts and connections has a

relatively low chance of success in the fragmented BoP market and hence, it was determined that the 'key partnerships' building block will be considered as an individual element of the BMC.

### 5.2.2 – Key Resources

Both the literature study findings and the empirical findings point to a similar scenario with regards to the resources element of the BMC. Both findings agree that availability of resources in the BoP is relatively constrained when compared to the ToP. While it is argued that financial resources can be made available by the firm provided it is backed by wealthy investors, resources such as expendable cash, fuel, human capital are all relatively modest (Esposito et al., 2012; Hart, 2010; London et al., 2014; C.K. Prahalad & Hart, 2002; E. Simanis & Hart, 2008). Hence, both findings point to the fact that a firm needs to be sustainable and ensure a sustainable use of its resources. This element is left as is due to its importance and its link with the building block of sustainability in the BMC within the BoP context.

### 5.2.3 – Key Activities

From the literature study and empirical study; one can conclude that the key activities a firm needs to perform remain somewhat similar be it in the ToP market or the BoP market. Of course, activities that are performed by the business are oriented to the BoP context and are represented in all other elements of the business model canvas as established by literature and empirical findings. Key activities, i.e. the activities a firm performs to do business and realize its objectives, is thus established as a stable building block of the business model canvas.

### 5.2.4 – Value Proposition

With respect to the element of 'value proposition' literature on BoP and the findings from the empirical study support each other. While it was noticed that not all elements aligned with one another it was generally determined that there existed an immediate need to deliver what the customers' needs are and hence, there was a consensus in terms of delivering a proposition that aligns with the customers' need. It was also established that firms can capture value by engaging with the market segments (Egan & Ovanessoff, 2011; Karnani, 2007; London et al., 2014; Osterwalder & Pigneur, 2004; C.K. Prahalad & Hart, 2002; Ramani et al., 2012; Reficco & Marquez, 2012; Rivera-Santos & Rufin, 2010; Schuster & Holtbrügge, 2012) In terms of the sub-Saharan African BoP, value is provided by firms offering relatively high quality products that meet their needs explicitly and showing to the customers that the product has a good value proposition by undertaking demonstrations and educative activities for the local communities to create awareness (Esposito et al., 2012; Goyal et al., 2014; London et al., 2014; Nidumolu et al., 2009; C.K. Prahalad & Hart, 2002; E. Simanis & Hart, 2008a). The viability of the product or service in terms of economy is also a factor

that is essential and hence, it is determined to be a major element of the business model and is left as in on the BMC due to the consideration of distinctive characteristics that arise in the BoP market.

### 5.2.5 – Customer Relationships

Customer relationships were discussed as an interesting element with respect to the BoP context. While it was confirmed from the findings that businesses that employ a B2B or a B2G approach may not necessarily warrant an element detailing the need for customer relationships but due to the fact that this research focuses on the B2C aspect of business, the customer relationship's importance was echoed both in the literature study and the empirical findings. The findings state that there exists a need for an approach that is detailed and effective; where the focus is on building mutual trust and engaging the customers with the value proposition being offered (Esposito et al., 2012; C.K. Prahalad & Hart, 2002; Reficco & Marquez, 2012). Within the sub-Saharan African BoP, this translated into more involvement of the customers in the development cycle of the products and services offered by firms, an inclusive approach of the local community by education, creation of jobs and other opportunities. As, in the context of the B2C businesses this element is considered an important aspect of the BoP-BMC, the building block of customer relationship is left as is.

### 5.2.6 – Channels

Again, the channels building block was an element that generated plenty of discussion during the empirical study. It is again determined that within a B2C business; the channels building block is a priority for firms in the BoP. Literature points out to the fact that in the BoP, there is a severe lack of access to the target customers and this is considered a major hurdle to the firm (Banga & Mahajan, 2005; Karamchandani et al., 2011; Nakata & Weidner, 2012; C.K. Prahalad & Hart, 2002; Schuster & Holtbrügge, 2012). Within the sub-Saharan African BoP, this was translated into highly dispersed pockets of people that were not served by proper infrastructure leading to a situation where the firm needs to take initiation and help develop the proper channels needs to access its customers as aligned with literature. There were instances where the channels deployed created more or less business for the firms and due to its importance in getting the value proposition offered to the end customer; it is considered an essential building block of the BoP-BMC.

### 5.2.7 – Customer Segments

As with customer relationships, the process of figuring out the target customers of a firm in the BoP context is an essential element. The literature findings stated that there was need to segment the customers on the basis of need and behavior characteristics in a manner that does not hamper the scalability of the business across different regions in the BoP (Egan & Ovanessoff, 2011; C.K. Prahalad & Hart, 2002; Sehgal et al., 2010). This sentiment was echoed in the empirical findings where it was determined that the value proposition offered by the firm is what determined the target

customers at the BoP. If the product or service does not meet the actual ground need, it is not successful within that particular segment and hence, it was considered an essential element in the context of the BMC for the sub-Saharan African BoP.

### 5.3 – New BMC Building Blocks

From the literature and empirical findings, the following building blocks were determined to be important in the context of the business model canvas for the sub-Saharan African BoP. The characteristics of the ‘Base of the Pyramid’ are very different to the ‘Top of the Pyramid’ as confirmed by both literature and empirical findings. Now, the elements mentioned below are a compilation of all information gained during the course of this research and will be taken into account towards the final framework.

#### 5.3.1 – Sustainability

The literature that emanated towards the ToP market stated that the firms involved in the business operations should measure their effectiveness by measuring their social, financial, ethical and environmental performance. While empirical study confirmed the same, it also underlined the importance of the same in the BoP context. In fact, within the BoP, the elements of social, ethical and environmental performance were deemed categorically as a necessity (Esposito et al., 2012; George et al., 2012; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; Osterwalder & Pigneur, 2013; C.K. Prahalad & Hart, 2002; Yunus et al., 2010).

While in the BoP, sustainable operations and the element of sustainability is considered a very important factor and in some cases it is even required as per the legislation. Hence, it can be concluded that the building block of sustainability deals with both definitions, i.e. that firms operating in the BoP should be sustainable with the utilization of resources available to them and also in terms of business operations be sustainable in terms of greater inclusivity of the local communities and population at the BoP to ensure that there is a positive spillover effect as a consequence of them operating in these regions and this will enable not only a greater access to the market in terms of revenue and profits, and also ensure a competitive advantage for these firms but also help alleviate the fundamental problems of poverty and lack of access to products and services taken for granted at the ToP. These socially inclusive business operations have been included within the sustainability block and due to its importance and the evidence that sustainability plays a major factor in each building block of the BMC; it is included as a new element towards the sub-Saharan African BMC.

#### 5.3.2 – Market Environment

While both the literature and empirical findings revealed the stark differences in the market environment between the ToP and the BoP, it was also established that due to the need for

involvement of the local communities and stakeholders within the business model, the market environment and the unique characteristics of the BoP market becomes a major factor in the business model of a firm (Hart, 2010; C.K. Prahalad & Hart, 2002; Rivera-Santos & Rufin, 2010).

The importance and the need for a separate building block for market environment ultimately stems from the fact that the market conditions at the BoP are extremely unpredictable. The influence of stakeholders is a lot more than when compared to ToP markets. The element of corruption also plays a major role in affecting the business activities of a firm. This combined with relatively weak institutional elements that create more harm than good force firms involved in the BoP market to gain knowledge, make themselves acutely aware, and be prepared to tackle the consequences of dealing in the market environment of the BoP and hence, this element get its own block.

### 5.3.3 – External Stakeholders

Traditionally and in the case of Osterwalder's Business Model Canvas; external stakeholders were not given their due importance in affecting the business strategy of the firm. While it may be established that their influence is relatively low in the ToP markets the same cannot be said of the BoP market where every party remotely related to the firm or market of interest in the BoP can affect the business of the firm. By integrating them into the business model, it enables the firm to be aware of individual requirements and hence, maybe enable better decision making and further collaborations with these external stakeholders.

While it was established in the empirical findings that some of these external stakeholders are integrated into other building blocks, not all are accounted for in terms of business model development. Thus, due to the very competitive nature of the BoP markets where the influence of external stakeholder can be both positive or negative, it was established that a separate building block will enable a firm to assess their impact and hence, according either integrate them into the business model or ignore them as and when the firm sees fit. This dual nature is what helps in establishing this element as a separate and new building block to operate in the BoP markets.

### 5.3.4 – Awareness

From the empirical findings and the knowledge gained by interacting with industry experts who have operated across the sub-Saharan African BoP region, the need for an element that discusses purely creating awareness was revealed. The element of awareness is a particularly interesting one; when a firm decides to do business in the BoP it invariably involves a social element or context as confirmed by literature and empirical evidence but what the literature does not talk about much is how these firms need to create awareness of the social issues it hopes to tackle. The Top of the Pyramid or the developed nations' population is relatively unaware of the problems that ravage the BoP regions and firms who need to generate resources need to create awareness amongst these people to help bring

about the change the BoP regions need in terms of poverty alleviation and creating a access to products and services taken for granted in the ToP. The problems a firm tackles can be multifold be it poverty eradication, health issues, environmental issues amongst many others. As Firms B and C pointed out over the course of the empirical study, by creating awareness amongst the people in Netherlands, done by showcasing their product at various technical festivals, symposiums and corporate gatherings, they were able to bring forth the societal aspect of their business into the spotlight and generated resources such as contributions, Corporate Social Responsibility investments which enabled them to translate these gains into a more adept cost and revenue structure and hence, improving the value proposition for their customers in the BoP market. Hence, awareness element is established as a separate element in BoP-BMC.

### 5.3.5 – Time

With respect to the element of Time, the way business is done in the BoP and the evidence gathered during the empirical study point to the fact that invariably time taken is longer at the BoP. This has many reasons associated with it. Literature points to this when it states that local relationships with partners and the community need to be established on mutual trust, this trust takes time to build. Also, interviewees established that the business tasks and operations that take place involve a significantly large portion of strategizing and planning to accommodate the unique characteristics and unpredictability of the BoP markets. As these activities establish a firms' competitive advantage over its rivals, it cannot be ignored and hence, time is an essential building block for the BoP-BMC.

## 5.4 –The Sub-Saharan African BoP Business Model Canvas

The following illustration showcases the modified BMC that represents the ideal business model development tool for the Base of the Pyramid operations. The illustration is kept similar to Osterwalder & Pigneur's (2013) original BMC to ensure that the advantages, such as easy visualization, encouragement of discussion amongst others are carried forward to the modified BMC as well. The colour scheme represents the elements according to the sections 5.1, 5.2 and 5.3, i.e. Green represents those elements that have been combined to ensure equal importance and their intrinsic nature. Red represents those building blocks that are judged to be stable across the ToP and the BoP context and finally, Blue represents those elements that are added to the traditional BMC developed by Osterwalder and Pigneur (2013) to make it more suitable for the BoP context.

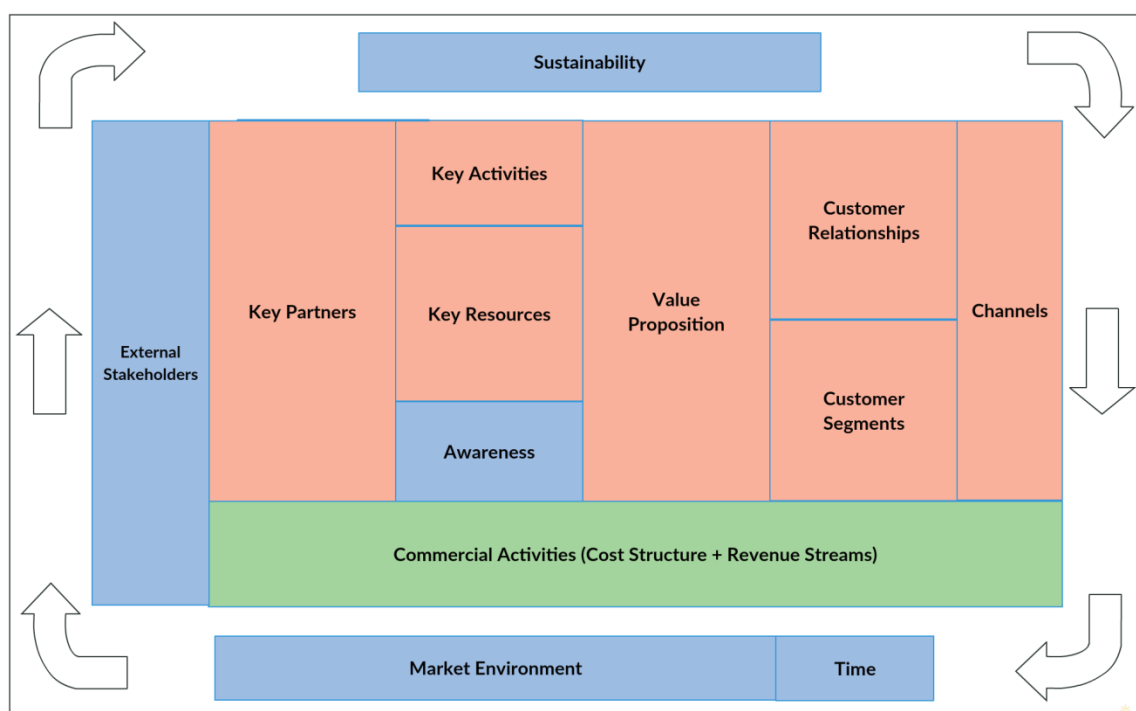


Figure 10: Sub-Saharan African BoP Business Model Canvas; Source: Author.

The reasoning behind the positioning of individual building blocks and the arrows are discussed below.

### *Sustainability*

The position of the building block 'Sustainability' is kept at the top separate to the main block due to its overarching nature. Sustainability and its representation are due to its two-fold nature. One, it is important for firms to be sustainable in terms of all its activities. There is a need to ensure that spending is limited on unnecessary activities that do not create significant value to the firm or to the customers themselves. Resources such as fuel and electricity are examples of such areas where there seemed to be a conscious effort to reduce dependence and ensure that a sustainable utilization of such

resources is ensured. Two, within the BoP there is a need for firms to operate sustainably. This is due to the fact that firms which engage the local communities in their operations seem to benefit from the spillover effect where, activities such as education, creating job opportunities enable the local communities to learn and benefit in terms of poverty reduction and overall improvement of the state of living in the BoP regions. This block not only enables creation of economic opportunities for the local communities but also enables repayment of invested capital, enables economic and social wealth creation and enables the inclusion of broad stakeholders. These arguments were raised not only in literature (George et al., 2012, 2015) but were supported in the empirical findings. Hence, as sustainable operations and the element of sustainability plays a role within each building block, it is justified to be placed at the very top in the modified BMC for the BoP.

### *Awareness*

The position of the ‘Awareness’ building block can be justified by the following arguments. One, it affects the availability of partners and resources. By creating awareness for the product or services a firm offers, it enables a better understanding of the same within the BoP environment. Activities that promote the product or services are important to establish the initial interest within the target customers. Two, It affects the influence of institutions and other external stakeholders in the firms’ operations. A firm that has a high social impact may have lesser hurdles and resistances. Three, for firms that are based in the ToP, as this research aims to target, it is essential that awareness is created for the services offered by the firm in the ToP markets. The additional resources generated by creating awareness in the ToP markets can serve as a tool to improve the cost structure offered to its customers in the BoP and hence, improving the value proposition.

### *External stakeholders*

‘External stakeholders’, as discussed in sections 4.12 and 5.3.3, are to be involved in the business model of the firms operating the BoP. Its position in the BMC is due to its capacity to affect the key partners, resources and hence, the activities that the firm undertakes in the BoP thus eventually having an effect on the cost structure and revenue streams. This fallout effect can be avoided if the firm can establish external stakeholders to the firm and its activities right from the off and thereby reduce the cases where their influence, especially if negative, is not something that can affect their societal and commercial activities. While some of the external stakeholders will invariably be included in other elements such as key partners and channels, it is imperative that the ones that do not showcase an importance initially are accounted for in the business model to avoid any unwanted consequences. At the BoP, firms cannot afford to be lax in its activities as resources available may be low and the fact that the institutional environment is inherently weak in the BoP.



### *Market Environment*

The 'Market Environment' block is placed at the bottom of the modified BMC. While the 'bottom' placement does not signify any specific instruction, it is placed there to signify their overarching natures. Market environment here deals with the local communities, the institutions, and the BoP market itself. Due to problems such as corruption, inherently weak institutions analyzing the market environment while developing the business model is advised from both the empirical findings. It is also important to note here that the involvement of local communities that are part of the market environment is an essential success factor for firms operating in the B2C operations, as this research targets, within the BoP.

### *Time*

The 'Time' block is also placed at the bottom of the modified BMC and signifies the intrinsically longer durations taken for firms to establish and run their businesses in the BoP. This was evidenced in both the literature and empirical findings whereby most firms stated that due to external and internal factors, a business takes comparatively much longer to set up and run in the BoP than in the ToP markets.

The arrows in the canvas signify a need to be continuously evolving. The business model of a firm in the BoP needs to evolve with the changing conditions of the market and its requirements more efficiently and quickly so as to not affect its value proposition and commercial activities.

Finally, in conclusion all the new elements in conjunction with the stable elements carried forward from the original business model canvas developed for the ToP markets by Osterwalder and Pigneur (2013) contribute in effectively creating a new business model development framework that enables academicians and entrepreneurs alike to tackle the unique conditions and requirements of the BoP markets and develop business models that better cater to the socio-economic growth of the regions in the BoP.

## 5.5 – Suggested instructions towards the Frugal Thermometer Case using the adapted Business Model Canvas for the sub-Saharan African BoP market.

The following table showcases the specific findings towards the case of the frugal thermometer and what the instructions are, a firm should follow while developing its business model. It serves as a guide or tool indicating how to conduct key activities successfully by highlighting what managers or personnel have to bear in mind with respect to the sub-Saharan African BoP market. The instruction mentioned are specific to firms that wish to operate in the B2C business aspect and hence, uses the frugal thermometer case as a way of showcasing how the BMC can be utilized. It is important to note here that the suggested activities are a result of the findings from the literature, the empirical study and the inferences of the author of this research project. These findings and suggestions can be utilized by any firm that offers its products or services within the B2C mode of operations at the sub-Saharan African BoP.

<b>BMC Building Block</b>	<b>Suggested activities</b>
<b>Key Partners</b>	<ul style="list-style-type: none"> <li>• BoP market potential cannot be reaped without partnerships.</li> <li>• Utilize as much as possible the existing and established stakeholders.</li> <li>• To get the product to the last mile, partner with private hospitals as capabilities and capacities available to them might be the most positive in terms of product distribution.</li> <li>• Ensure deficiencies and gaps in the BoP market are filled by using integrated networks where resources, assets and capabilities are shared.</li> <li>• Contracts and other legally binding documents cannot be taken for granted (in terms of acceptance) as in the Netherlands.</li> <li>• Make sure that accountability and obligations are shared and that there exists no one overpowering stakeholder.</li> <li>• Ensure that there exists mutual trust, commitment and interest between yourself and your partners.</li> <li>• Identify partners during early phases of market introduction planning.</li> <li>• Ensure partners have a good financial standing.</li> <li>• Partnerships should evolve in a nonlinear manner to ensure that the ever changing environment of the BoP is taken into account.</li> <li>• Deal with stakeholders like NGO's only if there is an inherent advantage.</li> <li>• Try not to pursue partnerships with NGOs and foundations as they do not work as a business dependent on making revenue and hence, can slow you down.</li> </ul> <p>(Esposito et al., 2012; Hart, 2010; Karnani, 2007; Nidumolu et al., 2009; Coimbatore K. Prahalad, 2006; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012)</p>
<b>Key Activities</b>	<ul style="list-style-type: none"> <li>• Develop strategies and activities taking into consideration the specific characteristics of the BoP market.</li> <li>• Partners and other stakeholders also influence the activities of the firm.</li> <li>• Work efficiently and faster in line with the market requirements of the BoP.</li> </ul> <p>(Jagtap et al., 2013; Johnson et al., 2008; Osterwalder &amp; Pigneur, 2013; E. Simanis &amp; Hart, 2008a)</p>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>• Sustainable use of resources, investing in renewable sources of energy and using</li> </ul>

	<p>eco-friendly solutions are important in the BoP.</p> <ul style="list-style-type: none"> <li>• Focus on reducing waste, follow the 3R principle of reduce, reuse and recycle.</li> <li>• Try to utilize resources, both tangible and intangible, that are sourced locally.</li> </ul> <p>(Esposito et al., 2012; Hart, 2010; Krause, 2012; London et al., 2014; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008b)</p>
<b>Value Proposition</b>	<ul style="list-style-type: none"> <li>• Proposition offered must match the customers' perception of need.</li> <li>• Quality of the product or service should not be compromised.</li> <li>• Focus on creating shared value in terms of both economical and societal.</li> <li>• Consciously involve local population in product or service life cycle.</li> <li>• Showcase value and quality of product or service by education.</li> <li>• Ensure local capacity and being locally embedded.</li> <li>• Ensure external stakeholders are made aware of the value proposition.</li> <li>• As a healthcare product, there is a need to show a very high value proposition as healthcare is generally ignored in the BoP due to various factors such as customs, cultures and even beliefs.</li> <li>• Should strive to create complementary products and services to establish themselves in the BoP market.</li> <li>• Deal with NGOs and foundations only if there is a gain to be made in terms of value offered.</li> </ul> <p>(Esposito et al., 2012; Goyal et al., 2014; A. Hammond et al., 2007; Karnani, 2007; London et al., 2014; Nidumolu et al., 2009; C.K. Prahalad &amp; Hart, 2002; Ramani et al., 2012; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Schuster &amp; Holtbrügge, 2012; E. Simanis &amp; Hart, 2008a)</p>
<b>Customer Relationships</b>	<ul style="list-style-type: none"> <li>• Ensure a detailed and effective approach to planning and management of relationships with BoP customers.</li> <li>• Need to build a mutual trust between the firm and the customers</li> <li>• Activities such as education, demonstrations and inclusiveness aide in building relationships</li> <li>• Ensure customers are well aware of the product or service; ensure accessibility, affordability and availability.</li> <li>• Inclusiveness ensures local contribution to the product or service development and helps build trust.</li> </ul> <p>(Esposito et al., 2012; C.K. Prahalad &amp; Hart, 2002; Reficco &amp; Marquez, 2012)</p>
<b>Channels</b>	<ul style="list-style-type: none"> <li>• Vital to ensure partners have access to proper channels.</li> <li>• Ensure that target customers are determined well in advance of partner negotiations to ensure access to available channels.</li> <li>• Utilize all available formal and informal channels to minimize costs.</li> <li>• If partners do not have access, initiate and invest in the development of appropriate channels.</li> <li>• Atomized distribution channels may be an option when integrating available formal or informal channels. It can also create job opportunities for people in the market itself.</li> </ul> <p>(Banga &amp; Mahajan, 2005; Karamchandani et al., 2011; Nakata &amp; Weidner, 2012; C.K. Prahalad &amp; Hart, 2002; Schuster, 2014; Schuster &amp; Holtbrügge, 2012)</p>
<b>Customer Segments</b>	<ul style="list-style-type: none"> <li>• Do not treat the entire BoP market as a single market.</li> <li>• Characteristics of behavior and need are to be analyzed before segmentation.</li> <li>• Scalability of the product and services needs to be ensured to minimize fixed and variable costs.</li> <li>• Scalability should not compromise specificity.</li> </ul> <p>(Egan &amp; Ovanessoff, 2011; A. Hammond &amp; Prahalad, 2002; Hart, 2010; Karnani,</p>

	2007; C.K. Prahalad & Hart, 2002)
<b>Commercial Activities</b> (Cost structure + Revenue Streams)	<ul style="list-style-type: none"> <li>• Ensure that volumes are high to compensate for lower available margins.</li> <li>• Price models an area of innovation, try different price models and incentives.</li> <li>• Ensure use of test markets to fine tune your cost structures.</li> <li>• Scalability may be important to ensure success of high volume, low margin approach and to reduce cost price for customers.</li> <li>• Ensure low price approach initially to gain foothold in the large BoP market.</li> <li>• Ensure price models reflect the income of the customer segment.</li> <li>• Large opportunity to make profit in the long term.</li> <li>• Ensure thorough analysis of the market economy to adjust for regions with higher economic growth than others in the BoP; Nigeria will not have the same economic conditions as Uganda.</li> </ul> <p>(Egan &amp; Ovanessoff, 2011; A. Hammond &amp; Prahalad, 2002; Hart, 2010; C.K. Prahalad &amp; Hart, 2002)</p>
	<ul style="list-style-type: none"> <li>• Need to shift focus from short term to the long term.</li> <li>• Ensure profit pursuit is aligned with poverty alleviation and empowerment of the local communities.</li> <li>• Follow models that can combine revenue generation and societal welfare, i.e. inclusiveness.</li> <li>• Societal welfare aspect will contribute to greater revenue from product and services offered in the long term.</li> <li>• Hybrid business models that combine societal welfare and revenue generation can be utilized.</li> </ul> <p>(Ansari et al., 2012; Chatterjee, 2013; C.K. Prahalad &amp; Hart, 2002)</p>
<b>Sustainability</b>	<ul style="list-style-type: none"> <li>• Need to ensure a sustainable social and environmental growth trajectory</li> <li>• Comply with legislation of local regions in terms of sustainable operations</li> <li>• Try to ensure that any sustainable operation can create better value.</li> <li>• Pursue limitation of waste and utilization of renewable sources of energy/resources to reduce dependence on external resources.</li> <li>• Employ local workforce, approach students from local universities.</li> </ul> <p>(Esposito et al., 2012; Hart, 2010; London et al., 2014; Nidumolu et al., 2009; Osterwalder &amp; Pigneur, 2013; C.K. Prahalad &amp; Hart, 2002; E. Simanis &amp; Hart, 2008a; Yunus et al., 2010)</p>
<b>Market Environment</b>	<ul style="list-style-type: none"> <li>• Large Market potential exists but requires a long term approach.</li> <li>• Ensure market risk analysis is carried out before entrance.</li> <li>• There exist weak institutional elements in the BoP context.</li> <li>• Legal contracts are often not enough.</li> <li>• Political systems are very slow and often corrupt.</li> <li>• Ensure utilization of both formal and informal institutional elements and mechanism to avoid falling into traps and ensuring corruption is dealt with.</li> <li>• Ensure embeddness in the local market or find partners that are well established to counteract deficiencies.</li> <li>• Ensure market building activities.</li> <li>• Highly competitive market environment.</li> <li>• Ensure appropriate measures to safeguard product/service integrity to avoid loss of intellectual property or copies.</li> </ul> <p>(Chesbrough &amp; Rosenbloom, 2002; Hart, 2010; London et al., 2014; C.K. Prahalad &amp; Hart, 2002; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010)</p>
<b>External Stakeholders</b>	<ul style="list-style-type: none"> <li>• Analyze all stakeholders including internal and external.</li> <li>• Establish power matrices for external stakeholders.</li> </ul>

	<ul style="list-style-type: none"> <li>• Take into account the role of external stakeholders while developing business strategy.</li> <li>• Do not overlook or deny role of any stakeholder. Ensure capacity to counteract their (if) negative influence.</li> </ul> <p>(Chesbrough &amp; Rosenbloom, 2002; Harrison &amp; St. John, 1996; Reficco &amp; Marquez, 2012; Rivera-Santos &amp; Rufin, 2010; Solaimani &amp; Bouwman, 2012)</p>
<b>Awareness</b>	<ul style="list-style-type: none"> <li>• Create awareness of societal welfare along with business operations at the ToP.</li> <li>• Ensure participation in various technical and corporate gatherings to bring forth the positives of your business operations.</li> <li>• Within the BoP, awareness of the product or service can be done via demonstrations and education.</li> <li>• Ensure that local governments are aware of the benefits of your business operation.</li> </ul>
<b>Time</b>	<ul style="list-style-type: none"> <li>• Ensure a long term approach in gathering profits.</li> <li>• Strategy and Planning is an important aspect of entering the BoP market and ensure it is done accordingly to gain competitive advantage.</li> <li>• It is essential to be more aware of market and business conditions to ensure contingency plans if operations fail.</li> </ul>

Table 10: Suggested Instructions towards the Frugal Thermometer Case using the sub-Saharan African BoP Business Model Canvas. Source: Author.

## Chapter 6 – Conclusions

### 6.1 –The Sub-Saharan African BoP Business Model Canvas

The motivation for this particular master thesis stemmed from the lack of a framework highlighting business model development in the context of the BoP markets and in particular focus, the sub-Saharan African Base of the Pyramid regions. The need for information throwing light on the issues with business model development in the BoP context led to a literature study and an empirical analysis of cases that would help enlighten the issues in focus. The aim of this research project is to be a little more precise and help further the literature that is available. The literature fails to reach any sort of consensus with respect to the profitability of the Base of the Pyramid, who is best placed to tap into the market potential and how they can do so. After the literature study, it was evident that the available literature is deemed to be too general in nature, not specific enough and hence, this research project strives to fill this gap.

The main goal of this project was to unearth *how firms from the Netherlands adopt their business models in order to meet the requirements and opportunities within the sub-Saharan African BoP market*, has been reached. By using Osterwalder & Pigneur's (2013) Business Model Canvas (BMC), an extensive comparative analysis of literature from the ToP, BoP and BoP cases from the Netherlands on which a thorough empirical study was conducted. The results from the comparative analysis have yielded the formation of a new business model canvas framework that has worked upon the original building blocks by combining, keeping as in and finally, adding new innovative blocks to better tackle and suit the unique BoP characteristics. This eventually led to the formation of the sub-Saharan African Business Model Canvas.

The findings from the empirical study reveal how the firms operating in the BoP have adopted their business models to challenge the unique hurdles and characteristics of operating in the BoP segments. The firms interviewed all highlighted that tackling the drawbacks of the BoP market requires innovation in their business model approaching an inclusive network to operations done by focusing on local stakeholders and education while operating on the B2C basis. This approach revealed that literature on difficulties with respect to consumers in the BoP is in fact valid and the firms ensure that tackling these hurdles is important to market entry and sustained success in the highly competitive market environments at the BoP. The new sub-Saharan African Business Model Canvas framework developed should be utilized by firms interested in seeking market opportunities that are still unsaturated, while creating the much required economic diversification, job opportunities and social development that most countries in the sub-Saharan African BoP region desperately need. The cases interviewed as part of the empirical study do point out that within the BoP; the aspect of education is a major point of reflection. The knowledge gap that persists in these regions if reduced can create a

market environment that would be more inviting to larger firms, such as multinational corporations and the like, that would not only improve the business environment but also force major institutions in the BoP to change the way they operate.

The firms point out to the fact that, they face a tough period and a lengthy time for acclimatization in the BoP wherein they adjust to the unique conditions and characteristics of the BoP while serving their customers with products and services that offer high value specific to the needs at a relatively modest price model. It was learned that, it is advisable to have a longer and more productive period of planning and strategy development before marker entry in order to be better prepared to challenge the hurdles. Hurdles to entry and sustained success in the BoP are overcome with the help of locally well-established partners who serve as an integral part of the business model of firms operating in the BoP. Also, it was essential for firms with limited resources to raise awareness of the advantages of their products both in the ToP, to improve availability of limited resources via investments and at the BoP, where education and demonstration again proved to be an important tool in establishing the demand for its services. The cases have shown that by operating in the BoP, they have managed to successfully negotiate the hurdles and that the initiatives undertaken by them has managed to have a positive spillover effect in terms of societal and environmental development. Hence, showcasing that they are in fact more helpful than damaging as such literatures suggest. All these leanings from the empirical study help the researcher in answering the research question on *what is known about the way current businesses operate in the BoP*.

The research also shed light on the impact of external stakeholders, answering the research question *what is the impact of external stakeholders on the business model of a firm at the BoP*. While literature from the ToP suggested that the role of external stakeholders is limited, at the BoP however the importance of incorporating them into the business model of a firm is established. This view is further strengthened by the empirical study which revealed that involving the external stakeholders in business planning and strategy and hence, the business model, creates a scenario where the firm can be aware of their actions and the actions of the external stakeholders themselves and thus ensure that the firm is better prepared in the event of any uncertainty or unwanted actions rather than be caught off-guard, this view was echoed in the empirical findings where some cases highlighted that due to the inherently weak nature of the institutional elements in the BoP regions, the external stakeholders do have a higher level of impact when compared to the ToP and that by involving them in the business model they were able to create a scenario facilitating a smooth process of doing business by aligning each other's interests with that of the firm in the BoP. However, it is important to note here that consensus on this issue was not reached and hence, would require further research.

## 6.2 –The Frugal Thermometer

The frugal thermometer case was used as a tool to showcase how the framework developed as a consequence of this research would be applied. This case underlined the need for this research project to understand the BoP region and the market for a B2C operation, where literature and empirical findings were analyzed to create a new framework for the sub-Saharan African region. Section 5.5 deals with the suggested instructions towards the Frugal Thermometer case and showcases the specific instructions per building block of the new framework developed for business model development in the sub-Saharan African BoP.

The frugal thermometer itself is at a nascent stage in terms of market availability, if indeed a new company or start-up is created to take the product to the masses, it is suggested that the findings from this research project are utilized in order to understand certain nuances of operating in the BoP market. While sustainability and sustainable business operations are almost prerequisites to success in the BoP market, the frugal thermometer project can involve the local communities in the product development stages thereby following a more inclusive and sustainable approach, this as far as the researcher is aware, has been done and while business operations should be run in as frugal manner as possible to avoid unnecessary resource spending, for example utilization of non-renewable sources of energy. The findings also point out that it is important for any new product or service to have a high value proposition for its customers and before market entry it should be ensured that the frugal thermometer product meets the critical needs and demands of its customers. The empirical study revealed that most new products and services in the BoP tend to fail due to the fact that the value proposition does not meet what the customers in the BoP actually need. It is also revealed that it is advisable before entering the BoP market, the developed cost structure and revenue streams for the product are utilized in a ‘test’ market within the BoP itself which would not only help the project gain valuable information with respect to market conditions, stakeholders but also enable them to tweak or adjust their model to better suit prevalent conditions and ensure successful entry.

The findings further point out for the need for building awareness for the product and the business as a whole. It is suggested that the frugal thermometer project is established as a social enterprise to ensure that the awareness for the product and its target market is created both in the ToP and at the local market of the BoP. The benefits of doing so can be many, it may lead to further investments by concerned parties or companies that wish to contribute via their corporate social responsibility schemes at the ToP, leading to greater available resources. At the BoP, creating positive awareness may lead to being on the good side of local governments and other institutional elements which can only improve the market environment the team will operate in.

Keeping the above learning in mind and according to the authors inferences gained from the empirical and literature study, the frugal thermometer project is recommended to partner with private



hospitals in the sub-Saharan BoP regions as this partnership can eliminate a lot of the early entrant problems a firm would face, especially in the healthcare sector. The private hospitals will provide an ideal platform to test, demonstrate, educate and eventually deploy the product in the long term while also enabling access to the local communities and hence, enabling a scenario where mutual trust can be built with the partner itself and also, more importantly with the local communities and customer segments. In all, the building blocks that are deemed absolutely vital by the author in terms of establishing a firm that aims to fulfill needs of the society while eventually being profitable are key partners, value proposition and cost and revenue structure. The firm should ensure that their business model is continuously improved due to the ever changing market environment by ensuring that feedback loops are integrated in all aspect of business operations. The business model of the frugal thermometer can utilize the findings from this research and the new business model development framework developed for the sub-Saharan African BoP in conjunction to ensure a successful market entry and sustained periods of business eventually leading to a profitable social enterprise. Thus, the research question, *what are the suggestions that can be drawn towards the introduction of the 'Frugal Thermometer' in the sub-Saharan African BoP market* has been answered.

## Chapter 7 – Validity, Limitations and Further Research

This chapter of the research project towards the master thesis details the issues based on quality of research, its limitations and prospects towards further research opportunities resulting from the work carried out in this project.

### 7.1 – Research Validity

The validity of this research is based on the extent to which research results (1) accurately represent the data collected, i.e. internal validity and (2) can be generalized or transferred to other contexts or settings, i.e. external validity (Sekaran & Bougie, 2010; Yin, 2009). The following sections elaborate on the above definition.

#### 7.1.1 – Internal Validity

Internal Validity of qualitative research refers to the extent to which the research findings accurately represent the data collected. One of the inherent limitations of the exploratory type of research is that information gathered is generally qualitative in nature and hence, it is difficult to determine how the information produced will be utilized. Hence, it remains difficult to determine the internal validity of an exploratory type of research.

#### 7.1.2 – External Validity

External Validity refers to the extent to which the research findings can be generalized or transferred to other contexts or settings apart from the immediate case study (Yin, 2009). In this scenario, having multiple case studies in the research approach aids in generalizability. Hence, for this research project 3 cases were studied in order to validate and then verify existing literature findings and empirical findings from these cases were used to create a new framework as part of the research objective, i.e. the sub-Saharan African BoP Business Model Canvas.

In order to ensure that external validity is improved, the cases chosen were accordingly subjected to certain criteria. One, It was ensured that all cases originated from the Netherlands and operated in the sub-Saharan African BoP markets. Two, it was ensured that none of the cases were non-profit organizations or foundations as the requirement of the research were oriented towards profit making enterprises. Three, it was ensured that all cases in the research project operated in the B2C model, i.e. business to consumer to enable the researcher to target the main goal of this research project.

With respect to the results, which lead to the formation of a new framework for business model development in the BoP regions of sub-Saharan Africa, it can be argued that the application of this framework in the sub-Saharan African regions should be externally valid. This is based on the

argument that the economic and social conditions of the target markets within the sub-Saharan regions are similar to one another (C. K. Prahalad, 2006). Of course, there are bound to be a few anomalies and they are discussed in the 'Limitations' section.

## 7.2 – Limitations & Further Research

This section deals with the limitations of this research project that deals with the formulation of a new framework for business model development at the sub-Saharan African BoP.

One, this Master thesis research project deals with 3 cases as part of the empirical study. The number of sample cases is a limiting factor due to the non-availability and non-cooperation of the many cases approached as part of the invitation sent out to participate in the empirical study. As the research findings are based on a sample of only 3 cases, the aspect of generalizability of the findings are limited. But it is to be noted here that the cases interviewed seemed to saturate of the information gained, i.e. the findings were similar across the 3 cases. Yet it is advisable that additional samples and interviews should be conducted in order to gain a better representation. Hence, the size of the sample is a limiting factor of this research project.

Two, the sample cases that took part in the empirical study of this research were all based in the Netherlands. While the main aim of this project was to find how firms from the Netherlands adopt their business models to the BoP characteristics of the sub-Saharan African region, it should be noted that this study is targeted at a wider range of firms from all over the ToP or the Top of the Pyramid. Since firms from only the Netherlands took part in this research due to constraints on research length, time and resources available, generalizability of findings for all other ToP firms is a limiting factor in this research.

Three, the sample cases were from a very narrow bandwidth of industries. Case 2 and 3, represented the lifestyle and clean energy industry while case 1 represented the healthcare services industry. The research conducted would have been well served if the sample cases were more in number but more importantly represented a wider spectrum of B2C (business to consumer) industries from the sub-Saharan African BoP. Thus, the lack of representation of other industries from the BoP is a limiting factor to this research project.

Four, while the sample cases all operated in a wide range of countries in the sub-Saharan African BoP, the generalizability of findings can be questioned as the economic and social environment of countries in the BoP are all not similar. While literature (Coimbatore K. Prahalad, 2006) points out that the BoP markets of sub-Saharan Africa can be viewed as a single market, evidences suggested that certain countries like South-Africa and Nigeria have considerably developed socio-economic conditions when compared to the rest of the sub-Saharan Africa. With respect to this research, these

few regions are disregarded as anomalies and can be limiting factor or opportunities for further analysis.

Five, as this project contributes towards the master thesis, the time and resource constraints placed can be seen as another limiting factor of this research.

With respect to further research, this research project enables plenty of opportunity for future students or researchers to continually explore a more in-depth study of the business model development aspects and that of sub-Saharan African BoP.

One, the area of study was focused on the businesses that deal within the B2C or business to consumer model of operation. While this research and its objectives seek to explore how B2C firms develop their business models in the BoP, it is to be noted here that the other areas of business operation such as B2B (business to business) and B2G (business to government) were disregarded. Hence, there is a future research opportunity to explore how firms from the Netherlands or the ToP develop their business models when they operate in the B2B or B2G models. It would be interesting to explore if factors and conditions that affect B2C operation hold in the B2B or B2G operations within the BoP markets.

Two, given the large landscape of sub-Saharan Africa, it would be interesting to explore BoP regions based on individual countries. Countries with higher development in the socio-economic conditions can be explored to see if they exhibit similar characteristics to the rest of sub-Saharan African BoP. Finally, BoP regions from around the world can also be explored to find differentiating factors and conditions.

Finally, to conclude we hope that the framework of sub-Saharan African BoP Business Model Canvas can provide opportunities, create solutions and develop ideas for future research and businesses that can one day help eradicate poverty and socio-economic isolation for the millions of people living in the sub-Saharan African BoP regions.

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## Appendix

### A. Interview Protocol

Guideline:

- A. Request permission to record the interview
- B. Introduction of the researcher and the master thesis research project.
- C. Introduction of the Interviewee:
  - a. Can you give me a brief introduction of yourself and the company?
- D. Which regions of sub-Saharan Africa does your company operate in?
- E. Introduce Base of the Pyramid.
- F. How does the ToP or BoP market affect the business model of the company?
- G. Are there any general success factors you would attribute to being successful in this region?

### Questions specific to the Business Model Canvas

Introduce BMC by Osterwalder and Pigneur – a tool to develop the BM of a company

#### 1. Key Partnerships

Following a brief explanation on the BMC element “key partnerships”

1. What are the most challenging issues within the element “key partnerships”?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within “key partnerships”?

#### External Stakeholders\*

1. What are the most challenging issues when dealing with “external stakeholders”?
2. What does a company do in order to overcome these challenges?
3. Not all Ext stakeholders form a part of the BMC, should they be a part of it?
4. Overall, Do “external stakeholders” influence your firm’s business model in any particular way?

#### 2. Key Activities

Following a brief explanation on the BMC element “key activities”

1. What are the most challenging issues within the element key activities?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within key activities?

#### 3. Key Resources

Following a brief explanation on the BMC element “key resources”

1. What are the most challenging issues within the element key resources?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within key resources?

#### **4. Value Propositions**

Following a brief explanation on the BMC element “value proposition”

1. What are the most challenging issues within the element value proposition?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within value proposition?

#### **5. Customer Relationships**

Following a brief explanation on the BMC element “customer relationship”

1. What are the most challenging issues within the element customer relationship?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within customer relationship?

#### **6. Channels**

Following a brief explanation on the BMC element “channels”

1. What are the most challenging issues within the element channels?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within channels?

#### **7. Customer Segments**

Following a brief explanation on the BMC element “customer segment”

1. What are the most challenging issues within the element customer segment?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within customer segment?

#### **8. Cost Structure**

Following a brief explanation on the BMC element “cost structure”

1. What are the most challenging issues within the element cost structure?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within cost structure?

#### **9. Revenue Stream**

Following a brief explanation on the BMC element “revenue stream”

1. What are the most challenging issues within the element revenue stream?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within revenue stream?

#### **10. Sustainability\***

Following a brief explanation on the BMC element “social and environmental benefits”

1. What are the most challenging issues with respect to social and environmental benefits?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within social and environmental benefits?

### 11. Market Environment\*

Following a brief explanation on the BMC element “social and environmental costs”

1. What are the most challenging issues with respect to social and environmental costs?
2. How did you as a company mitigate these challenges?
3. What opportunities do you perceive within social and environmental costs?

### 13. Osterwalder and Pigneur’s Business Model Canvas (BMC)

1. Do you have any further **comments or suggestions** regarding the BMC?

### 14. The ‘Frugal Thermometer’ scenario

2. Following a brief explanation about and the current status of the ‘Frugal Thermometer’

Briefly, what and how would you suggest the “Frugal Thermometer” team proceeds from the product development stage to the market diffusion stage? And are there any **key success factors/ key elements** from the BMC that the team should focus on during market introduction.

Concluding remarks from the Interview.

### B. Formal and Informal channels utilized by firms operating in the BoP

From (Chikweche and Fletcher, 2012)

Variable	Case A	Case B	Case C	Case D
<b>Firm controlled formal channel</b>	Factory shop Van sales Distributors	Van sales Retail outlets Distributors Franchise Pie carts	Van sales Distributors Franchisee	Van sales Distributors Franchisee
<b>Per cent contribution to total distribution</b>	24	26	18	15
<b>Other formal channels</b>	Retailers Wholesalers	Retailers Butcheries	Retailers Wholesalers	Retailers Wholesalers
<b>Per cent contribution to total distribution</b>	14	16	29	34
<b>Channel</b>	Case A	Case B	Case C	Case D
<b>Informal channels used</b>	Women’s club Buying clubs Tuckshops General market stalls Professional associations	Women’s club Buying clubs Tuckshops General market stalls Professional associations	Women’s clubs Buying clubs Tuckshops General market stalls Professional associations	Women’s clubs Buying clubs Tuckshops General market stalls Professional associations
<b>Per cent contribution to total distribution</b>	62	58	53	51

Figure 11: Formal and Informal Channels at BoP; source: Chikweche and Fletcher, 2012)