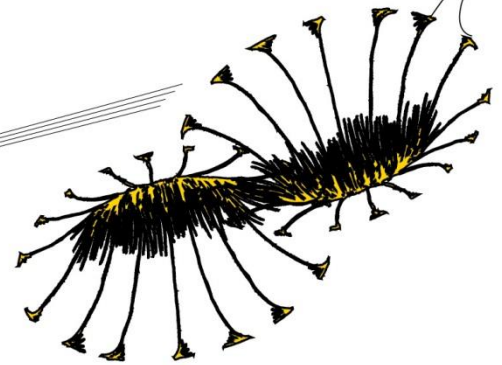
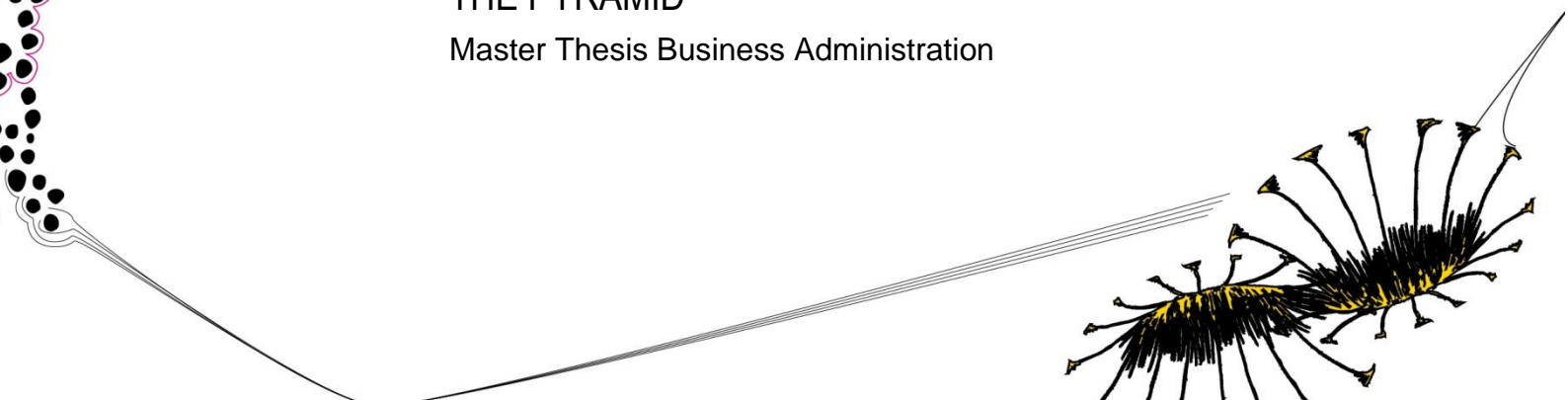


VALUE CREATION THROUGH THE USE  
OF BOP STRATEGIES AT THE BASE OF  
THE PYRAMID

Master Thesis Business Administration



# Value creation through the use of BoP strategies at the Base of the Pyramid

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*Master Thesis Business Administration*

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## Management Summary

The Base of the Pyramid (BoP) is a relatively new area of research in which many assumptions still need empirical substantiation. In this research it was decided to focus on the link between use of a BoP strategy and the type of value created for the private firm.

The research started by reviewing the current literature on the Base of the Pyramid in order to understand the intricacies of this particular market. This gave us insight into the opportunities and difficulties associated with it. This also led us to identify three main elements of a BoP-strategy that should be incorporated into any business model when entering the BoP. These elements are Co-creation, Local and Non-Traditional Partnerships and Building Local Capacity. This then formed the answer to our first sub-research question “What is an appropriate strategy for the BoP ?” The next question that demanded attention is “What classifications of value exist?”. In order to answer this question we discussed a multitude of perspectives on value and what is defined as the source of value within these perspectives. As this research focuses on understanding how entering the BoP-market impacts the value created at the firm, this research demanded a classification of value that allows for capturing its multi-dimensionality at the level of the firm. Therefore it was decided to continue to focus on the neo-social system theory of the firm.

Within this theory of the firm, there are four main functions that are identified as the essential for the survival of the firm, each with an associated type of capital the firm must possess. These are economic, strategic, cultural and social capital. The creation (or destruction) of value is identified as the in or decrease of these four capitals over time.

When combining the insights on the BoP and the associated strategies and the classification of the four types of capital it was possible to form propositions on how the three main elements of a BoP-strategy will affect the change in the four capitals or in other words value creation. Based on knowledge of the BoP and main elements of a BoP-strategy the proposition was formed that all four types of capital would be positively affected by the implementation of a BoP-strategy.

This was then the starting point for the empirical part of the study in which four case-studies in the water sector were examined. Through a combination of participation observation, desk research and interviews a case description was formed. The cases were rated on the extent to which they had implemented the BoP-strategies and the extent to which their capitals had changed after attempting to enter the BoP-market.

The analysis of the cases led to several insights which were identified in the cross-case analysis section. First of all the cases showed that if the BoP-strategies were implemented this was associated with a positive change in all four capitals. When BoP-strategies were not implemented we found little increase in social capital and even a loss of economic capital. However we did find a positive change in cultural and strategic capital. When examined more carefully we find this change in cultural and strategic capital is different from that found in cases which did implement the BoP-strategies. Namely when BoP-strategies are not implemented, entering the BoP-market still leads to a positive change in reputation in the home market. As for cultural capital, it is found that the activities in the BoP-market provide a great motivator for employees and even a tool for development.

Secondly a fourth type of BoP-strategy was identified that appeared in the two successful cases and was lacking in the non-successful cases, namely Designing for Local Scale. This fourth BoP-strategy refers to the emphasis on building scale locally, so that economies of scale can be achieved locally, rather than only on global scale. Having a local presence or liaison is crucial in this respect.

Finally it was also found that the success of the two cases that did implement the BoP-strategies was facilitated through the build-up of the appropriated social capital. In other words, the development of the right type of social capital enables the development of the other type of capitals when entering the BoP-market. The BoP-strategies, amongst other things, appear to prescribe what type of social capital should be built up.

The results from this study strongly indicate that private firms entering the BoP are wise to incorporate all four BoP-strategies in their entry strategy. Firms doing so will be more likely to see an increase in all four capitals of their firm when entering the BoP.

Aside from the practical implications of the study it has led to new insights for two research fields. First of all it answers the call of Hart and Dowell (2010) for both more empirical research and the application of theoretical frameworks to the research area of the BoP, thereby fortifying and expanding upon the current knowledge about this market.

Secondly it has advanced our understanding of the neo-social system theory of the firm. Application of this theory to a new area has led to the insight that there appears to be an order in which the capitals are increased when entering a new market, at least within a BoP environment. The right type of social capital becomes the gateway to the increase of the other capitals of the firm.

## List of Figures

Figure 1. Blueprint literature review	p.12
Figure 2: Total BoP market by income segment	p.13
Model 1 Capitals as in and output	p.22
Model 2 The four capitals and the mediating effect of the BoP-Strategies	p. 23
Table 1 Selected case studies	p.28
Table 2 Case study sources	p. 29
Table 3 Case study interviewees	p.30
Table 4 Operationalization	p.32
Table 5. Scoring the capitals	p. 33
Table 6. Scoring AfricaPumps and FamilyPVC	p. 42
Table 7. Scoring Technocorp	p.48
Table 8. Scoring ClearWater	p.52
Table 9. Scoring Maji	p.56
Table 10. The change in capitals and the use of the BoP-Strategies	p.57
Model 3: The mediating effect of the BoP strategy elements and the role of social capital.	p.59

## Contents

Management Summary.....	2
1. Introduction.....	8
1.1 Background.....	8
1.2 The research context.....	9
1.3 Goal .....	9
1.4 Research Question .....	10
1.5 Relevance .....	10
1.6 The route forward .....	10
2.1 Business at the Base of the Pyramid .....	12
2.1.1 Defining the BoP .....	13
2.1.2 The BoP-strategy .....	14
2.2 Value.....	15
2.2.1 Discussing value.....	16
2.2.2 The neo-social system theory of the firm. ....	19
2.3 Firm value when engaging at the BoP.....	22
3. Methodology .....	26
4. Case studies.....	33
4.1 AfricaPumps Inc. and FamilyPVC Ltd. ....	34
Use of BoP-strategies .....	34
AfricaPumps :The (change in the) four capitals .....	37
FamilyPVC :The (change in the) four capitals.....	40
Summary Table AfricaPumps and FamilyPVC.....	42
4.2 Technocorp.....	42
Use of BoP-strategies .....	43
The (change in the) four capitals.....	45
4.3 ClearWater Technologies .....	48
Use of BoP-strategies .....	48
The (change in the) four capitals.....	49
4.4 Maji.....	53
Use of BoP-strategies .....	53
The (change in the) four capitals.....	54

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5. Cross-case Analyses.....	57
6. Conclusion .....	61
7. Discussion.....	61
7.1 Theoretical and practical value .....	62
7.2 Limitations of the study.....	63
7.3 Suggestions for further research.....	64
Bibliography (needs to be updated).....	66
Interviews and Internal Documents.....	69
Appendix A .....	70
1.1.1 Water Ontwikkelings Samenwerking (Water OS) .....	70
1.1.2 Water Mondiaal.....	70
1.1.3 Partners voor Water .....	70
1.1.4 Delta teams .....	71
Appendix B .....	72
1.2.1 Water Mondiaal in Mozambique .....	72
1.2.2 Vitens Evides International (VEI) and Administração de Infra-estruturas de Água e Saneamento (AIAS).....	72
Appendix C Interview scheme .....	74

## 1. Introduction

### 1.1 Background

The idea of serving ‘the base of the pyramid’(BoP) through business was popularized by Prahalad and colleagues at the beginning of this millennium (Prahalad & Hammond, 2002; Prahalad & Hart, 2002) .

Prahalad and Hart (1999) speak of the base of the economic pyramid as the people that earn less than US \$1,500 Purchasing Power Parity (PPP) per annum. However since then the definition used by business practitioners and researchers has varied since then. In this paper we will follow the definition of Hammond et al. (2008) that have a slightly broader definition of the BoP, namely a per capita income of US \$3,000 (PPP) per annum. Apart from defining the BoP in terms of income level another important element that typifies the base of the pyramid is the engagement in the informal economy (Prahalad and Hart 2002, de Soto 2000; Hammond, Kramer, Katz, Tran, & Walker, 2008). According to Prahalad and Hart (2002) this group presents a multi-trillion dollar market.

These promising figures and the compelling idea of being able “to do good, while doing well” have sparked significant interest in this topic with researchers and business practitioners alike (Reficco & Marquez, 2012). However the viability of these ideas have been questioned (Karnani, 2007). Cultural heterogeneity and geographical dispersion of the BoP might limit the achievement of economies of scale, therefore increasing distribution and marketing costs (Karnani, 2007).

Despite the validity of Karnani’s (2007) criticism, successful examples of BOP initiatives do exist (Rost & Ydrén, 2006; Webb, Kistruck, Ireland, & Ketchen, 2010). Unilever is one of the few MNCs that has successfully entered the BoP market in India, with single-use packages of soaps and related products (Ted London & Hart, 2004; Simanis and Hart, 2009). Also different social and local entrepreneurs have been able to develop successful BoP-initiatives. Such as Aravind, a group of eye hospitals, focusing on eye surgeries for cataracts (Seelos, 2010).

Yet such successful examples where economic profitability is achieved remain sporadic (Landrum, 2007; Rost & Ydrén, 2006). So why is it that despite all the promise present in the BoP few companies achieve success in these markets? The answer may lie in the strategies employed by the firms engaging in the BoP. Simple extension of the traditional ‘global strategy’ focusing on the balance between global integration and local responsiveness is proving to be insufficient (Ricart, Enright, Ghemawat, Hart, & Khanna, 2004). The vastly different institutional environment found at the BoP calls for a different approach (Wright, Filatotchev, Hoskisson, & Peng, 2005). Research by London & Hart (2004) implicates that those firms that are successful in the BoP, and thus have been able to create value for themselves as a firm, have made use of innovative new mechanisms to reach and connect to the target group.

Taking into account the insights of the various researchers one could claim the appearance of new strategic elements, essential for entering the BoP. These strategy elements are based on very different principles than the principles at the base of the traditional global strategy. In this paper we will analyze how implementing (aspects of) a BoP-strategy affects the value created by private firms.



## 1.2 The research context

This research was under the auspices of the Netherlands Water Partnership. The Netherlands Water Partnership (NWP) is a public-private network organization that functions as an independent coordinator and information center for the Dutch water sector. By bringing together the different parties within the Dutch water sector they strive to fortify the position of the Dutch water sector both nationally and internationally and ensure the Netherlands creates a valuable contribution to the water challenges the world faces today (NWP, 2012).

To this end they undertake a variety of activities, which are initiated depending on the demand of the sector or on the water policies of the Dutch government. For a more detailed description of the government policies and structures important to the NWP see Appendix A.

Through their involvement in the execution of the Dutch Water Mondiaal policy (see Appendix A for further explanation) the NWP are involved in a project in Mozambique. Here Vitens Evides International (VEI), will be supporting AIAS. AIAS is the national authority responsible for development and rehabilitation of water supply systems in 130 districts and towns and sanitation in 149 districts and towns in Mozambique. VEI will be supporting AIAS through a water operating partnership (WOP). Already in an early stage VEI indicated there might be possibilities for other (Dutch) water sector parties to become involved in finding solutions for providing water and sanitation in the semi-urban and rural districts in Mozambique. There is one important characteristic of the population that will be served by AIAS, being that they belong to the poorest of the world. An estimated 95% of the population is estimated to belong to the Base of the Pyramid (BoP), a percentage that is probably higher for the population served by AIAS as they do not cover the larger cities (Hammond et al, 2007). For a more detailed description of the project see Appendix B.

This the element where the NWP becomes involved, as they, together with a variety of other actors, will support in the development of a suitable business case for the semi-urban areas in Mozambique and to interest and support other Dutch parties who wish to become involved in the developments taking place in the WASH sector in the BoP market in Mozambique.

In order to be of true support to these firms a clear understanding of the BoP-market and all its intricacies is clearly needed. Understanding what strategies are effective in such a market and how these strategies impact value creation for private firms is also needed. Developing this knowledge will evidently strengthen the NWP's ability to support Dutch private firms wishing to enter the BoP-market.

As the Netherlands Water Partnership focuses specifically on the water sector and the research is conducted with help of their organization this research will also specifically focus on the water sector. This is also interesting research sector due to the importance of access to clean water for people and the particular problems of the BoP in obtaining clean water.

## 1.3 Goal

The goal of this research is to investigate the relationship between the implementation of BoP-strategy elements and value created for the private firm entering the BoP, specifically in the water industry. In this research we specifically wish to concentrate on a broad definition of value beyond only economic value in order to truly understand the interaction between chosen strategy and what it does for the firm.

## 1.4 Research Question

Based on the research goal identified and the introduction above the following research question was formulated:

**What is the effect of the use of BoP-strategy elements on of value created for private firms operating in a BOP-environment?**

This will be the main research to be answered during this research. In order to guide the literature review and the empirical study several sub-research questions were also formulated. These sub-research questions are stated below. The first two sub-research questions are specifically meant to guide the literature review. The last sub-research question will guide the formulation of propositions based on the literature review and steer the empirical study. The last research question is also very directly tied to main research question.

1. What is an appropriate strategy for the BoP according to literature and best practice?
2. What is value and what different classifications of value can be found within the literature?
3. What is the effect of a BOP-strategy on the value created?

## 1.5 Relevance

The Base of the Pyramid is a relatively new area of research in academic research with the first papers in this field dating from the start of the new millennium. Despite increasing attention for this particular field there still is a lack of sufficient academic research (Hart and Dowel, 2010). In particular the current available papers are often criticized for a lack of theoretical rigor (London et al. 2010). This may be particular true for claims regarding the value that lies in the BoP for private firm. This research will help in empirically investigating the different types of value at the BoP and how it is linked to strategy chosen.

Next to the academic relevance, this research has particular relevance for private firms already in or wishing to enter the BoP market, specifically for those in the water sector. This research aims to give insight into how a BoP-strategy links to value created for the firm and thus should deliver useful insights for practitioners in the field.

## 1.6 The route forward

In the previous sections an introduction to the topic of the Base of the Pyramid has been provided. Within this field we have identified an area for further research. Also the practical research context was further introduced and the goal and the relevance of the chosen research topic were further explained. This then lead to the formulation of a research question with three different sub-research questions. These questions will lead the rest of the structure of the research and this rapport.

In the next chapter we will dive deeper into the theory behind this research. This chapter will focus on answering the first two sub-questions and explore the current literature on the strategies for the

BoP and for insights into value. The insights that are gained from this will be used to form propositions to sub-question three.

In third chapter we will then give insight in the methodology used to gather empirical evidence to answer the sub-questions. This methodology centers on the study of four different case studies. In the fourth chapter we will give an overview of the results from each of the four case studies. In the fifth chapter we discuss the patterns that emerge over the four cases. Finally we will draw the appropriate conclusions in the sixth chapter and discuss the value and the limitations of the research in the last and seventh chapter.

## 2. Literature Review

The focus of this section will be on (partially) answering the three sub-research questions “What is value and what different classifications of value can be found?”, “What defines the BoP?” and What is an appropriate strategy for the BoP according to literature and best practice?

Through integration of the answers to the previous three questions we will attempt to form propositions on the answer for the last sub-research question: What is the effect of a BOP-strategy on the value created?

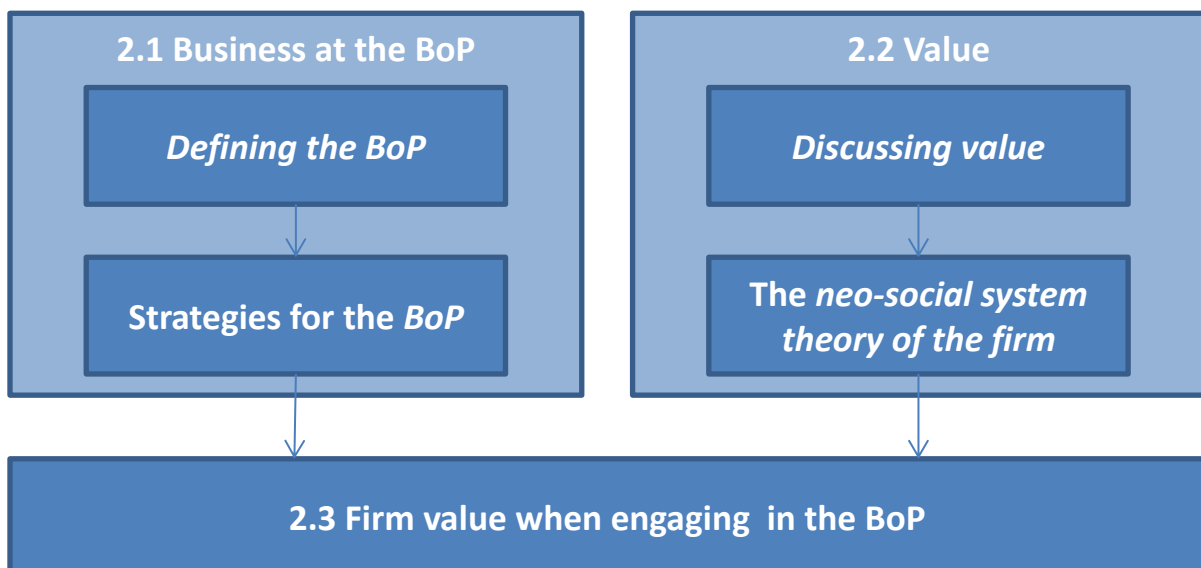
In order to answer these questions there are a variety of topics that must be discussed and finally integrated at the end of this chapter. The figure below demonstrates the format of this chapter.

In the first section, the left leg of the diagram, we dive into the world of Business at the BoP. We will make a start with further understanding and defining the BoP. From there we will continue with a discussion of known (un)successful strategies for the BoP-market.

After finishing this discussion we will focus on value, as can be seen in the right leg of the diagram. We will start by discussing several theories on value and there particular intricacies. From there we will select a theory of value that appears most suitable for this research and explain it further.

Finally at the end of the chapter we will combine the insights from these two sections to form ideas on how BoP-strategy elements affect the value created by firms entering the BoP.

Figure 1. Blueprint literature review



### 2.1 Business at the Base of the Pyramid

In this section we will further elaborate on the characteristics of the BoP and the strategies needed to enter this environment.

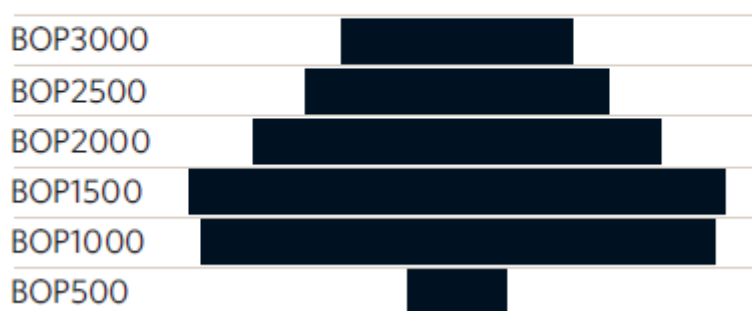
### 2.1.1 Defining the BoP

Although Prahalad and Hart (2002) originally speak of 4 billion living on less than \$ 1500 dollars PPP, Hammond et al (2007) find that based on a 2005 survey of the World Bank, that this group earns up \$ 3000 (2002 PPP) per year, still far below any Western poverty line. The authors then subsequently divide this group into six sub-groups using income of increments of \$ 500 PPP. BOP 500 then represent the group earning less than \$ 500 PPP, BOP 1000 the income group between \$ 500 PPP and \$1000 PPP, etc. Composition of the BOP markets varies greatly across countries (Hammond et al., 2008), though the below figure gives an indication of the distribution of market potential in the BoP.

Figure 2: Total BoP market by income segment (Hammond et al., 2008)

#### BOP market—\$5 trillion

TOTAL BY INCOME SEGMENT



What does become clear from the figures above is that this group presents a large potential market, that so far has been mostly untapped.

As mentioned in the introduction, another important characteristic of the BOP is the lack of access to the formal market economy (Hammond et al., 2008; K. Prahalad & Hart, 2002). Most of the BOP population lacks access to the formal world economy and as such may not benefit from it. Official titles of assets owned are often lacking and access to official credit is limited. Whether it concerns loans or even access to markets for their products, the people of the BOP are often dependent on monopolists which can exploit their position (Hammond et al., 2008). As result of the lack of access to the formal market economy, people of the BOP often experience a so called 'BOP-penalty', where the prices they pay for certain products/services are many times higher (may it be in the effort to obtain the product as well as actual price) than those paid by the wealthier (de Soto, 2000; Hammond et al., 2008; London, 2007). For example with water this is often the case, because where the wealthy often have access to piped water, the poor are often dependent on either surface water or mobile water vendors.

The main issue here is the lack of a formal institutional environment which can guide interactions in the business sphere. Instead social interactions and relationships guide business at the BoP (Rivera-Santos & Rufin, 2010a; Webb et al., 2010).

For the optimist there are real opportunities for western firms to access a largely untapped market. For example the BoP-Penalty paid indicates that there is clearly room for firms who can break open this market and somehow leverage scale. Also the total capital market presented by this group presents a huge potential market. As discussed in the introduction and above estimates of the wealth to be found at the BoP are in the range of several trillion dollars (Prahalad and Hammond, 2002; Prahalad and Hart, 2002; Hammond et al, 2007). Next to purely economic reasons entering the BoP also provides new alleyways of poverty alleviation by helping connect the BoP living in the informal economy to the formal economy (London, 2007). And though from the above description it is clear that the BoP-market functions very differently from most Top of the Pyramid Western markets research has revealed several successful cases of business's entering this market (London and Hart, 2004; London, Anapundi and Seth, 2010; Seelos and Mair, 2007).

All in all though it is clear that business in the BoP may hold promise of creation of value both for the BoP as well as for the firms engaging in it, it is also evident that doing business in such circumstances may require a specific approach. In the next section we will delve deeper into the how question raised in this section.

### 2.1.2 The BoP-strategy

London and Hart (2004) were one of the first ones to empirically start searching for an answer to the question on how to successfully enter the BoP. They identified three main elements each business should incorporate into their strategy when entering the BoP. This has then been the basis on which other researchers have continued their studies, though there is still a lack of sufficient empirical based studies (Hart and Dowell, 2011). These studies have focused on one of the elements identified by London and Hart (e.g. Webb et al., 2010; Rivera-Santos and Rufin, 2010a;2010b) or on formulating a complete package of tips on how to enter the BoP (e.g. Simanis et al., 2004;2008). However all these insights can still be brought back to the three "BoP-strategies" identified by London and Hart in 2004. These will be explained in more detail below.

#### Forming Local and Non-Traditional Partnerships

Partnerships can be crucial in order to learn about a new market (Eisenhardt and Schoonhoven, 1996). The partner(s) in question should thus have knowledge about the market otherwise not accessible. For the BOP-market this knowledge is found to lay with non-traditional and particularly local partners such as NGO's, regional and local governments and local businesses and community organizations, rather than large local firms servicing the local TOP-market and national governments (Nielsen and Samia, 2008). It appears such firms often are as lacking in knowledge about the local BoP-markets as the foreign companies trying to enter them (London and Hart, 2004). As such a firm may need to turn to a variety of partners that would normally not be considered in the scope, especially by MNC's.

Some organizations may have different primary goals from firms (Rivera-Santos & Rufin, 2010b), focusing on social performance rather than financial. However their knowledge of the local BOP-markets is often extensive and their reputation and network can help the firm in gaining local trust (Rivera-Santos & Rufin, 2010a). Building partnerships with such local and non-traditional partners is thus seen as an important BOP-strategy (Ted London & Hart, 2004)

### Building local capacity

It was found that success in the BoP-market will require a focus not only on the economic performance of the own organization but also the social performance in the local context. Rather than organizing this through corporate philanthropy, it can be incorporated into the business model. Firms may set out to identify weaknesses in the local business eco-system and play a role in filling these gaps. This will both serve to develop the local context as well as help create a more stable business environment and help overcome barriers to scale (Gradle and Jenkins, 2011).

This can be done through various approaches and may include developing skills in local entrepreneurs or partners, building and re-enforcing current infrastructure and providing more transparent market information. Firms can play an important role in strengthening existing institutions or by filling in institutional gaps (Gradle and Jenkins, 2011; London, Anupindi, & Sheth, 2010; London & Hart, 2004).

### Co-creation

Engagement of local users and partners in the creation of the product and the business model is an important strategy for entry at the BoP-market (London & Hart, 2004). However in his speech Hammond (2012) questions the validity of this strategy as co-creation in each market would simply be too expensive. However Nielsen and Samia (2008) find that BoP-consumers and producers are often intertwined and firms can learn a lot from the innovative distribution, promotion and pricing strategies developed at the BoP. Also designing to allow for customization is a factor in many BoP-ventures (Viswanathan and Sridharan, 2012).

The main lesson should thus be that rather than focusing on the value of the product itself and trying to control its adaptations, flexibility in the product and service concept to suit the local context beyond incremental national adaptations can be crucial for success (London & Hart, 2004). It is thus not the product itself that should be seen as the value proposition but the entire business model, which should include all parties involved profiting from involvement in the product (London & Hart, 2004).

From the above we may thus take there are three important BoP-strategy elements that so far have been identified in research. These three elements are Forming Local and Non-traditional partnerships, Building Local Capacity and Co-creation.

We will leave our discussion of the BoP for now and continue with the section on value. After this we will come to the BoP and combine it with the insights of the coming section.

## 2.2 Value

In the previous sections we looked at the BoP and the strategies to enter this market. We will leave this topic for now and in this section we will take a deeper look at value and value creation. As value is a very abstract but very powerful concept and over time many perspectives have been developed on the matter, each highlighting a particular element of the value discussion. We will review these different perspectives to gain insight into the process of value creation and to understand which perspective can help us understand value creation at the BoP.

During this review it is important to keep in mind the goal of this research. We wish to understand value creation *for the firm* when entering the BoP market, so therefore we wish to look at what happens at the level of the firm. Secondly we are interested in a broad understanding of value, as it is believed as stated in the introduction, that business at the BoP may have more in store than profits. New knowledge and innovations may just few of the other things the BoP might bring the firm (Prahalad, 2002). Therefore it is important to maintain a broad perspective on what may constitute value. Therefore we will be on the lookout for perspectives on value that have a multi-dimensional view on value and that offers concrete enough guidelines to capture these different categories of value.

The discussion on value is structured around the eight perspectives on value identified in the 2012 Kraaijenbrink working paper, which gives a comprehensive review of the different perspectives of value.

### 2.2.1 Discussing value

**Neoclassical economics** offers us a much discussed perspective on the value of resources. Within this perspective Bowman and Ambrosini (2000) have developed a framework in which they distinguish between *exchange value* and *use value*. Use value is defined as the value the customers perceive to receive from the specifications of the product. The exchange value is defined as the monetary amount paid for the exchange or use of a certain product, service, good and so forth. In all but rare occasions the exchange value of the product will be lower than the use value (Bowman & Ambrosini, 2000; Lepak, Smith, & Taylor, 2007). Along similar lines of reasoning we find the Price-Cost-Value model, which focuses the relationship of the price (P) of a certain resource that is bargained over by a supplier who has had a certain cost (C) to produce the product and a customer, to whom the resource presents a certain value (V) (Tirole in Kraaijenbrinck, 2012). The focus of this perspective lies solely on economic measures. This focus is considered too narrow for this research, as explained earlier.

Another perspective that falls in this economic focused category is **Transaction Cost Economics**. This theory focuses on the choice to internalize or externalize activities based on the associated costs (Williams in Brouthers, 2002). Due to the costs associated of setting up a new venture a firm will always prefer to organize new activities through the market place if no transaction costs are present (Hill et al. 1990). However organizing activities through the market place usually entails transaction costs, which are influenced by the risk of opportunism, bounded rationally and asset specificity (Argawal & Ramaswami, 1992). The costs associated with the activity determine whether to internalize or externalize these activities. This teaches us that the transaction costs associated with resources may affect the value of resources (Kraaijenbrink, 2012).

The Property Rights Perspective, the Austrian Economics Perspective and the Dynamic Capabilities Perspective take a different look at how resources can provide value. What these perspectives have in common is that it is not the resources themselves per se which provide value but more what the resources can do for the firm. Within the **Property Rights Perspective** it is said it is the attributes of the resource that can do something for the firm, or in other words provide value. The value of the resource is thus dependent on the extent to which property rights are owned on certain attributes of the resource (Alchian and Demsetz, 1973; Kraaijenbrink, 2012). This also implies that different firms



can hold property rights of different attributes of the same resource, and thus provide value to several users at the same time (Alchian and Demsetz, 1973; Kraaijenbrink, 2012).

Within the **Austrian Economics Perspective** again it is not the resources themselves are valuable. In this perspective the value is believed to come from the services a resource can provide (Vargo and Lusch, 2004; 2008). Another important aspect is that the perception of the services a resource can render is subject to subjectivity; therefore the value of resources is subjective (Foss et al., 2008).

Another perspective where resources are only considered valuable within context and the entrepreneurial subjectivity of the value is recognized is the **Dynamic Managerial Capabilities Perspective**. Within this perspective a resource becomes valuable when they are used to form capabilities for the firm (Simon, Hitt and Ireland, 2007). This leads to the value of the resources being influenced by the other resources of the firm in the extent to which they are co-specialized and complementary. This also means that the value of the resources is dependent on the managerial ability to form capabilities with the resources available (Teece, 2007; Kraaijenbrink, 2012).

The above three perspectives provide interesting insights in the ways resources can provide value by doing something for the firm and the subjectivity of the value that can be provided. However these perspectives do not give us concrete guidelines as in how to look at value multi-dimensionally nor give any concrete guidelines how to do so. As such these perspectives are not the most applicable in this study.

Finally there are three more perspectives we wish to discuss that provide interesting insights into the concept of value. First of all there is the **Embeddedness Perspective** in which it is recognized that the firm is not standalone but is located in and interdependent with its environment (Kraaijenbrink, 2012). The theories in this perspective have development in several direction such as institutionalism (DiMaggio and Powell, 1983), the natural resource based view (Hart and Dowell, 2011), stakeholder theory (Parmar et al., 2010) and social network theory (Grannovetter, 1985; Allee, 2000;2002;2008). What these theories have in common is that they lead to the understanding that value is created not only in the context of the firm, but also in a broader context beyond the firm.

The insights of understanding that a firm does not operate on its own is a very useful insight. However the theories within this perspective do not provide us enough guidelines to understand the how value developed at the level of the firm in a multi-dimensional way. Though the insights learned from this perspective will be taken into account, on its own it is not enough to frame our research on value creation for the private firm.

Next there is the **Normative Perspective** questions the notion of value itself and focuses on how the definition of value is determined by our frame of reference. It is argued that focusing on utility and rent generation as the only forms of value is a normative choice, namely for the capitalist frame of reference (Kraaijenbrink, 2012). Within this perspective also different notions of value are presented and discussed for example by Boltanski and Thévenot (2006). This research however is focused on private firms that generally tend to operate within the capitalist frame of reference. Therefore, though we want a multi-dimensional look we do not want to abandon this frame of reference. We simply want to understand the different understand the different types of value it can generate for the firm, including economic returns.

Finally there is the **Functionalist Perspective**. This perspective stems from the literature on organizational effectiveness, where the main objective of the organization is taken to be the effectiveness of organization as a system, rather than sustained competitive advantage or rent generation (Kraaijenbrink, 2012). This perspective is comprised of theories such as the competing values approach (Quinn, 1992), the organizational goals identified by Perrow (1967) and Parsons social system theory (1956). The distinguishing characteristic of this perspective is that it is considered that value should not only be seen as financial but should be considered multidimensional. This comes forth from the notion that it different functions need to be fulfilled in the organization in order to exist effectively in the long run. It is thus the function(s) a unit may have within a firm that determines its value (Kraaijenbrink, 2012). There are some differences in the aforementioned theories regarding how they classify the different functions, but they do all classify four different types. The classifications made by Parsons have been the most influential (Kraaijenbrink, 2012).

It is this perspective we will choose to continue with in this research, especially the interpretation of Parsons' 1956 work and the application of his AGIL-scheme to the business arena by Groen, Kraaijenbrink and Heuven (2007) and their neo-social system of the firm, which will be explained in more detail below. This perspective gives us the ability to look at value and value development at the firm level. This theory can clearly be applied with the firm as the starting point and assigns value to each of the aspects of the firm that are considered essential for long-term effectiveness. As a result of we have a multi-dimensional perspective on value, a factor which was considered important for this research and was found lacking in many of the previously discussed theories. This will enable us to better understand how the business at the BoP affects firm value in its entirety, not only economically, but all aspects considered important for long term effectiveness of the firm.

Also one of the strengths of this perspective is that, although it focuses on the firm, it does take into account the importance of the interaction with the social environment through the integrative function. To a certain extent this perspective thus integrates some of the learnings of the Embeddedness perspective.

We too find that the lessons from some of the other value perspectives are not completely disregarded but incorporated at different levels in the application of this perspective. One of the important insights that was gained from the Property Rights Perspective, the Austrian Economics Perspective and the Dynamic Capabilities Perspective was that the value of the resources lies in what they can do for the firm. This viewpoint is also incorporated in the functionalist perspective. This is because the resource itself becomes valuable through the function it performs and thus may even contribute to different functions or capitals as explained below. As Roersen (2008) states it is the use of the resources that determines to which capital it belongs. So here again we see it what a resource does that determines its value for the firm, although the different perspectives have different interpretations on how a resource can do something for the firm.

Although Parsons' work and AGIL scheme have been criticized for being too abstract for use in any form of empirical research (Ritz, 2001), the neo-classical system of the firm is clear enough to provide concrete guidelines on how to apply this theory to the subject of this research, namely Dutch firms entering the Base of the Pyramid. A drawback however is that the operationalization of the four functions when described separately has varied greatly (Roersen, 2008) and there are few

studies that have done research on the four capitals together. Therefore also very little empirically supported knowledge has been so far been developed on the interaction between the four capitals. However this is not an issue for this research as we are looking for a theoretical framework to understand the multi-dimensionality of value at the level of the firm and use it to capture the current scattered knowledge about value development for private firms entering the BoP. To a certain extent one may thus say we are simply using this framework to structure the current knowledge about value development when entering the BoP with or without certain strategies. This is then also tested against our own empirical research. For this reason it is not an issue that little empirical evidence is known about the development of the capitals through time because this research attempts to capture just that, albeit in a specific context, namely entering the BoP.

### 2.2.2 The neo-social system theory of the firm.

In the previous section we have reviewed the different perspectives on value and selected the Functionalist perspective as the most appropriate perspective for this research. Particularly we will further focus on interpretation of Groen, Kraaijenbrink and Heuven (2007) of Parsons' 1964 work.

In his work on social system theory Parsons has come to define a social system as follows "[...]consists in a plurality of individual actors interacting with each other in a situation, which has at least a physical or environmental aspect, actors who are motivated in terms of a tendency to the "optimization of gratification" and whose relation to their situations, including each other, is defined and mediated in terms of culturally structured and shared symbols" (1964, p.5-6 in Groen, Kraaijenbrink and Heuven, 2007, p12).

In this definition there are several elements of importance. First of all he mentions that a social system requires a plurality of actors, which may be individuals in an organization, but also a set of organizations working together or even a set of institutions, organizations, individuals etc. that make up a society (Parsons, 1970; Groen, Kraaijenbrink and Heuven, 2007).

Additionally and very importantly this definition contains the four aspects or functions that are considered prerequisites for any social system to survive in the long term. These four functions are part of the AGIL scheme which stands for

1. Adaption; Adaption to the environment may be constantly needed. This may be facilitated by the system of (production, gathering and) redistribution of commodities. In the social system definition it is reflected in the "*optimization*" mentioned in the definition, which may be interpreted as the optimization of certain action patterns leading to best 'adaption' .
2. Goal Attainment; Setting goals for the future and making decisions to obtain them is essential for long term survival. This is reflection in the definition by including '*striving for .. gratification*' which stands for the fulfillment of a goal.
3. Integration; To achieve to goals of a system interaction between the different individual actors and their personal goals is a necessary function. These interactions require integration. This social function is also mentioned in the definition where it is stated that a system requires "*actors interacting with each other*" .

4. Latency; Latency in this scheme stands for latent pattern maintenance or in other words maintaining “culturally shared symbols and patterns”.

(Groen, Kraaijenbrink and Heuven, 2007; Parsons, ; Huaco, 1986)

These four theoretical are considered necessary functions of any social system, which also may be any set of organizations working together towards a common goal or specifically a firm. When we zoom into what these four essential functions mean at the level of the firm, they can be used to deduce a classification of capitals necessary for long term effectiveness of the firm. The attainment function translates to economic capital at the level of the firm, goal attainment to strategic capital, integration to social capital and latency to cultural capital (Groen, 2005). The four capitals are explained in more detail below.

### **Economic Capital**

Within the firm this function is concerned with optimization or efficiency (Groen,2005). This capital is concerned with the adaptability, and in the case of the firm this relates to ability to dispose and acquire resources or the rights to these resources (Groen, Kraaijenbrink and Heuven, 2007). It is important to note that these resources should not be tied to a particular goal. Groen, Kraaijenbrink and Heuven, 2007 (p.18) define economic capital as *‘the set of mobile resources that are potentially usable in exchange relationships between the actor and its environment in processes of acquisition, disposal or selling.* The most obvious of these resources is money, but may also be land, labor, capital or arguably knowledge (Groen, Kraaijenbrink and Heuven, 2007).

### **Strategic Capital**

Strategic capital is linked to the goal attainment function, which refers to the organization’s ability to organize resources and actors in order to achieve its goals. By Parsons (1964) it is considered the power function, or more precisely the political power function. Strategic capital is then defined as *‘the set of capacities that enables actors to decide on goals and to control resources and other actors to attain them’* (Groen, Kraaijenbrink and Heuven, 2007, p.17). Strategic capital enables the organization to influence other actors and set the agenda in order to achieve its goals. Power, status and authority are considered personal elements of strategic capital, but strategic capital may also reside in artifacts such as technical standards and patents (Groen, Kraaijenbrink and Heuven, 2007). Referring back to Parsons’ original explanation of the goal-attainment we define strategic capital as the power function. Power is not a sub-element of strategic capital, but in fact the definition. On a personal basis authority and status may be considered sources of power and on firm level power may reside in the relationships held with others in the network, technical patents or standards in reputation.

### **Social Capital**

This type of capital is related to the interactions between the different actors within the organization as well as with the external environment. This leads to social capital which is defined as the *‘set of network relations through which actors can utilize, employ, or enjoy the benefits of capital that is controlled or owned by other actors* (Groen, Kraaijenbrink and Heuven, 2007, p.20). This means that social capital is only created when different actors are willing to act in each other’s interest by using their capital for the other. Simply knowing each other does not constitute social capital. Important to note that in this definition social capital refers only to the network of relations which may give access to the capitals of other, not the capitals access is gained too (Groen, Kraaijenbrink and

Heuven, 2007).

### **Cultural Capital**

Pattern maintenance is considered another important function within the social system. This function allows for a (temporarily) stable framework guiding the interactions of the different actors within in the system in line with the economic and strategic goals. This framework also guides learning and change. This pattern maintenance framework is captured within cultural capital and may exist, amongst others, in shared values and norms. As such Cultural capital is defined as *'the set of values, norms, beliefs, assumptions, symbols, rule sets, behaviors and artifacts that define the actor in relation to other actors and environment* (Groen, Kraaijenbrink and Heuven, 2007, p.21). Specific to Cultural Capital is that, in contrast to economic capital, it is specific to the organization and highly immobile, engrained within the organization (Groen, Kraaijenbrink and Heuven, 2007; Roersen, 2008).

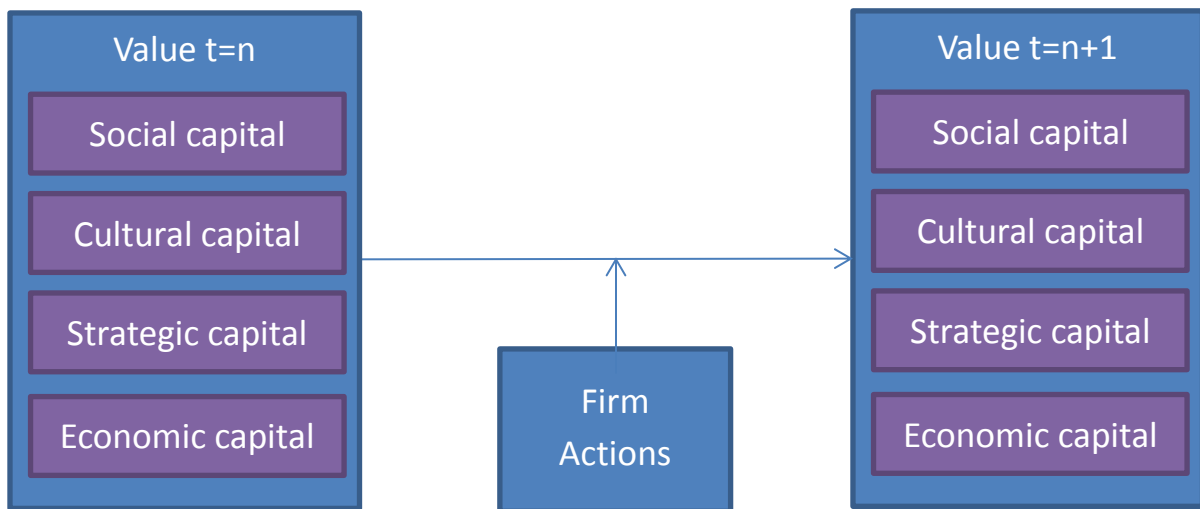
### **The capitals and value creation**

Different approaches have been formulated in how to link capitals to performance or in other words the value created (or destroyed) in the associated time. However Groen, Kraaijenbrink and Heuven (2007) have developed a view on the link between capitals and value creation, where capitals are both the inputs and the outputs of the entrepreneurial process. The entrepreneurial process consists of a set of actions taken of time. The value created by a firm would thus be measured as a function of the different capitals at time  $t$  and the increase or decrease in the time following. This function most definitely should not be seen as the sum of the different capitals. This would imply that they are interchangeable which is most not definitely the fact and would be in contrast to the entire concept of having different necessary and complementary functions in an organization (Groen, Kraaijenbrink and Heuven, 2007). However the parameters and the configuration of the function are currently unknown and may in fact be quite artificial.

Nonetheless the important lesson from this formula is that an increase in the capitals from time  $n$  to time  $n+1$  may constitute a positive change and thus implies that value was created in the time passed, whilst a decrease would be considered a loss of value. Of course due to the presence of four capitals measuring value created might also be ambiguous if some capitals increase whilst others decrease. The interactions between these capitals are not clear yet, but it is presumable that at least a minimum in each capital is required as well as a certain balance (Groen, 2005). This implies that increases or decreases leading to a certain misbalance might also constitute a loss of value.

Another important aspect to take away is that considering that capitals are both in and output of the entrepreneurial process value creation is considered path dependent. This means value created at time  $t=n+1$  is dependent on what the capitals where at time  $= n$ .

This process may be demonstrated by the model below. The capitals at time  $t=n$  influence the level of capitals at time  $t=n+1$ . The change that occurs in that time elapse may be considered the value created (or lost) for that time period due to the (in)-actions of the firm.

*Model 1: Capitals as in and output*

### 2.3 Firm value when engaging at the BoP.

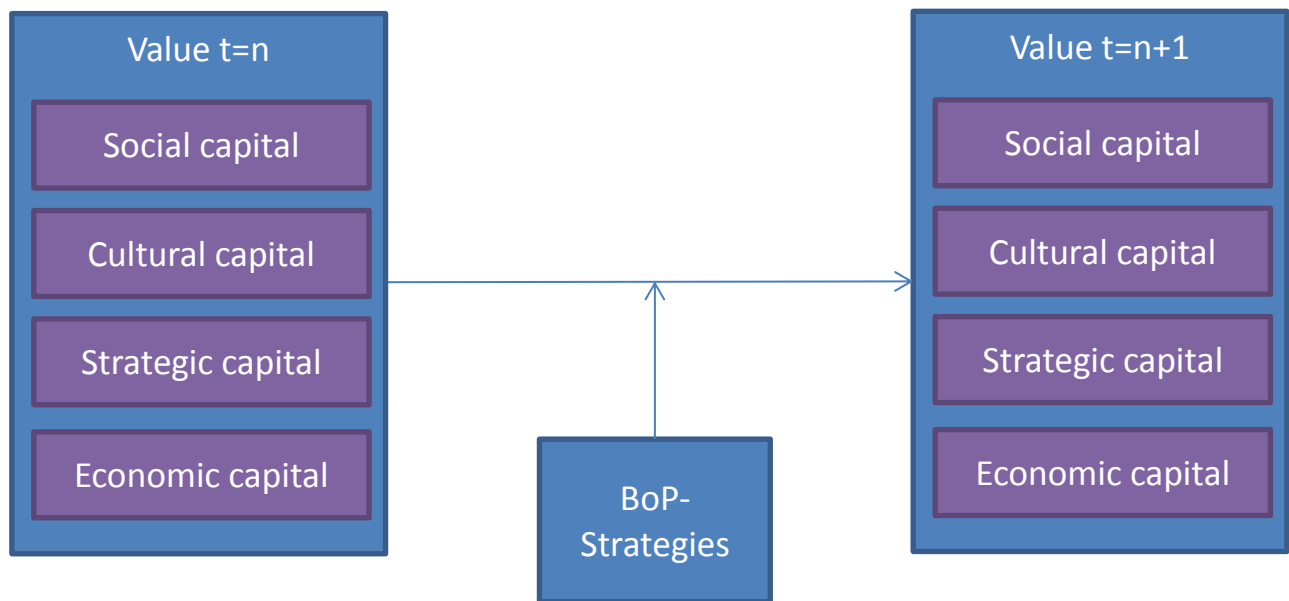
In this section we will try to combine the insights of the previous two sections in order to form certain propositions about how implementations of the BoP strategies affect firm value.

In the first section we reviewed different perspectives on value and further explored the neo-classical theory of the firm. We concluded this section with the model of performance where the four capitals were both input and output of the entrepreneurial process or any sub-process in the firm. Engaging in the BoP market may be considered such a sub-process. Engaging in such a process will most likely lead to a change in the four capitals. To be explicit, we will not be looking at all firm actions that could be part of the entrepreneurial process, but at the BoP-strategy elements in particular and how they affect the change in capitals in a given context of the BoP.

In the previous section we further explored the BoP and its peculiarities. We also found that the little academic empirical research that has been performed in this field has led to the identification of three main BoP-strategies that combined are believed to effect the success of a firm's attempt to enter the BoP (London and Hart, 2004; .

We may thus conclude that BoP-strategies appear to have an effect on performance of the firm. In other words this may lead to assume that BoP-strategies affect the relationship between the input and the output capitals when engaging in a BoP environment. This leads us adapt the earlier model of the four capitals and performance to include the mediating effect of the BoP-strategies.

*Model 2. The four capitals and the mediating effect of the BoP-Strategies*



The question remains to what extent and in which manner these strategies will affect the different capitals.

#### Economic capital

Prahalad and Hart (2002) first suggested that firms could do good by doing well. However if it was indeed possible to make a profit serving the poor has been questioned by Karnani (2007) and Landrum (2007). However in an extensive review of cases of firms entering the BoP London and Hart (2004) found several cases that were able to successfully set up business in the BoP. The three BoP-strategies were identified as the determining factor between failure and success. Also (Simanis et al, 2008) have found successful cases in which can find that the BoP-strategies have been applied. Also the analysis of successful cases described by Seelos and Mair (2007) and (London, Anupindi and Sheth, 2010) reveals insights that fortify the earlier insights in the importance of the BoP-strategies. By building local capacity and allowing co-creation and everyone involved to profit firms help increase the willingness to pay (Sanchez and Ricart, 2010). Thereby firms are increasing the total size of the BoP-market and thus also their own potential economic returns.

Concluding, gaining economic success in the BoP-market remains very challenging, however it appears the BoP-strategies help steer the firm in a direction of success. This leads us to formulate the following proposition.

P1: The increase of a firm's economic capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies.

#### Strategic Capital

The BoP-strategies prescribe partnering with local and non-profit organizations. Though these last type of partnerships provide many potential perks, it also come with certain risks. NGO's will be able the significantly impact the reputation of the firm. This may be positive if collaboration works well, but may have far-reaching negative consequences if the NGO turns on its private partner (Rivera-

Santos and Rufin, 2011). Loss of reputation may ensue, as well as motivational loss on behalf of the employees (Wymer Jr. and Samu, 2003). These risks might be mitigated if other BoP-strategies are also well implemented, such as developing local capacity, which tends to align goals more with those of the non-profit partners. In this case positive contributions to the development of the BoP can also lead to a positive change in the reputation of the firm (Hammond et al., 2007; London and Hart, 2004).

Aside from influencing corporate reputation, partnering with local and non-profit organizations can also provide legitimacy at a local level (Rivera-Santos and Rufin, 2010b; Reficco and Marquez, 2012). Therefore if *all* BoP-strategies are implemented it is expected that this will lead to an increased strategic capital.

P2: The increase of a firm's strategic capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies

### Cultural Capital

When entering the BoP-market firms will be posed with many challenges, such as lacking infrastructure, an incomplete formal institutional environment and local market information (Rivera-Santos and Rufin, 2010b). As such firms will need to gain access to information about the new market in order to form the local business model and the accompanying appropriate tacit knowledge and new templates.

When implementing the BoP-strategies firms will be able to build up knowledge about the local market and circumstances (London and Hart, 2005). Collaborating with the right partners can help gather information on target customers and help understand local business cultures. Through this mechanism the BoP-strategies can help build a firm's cultural capital.

P3: The increase of a firm's cultural capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies

### Social Capital

The amount of alliances a firm will enter in increases as the market becomes more risky or innovative (Eisenhardt and Schoonhoven, 1996) As the BoP market may be typified as such an environment, it may be expected that all firms entering such the BoP will thus attempt to increase their alliances in order to gain access to local resources. Most likely social capital will increase for all firms entering the BoP.

However a growing body of literature finds that traditional alliance partners cannot provide access to the necessary local resources as they do not have access to these either (London and Hart, 2004; Klein, 2008). Therefore the BoP-strategies prescribe building many diverse and deep local relationships with local and non-traditional partners (London and Hart, 2005; Seelos and Mair, 2007; Klein, 2008). These partners, such as NGO's, local business and governments and community organizations are expected to help gain access to local legitimacy and other resources, such as local market information (Hietapuro, 2011; Klein, 2008). As such the BoP-strategies increase social capital through the act of prescribing what type of relationships to enter in in order to gain access to the necessary resources.

P4: The increase of a firm's social capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies



## 2.4 Conclusion

In this chapter we built the theoretical framework on which the research is built. In order to be able to answer the main research question **“What is the effect of a BOP-strategy on the value created for private firms operating in a BOP-environment?”** there were several sub-research questions that had to be addressed in this chapter.

First of all we had to define the BoP and determine what be an appropriate strategy to enter the BoP. In this piece we defined the BoP as those who have a yearly income under US \$ 3000 PPP and who participate mostly in the informal economy. In literature we identified three main elements that are important to build into your strategy when entering the BoP market. These strategy elements are; building local and non-traditional partnerships, building local capacity and co-creation.

Next we discussed different interpretations of value in order to find a theory that can help us capture value at the level of the firm. In particular we were looking for a theory that can show the multi-dimensionality of the value created (or destroyed) as a firm enters the BoP. This led us to Groen, Kraaijenbrink and Heuven’s (2007) interpretation of Parsons’ work on the social system. In their neo-social system of the firm they identify four capitals which are, namely being economic, strategic, cultural and social capital. These capitals are both the input and the output of a system and the delta of change thus indicates whether value was created or destroyed.

Combining these insights the proposition was formed that when entering the BoP, if the BoP-strategy elements were implemented this would lead to a greater increase in value. This was the case for all four capitals. These are the four propositions that will be tested in our empirical research. In the next chapter the methodology for the empirical part of this research will be explained.

### 3. Methodology

In the previous chapter the sub-questions were answered theoretically, based on a literature review. The next step is to empirically test these findings.

This study contains exploratory, descriptive and explanatory elements. Firstly both the subject field is still quite new in academic research and the researcher was rather unfamiliar with the topic prior to the research. This justifies an initial exploratory approach to familiarize one with the topic and the variables of importance (Babbie, 2010). The next phase of the study has a more descriptive and explanatory character, trying to describe and explain how the BoP-strategies influence the value of private firms engaging in the BoP. Overall the general research methodology was very explorative in nature.

For this purpose a multi-case study approach was used, which is deemed appropriate for such type of studies. Using a case-study approach allows the study of a phenomenon in its real-life context when the borders between the phenomenon and the context are not clear (Yin, 1981). A multi-case study enables the researcher to better understand why and how certain results occur by allowing in-depth analysis both within a case and across different contexts (Huberman & Miles, 1994; Yin, 1981). Also through the application of such a research methodology issues can be revealed that otherwise would not be apparent (Babbie, 2002).

The selected case study sample must show some consistency in order for the research to draw any valid conclusions. If this is not the case, this will form a threat for internal validity (Babbie, 2002). Some variety of the selected case studies will however increase the generalizability of the results and is nearly inevitable in such a multi-case study. Variables to consider in the context of this research are firm size, phase of the entrepreneurial process, business proposition and the target market amongst others.

However, for the research to take place it is most important that the selected case studies show varying levels of the research variables. In this particular research we are thus looking for firm with different levels of use of the BoP-strategy elements when entering the BoP-market. The selected sample will be expanded on later.

Babbie (2002) indicates that in field research, to which a multi-case study belongs, in order to form an appropriate analysis over time and space it is necessary to combine different observations over time. Therefore in this research a combination of three different field research techniques have been applied.

The empirical research consisted of three steps, from more general to more specific. These three steps consisted of several months of participant observation, followed by desk research on specific case studies and concluded with several interviews with selected case studies. Each step of the process will be explained in more detail later.

#### **Participant Observation**

This was the exploratory phase of the research, where the researcher was familiarized with this relatively new research area from the ground. Participant observation is considered useful as a tool for the preliminary explorative stage of a research (Lazarsfeld, 1972). It can be used to form concepts

of measurement, generalizations and propositions and thus a form of observation suited for the first familiarization with a subject area (Jorgenson, 1989). Some even consider it the best tool for in depth study of a subject because it allows for understanding of the intricacies of a subject over a longer period of time (Gummesson, 2000).

During this period of participant observation also a review of the literature on the BoP and theories of value was conducted.

For this exploratory phase it was chosen to engage in participant observation through an internship at the Netherlands Water Partnership. This is a network organization for the water sector, specifically aimed at helping firms engage in (new) foreign markets. Part of their energy is now also geared to helping entrepreneurs specifically target the BoP. As such they have contacts with different entrepreneurs, NGO's, government officials and other experts with experience with this market. As such this was deemed a tactical place to familiarize oneself with the particularities associated with the BoP market and the challenges that come with it.

In order to gain a broad understanding of the subject during this four month period informal interviews were held with experts in the field, entrepreneurs, NGO's, policy makers and government officials.

During a field trip to Mozambique unique insight into a potential target BoP-market was gained. This was done by collaborating on the development of several potential business cases for the BoP market in Mozambique regarding the water sector. During this time again there was room for informal interviews with local policymakers and officials, local NGO's and business people.

Through all these interactions and activities it was possible to gain a broad understanding of the topic as well as the variables important in this area and issues that still remain misunderstood. Also first contact with potential case studies for the next phase of the research had been made.

Case studies were collected through making use of the network of the NWP and their related partners (e.g. BOP inc.). All known Dutch firms that in the water sector that have attempted to enter the BoP-market commercially were asked to participate in the study. This resulted in five case studies, one of the approached firms was not willing to participate in the study as the product for the BoP-market was no longer a focus of the firm and one firm never responded to invitations to participate. Ideally the case studies would have found themselves in the same phase in the entrepreneurial process, however due to the limited amount of cases it was decided to accept variation in this respect. The firms also varied vastly in size, both financially and in personnel. Though we were only able to collect few case studies for this research it includes almost all Dutch (semi-) private firms trying to commercially enter the BoP.

The sample thus shows consistency in country of origin and sector, but shows variety in other third variables. This is important to take into account for the internal validity of the research, but does increase generalizability of the results. Most importantly, this convenience sampling method lead to a sample with sufficient variety in terms of BoP-strategies employed and success in entering the BoP-market. Below a short description of each is provided.

Table 1. Selected case studies

Firm	Case Description
AfricaPumps inc. and Family PVC ltd.	<p>AfricaPumps is a small social enterprise focusing on the sale of durable hand pumps for Africa. It is mostly a one person organization, with part-time support. The organization was founded in 2006/7, although development of the pump had already started in 2002 under a different employer.</p> <p>FamilyPVC is a family owned business that creates high quality PVC water well casings and screen systems. There are a total of 11 employees, four in the office, six in the factory and one chauffeur.</p> <p>Together they are in the business of durable hand pumps. AfricaPumps has the lead in this partnership and acts as process manager. They mostly do marketing and sales of the pump. FamilyPVC facilitates all the logistics for sale of the hand pump.</p>
TechnoCorp	<p>Technocorp is a developer and manufacturer of smart technical solutions for several of the many issues society faces, such as feeding the world's growing population and clean water provision for everyone. It is a NYSE registered company with around 700 employees. Within their lighting division they developed a small sturdy water-purification unit for the BoP-market in 2002.</p>
ClearWater Technologies	<p>ClearWater Technologies is the commercial daughter of a public Dutch water provision company. They develop and provide innovative water treatment solutions to enable provision of clean drinking water. The company counts just over 50 employees. Their gasoline powered water purification unit was developed in reaction to the tsunami in 2004 under the mother company. When ClearWater Technologies was founded in 2010, the product was placed under their direction.</p>
Maji	<p>Maji is a young start-up company that was only founded in 2011. They sell bottled water to the middle class and top of the BoP and through the kiosk model. Currently the firm exists of around six people.</p>

### Desk Research

When case studies were selected and had agreed to participation desk research on each of the case studies was first conducted. Desk research is a usual suspect in many qualitative researches (Huberman and Miles, 2002). Desk research helps form a first impression of the firm as far as they were not already encountered during the participant observation period. Desk research can also provide a good secondary data source (Beverland and Lindgreen, 2010).

The desk research stage consisted of evaluating a variety of documental sources to gain a first understanding of the subjects of research. The table shows a more comprehensive list of the sources studied. For Africa Pumps and Family PVC this is taken together as they collaborate.

Table 2. Case study sources

<b>Firm</b>	<b>Reviewed sources</b>
AfricaPumps inc. and Family PVC ltd.	-Company websites -Firm Flyers -Technical manual product -Extensive Product Reviews -Promotional Video -News articles
TechnoCorp	-Company website -Product website -Firm flyers (department and product specific) -Extensive Product Review -Promotional Video -Descriptions of client projects
ClearWater Technologies	-Company website -Product Information Leaflet -Extensive product Review -Experience Video -News articles
Maji	-Company website -Government support document -Project description network organization -Fundraiser portfolio

## Interviews

Interviews can allow for a deeper delving into the matter under study (Becker and Geer, 1957). In particular for field research less structured interviews are appropriate (Babbie, 2002). Semi-structured interviews have a general well thought out plan of inquiry but allow delving deeper into interesting pathways as they appear throughout the interview (Babbie, 2002)

For this study semi-structured interviews were conducted to understand the change in the four capitals and the role (the absence of) a BoP-strategy played in this. The scheme for the interview can be found in Appendix C. Interviews typically lasted between one to two hours. At four of the firms only one person was interviewed due to the small size of the firms. For one case study it was possible to interview two people. In general the director of the company or the person directly in charge of the BoP-project was initially contacted to participate in the interview. In most cases it was possible to speak to this person. In one case, the contact was referred to the PR person, who himself is involved in bringing the product under attention with the right institutions. The table gives an overview of the people interviewed for the case study.

Table 3. Case study interviewees

<b>Firm</b>	<b>Job Title of interviewee</b>
AfricaPumps inc.	-Founder and director
Family PVC ltd.	-Sales Manager (in charge of all activities related to the BoP-product)
TechnoCorp	-Product manager/new business of the light division (creator of BoP product and currently again in charge of all activities related to the product) -Account Manager of light division (temporarily was account manager of
ClearWater Technologies	Manager Public Affairs (involved in marketing the product)
Maji	Founder and CEO

These interviews were then transcribed and coded for the BoP-strategies and the four capitals. This was then used first of all to create a short description of each case study to be found in the next chapter and secondly and most importantly used for in and cross-case analysis.

### **Operationalization**

In order to make the step from the theoretical to the empirical, operationalization of the four capitals was needed. This was done on the basis of the most important articles used in the literature review ((A. J. Groen, 2005; A. Groen, Kraaijenbrink, & Heuven, n.d.; Roersen, 2008) and additional articles that focused on one specific capital.

#### *Strategic Capital*

Strategic capital was defined as the goal attainment function, the ability to set the agenda. Reputation of the firm is seen as a determinant of the firm's strategic capital and ability to set the agenda (Heuven, 2009). Artefacts can also present a form of power. Patents and technical standards in particular in the business area can be a form of power (Groen, Kraaijenbrink and Heuven, 2007; Roersen, 2008). Finally we must take a look at the power the firms holds in its relationships to important others in its network, namely its suppliers, customers and partners. The interdependence of the firm and its relations affect the bargaining and power position of the firm and thus its ability to set the agenda (Kumar, Scheer and Steenkamp, 1995).

#### *Economic Capital*

Economic capital is the adaptive function, and focuses on resources that are usable in exchange with its environment (Yuchtman and Seashore in Groen, Kraaijenbrink and Heuven, 2006). Money is the most obvious of these resources, which can in itself be described by different parameters in an organization (e.g. profit, revenue). In this research the set of mobile resources is described as the assets of the firm and the financial performance of the firm ( Groen, Kraaijenbrink and Heuven , 2006; Roersen, 2008) Finally operational effectiveness is also seen as an important element of economic capital (Roersen, 2008).

### *Cultural Capital*

Cultural capital is the pattern maintenance function. This function relates to particular skills, norms, culture that are particular to the firm and immobile as they are captured by the firm. This is reflected in the operating procedures, the tacit knowledge held at the firm (Groen, 2005). Therefore this was operationalized as the degree to which templates were formed for functional procedures in the technical, marketing, administrative, financial and relational functional areas. Also prior (firm) knowledge is seen as a determinant of cultural capital (Shane, 2000 in Groen, 2005) and captured as the (educational) development of the employees. Following Roersen (2008) also entrepreneurial orientation is included. During the participant observation phase employee motivation was also often mentioned by different experts as a result of involvement in the BoP. Therefore it was decided to also include this as part of cultural capital.

### *Social Capital*

The social capital of the firm is described as the network through which a firm may gain access to other capitals controlled by others. Therefore in order to assess the social capital of the firm both Structural and Relational elements of the network of the firm are taken into account. The degree and range of a network are important structural features that give an indication of size and diversity of the network and thus the potential capitals access is gained too. The degree of a network refers to the amount of ties the firm has (Freeman, 1979). The range of the firm indicates to what extent the connections cross institutional, social and organizational boundaries (Reagans and McEavily, 2003).

In the definition of social capital it is not only important that a certain connection exists, but that this connection then also is willing to act in the firm's interest and provide them with access to other capitals. As such tie strength is also considered an important element of the dyadic relationship between the firm and any other particular actor in the network (Heuven, 2009; Scholten, 2006; Granovetter, 1973)

Table 4. Operationalization

Capital	Determinants	Indicators	Related articles
Strategic	Relational Power	-Influence customers -Influence suppliers -Influence from/on partners	(Kumar, Scheer and Steenkamp, 1995)
	Technical Power	-Industry standards -Patents	(Groen, Kraaijenbrink and Heuven, 2007) (Roersen, 2008)
	Reputational Power	-Publications +ve/-ve -Evaluation of partners/clients	(Heuven, 2009)
Economic	Assets	-Financial Assets -Natural resources (land, facilities, materials, labor)	(Roersen, 2008) (Groen, Kraaijenbrink and Heuven, 2007)
	Financial effectiveness	-Revenue -Profit (margin)	(Roersen, 2008) (Groen, Kraaijenbrink and Heuven, 2007)
	Operational effectiveness	-Waste	(Roersen, 2008)
Cultural		-Education (Development)	(Shane, 2000 in Groen 2005)
	Procedures and tacit knowledge(templates)	-Technical -Relational -Marketing -Administrative -Financial	(Groen, 2005)
	Entrepreneurial Orientation and Attitude	-Scale Lumpkin & Dess -General Attitude	Lumpkin and Dess (1996) (Roersen, 2008)
	Employee Motivation		-participant observation
Social	Structural	-Degree -Range	(Freeman, 1979) (Reagans and McEavily, 2003)
		-Tie strength (Time, Depth)	(Heuven, 2009) Scholten (2006) Granovetter (1973)



## Scoring the case studies

Based on the desk research and the interviews each case study was described for each of the four capitals following the operationalization. Each case study was then scored on the extent to which their capitals had changed (+ve or -ve). The table below explains how this scoring was done for each of the four capitals.

Table 5. Scoring the capitals

Capital	--	-	0	+	++
Economic	No or little increase in revenue Significant loss over product Significant waste/losses	Little increase in revenue Some loss over product Some	Little to Revenue Break even on product	Increase in Revenue Small positive margin on product Little waste/losses	Significant increase in revenue Positive margin on product
Strategic	-Very weak power position -Significant decrease in reputation	-Weak power position -Decrease in reputation	-Neutral power position -Reputation stable	-Strong power position -Increase in reputation	-Significant power position -Significant increase in reputation
Cultural	-Very unclear procedures -Much decreased employee motivation -Negative change in attitude	-Unclear procedures -Decreased employee motivation -Negative change in attitude	-Some clarity about procedures -Employee motivation neutral -No change in attitude	-Clear and improved procedures -Increased employee motivation -Positive change in attitude	-Significantly clear and improved procedures -Significantly increased employee motivation -Positive change in attitude
Social	-Significant decrease in range -Significant decrease in degree -Existing ties have lost in tie strength	-Decrease in range -Decrease in degree -Existing ties have lost in tie strength	-Range of the network remains the same -Degree of network remains the same -Strength of ties unchanged	-Increase in range -Increase in degree -New ties exhibit high tie strength.	-Significant increase in range -Significant increase in degree -Significant amount of new ties exhibit high tie strength.

As there are different elements to each capital it may be that the description of the capital of a certain firm does not fit exactly within one score. In this case we will try to find the best scoring taking into account the different elements. This will be discussed in detail per capital for each case study.

## 4. Case studies

In this section we will give a short overview of each of the companies that were studied as a case study. For each firm we will start off with a short description of the business. Then for each company we will evaluate how their capitals have changed due to the BoP product under investigation and assess this score with on a five point scale from very negatively (--) to very positively (++), where the 0 stands for neutral. Also for each case we will describe to what extent the BoP-strategies were implemented on a scale from 1-5, where 1 stands for not at all and 5 stands for very much.

In the case descriptions several quotes are included, as the interviews were in Dutch, these have been translated into English by the researcher.

### 4.1 AfricaPumps Inc. and FamilyPVC Ltd.

AfricaPumps and FamilyPVC work closely together regarding their product for the BoP. Therefore their business model and the extent to which they make use of the BoP-strategies will be described together. The analysis of their change in capitals will be done separately.

AfricaPumps is a social enterprise which enables the selling of sturdy hand pumps in Africa to NGO's. The sturdiness of the hand pump ensures longevity of the product and reduced maintenance costs for the villages compared to pumps sourced from the Asian market.

AfricaPumps is a single man social enterprise with part-time support founded in six years ago. The director of AfricaPumps is also the developer of the product and continues to fulfill the role of developer. Aside from that he guides the marketing and sales process and is generally the process manager. FamilyPVC can be seen as AfricaPump's strategic partner who takes on some significant parts of the process.

FamilyPVC is a family owned business that creates high quality PVC water well casings and screen systems. The PVC pipes are bought and then altered by FamilyPVC to become high quality water well casings and screen systems. Regarding the sturdy hand pumps they are responsible for all logistics and distribution as well as the financial procedures.

The sturdy hand pump is sold to NGO's, not directly to the BoP, this is important to keep in mind. The BoP however is the 'consumer' of the product. They can also enter into a service contract with the local dealers of the hand pump. Although the marketing and sales to the NGO's make take place from the Netherlands the actual sales actually go through their local dealers in Africa as much as possible.

### Use of BoP-strategies

#### Co-creation

The idea for a more sturdy handpump was born in 1997 when the current founder of AfricaPumps was confronted with the large percentage of broken down handpumps which plagued Africa. Development of the pump started in 2002 by the current founder of AfricaPumps while he was still employed by others. At that time he had been working for NGO's in Africa for a long time and was now stationed in Kenya. Together with his staff and the local private sector they developed the first model of the sturdy hand pump. Through time he collaborated with another Dutch party but eventually decided to fund AfricaPumps and intensify collaboration with FamilyPVC. About the product design process

*“Well it is a very long process. You start by reviewing which hand pumps already exist. The good things, the bad things about them. Then you try to understand why certain things are good or bad. And then you end up in a complete design process. Then you start testing a few and indeed it works pretty well, but it could still be better if.. you know. So what we did, we installed a few about 4/5 years ago in Africa. And then you start looking for what works, asking local people, what are you happy with, what are you not so happy with? Ok, feedback, back again en another etc. That way you get better every time... And then it worked really well in 30/40 meter wells, then we tried them in wells of 80/90/100 meters, far in the north of Kenya. Really the dry horn of Africa. And then it turned out it worked well for 80/90 meters, but there were a few things that didn't work completely right. Ok, so then you take that again... and so stronger and better and better and better. So it is sort of, they come to me with a problem, then I'm not going to make that up with the companies here, then I sort of start shopping, we have this problem, how can we solve that? Because I don't know everything. So, like I said, it is a sort of collaboration. We just collaborate with the local companies who have to implement the pumps and test them. And the companies here have the expertise. They know more about the materials.”*

After initial focus was on the development of the product, which always remains ongoing, the business model also came into focus. This is when they developed the idea of the PumpZone. They don't try to sell stand-alone pumps, but to create zones in which pumps are placed. In this way maintenance can be organized for entire zones at a time rather than individual pumps. They also stimulate yearly maintenance check-up contracts between the dealers and local villages but how they exactly organize this is between the dealers and villages. This allows flexibility in the local business model. Regarding the role AfricaPumps plays in developing the local servicing model it is said; *“Nope, those villages and the dealers organize all of that themselves. You shouldn't want to control that too much”* This way distributors and the local village people can adapt the business model to suit local preferences and circumstances.

Finally the value proposition has been developed throughout the entire system, not only in the product offering itself. The price structure is developed so that a reasonable profit can be made by each participant in the chain. This is so for the suppliers in the Netherlands of which FamilyPVC is one. The price structure is particularly so that the distributor, the local and last step in the chain profits. To demonstrate this Eric shows a video in which he asks the Gambian distributor what he likes about the pump. The local distributor mentions because it is good for his pocket and for his community. But as Eric notes; *“Look, he names his own pocket first.”* Involvement in the chain must be profitable for the local partner too. *“And that is so crucial, because (name) also just is a man from Sudan.”*

If we evaluate the above we find that the idea for the product was born locally in response to the needs of the communities encountered. Further development then occurred through feedback loops and interaction between local circumstances and technical knowledge in the Netherlands. Although advice is given on how to organize maintenance the local business model for maintenance is allowed to form to local circumstances. Finally the value proposition is developed so that each step of the chain profits from its involvement. All in all it appears that co-creation has been clearly incorporated into the business model and we thus score them with a 5.

### Forming Local and Non-Traditional Partnerships

The collaboration between AfricaPumps and FamilyPVC can already be described as non-traditional partnership between a for-profit firm and a not for profit social enterprise. Though AfricaPumps is a Holland

based organization, due to many years of experience of the founder working in Africa for NGO's this means that this relationship already holds significant knowledge of the local market. This knowledge is further supplemented and updated by the feedback from the local distribution partners in Africa as demonstrated in the quote in the paragraph above about the design cycle. These local distribution partners are small and middle-sized local companies with previous ties in the water sector. Through the installment and maintenance of the pumps they built up more ties with the local villagers.

Of course their clients are NGO's who have extensive knowledge of the local circumstances. This allows them to place the installment of a new hand pump within a program of education and development. Such as Eric, the founder of AfricaPumps says; *"But the NGO's can do that, they are very good at setting up water committees and that kind of stuff. That they are very knowledgeable about."*

Based on evaluation of the above we score this partnership with a 5.

### Building local capacity

Local capacity is built in two ways. On the one hand local capacity is built because through installation of the hand pumps in the villages. Missing infrastructure for water provision is so provided. This saves many of the women hours of fetching water, leaving more time for them to pursue other economic activities. Also the increased access to water increases options for small scale agricultural activities. Because they sell the hand pumps to NGO's, placement is often complemented with training on e.g. hygiene and forming water committees. They smartly make use of this also when they attract other external sponsoring for the placement of pumps, which is explained in more detail under Designing for Local Scale. This money is used to 'buy back' a installed pump from an NGO, which ensures that these pumps are also accompanied by a training program.

Secondly of course local business is encouraged because NGO's are encouraged to buy the pumps with the local distributors and not directly with FamilyPVC. This thus generates new business for the local dealers as they also profit from the marketing and sales activities performed by AfricaPumps. The other way around, local dealers also generate new leads of which of course then AfricaPumps and FamilyPVC profit. For example their dealer in Mozambique has become one of their best ambassadors. Also the local maintenance schemes generate new business and income for the distributors.

Reflecting on the above we see that local capacity is built on several levels, from providing missing infrastructure to helping build local business. As such we score a 5 for building local capacity.

### Designing for Local Scale

As explained earlier under the Co-creation section they try to only place pumps within a PumpZone, so scale is achieved in the maintenance schemes. Though they only promote the yearly service check-up, they really try to only place pumps within PumpZones. Dealers also actively try to control this. *"Well our dealer, he tries to control that, he prefers not to sell pumps in the middle of nowhere, because then he'll say, if it's not in a pumpzone I lose sight of them. If people really push it then, ok, but then you have to keep in mind you have to come back to me, so it's probably better if I then cover an entire area. So then it's up to the local NGO"* As explained before the exact configuration for maintenance schemes is decided upon between the villages and the dealer, though NGO's can play a role in this.

Another way they push for scaling is by not only trying to sell directly to NGO's but also by finding sponsors, in which they sometimes engage in longer projects or collaborations. *"And how do we do that? We then say, hé, there is a pump here. Great, if you, the NGO, want to give us money for this pump. Then it gets installed. Ok, picture, GPS. Well and if you then send us that picture and the GPS then we can tell this sponsor, look, we already have this pump installed here, very concrete, you can buy that from the NGO. Well, they like that, because then they straight away know; that pump is ours. And then in fact the NGO that placed the pump doesn't matter anymore. And the NGO, they then get money again from us or what I prefer, they get a discount on the next pump with the dealer. And so it continues."* *"And that's the idea, so if we have a lot of sponsors, we can become a sort of pull factor. You can create more demand, through which you.. and every pump installed, in such a PumpZone, is another village with access to water. And to increase demand, we do a littl promotion for donors, such as Sanex and other organizations, like Join the Pipe. They then sponsor a pump with us and then we can kind of pull open the market."*

Reflecting on how they have allowed for scalability in the business model, we must say this is done quite well. Through the promotion of the PumpZones they push for local scale and so reduction of maintenance costs. This way little hubs of local scale can develop around the dealers. Also their twofold approach of selling the pumps to NGO's but also finding other sponsors to buy back pumps makes they can also become a pull-force in the market place. Designing for local scale is thus awarded a score of 5.

### AfricaPumps :The (change in the) four capitals

#### Economic Capital

The assets of the company seem to be very limited. Office space is rented and all materials and production facilities are held by the strategic partner or other partners of the firm. Rent is paid for the storage of materials to the strategic partner.

So far since the start a total of 500-600 pumps have been sold. Sales have slowly increased in the last four years to a current level of between 150 to 200 pumps a year. For each pump sold Company A receives on average 150 euros, which provides them with just enough revenue to more or less to cover their overhead costs. Or as the interviewee says; *"Roughly that is about 10% that needs to cover our overhead and well that works out more or less"*. Since it is a not-for-profit social enterprise this is their main goal. Any growth in sales and thus income will be reinvested in the company and no profits are meant to be made.

Some important efficiency changes have taken place in the logistic process. This in part is due to scaling, enabling larger shippings. *"In the beginning there was some airfreight. So you just made that into small bundles and we sent that away. And slowly that has become half and whole containers."*

Another change has been made in how the pumps are packaged. Now all bolts and screws needed for one pump are packaged in the cap of that pump. There appears to be very little waste within the organization, though this does not appear to have changed much.

When assessing all of the changes within the economic capital domain we see that AfricaPumps has either remained at the same level or has increased positively. For example, the level of assets appears to have remained stable, but revenues have clearly increased, as has efficiency. As such it the change in economic capital is assessed with a +.

#### Strategic Capital

AfricaPumps has several NGO's that buy from the pumps from them. These vary in size and location, this makes dependency is not too high. On the other hand the pump and the brand are protected and currently they are the only firm providing such a sturdy hand pump. However there are other hand pumps in the market, though they are not of the same quality. Taking into account the above there is not strong holder of power in the relationship between AfricaPumps and its clients in general. The same can probably be said for the suppliers. As for the relationship with its strategic partner it appears this operates on a power balance as well, or at least the power in the relationship is not used. Concluding it appears that the firm has a neutral power position in the field.

Aside from their direct power relationships their reputation and status in the field is growing, because they are the only one providing such a sturdy hand pump that greatly reduces maintenance costs their reputation is slowly rising, or/and that of their competitors falling. The price of their product is about five times higher than their competition but due to the sturdiness of the product and thus the long life span and reduced maintenance costs the total price per year is lower, especially for the local communities. AfricaPumps is taking a two way approach to increasing reputation and sales. On one hand they have a solid belief in the quality and effectiveness of their product, illustrated by quotes as; *"the durability of the pump. It just is very reliable. It doesn't contain any parts that can wear out."*

Meanwhile they also focus on demonstrating the problems of the current pumps used and the lack of evaluation of projects of many NGO's. In many articles they are featured there is always a focus on the short life span of the current standard pumps. Also the interview is littered with quotes like; *"If in Africa something happens with the pumps, then it starts buzzing everywhere. We have just put a bomb under the entire Unicef India pump hassle."* *"There was a large American project in Mozambique, who put in bogus pumps. And they knew ahead of time that if they imported cheap pumps from India, that they weren't going to work. But, they had too, because they were cheap. [...] The project has been going on for a couple of years now and already half of the pumps doesn't work anymore.[...] So they meekly call our dealer, asking how quickly we could deliver. A whole political scandal.."* This fact is confirmed by the researcher who was in Mozambique during the time the evaluation results came out and caught wind of the devastating tone of the evaluation. AfricaPumps actively tries to publish about these facts (not necessarily this incident in particular) and the shortcomings of the current hand pump, thereby also increasing their own reputation which is now slowly gaining traction.

Evaluating the development of the strategic capital we come to the conclusion that this has positively increased. Their power position in their relationships is not particularly noteworthy, not in a negative nor positive way. Their reputation is slowly gaining traction and they are becoming an authority in the business. As such we score the change in strategic capital with a +.

### Cultural Capital

The founder of AfricaPumps was already very knowledgeable about the target market due to many years of work experience in Africa. Although of course more experience is accumulated over time education levels have not been impacted significantly.

There is clarity regarding the division of tasks between the strategic partners. Procedures do allow for flexibility. FamilyPVC covers all logistical and financial procedures. AfricaPumps takes on marketing the product through their many contacts with NGO's and through publications. Also the responsibility for further development of the pump lies with AfricaPumps which facilitates the process between feedback from the field and the different suppliers that together form the sturdy hand pump to find new innovations to fix the

encountered problems. *“So I say, boys, I’ve got this problem, how would you solve this? Well then they provide a solution and there I go again. I’m a sort of a matching, between these parties, well, that works fantastically.”* However it must be noted that development of the product goes on continuously which can sometimes be perceived as a bit of a difficulty for the suppliers.

The sales process also always runs through AfricaPumps in order to control the process. Quoting their strategic partner when asked sales requests are handled; *“Eric wants to keep a grip on things. So he knows what happens and as a representative of his organization. He, as he said so eloquently, should monitor the process.”* Eric, from AfricaPumps, will always prepare the invoice and the packing list for the order. However the actual payment process runs through FamilyPVC and the dealers. The NGO will pay the dealer, who pays the invoice sent by FamilyPVC. FamilyPVC then pays a “commission” for each pump sold to AfricaPumps. AfricaPumps also compensates FamilyPVC for the time they invest in organizing the logistics for each shipment and the storage of the product.

Relationship with all relations is always managed openly and transparently. *“We are very transparent, we say exactly what we offer and if there is a problem, we say sorry and fix it. Just very clear, very concrete, concrete and transparent”*.

When asked if he believes attitude of the firm, in terms of risk-taking, innovativeness etc., has changed during the development of the project Eric responded saying he didn’t believe so. As it is mostly a one man operation with already much previous experience in the target market this is not difficult to believe.

Evaluating cultural capital development at AfricaPumps we see attitude and education levels have not changed much for this firm. However a clear division of tasks with the strategic partner has formed and processes are organized accordingly. Overall evaluating cultural capital development we score it a +.

### Social Capital

During its foundation the organization has built up a very strong relationship with their strategic partner FamilyPVC. Contact is frequent and the collaboration stable. Also with other suppliers there is a stable relationship, where contact is direct regarding innovations to the product.

Their good relationship, based on transparency and trust, with the local dealers, people in the field, allow for constant feedback on the product and the feasibility of local maintenance. These lines are also very short; demonstrated by calling one of their distributors during the interview to have a short conversation in French and a promise to call back again in the coming days. The importance of these local relationships and the importance of trust in these relationships is emphasized. *“That is good relationship, that is crucial” “What it comes down to is trust. Look, they trust what we do and we trust they give us the right information. Of course it can happen that a message doesn’t come through. Then we try again. But they know that if there is a problem, they will get feedback. And that is the same for the trust between villages and the dealer. It’s all about trust. If people have trust in the pump, they also trust the dealer. And if there is a problem, they go there, and things get sorted.”* These relationships with local distributors but also the consumers of the products are not only strengthened by distant communication but also occasional trips to Africa.

AfricaPumps works together with a variety of NGO’s such as Unicef and Oxfam. Relationships are particularly good with USAID. For example Eric would be flying to the US to meet with them among others a few days after the interviews. There are also structural collaborations with another small NGO which shares their

office space and through the sale of certain of its products provides financing for the distribution of more pumps. Larger projects have also been set up with larger companies.

All in all AfricaPumps has worked hard to increase its social capital and the results can be seen. They have built up a network of trustworthy local distributors which provide them access to local feedback about the product and access to the local people, which of course is also one of the main attributes of their clients the NGO's. Also in the western world social capital has been built up through an intensive relationship with their strategic partner as well as their other suppliers and the western offices of NGO's and western businesses. This causes us to evaluate social capital with a ++

### FamilyPVC :The (change in the) four capitals

#### Economic Capital

Regarding assets held by FamilyPVC the inventory of the product is stored in their factory. However they are financially compensated for the rent of the storage space.

As stated in under AfricaPumps numbers of pumps sold have slowly increased. Regarding revenues and profits from the beginning it has been the idea to apply social pricing to the product. "Every supplier takes a small margin on the product in order to keep the costs low and incorporate the social aspect. " "For all other activities I do around the product, the documentation, the organizing, we just get compensated for that. And a bit of storage, we get compensated for that". The product is financially interesting for FamilyPVC but is not their highest margin project. *"Yes, it is interesting in that sense, otherwise we wouldn't do it anymore, I'm very open about that. To say that we're doing this because we're making so much money off of it? No, I don't think you should want that."* Involvement with this product thus boosts revenues through the compensation they get for the storage and organization of the logistics. Also revenues are boosted because they supply the PVC pipes used in the pumps. They do make a margin on these products, which is however a little lower than the margins that usually take into account.

As already described under AfricaPumps some efficiency improvements have been made to the logistical process.

When evaluating economic capital we find that their involvement with this product boosts both the revenues and profits. Relative profits might be lower than with other products. Efficiency has also improved. We can only conclude that economic capital has been impacted positively and is thus indicated with a ++.

#### Strategic Capital

The most important relationship for FamilyPVC regarding this product is the one with FamilyPVC. As noted before there appears to be a balance in power between these two parties. Theoretically AfricaPumps is probably more dependent on FamilyPVC than the other way around because of the crucial role they play in distribution, though the patents on the name and the technology lie with AfricaPumps. However there is no evidence of this power being used. Regarding the suppliers and local distributors the power balance in the relationship does not seem noteworthy. All in all it seems that power position is neutral.

Regarding the effect of their involvement with this project on their reputation the interviewee finds it hard to quantify. In the Netherlands they don't intentionally market their involvement, though it is mentioned on their website. The English office does use it more actively for branding.



*“I’m sure it has effect, I don’t think it has such an effect that it really boosts revenues or people have a better image of you. Or, at least not in the Netherlands. I know my colleague in England did like it in the context of CSR. Something to take along and show the clients. After all it is a sort of extra point of interest, that you can show we are involved. But I always find it very difficult; we don’t really going around boasting, look, we are involved in development aid... But then that’s not how our market works, nor our clients”*

It is believed that the clients are attracted to the quality of their products and services and as such their involvement thus doesn’t really generate extra sales. In Britain however, because of showing the product as one of their CSR activities, this led to an order of the British army of 12 pumps for Sierra Leone.

*“We have also delivered some pumps to Sierra Leone, through the British army, so that is also very interesting. That was through my English office, a colleague there. And he indeed, what I said before, it fits within the scope of the product. If you present yourself as we are also involved in this as a development project.”*

Of course aside from the influence the product has on their general reputation, the reputation of the product itself is growing vastly, due to the efforts of AfricaPumps and the overall quality of the product. This was explained under Africa Pumps.

Evaluating the neutral power position, the limited positive effect on general reputation and the greatly increased reputation of the product itself we score the development of strategic capital with a +.

### Cultural Capital

Education and development levels do not appear to have been effected by incorporation of this product into their portfolio.

As already stated under AfricaPumps, division of tasks is very clear between the two partners. The financial process and the role FamilyPVC plays in this was already mentioned. The distribution process is also their responsibility. When a new sale has taken place AfricaPumps will prepare the order and send the overview of the invoice plus the packing list to FamilyPVC, which triggers the logistic process. *“I then receive the packing list and make sure that all materials are picked and placed in the container.”* They also take care of all paperwork, customs and everything that is part of the distribution process up to the local distributor and in few cases, directly to the project site of the NGO. The NGO or the local distributor is then responsible for local distribution and implementation. *“Yep, the distributor then really just receives a container, completely packed with materials. From there they then have to turn it into something.”*

As part of the logistical process FamilyPVC also holds the inventory for the pump. *“We hold as much inventory as needed for around 100 pumps. As soon as an order leaves we try to restock again. Then you can respond quickly, as a matter of speaking if the client orders you can send the order a week later. You only have to pick an order.”*

It is not believed that their involvement with this product has brought about any real changes in attitude in any way. This is also because this product is so far removed from the bulk of their other products.

Assessing the change in cultural capital we find that involvement with this product appears to have had little impact on the attitude within the firm, neither positively nor negatively. Tacit knowledge however is captured well within the defined procedures within FamilyPVC. As such Cultural Capital is scored with a +.

## Social Capital

As described earlier the strategic partnership with AfricaPumps is very strong and stable.

FamilyPVC was already previously familiar with two of the distributors in Africa, namely in Gambia and Mozambique, though this product has rekindled their previous relationship. These ties are very short and strong. In Kenya they now also have a distributor for the pump with whom they have good working relationship. In Tanzania they also have contacts with a group, though this relationship is sporadic. All of these relationships are viewed more as client relationships, to whom they deliver the product. *“You work with dealers there, distributors and deliver them a product.”* Feedback loops etc. go more through AfricaPumps.

Also, their relations list has increased with NGO’s, which have also lead to (plans for) projects in Sierra Leone, South-Sudan, Swaziland and Ethiopia. These are all however, covered as much as possible by their main three distributors in Africa. Contacts have also made with national and international government, though this is sporadic in nature. Again though these relationships are managed mostly AfricaPumps.

Evaluating how social capital has changed during involvement in this project it is evident that it has increased. This is specifically clear for the relationship with strategic partner AfricaPumps, where it is clear they are willing to act in each other’s interest as there interests have been mostly aligned. Through involvement in this project they have rekindled previous good relationships in Africa and created new ones. Also they have built up a new network with NGO’s. However as many of these relationships run through AfricaPumps the change in social capital is scored with a +.

## Summary Table AfricaPumps and FamilyPVC

Table 6. Scoring AfricaPumps and FamilyPVC

Company	Economic Capital	Strategic Capital	Cultural Capital	Social Capital	Local and Non-traditional Partnerships	Building Local Capacity	Co-creation	Designing for Local Scalability
AfricaPumps	+	+	+	++	5	5	5	4
FamilyPVC	++	+	+	+	5	5	5	4

## 4.2 Technocorp

Technocorp is a NYSE registered company with over 700 employees offering technical solutions in a variety of fields. In 2002 they started to develop a sturdy water-purifying device based on their UV-technology that they have since tried to sell to the BoP-market.

Several partnerships have been initiated in order to market the water-purifying device. They have made use of distributors that were previously known to the firm, but where not knowledgeable in the water sector. Of the initial 15, only 5 are still (semi-)actively in use. Of these partners, in China, is very successful.

They had one full-time employee specifically for this project for the duration of about four to five years and even a second full-time employee for a shorter period of less than a year. However as it proved more

difficult than expected to market the product they both have moved on to new challenges and the responsibility for the project is now back with one of the original developers and the current manager of the UV department.

## Use of BoP-strategies

### Co-Creation

The idea of the device was born in the office during an informal gathering. *“We made the first sketches on the back of a coaster.”* After receiving the company’s blessing the idea was further developed. During this process many contacts have been made with people with experience in target market.

*“Well, we approached a few people who helped us. That came from that market. I once visited a doctor that worked abroad a lot, had worked in Ghana. Just, if we would do something like that, what would you think of? In that way we tried to poll a few people.”*

On the basis of this information they developed a prototype which was then tested by by a university abroad and certified by a quality assurance firm, who were very enthusiastic about the product. From there several projects have been undertaken that led to new feedback about the product on the basis of which it and some of the promotion material was adjusted. *“Like this one, it was placed in Brazil in 2005 and is still working. There were a few problems, some start-up problems, the connectors started rusting because of the high humidity in Brazil. We’ve now found a solution”.*

*“And we learned things from the users. We adjusted some things. Very simple things we had never thought about.” “You had to keep pressing the button to let water come out of the unit. That, of course, is really inconvenient. So now, if you press it once the water starts to come out, if you press it again the water stops. Those kind of simple things. So that has taught us to look with a different view, to see things from the perspective of the user”*

The product was thus developed from a technical perspective, though input has been sought from people with experience in the target market.

The value proposition was developed in terms of the product itself. Focus has been on trying to sell the product, not to develop the model around it. This is, amongst others, reflected by their earlier choice to have local distributors that were not in the water industry, and thus not able to provide services etc. It is also reflected statements like; *“In the beginen we really thought that we were going to sell the units very easily. Because it’s a very simple and good solution. Everbody says, this is fantastic”*

This insight is now slowly changes, but as these changes are quite recent and results are not yet clear we will not take these changes into account and analyze the situation up till half a year back.

Based on the fact that the product was developed from a technical perspective, though some input of experts was sought, and that the value proposition was developed mostly only in term of the product they are scored with a 2 for co-creation

### Local and Non-traditional partnerships

They have tried to set up relations with some African governments; however these relationships have

proven non-sustainable *“The lesson we have learned is that if you try to do something through the government, making that that step, it won’t work.” “We are convinced that there (Africa resp.) governments don’t work.”* They have also tried to sell the product through several previously known distributors that had no experience in the water industry or the BoP. At least two-third of these contacts has become inactive over the years. This is because they have no knowledge of or access to the target market and no motives to try to actively pursue this. *“I think it is mainly due to several partners that were to some extent active but not in water-related issues.”* One particular distributor in China is proving to be a very successful relationship for selling the device. s

Currently they are revising their partner strategy and actively recruiting new local partners in several parts of Africa and South Africa. They are targeting medium-sized companies with previous experience in the water industry. The results of this new strategy change need yet to show themselves but they have already signed new distribution agreements with a South –African and a Brazilian firm. Another opportunity that is now being investigated is collaboration with small private donors, in a similar fashion as FamilyPumps work with sponsors. (Groups of) private owners from the Netherlands can sponsor the placement and first year of maintenance of a water purifying device in Africa, which would then be installed by their local dealer. These plans are momentarily under development.

The initial partner strategy of Technocorp targeted previously known local firms with no particular knowledge in the water industry nor the BoP market and national governments. Now they are switching to finding small and medium-sized local partners with more experience in the water industry and the ability to provide maintenance and service. The initial strategy does not show many elements of the Local and Non-traditional partnerships, whereas the newer strategy does to a certain extent, although the question remains if these new partners not only know the water market but also the BoP-market. However because the newer partner strategy was only just being implemented as this research took place and thus not yet related to results we will choose to score TechnoCorp on the old situation as we can also relate this to results in the capitals. As such we score the initial partner strategy with a 2.

### Building local capacity

The potential of the water purification unit is that it can provide clean water, thereby fulfilling a crucial role in infrastructure. However the unit on its own only purifies water, it can of course not provide water, it needs an external water source. However it can then purify the water from any surface water source, providing obvious health benefits. For example in Tanzania attendance rates increased vastly after introduction of the unit. *“Within two weeks there were 40% more children in the school. That simply is because those kids on average need to walk half hour to forty five minutes before they reach the school. And well if you have diarrhea, chronic diarrhea, then you are not going to go to school. Then you stay home. Because of drinking the bacteria free water those kids just have better opportunities to go to school, to have an education”.* And in Ghana at a small hospital is reduced child mortality with two per month. *“But a nice example at a small hospital in Ghana, a children’s hospital is that before on average two babies would die each month due to consequences of contaminated drinking water. After the purification unit was installed, no children died anymore from the consequence of contaminated drinking water.”*

It is thus obvious that when installed the purification unit builds the capacity of the community affected by reducing illness and deaths and thereby increasing chances to partake in economic activity. However, in the initial business model they do not actively help local business develop in any way. This might change with

the new partners and potential alliances with private donors, which could help market development. However as this is not yet the case we score them a 3 for local capacity building.

### Designing for local scale

Up until recently Technocorp appears to have put little thought into how to organize for local scale, a result maybe to a certain extent of viewing the value proposition in terms of the product only. This reflected by the several small NGO's that have bought the only few of the products for a small scale project. The units that have been sold are often standalone and scattered all over the world without pushing local scale. There are of course exceptions to the rule, like for example in China, where sales are going well and orders go by the container.

Therefore we score them with 3 for designing for local scale.

### The (change in the) four capitals

#### Economic Capital

TechnoCorp has had needed to make a few asset investments specifically for the water purification unit. So far they have treated the product as a type of pilot series and have been able to produce batches on their prototype line. They have had to invest a mold for the plastic casing of the unit and some other toolings.

Total distribution of the product totals about 400 units of which an estimated 95% has been sold. These are the total sales in the past ten years. It does appear there is a very slowly increasing curve in the last years. When asked what about the financial consequences of the purification the initial reaction is; *"Next question please."* (with a smile) and then *"No, we are not going to take a look at that. Because if we start looking at how much all of it cost then all of us become very nervous and we screamingly start doing something else very quickly."* When pressed it is estimated that costs are around a few hundred thousand euros, and when the different cost components were listed, it appears this estimate might be conservative. *"But well, Pedro has worked here four/five years. And if I take a look at his salary. He may have sold a few units, but it doesn't add up. And if I look at the tooling that has been made, the tools made, the tests that have been done. The tickets to India and Africa for Pedro."* It is mentioned that some of these cost elements may have generated leads for other products. All in all it may be safe to say that so far, in the last ten years, clearly a loss has been made on the product.

Current production is in batches of 100, but should the product start to scale they can invest in scaling up production.

Evaluating the figures above we find that so far involvement in the BoP we find some specific assets have been obtained. Some revenues have been generated for this product over the last ten years, though these are not very large, though they appear to have been very slightly increasing in the last years (mainly due to China). Overall it is clear a loss has been made over the product up till now. The operations have been set up efficiently within the existing structure of the firm. Therefore we score the change in economic capital with -

## Strategic Capital

There appears to be no strong power divide between Technocorp and its distributors. This may be as that both in the case of TechnoCorp as well as for many of the suppliers it is one of more products. As for the suppliers this is the same. They do have a patent on the product, but this has been acquired more out of prevention of others taking a patent on the product rather than to hold a strong power position.

In fact, one of their own clients, from the UV departments, has now brought a similar product on the market. They let them know they weren't very happy with it, but have not taken any other action. They see they run into the same marketing problems and TechnoCorp's solution remains slightly cheaper, so they feel no need.

It appears that their involvement with the water purification unit has been beneficial for their overall reputation. When asked what the greatest value was the unit had brought them the account manager answered *"For our image. Not just making money with B2B. Not only making money that way but that we also try to do something for.. Because that really has always been the idea, even up to this moment."*

Also the general manager of the UV-light department emphasizes the role the purification unit has had in their rise as market leader in the UV-light business. *"Look we've become world leader for these kinds of UV-products. That is not because of the purification unit, but it definitely contributed. We show it at our stand at the fair of the international UV-association in Las Vegas. We also show the product at other fairs. And people respond to that. They will come over and say, "hey what an interesting product". And now we have a nice story to tell. And bam, but we also sell other UV-products.. Because the story is easily told."*

As referred to in the quote above, they do use some of their smaller successful stories as marketing tools, for the product itself, but as can be seen, for the UV-department in general as well.

As for the reputation of the product itself, it appears that everyone who worked with the product is very enthusiastic. Also the Dutch KIWA institution was full of praise when they tested the product. However so far they have been unable to leverage this reputation to boost sales.

Evaluating the above we find that Technocorp does not hold a particularly strong or weak power position towards their clients or suppliers. They do have patent on the project but in practice they do not exercise the power associated with it. Finally the reputation and marketing abilities of the UV-department under which the product falls have profited from the BoP product. Mostly because of this last aspect we score the change in strategic capital with a +.

## Cultural Capital

Trying to market this product has given new knowledge about the complexities of their target market. This includes several cultural as well as technical aspects.

The internal processes are clearly defined and worked out, such as production and inventory management. However they keep continuing to search for a business model, which makes it difficult to form templates to guide actions.

When asked what was one of their greatest challenges one of the responses remains; *“Choosing a business-model.”* As they have not yet been able to develop the appropriate tacit knowledge to make the water purification unit a success, therefore this knowledge can also not be captured within the processes. They do indicate, they, as a firm have learned from their experiences and are forming new templates for dealing with distributors and clients and thus show an increase in tacit knowledge.

Their attitude has been altered in the sense that they have become slightly more watchful in the start of their partnerships.

Also the successful projects executed in Ghana and Tanzania add to the pride and motivation of the employees from the light department as they feel they have been able to create technology that truly matters. This is also true for the compliments achieved from the certification organization.

Taking in to consideration the positive effect of this project on employee motivation and pride and the first increases in tacit knowledge we score cultural capital with a +.

### Social Capital

They have had significant difficulty building up their social capital. Reflecting on what they have learned the interviewee states; *“I think the most important thing we have learned so far from this unit at TechnoCorp is that finding the right partners is the most important thing in projects like these. Especially in these kinds of countries, that know local customs but can also find their way to the people who make the decisions.” “Your partners, your network is really of essential importance”*

They attempted many different types of relations in order to sell their product and to get the product going.. However most of these attempts have been unsuccessful. Lately they have had a change in partner strategy and are specifically looking for small local partners which experience in the water industry and the ability to provide technical support. They have now signed distribution agreements with two such partners in the last half year.

*“Look, we’ve tried with NGO’s, organizations in the Netherlands. The Red Cross and those kind of things. They all think it is fantastic, very nice. We looked at Shell, who has all kinds of companies in India for example. All kinds of factories, which might bring you to provide these units in the surrounding villages. As a good neighbor as a matter of speaking, but somehow that doesn’t work out. So I think the strategy now, with local partners, yeah it is slower. You have to build up something. First of all finding the right partner. You never have the right partner straight away, that we found out. Well, that is getting better now. En that partner has to start building. You have to support them, help them and well that has to start developing”.*

Reflecting on the above we find that they have not been able to build up a clear network around this product that is willing to act in their interest. This is reflected by the many relationships they have tried to set up and that have faltered, such as with the government, but as well with the large percentage of inactive distribution partners. It appears that because of the new course that has been set out for this product some positive changes are taking place regarding social capital, reflected by the two new partnerships. However as said before for this research we currently want to reflect upon the older strategy that was implemented up to about half a year before this research. The social capital that was acquired at this time is scored with a 0.

Table 7. Scoring Technocorp

Company	Economic Capital	Strategic Capital	Cultural Capital	Social Capital	Untraditional Partnerships	Building Local Capacity	Co-creation	Designing for Local Scalability
TechnoCorp	--	+	+	0	2	3	3	3

### 4.3 ClearWater Technologies

ClearWater Technologies is a subsidiary of a Dutch water provision company that is focused on commercially selling the earlier innovations of the mother company and the new innovations developed in their R&D section. This R&D section focuses on developing state-of-the-art technology for purifying surface water. Simply said the company exists of an R&D core with a marketing and sales shell.

The main focus of the sales strategy are the high-end products, mostly directed at surface water purification, which are sold to developed countries. Next to this they also sell an older line of water purification systems to developing and up-coming countries. This system has been developed for different sizes that can be implemented in a plant depending on the need. Also these systems can be linked if wanted and so doubling and so forth the capacity of the plant. These systems are now successfully sold through Build-Operate-Transfer contracts and with external financing to several major cities in mostly East-Asia.

These systems than formed the basis for the development of their smallest product in this line. This product was designed in reaction to the tsunami in South-East Asia and the problems with obtaining fresh water. Since then the product line has been used in several relief aid purposes and is part of the portfolio of ClearWater Technologies. However it is only a very tiny splinter of their portfolio as the focus is mainly on the high end products. Therefore there is little focus on this product.

#### Use of BoP-strategies

##### Co-creation

The product was quickly designed and implemented in reaction to the tsunami in South East Asia in 2004. This process was took place in mere weeks. When the product was first implemented it was accompanied by the several people of the mother company. The experiences of these people, who of course could observe the reaction of the local people, led to several improvements of the original design especially in technical design.

Reflecting on the design of the water purification unit we find that was done driven from technology rather than from local circumstances. Some improvements and changes have been made to the product after interaction with the client group but overall we can conclude the level of co-creation has been very low and we thus score it with a 2.

##### Local and Non-traditional partnerships

For product 'E' they have actively mixed themselves in relief aid discussions. The goal is visibility amongst the important players, however this requires more effort than can currently be invested. They have been placed on the list of UN suppliers, but to make it to the top 20-30 (out of 300) would require many more years of



lobby work. Their work has also led to visibility amongst several other NGO's, such as Doctors without borders. This resulted in some sporadic collaboration, but no real lasting relationships have been set up with any of these partners. Therefore for we score the degree to which they have engaged in local and non-traditional partnerships with a 2.

### Building local capacity

As for each of the studied cases, by providing access to clean water, they fulfill an important gap in the local infrastructure. Clean water can drastically impact health and vastly reduce the time needed to fetch water. This frees up time and energy to undertake other value-generating activities. However their current model does not allow for any other forms of building local business as other models have done.

Based on the above we score a 3 for building local capacity

### Designing for Local Scale

They have thought about models of local scale but so far have not been able to implement these. Models they have thought about include setting up different little water purification 'stations' where people can come and buy water. They would like to set up a region with at least 20 to 25 of these stations and then also train a local technical employee to service these stations. However so far this has only remained an idea and has not been implemented.

Instead they have only done small one-off projects, where they sent a few purification units to disaster areas for relief aid purposes, accompanied with some of their men who installed the units in suitable places. No attempts were made to leverage local scale with the different units.

As they have recognized the importance of local scale, but have been unable to implement it to date with any of their projects we score Clean Water Technologies with a 2 for building local scale.

## The (change in the) four capitals

### Economic Capital

Because of the small scale of the product no investments have been made in developing a factory or other specifically for this product. No real assets have been acquired for this product.

Financially no exact numbers are given for the product, but it is clear that a loss is made on the products. *"It doesn't earn us any money at all, it costs us money." "It's more a matter of how much it is allowed to cost before branding starts to hurt."*

Costs incurred vary strongly for the product regarding whether or how many of the units are used in a year. When they actively send products to a disaster area, accompanied by several of their employees, the costs quickly rise into the 100,000's of euros. For example in Haiti it is estimated it cost them around 300,000 euros. Some money will come back to them but this is usually only negotiated afterwards. *"Usually there are a few, like the Red Cross or Cordaid, or a World Bank that still has some money, well then you get back a part of your costs."*

The amount of waste in the process was difficult to gauge but due to small scale efficiency is not very high, because no structural investments can be/are made. For example it was discussed that a larger scale a factory in Asia could be produced, drastically lowering production costs.

Evaluating the effect of the BoP product on the economic capital of ClearWater it is easy to see that the impact has been negative due to the losses occurred and the limited build up in efficiency. We thus score a -- for economic capital.

### Strategic Capital

The UN and the related relief aid organizations like UNHCR and Unicef are seen as one of the main players in the relief aid world and thus the greatest potential customer if you can make it onto a preferred supplier list. However the UN has a very strong power position and becoming a regular supplier is a very difficult feat due to enormous competition and the high stakes involved. *“It is all just business that runs in the billions. But before you’re on a list.. Look we are on a list now, but it contains 300 suppliers of water purification products.[..] So before you are in the top 30 and you have actually been able to supply a few times.. To achieve that you have to have a lobbyist in Geneva and New York for two/three years. Well, of course we can’t do that.”*

Other, independent NGO’s are enthusiastic about the unit in relief aid organizations, but in disaster areas the UN can at times have nearly total control of what comes in and out an area. The interviewee about what happened in Haiti; *“Cordaid says, really good, we should do that. And Doctors without Borders goes; we want a few straight away. And the UN says; no, not happening, you not allowed near the harbor of Port-au-Prince”*

They do have patents on the product and the different sub-systems and so far have not experienced any infringement on their patent rights. Concluding it appears their power position is quite weak in the relief aid market they are now targeting with this product.

Though they have not built up a strong power position in the difficult relief aid world their reputation seems to be positively impacted by the small purification unit. They have built up a reputation now with the product itself, like when in reaction to a disaster the Dutch minister of foreign affairs called them directly to ask if they could provide the unit (although the department of foreign affairs afterwards blocked this because it was not in line with policy). But maybe more importantly it also positively impacts their reputation in their high-end market.

*“Yes, the water purification unit is of course an enormous branding instrument for Clear Water. The Australians get tears in their eyes when they see what we did.” “Almost the whole world has that reaction. And because of that they think, what a sympathetic company. And for your image building of ClearWater and our mother, which are basically one, but both for mother and daughter it is a very good branding instrument. Even though we never conceived that idea from the start but now it turns out like that. And that will also be one of the reasons to hold on to the product as long as possible.”*

The development of the strategic capital with regard to the small purification system is mixed. On the one hand they have not build up a power position in the relief aid world. However considering the structure of this market, power is something that will not be easily gained by any small company. They have protected their product through patents. Reputation is however a different story and the unit has truly had a positive

impact on reputation in their different markets. It is mostly because of the positive impact on reputation we score the development of strategic capital with a +.

## Cultural Capital

Engagement in the BoP is perceived as very important for the development and motivation of employees. This not so much for the employees of ClearWater Technologies, but even more so for the employees of the mother company, which were involved in the development and local implementation of the product in several cases. This is supported by statements as *“The HR component is very big, the unification of people, but also for the development of people..”* and *“There are people that stay with ClearWater’s mother company because of the chance of participating in such a project”, “the pride associated with working for a company that does such things”*. It is also specific

For this product there appear to be very little procedures in place. This is mostly because the product is now targeted mostly as a relief aid product. For example, there appear to be no structured financial procedures, rather the process is approached flexibly when they are asked to provide the product. Quoting the interviewee; *“..where we were asked to provide these things. And what you usually see then is that first we bring the units and only then start negotiating with parties whether we will get anything for it”* Also logistic procedures seem to be difficult to formulate. Distribution can be a hassle due to total control of harbors by the UN in disaster areas, leading to unnecessary and unexpected detours and costs. The process of bringing the products back home after the disaster is not target too clear procedures. Though the idea is to bring them back home, in reality this doesn’t always happen. *“But in reality, like in Haiti, you are not going to tell a village, sorry boys, we’ve come back to pick them up. Those people, all 400 of them, are dependent on such a unit. So then you say, so what are we going to do? So then we send some new membranes along with someone going there. Really, just trying to keep the things going at a low cost.”* Technically though the procedures fixed and fully developed. A ‘scenario’s guidebook’ has been developed for implementation and improved upon by the employees accompanying the local implementation of the products, a standard procedure every time they send out any new units to a new disaster area.

Marketing and relational aspects of this product are seen as currently difficult chasing the line of disaster relief product, because of the concentrated power of UN institutions in deciding the chosen products. The current line is to try to intensively engage in relevant discussions and meetings of the UN regarding relief aid and rehabilitation.

It appears involvement with this product has not altered their attitude in terms of innovativeness, reactivity etc, (Though it has led to a concrete new innovation), but does affect attitude in terms of employee pride and motivation as mentioned before. It appears to be an integral part of their firm’s culture to engage in such a project. As the interviewee states *“Our mission is to provide clean drinking water..if the opportunity provides itself somewhere, than we have to do that” “It is a beautiful thing to be able to provide the same quality of drinking water in all different kinds of places. That is a bit of a calling. That belongs to our mother company and our philosophy together. If we have good drinking water, we can give the world that... even when you are doing things commercially.”*

When we evaluate how the cultural capital of ClearWater Technologies has developed regarding their small water purification unit we see development is twofold. On one hand it appears that procedures capturing tacit knowledge in the firm are not very well developed for this product, maybe with the exception of the technical knowledge. On the other hand it has a positive effect reinforcing values. Instilling pride in and

development of employees may be the greatest attribute of this regarding the BoP product and cultural capital. Because the change in cultural capital is not simply positive captured in positive or negative we classify the change as neutral, though during cross-case evaluation it is important to keep in mind what this actually means. A score of 0 is awarded to cultural capital.

## Social Capital

Through the introduction of the small water purification unit they have built up visibility in a network that previously did not have access too. Internationally they had already built up a network with development banks etc, through their larger projects regarding entire water purification plants. Now they have built up connections in the world of NGO's and relief aid, where they participate actively in discussions. However, so far this has led to a few projects with the unit, but not many. As stated in the theory review, the relationships are only of interest if relations are willing to act in each other's interest. Regarding the connections in the relief aid world this willingness still seems very limited, though some connections have led to the development of a new product. This is an even smaller water purification unit designed specifically for small teams up to about 15 people. This product was developed on the basis of information shared by people in the field from such organizations. The product is currently being developed in collaboration with USAR, so this collaboration is beneficial to both.

Also more connections have been built up with the government in the Netherlands where lines are now shorter. However this again seems to have led to little willingness to act in their interest regarding the BoP product. This is demonstrated by the example of the Minister of Foreign Affairs asking them for their help.

*"We now do have easier contact with the Dutch government, foreign affairs especially. Everybody knows us. A year ago there was a disaster somewhere and Maxime Verhagen ( the minister of foreign affairs resp.) called our CEO to ask if we could deliver our purification units. And well our CEO agreed. But then we were called back by that same ministry told us they were not going to send products. So the Minister called from the top, but then from below him they said no. So then it didn't happen."*

It is unclear how these relationships affect their other projects outside of the BoP.

Finally they have built up few relationships locally, but only in small places and not of great importance. As is stated by the interviewee; *"Look, I'm sure we are known in a few places in Haiti but, we don't do anything with that. Well, maybe if one of our men goes there on day he might be received with open arms and get a party. But business-wise not, of course"*

When evaluating social capital development we can come to the conclusion that this has been limited. New connections have been laid that were not there before. However, with the exception of the collaboration on a new product, this has led to few situations that worked in the interest of Clear Water. Therefore we score the increase in social capital development with a -.

Table 8. Scoring Clear Water Technologies

Company	Economic Capital	Strategic Capital	Cultural Capital	Social Capital	Untraditional Partnerships	Building Local Capacity	Co-creation	Designing for Local Scalability
ClearWater Technologies	--	+	0	0	2	2	3	2

## 4.4 Maji

Maji is a young start up, focusing on providing clean water to the middle class and the top-segments of the BoP in growing economies through low margin bottled water and to the BoP through a kiosk model. The kiosk model is where small water shops are set up, where clean water is sold from a large tank. People can come by with their own jerry cans or similar to collect clean water. A local entrepreneur from the BoP runs the kiosk. The clean water will be delivered from the water purification factory of Company E. Company E will receive a certain percentage of the turnover of the entrepreneur. The water sold in bottles carries a different brand name than the water sold in the kiosks.

Currently Maji is targeting five countries to set up their business; Kenia, India, Peru, Ghana and Indonesia

Kenia is where they started and have run the first pilot and are currently attracting a new business partner. In India the factory has been built and they hope to be in business by the end of this year. In Peru and Ghana they are in advanced stage of setting up business. The plans in Indonesia are currently on hold due to bureaucratic issues.

In each country the idea is to set up a local business together with a local business partner. All employees are recruited locally. The head office in the Netherlands fulfills coaching role towards the general manager of the plant. They are strongly involved with the recruitment of this manager and the technical manager of the plant. Next to coaching the general manager, they also fulfill a control function.

### Use of BoP-strategies

#### Co-creation

The product is similar in each country, namely clean water. However the technology may vary (different components added or left out) dependent on the circumstances. The main business model is also very similar in each country, though variations are possible on the basis local circumstances. For example in Peru, the government will be an important partner, as here the focus is on purifying. Also distributions channels may vary as well as the ratio between the different types of distributors.

#### Non-traditional partnerships

In each of their target country they seek a local business partner to together set up the local company. The chains of distribution are various. Many small local distributors from all walks of life are attracted through various channels.

For the kiosk model community leaders are sought to have a leading role in promoting and setting up the kiosks. Also an NGO has been attracted to set up hygiene education programs in the areas where they will be setting up kiosks. Therefore it appears they make extensive use of non-traditional partners in their business model and thus they are scored with a 5.

#### Building local capacity

All personnel is recruited locally, providing local jobs and connecting them with the formal economy. Using a variety of small and larger distributors stimulates entrepreneurship in different levels of society. This is especially true for the entrepreneurs running the kiosks.

Aside from this through partnership with the NGO they will be providing hygiene education in the areas surrounding the kiosks and will specifically educate their own personnel and the entrepreneurs running the kiosks.

As for each of the studied cases, by providing access to clean water, they fulfill an important gap in the local infrastructure. Clean water can drastically impact health and vastly reduce the time needed to fetch water. This frees up time and energy to undertake other value-generating activities.

### The (change in the) four capitals

#### Economic Capital

Structural investments in assets have been made in order to set up the pilot in Kenya. In India the plot and the building are rented from the landlord. Structural investments are currently being made in machinery for the factory in India. Significant new assets are thus being built up.

So far there has only been a set of pilot runs in the factory in Kenya, therefore there are only some preliminary indications about financial effectiveness. In the final stages of the pilot they had a daily turn-over of around 20,000 liters daily with a profit of about 1 cent per liter. This amounts to a daily profit of about 200 a day. However this was at pilot runs at below full capacity. *“You’re doing a pilot run, so you try a few different things. And you can’t try these things if your machine or factory is running at full capacity, because then it is way too expensive to switch to something else. So we ran at half capacity.”* It is expected that scaling up will significantly increase profit margins, due to the high fixed costs.

Operational effectiveness was impacted because of the switches between different set-ups during the pilot phase, therefore it is difficult to comment on the amount of waste in the production process. As mentioned before the factory was only employed at half capacity for the duration of the pilot, which of course means waste in terms of unused capacity. For the factory in India it was chosen to switch to a more automated production.

Maji has built up a position of useful assets. Also it has been demonstrated a (small) profit can already be made under pilot conditions and as such are scored with a + for economic capital.

#### Strategic Capital

In Kenya Maji has many different small and medium distributors for their products. In regard to these distributors Maji hold a strong position because of the large availability of potential distributors. To quote the CEO; *“Well, if one doesn’t perform, you take another. Because you can find a lot of those kind of companies in those countries.”*

The relationship with their suppliers is more complicated and dependent on their social network. They do seem have the connection to make things happen if they run into problems with suppliers. This is demonstrated by the following quote:

*“..if you order empty bottles at the factory because your bottles are finished than the result really depends on the relationship between the general manager and the manufacturer. Because, you can order the bottles, but if I don’t want to deliver to you, than I won’t. Well, try getting your hands on some bottles then. That are complicated issues. So then you’re back to, can’t we call or visit somebody, who can help speed things along.”*

However as demonstrated in the previous quote this can require some effort at times. Therefore the power in these relationships is seen as dynamic, balancing back and forth between Maji and their suppliers.

Also with their business partners the power in the relationship is an important issue. It seems that Maji is able to organize sufficient power through its network to be the one with the most power in the relationship. However this has been a struggle as demonstrated in the quote below.

*“Our previous partner started to become very difficult to work with. So than you try to figure out how to get rid of him. Well, then you call another Dutch person, and ask: “I’ve got this problem, how would you solve that?” Well, than they give you advice. In the end it was all solved through the informal way, without the solution becoming visible. He just stopped being difficult, so to say.”*

To summarize, their power position is strong with regard to their distributors, but quite volatile in regard to their suppliers and partners. However they are able to successfully able to organize sufficient strategic capital through their network in order to stay on the ‘winning’ side in these relationships. Therefore, very much due to their network, they have a sufficiently significant power position.

As for their reputation they have two different brand names for bottled water and the kiosk water model, to forgo cannibalization of their own brand. In the bottled water business they slowly built up a name under small businesses and families through their distributors and other connections. In the kiosk business they are strongly leveraging the reputation of the community leaders they are partnering with to build up a name. As they have not actively gone into business in India yet, it is hard to comment on their reputation there. Thus it appears their reputation is not yet very large, but growing in a positive sense.

Finally combining their relatively positive power position and the fact their reputation is not yet well established but growing we score Maji with a + for strategic capital.

### Cultural Capital

The most important attitude change has been that they have become more careful with their trust. Due to several incidents where money was stolen from the company in different steps of the process more administrative controls have been put in place.

The amount of employees involved has grown, but relies on a fluctuating base of mostly higher-educated personnel at the main office in the Netherlands. In the target countries personnel ranges from higher educated personnel to people with barely any formal education.

Also through time they have learned to improve their procedures significantly. This includes many administrative and financial procedures. Also their marketing and pricing strategy has needed some tweaking due to learning experiences with the local circumstances. The improvement they have made in most of these areas have been significant.

All in all we score Maji’s cultural capital with a +.

## Social Capital

In each country they access Maji seems to focus on quickly building a broad network of people. In first instance their focus was on Kenya.

Here they quickly built up an entire new network existing of people of many levels. This ranges from their local business partner to their wide variety of distributors they work with. Also they have built up many connections with local community leaders as described earlier.

In India they are currently focusing on working with their business partner, but also their and in their future target countries they are focusing on building up a network as described by the quote below;

*“For example in Ghana, on which we are currently very focusing in order to start up business there. Everytime you’re there you expand your network. And every time you see other parties, speak to other parties and anticipating your start-up, you already build up a whole network.”*

Maji also calls on the kinship of fellow Dutch people that are doing business in those countries and have built up a local network. Furthermore they are currently setting up a partnership with a Dutch NGO with local offices that will be aiding in the local health programs.

In conclusion Maji has been quickly been up a broad and diverse network, with tight connections to many of them. As such Maji is scored with a ++ for social capital.

*Table 9. Scoring Maji*

Company	Economic Capital	Strategic Capital	Cultural Capital	Social Capital	Untraditional Partnerships	Building Local Capacity	Co-creation	Designing for Local Scalability
Maji	+	+	+	++	4	5	4	5



## 5. Cross-case Analyses

In this section we will combine the insights gained from the different case studies and try to identify patterns that occur between these cases. These patterns will then inform any changes we make to the initial model that was formed in chapter 2, the literature review. From there we will reflect back on the initial propositions formulated at the start of this research.

### 5.1 Patterns across the cases

In the table below the results of the case studies are summarized. In the next paragraphs we will reflect on what this means and try to further understand the patterns across the cases.

*Table 10. The change in capitals and the use of the BoP-Strategies*

Company	Economic Capital	Strategic Capital	Cultural Capital	Social Capital	Untraditional Partnerships	Building Local Capacity	Co-creation	Designing for Local Scalability
Family PVC	++	+	+	+	5	5	5	4
AfricaPumps	+	+	+	++	5	5	5	4
Maji	+	+	+	++	4	5	4	5
Technocorp	--	+	+	0	2	3	3	3
ClearWater Technologies	--	+	0	0	2	2	3	2

When reviewing the table above presenting the research results that are a few things that the table tells us.

First of all we notice a new BoP-strategy element has been added to the mix. This is described as Designing for Local Scale. What was found across the cases is that both the successful cases have thought about building local scale to be able to profit of local economies of scale. In the first case of AfricaPumps and FamilyPVC this results in manageable maintenance costs, because 'zones' can be inspected all at once. Also in the case of Maji, local scale is enforced by having their own plant in each location. More local synergies will be created in a later stage when several plants have been built in the same country, enabling the creation of local hubs.

This is in contrast to Technocorp and ClearWater Technologies who have not yet been able to formulate a business model that promotes scale locally. However both have made mentioned that this is problem they recognize, find a point of difficulty and/or have recently developed plans how to overcome this problem and yet have to implement this.

Secondly we see that the cases of AfricaPumps with FamilyPVC and Maji have been able to make a positive change to their economic capital, where for TechnoCorp and Clear Water Technologies their activities so far have resulted in a negative change in economic capital. It appears that those cases where a positive change in economic capital was achieved, where also the cases where all BoP-strategies where implemented at least to a certain degree. This does appear to support the earlier findings of London et al. ( 2004) and London, Anupindi and Sheth (2010) that these strategies are essential to economic success in the BoP.

When we take a deeper look at the rest of the results we see that almost in all cases Strategic Capital and Cultural Capital increased. However when we take a deeper look at the results and look back at the case study results we see that these changes mean different things between the cases where the BoP-Strategies were used versus those where they were less used. Especially Clear Water Technologies the change in cultural capital was at least partly due to the development, pride and motivation gained from their product for the BoP. For Technocorp, employee motivation and pride is also an important part, though not the only factor, for the score for cultural capital. However for the other three cases this does play less of a role. Instead the change in cultural capital translates

Also regarding strategic capital we see differences between these two groups. In the case of Clear Water Technologies and TechnoCorp their activities in the BoP lead to an improved reputation in their other markets. This is also slightly the case for FamilyPVC, though this is less prominent than with the previous two cases. For the cases of Maji and AfricaPumps strategic capital also increases but in different ways. In the case of Maji their increase in Strategic Capital comes mainly from their increase in local power that is build up through their social connections. In the case of AfricaPumps stems mostly from their increasing reputation among NGO's, their main client group.

Summarizing these results it appears that the increase in cultural capital and strategic capital in the cases where limited BoP-strategies were used seem to stem from an increases which benefit the 'home' market where for those cases that have implemented the BoP-strategies the changes in these capitals are in the BoP-market.

Interestingly when reviewing the less successful cases we find that they appear, through experience to be developing ideas similar to the BoP-strategies. This is particular so for TechnoCorp. This includes rejecting large governments as realistic partners and focusing on smaller local partners with experience in the target market. Also they are slowly starting to think about the value proposition in terms of a complete business model rather than only focusing on a product push.

Finally we see that the cases in which an increase in economic capital was achieved were also the cases with the strongest positive change of social capital. When we look back at these two cases we find that the building up of social capital plays a very large role in the success of these cases. As mentioned already in the theoretical section of this research, the BoP-strategies nearly literally prescribe developing social capital. The social capital allows building a local presence and developing local scale. In the case of AfricaPumps and FamilyPVC we find that due to the right social capital or local distribution partners but also involved NGO's they have constant access to information about their target market, allowing them to tweak technical and other processes accordingly. This social capital thus precedes the development of the appropriate cultural capital. Also the social capital built up with a number of social partners has led to access of economic capital through sponsorships for the pumps.

How social capital in the target country can lead to strategic capital and economic capital is demonstrated by the case of Maji. When problems were encountered with one of their employees, the built-up network was used to exert power to solve the problem. Also collaboration with community leaders for their kiosk model is good example where through the building up of social capital can lead to strategic capital. The status of the community leader can so be transferred to the product.

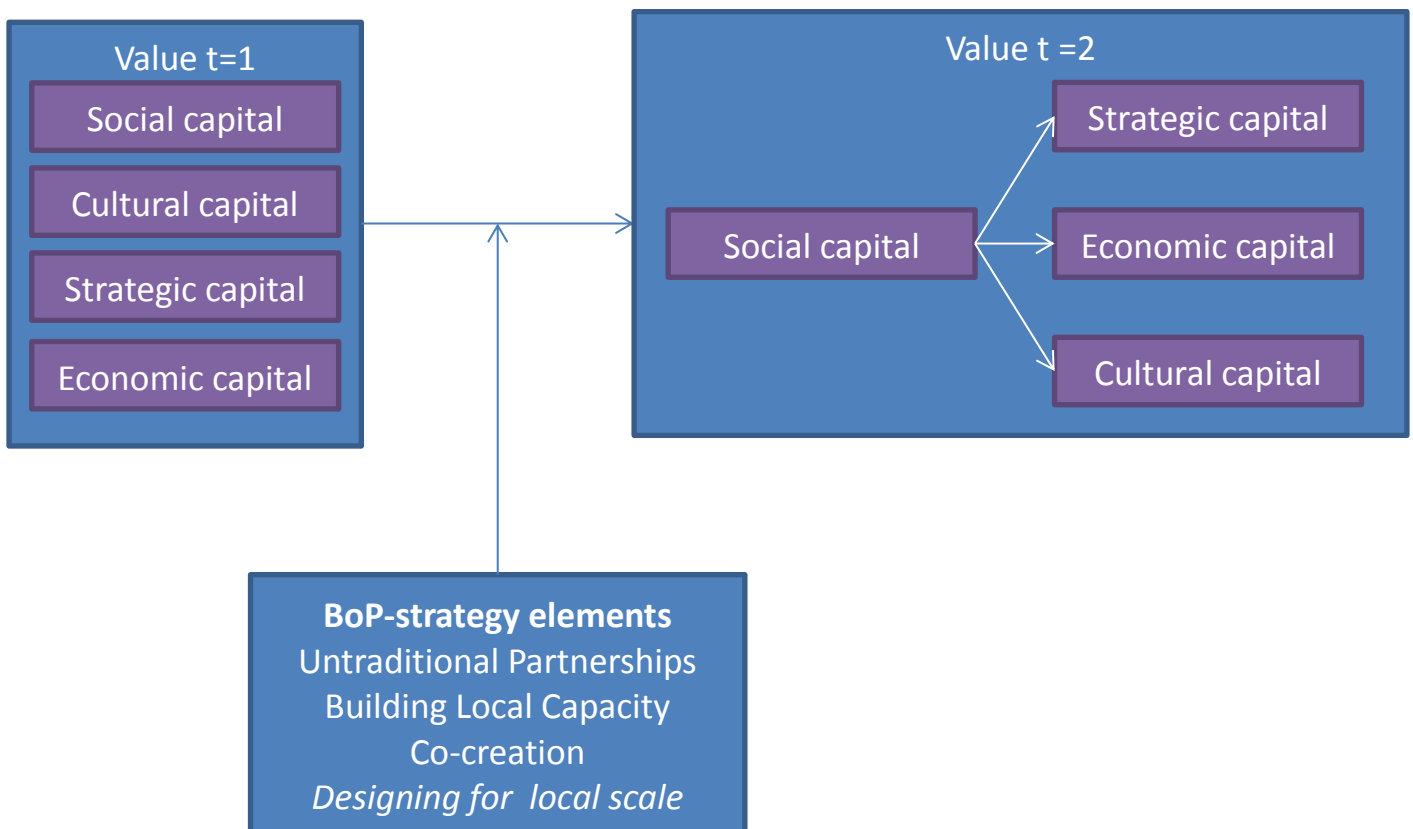
Not only is the importance of the right social capital reflected by the cases that have been successful but also in the cases where economic success has not been achieved so far, for example TechnoCorp. Because of their inability to build up the right partnerships this has stifled sales.

Reflecting on the above it thus appears that to succeed in the BoP-market the first step is to build the appropriate social capital. This also coincides with the emphasis within the BoP-literature on local partnerships. Through this social capital access can be gained to necessary resources, such as information about local circumstances and customs, reputation and revenues. Note that building up the right social capital appears to be a prerequisite, but not a guarantee for successful development of the other capitals in the BoP-market.

Developing the appropriate social capital is needed to gain access to the local market. However the resources that access is gained to through this social capital must then be used to develop a business model incorporating the BoP-strategy elements. Otherwise success is still unlikely to be encountered.

Accordingly the insights gained in the cross-case analysis have led us to propose the following model regarding the development of capitals when entering the BoP-market.

*Model 3: The mediating effect of the BoP strategy elements and the role of social capital.*



## 5.2 Linking the new and old models of value creation

At the end of chapter 2, the literature review, four propositions were formulated as well as a model of value creation over time. Below the four proposition that were formulated are repeated.

P1: The increase of a firm's economic capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies.

P2: The increase of a firm's strategic capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies.

P3: The increase of a firm's cultural capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies.

P4: The increase of a firm's social capital will be greater if the firm implements the BoP-strategies compared to non-implementation of the BoP-strategies.

In the previous section we looked at the patterns across the case studies. This led to the re-design of the initial model and can help us reflect on the propositions.

When reflecting on the propositions we find that the cross case analysis confirms the propositions that were formed in the literature section. As we saw in the previous section the firms who have implemented the BoP-strategies performed better regarding economic, cultural and social capital. As for strategic capital, here it appears they all saw an equal increase in this capital. However as was touched upon in the previous section, we do see a difference in the type of strategic capital that was gained by the firms that were not using BoP-strategies. In these cases the increase in strategic capital can be explained by the positive effect of their activities in the BoP on their reputation in their 'home' market, the more traditional non-BoP markets.

This same effect can be seen for cultural capital, the rise for the non-BoP Strategy firms is mostly due to positive effects in their home market.

Aside from insight into the singular relationship between the BoP-strategies and the capitals, we have also gained insight into the relationship between the BoP-strategies and the order of the capitals. Across the cases it was found that the building of social relationships preceded the increase in other capitals. Building up social capital is found to be of great importance in the BoP, which is marked by a lack of a formal institutional environment. The BoP-strategies help build up the right type of social capital and general local embeddness that is needed to be successful within the BoP.

Finally the propositions have been extended with the insight into an important fourth BoP-strategy element, namely Designing for Local Scale. This means that the successful firms also focused on building local economies of scale in local business models rather than only focusing on the global production and distribution.

## 6. Conclusion and Discussion

In this chapter we will highlight the final conclusions that can be drawn from this research and discuss the theoretical and practical value of these findings. From there we will continue by discussing some of the limitations of this research and end with providing some suggestions for further research.

### 6.1 Conclusion

This research started with the question: “What is the effect of the use of BoP-strategy elements on of value created for private firms operating in a BOP-environment?” In the previous chapters we have made an attempt to formulate an answer to this questions and this has lead us to formulate three main conclusions that we can take away from this research. These will be highlighted in the next paragraphs.

#### **BoP-strategy elements lead to higher value**

The evaluation of the five case studies in the water sector demonstrates the value of the BoP-strategy elements within the BoP-market. The case studies in which all four BoP-strategy elements were part of the business model clearly had a greater increase in all four capitals than those firms who didn't. In conclusion, it appears that incorporating the BoP-strategy elements into the business model when entering the BoP leads to a greater increase in value for private firms operating in the BoP-market.

#### **Social capital is the gateway**

In the more successful case studies social capital plays an important role. In all these cases the importance of the firms connections were stressed as pivotal in gaining access to other types of capital. This varied from an emphasis on access to strategic capital in the case of Maji to cultural capital in the case of Africa Pumps. The power of social capital was not only demonstrated by the cases where they did have it, but also by those where it was lacking. These firms experienced significant difficulty in building up local business. In an BoP-environment building up the right type of social capital as a firm appears to be the gateway to building up other types of capital. Implementing the BoP-strategy elements can inform firms what type of social capital needs to be built up and how to do this.

#### **Designing for local scale**

Finally, a fourth element that was consistently present in the successful cases and consistently lacking in the cases that were considered less successful was “Designing for local scale”. In the three successful case studies they effectively managed to build local economies of scale within the business model. By contrast the less successful case studies focused on production efficiencies of scale and a global reach. Focusing on designing the local business model and creating local scale efficiencies is thus considered a fourth BoP-strategy element, necessary for success in the BoP-market.

So what is the effect of the use of BoP-strategy elements on of value created for private firms operating in a BOP-environment? If we bluntly summarize; More value is created for these firms, through first accessing the right type of social capital and from there expanding their other capitals.

And the BoP-strategy elements include not only Building Local Capacity, Forming Local and Non-traditional Partnerships and Co-creation, but also Designing for Local Scale.

## 6.2 Theoretical value

The general area of research on the Base of the Pyramid is a still relatively young area of research, in which there is still a lack of sufficient scholarly research (Hart and Dowell, 2010). Also the research that has been currently done in this area is often criticized for the lack of theoretical rigor and general frameworks ((Ted London et al., 2010; Rivera-Santos & Rufin, 2010a; Sanchez & Ricart, 2010). Hart and Dowell (2010, p. 1472) state: “there is a real opportunity for scholars to address this issue in a rigorous way in order to assess the degree to which our current theories are sufficient in understanding the BoP phenomenon and to what degree this issue requires us to augment existing theories or even develop entirely new ones.”

This research has made an attempt to be one of the papers to fill this gap. Though exploratory techniques in this relatively new field of research have still been used, in contrast to many of the earlier papers on the BoP, this paper has attempted to capture the findings within an existing theoretical framework. In this paper an existing framework of value has been applied to earlier identified BoP-strategies. This led to validation of the three BoP-strategy elements already known identified early on by London and Hart (2004) and to the formulation of a new BoP-strategy element, being Designing for Local Scale.

This fortifies the belief in the importance of creating local partnerships and an overall local embeddedness as a firm when entering the BoP. We found that the building up of social capital was the gateway to the increase in other capitals. This in fact is in line with findings of many other researchers who describe the role of the local partners as being able to give them access the local resources and legitimacy (London and Hart, 2004; Klein, 2008; Rivera-Santos and Rufin, 2010a; 2010b)

Within this research we have been able to capture this within a theoretical framework and make it more explicit. It thus helps us understand that the four BoP-strategies help build the right type of social capital and set the firm up for increases in the other capitals.

Aside from contributing to the research area of the BoP, this research also led to new insights regarding the neo-social system theory of the firm. In the earlier papers on this theory (Groen, 2005; Groen, Kraaijenbrink and Heuven, 2007) it is assumed that the gain in capitals is due to an interaction of the four capitals as influenced by certain firm actions.

Within this research it appeared that at least during the stages of entering a new market and setting up a business, there appeared to be a more specific order in how these capitals evolved. Within the BoP-market it appears it is first social capital must be built up in order to be able to expand the other capitals. Social capital functions as a gateway to building up strategic, cultural and economic capital. It will be interesting to see if this finding holds up for firms entering any new market, or if this particular to the BoP-market.

In conclusion it appears this thesis has been able to contribute to BoP-research field by validating earlier findings, identifying a fourth important strategy element for successfully entering the BoP and by better understanding the mechanisms by why these elements work.

Aside from contributing to the BoP-research field, this paper has helped set a step in the evolution of the neo-social system theory of the firm. It was able to scratch upon the surface of understanding the interaction between the capitals when entering a new market and the particular role that social capital plays in this. It will be interesting to see how this knowledge develops.

## 6.3 Practical Value

The practical value of this research is that it demonstrates the value of the three already known BoP-strategy elements and introduces a fourth element to take into consideration.

It appears, that if firms are wise, they should take into account these elements when designing their business model and market approach when they plan to enter the BoP-market. This means they should carefully think about which partnerships and connections they wish to build up. Herein they should not focus on large governments or large firms operating in the top of the market, but rather find partners that can actually help them gain access to the local BoP-market. NGO's, local governments, local businesses and community leaders can be important partners in this process.

Next it is important to incorporate local capacity building into the business model, rather than organizing this separately through corporate philanthropy. The business itself should already not only contribute to the performance of the firm but also to the target markets development through filling institutional gaps and developing local entrepreneurship. In this research we found that the successful cases often did both. They provided easier access to clean water and incorporated local entrepreneurs into the business model.

Next they also allowed the business model and value proposition to develop according to local circumstances. Rather than pushing a certain proposition it was developed and adapted locally, where it allowed everyone involved to profit.

Finally, it appears firms are wise to design for local scale, to look for local opportunities for scaling. This way one can profit of local economies of scale making low margins possible and worthwhile because they come with high volume.

Aside from these more general implications it might be interesting for other business to review the partnership types the successful cases have built up. In particular the partnership between the first two case studies of a Dutch social enterprise and Dutch private firms seems to lead to valuable synergies. There might be more to learn from these type of partnerships than explicitly mentioned in this research.

## 6.3 Limitations of the study

The heterogeneity of the firms in the sample was great. Though all Dutch firms and in the same sector they do all have different value propositions and target different countries. However, because of the deep case study approach, a particular effort was made to understand the intricacies of each case. Thus it was considered how and if these variables could have had a significant impact on the change in the capitals. It might be important to note that the firms that were most successful were also the firms that most heavily targeted countries on the African continent as their main market. Albeit they were not the only ones, also one of the less successful case studies targeted this continent without success, so this cannot be considered the third variable explaining the differences.

Furthermore in this study looked at the change in capitals, as this determines whether value was created or destroyed. However we did not explicitly correct for the begin state of the capitals of the different case studies. Considering that performance is considered path dependent the original configuration of capitals, this should have been taken into consideration and forms threat for internal validity.

Also in general operationalization of the capitals was perceived as difficult. The operationalization of the separate capitals has been very diverse and there are few empirical studies that look at all four capitals combined. Therefore operationalization of some elements had to be done specifically for this study, for which construct validity could not be extensively determined. However an attempt was made to

Furthermore only a small sample size was available in the country and sector under research. A small sample size can compromise a threat to external validity. However the list of case studies does cover nearly all firms in the water and sanitation sector attempting to enter the BoP at this time in the Netherlands. Therefore the sample is representative of the activity of Dutch firms in this market. Also extensive interviews were held with the case studies that were part of the sample and thus it was possible to gain a deep understanding of the firms that were part of the case study.

Also there might be a selection bias in the sample. There were two firms that were approached that did not take part in the study (one refused and one never responded), this could have led to selection bias in the research sample. However the remaining sample still showed sufficient variety in the research variables.

Another issue that had to be dealt with is single informant bias in half of the studies. However to certain extent this was offset by triangulation process, where information from the interviews was combined with information gained from informal interviews during the exploratory phase and desk research. Therefore the risk of single informant bias is greatly reduced, as the interviewee is no longer the only source of information.

Finally the data was collected, coded and reviewed by only one single researcher. This has as a risk that the process may be colored by the researchers own beliefs and results become subjective. However this risk was mitigated by operationalizing the constructs of the research from the start. Also the scoring methodology was explicitly formulated. These actions help preserve objectivity in the research results.

Overall it may be said that this research was limited in its empirical scope. However, within the limitations present, serious attempts have been made to preserve the objectivity of the research and to gain deep insights in the effect of the BoP-strategies. This has led us to interesting new insights about capital creation and the BoP-strategies within a particular context. These insights do need validation with other researches.

## 6.4 Suggestions for further research

As indicated in the previous section, this research was only the first step into understanding the link between the doing business in the BoP and capital development of the firm. As always, more research is needed to better understand to findings of this study.

As this research was limited in its empirical scope it would be very interesting to do a longitudinal study following several case studies and how their capitals develop whilst entering the BoP. This would then be done whilst also monitoring their strategies to enter the BoP. This could already be done with the four case studies mentioned in this research but preferably would compromise of a large diverse group of case studies. This would enable a deeper and profounder insight into the relationship between the different BoP-strategies and the development of the capitals and the interaction between the capitals themselves.

Further research could focus also focus on understanding how the conclusions of this research extend beyond the water sector into different markets. Also it would be interesting to find how the relationships



between the different capitals found at the BoP compares to mechanisms in the ToP-market. Does social capital play such an important role in this market too when entering this market or are there other relationships and balances present between the capitals?

Finally operationalization of the capitals remains a difficult topic for this theory. As described earlier, as with the Parsons' classification, the classification of capitals makes a lot of sense intuitively but is more difficult in an empirical setting (Riz, 2001). Further research into what are the best indicators for each capital when researched together might bring the neo social theory of the firm and related empirical researches to a higher level.

All in all the findings of this research lead to many new questions both in the research area of the BoP as in the area of the neo-social theory of the firm, providing new interesting alleyways of research.

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## Confidential list

## Appendix A

To fully grasp the project which is the context of this research it is important to understand certain Dutch government policies and the structures created to implement these policies. These will be explained in the coming paragraphs.

### 1.1.1 Water Ontwikkelings Samenwerking (Water OS)

Currently the Netherlands has official development aid (ODA) available for fifteen countries and has limited the projects they support to four areas, being legal order, water, food security and sexual and reproductive health and rights (Rijksoverheid). This money is distributed through the Dutch embassies in these countries. The goal of the Water OS policy is to support the embassies in identifying and kick-starting relevant projects within the water sector in the chosen countries. Activities that can be thought of is meeting with relevant stake-holders to identify needs and hiring experts to research the current situation and opportunities for improvement. The policy is financially supported by the ministry of Foreign Affairs and executed by Agentschap NL, a governmental body, and the NWP as part of the Partners voor Water program (explained below) (Horn, 2012).

### 1.1.2 Water Mondiaal

“Water Mondiaal” (WM) is a interministerial policy programme developed by the ministry Economic Affairs, Agriculture and Innovation (ELI), the ministry of Infrastructure and the Environment (IM) and the ministry of Foreign Affairs (BZ). The goal of the policy is to strengthen the position of the Dutch water sector worldwide whilst simultaneously contributing towards reaching millennium goal nr. 7<sup>1</sup> and to adaptation to climate change (Partners voor Water, 2012; NWP, 2012).

The Netherlands has a leading position in the water sector and, as a delta country, has highly developed knowledge on the subject of managing water in such a challenging environment. As such, within the Water Mondiaal policy a choice has been made to focus mainly on five delta countries, which include Bangladesh, Egypt, Indonesia, Vietnam and Mozambique. With the extensive knowledge of the Netherlands it is anticipated the Dutch water sector will be able to make a real contribution in these areas. Through active collaboration on multiple levels it is expected the Netherlands will be able to contribute to reducing vulnerability against floods and the effects of climate change and ensuring supply of sufficient and clean water in these countries (NWP, 2012).

The policy is financially supported by the three ministries mentioned above and executed by Agentschap NL and the NWP as part of the Partners voor Water program. To organize the activities in these countries a special Delta team has been formed for each country.

### 1.1.3 Partners voor Water

The consortium of Partners voor Water facilitates the execution of the Water Mondiaal policy and the Water OS policies. The funds that are allocated for the Water Mondiaal program flow through the Partners voor Water program (Partners voor Water, 2012).

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<sup>1</sup> Millennium goal nr. 7 is concerned with ensuring environmental sustainability. In particular subgoal c states; “[Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation](#)” (United Nations)

The consortium consists of Agenschap NL, a governmental body, and the NWP. Agenschap NL carries the responsibility for the definitive allocation of funds and ensuring that procedures are correctly followed. The primary task of the NWP is to secure involvement of the Dutch (private) actors in the water sector (Katz, 2012).

#### 1.1.4 Delta teams

For each of the five focus countries which are mentioned in the Water Mondiaal policy, a special Delta team has been formed. The Delta team is comprised of a representative from each of the three ministries, the NWP and Partners voor Water (explained below). This team develops plans on how the goals of the Water Mondiaal program may be reached in this particular country of focus. The financing of this project goes through the Partners voor Water program.

## Appendix B

In this section the project which forms the context of this research is further explained. First a little more insight is given in the Water Mondial projects in Mozambique and

### 1.2.1 Water Mondial in Mozambique

Mozambique is one of the selected delta countries and as such a delta team has been formed for this country. One of the first goals of this team was to identify the possible areas of collaboration in cooperation with the Mozambican counterparts. As such in February 2011 a market scan was conducted as well as joint workshop in Maputo. One of the areas of collaboration that was identified is Water supply and sanitation.

Certain players of the Dutch water sector already have a strong presence in the Water supply and sanitation sector in Mozambique. Vitens Evidens International (VEI) especially has a strong presence and close relationships in the water sector in Mozambique. As such they have been approached by Administração de Infra-estruturas de Água e Saneamento (AIAS) to potentially form a water operating partnership. This project shows potential for more Dutch water sector parties to be included and thus is interesting to partially support under the policy of Water Mondial. In the next section the project will be introduced after which the next steps will be explained.

### 1.2.2 Vitens Evidens International (VEI) and Administração de Infra-estruturas de Água e Saneamento (AIAS)

AIAS is the national authority responsible for development and rehabilitation of water supply systems in 130 districts and towns and sanitation in 149 districts and towns in Mozambique. The operations of these water supply and sanitation facilities are to be delegated to local private and public/municipal operators. The current capabilities of both the locally delegated operators and AIAS are not sufficient to adequately manage the systems in those 149 districts and towns (NWP, 2012).

As such AIAS approached VEI to show its interest in forming a Water Operation Partnership (WOP). VEI currently is also involved in a WOP with FIPAG, which has the same responsibilities as AIAS but then for the urban areas.

To enable AIAS to engage in the WOP with VEI, AIAS will receive financial support from the Dutch embassy. This funding is provided as bilateral aid in order the help improve the access to clean water and sanitation for the Mozambican people. This aid can then be used to 'hire' VEI to improve the governance aspect of the water operation (Horn, 2012).

However to improve the situation in these districts more actors may be needed and as such the Dutch water sector may be further involved. In March 2012 VEI conducted an identification mission to define the scope of the project. One of the outcomes of the mission was a list of 15 towns that should prove as a representative sample for the situation in the 149 districts and towns. The focus will be initially on these 15 towns to develop a rapid showcase for improved performance. In order to achieve the improved performance a variety of other Dutch water sector actors will be needed to contrive and implement innovative solutions to fit the local circumstances. The first step to achieve this involvement is to study the current local situation and to identify opportunities for implementation of new concepts. This is being done in a base line study under the leadership of VEI of which the first phase took place in August, and the remaining phases are scheduled for September and November (NWP, 2012; Horn, 2012).

This base-line study is financed through the Water Mondial program because of the potential of other Dutch water sector parties to become involved in improving the water supply and sanitation in Mozambique. However one of the challenging restrictions of becoming involved in the Mozambican water sector is the



financing. Though the embassy will provide some financing to AIAS this will not be sufficient to solve all issues at hand and the effectively involve the private sector. This implies that the consumers themselves should carry (some of) the costs of the provision of clean water and proper sanitation. However the target group of AIAS belong to the poorest worldwide (*exacte cijfers nog toevoegen*). The idea of viewing this group not simply as in need of aid but as actual consumers, which collectively represent a large market was first introduced Prahalad and Hart (1999). They termed this group the Base of the Pyramid and called for innovative approaches for doing business with groups at a profit whilst simultaneously helping to improve the conditions of the poorest of the world. This will be further explained in the next paragraph.

We may thus conclude that innovative business models will thus be needed to actively involve the (private) Dutch water sector in Mozambique. These may be formed partly on the basis of the lessons learned from the study Acces to safe water for the base of the pyramid (Hystra et al., 2011) and the study Scaling Sanition into Action, currently being performed by the BOP Innovation Centre (NWP, 2012).

The NWP will have a crucial role in developing such an innovative business case and aiding the formation a consortium of Dutch water partners that willing and able to participate in this business case for the water and sanitation sector in the 15 Mozambican towns and districts. The business case will have to be sustainable in the long run, but 'kick-start' funding is available as the World Bank currently has around 300 million available to improve the water and sanitation situation in Mozambique.

## Appendix C Interview scheme

### Interview scheme Firms, Mary Anne de Haan

#### Introduction

This interview forms part of the master thesis project that I am conducting for the University of Twente and the Netherlands Water Partnership regarding value creation for private firms in base of the pyramid markets.

In order to fulfil my research it is important to gather certain information from different firms regarding their experiences and value creation in the BOP market. Thank you very much for participating by letting me conduct this interview.

Of course all information given will remain confidential and described in research under aliases.

Explain purpose research.

Note: The questions below are only a guideline, the interview itself may be more fluid. Questions that are in italic are examples of questions that may be asked in addition to the main question. Checkbox at the end of each segment should ensure all necessary topics are covered.

#### General information

Firm Name:

Interviewee name:

Please also briefly describe the activities in the BOP market.

Could you briefly describe your function within the firm.

#### Use of BOP-strategies

Please tell me how you went about entering the new BOP-market?

Why did you enter this market?

*What was the process of designing your product. Which steps and (groups of) people (and organizations) where involved?*

*What role do the local people play? How are they involved?*

*What are your partners in the BOP market and what type of organizations are they?*

#### Strategic Capital

How do you make that as a firm you reach your goals and how has that changed?  
(Think of chosen strategy, patents, industry standards)

Can you describe your relationship with your different clients/suppliers/partners?

(Think of power, reputation)

Power	-Influence customers -Influence suppliers -Influence from/on partners -Industry standards -Patents
Reputation	-Publications +ve/-ve -Evaluation of partners/clients

### Economic Capital

Financially, what has happened for your firm since entering the BOP-market?

(Think of revenue, profit, ROI, assets)

In terms of efficiency, how has your firm changed since entering the BOP-market?

(Think of waste/redundancy in terms of materials, people, actions)

Assets	-Financial Assets -Natural resources (land, facilities, materials)
Financial effectiveness	-Revenue -Profit (margin)
Operational effectiveness	-Waste

### Cultural Capital

How has the 'attitude' in your department changed since you entered the BOP-market?

(Think of pro-activeness, aggressiveness, innovativeness, autonomy, risk)

How has the level of skill and education changed since you entered the BOP-market?

How you developed new procedures or templates since first entering the BOP-market?

(Think in terms of technical, relational, administrative, financial, marketing)

	-Education (alle gebieden)
Procedures and tacit knowledge(templates)	-Technical -Relational -Marketing -Administrative -Financial
Entrepreneurial Orientation	-Scale Lumpkin & Dess

### Social Capital

Can you tell me about how your network in the BOP has changed since you entered the BOP?

(Think about customers/suppliers/competitors/partners, frequency and depth of relationship)

Network strength	<ul style="list-style-type: none"> <li>-Degree</li> <li>-Tie strength (Time, Depth)</li> <li>-Range</li> </ul>
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*Doelvragen naar exacte netwerk*

**The influence of the BOP-strategy on the change in the capitals.**

When looking back, how do you think your partnerships mentioned earlier (repeat these) have influenced your success in the BOP?

When looking back, how do you think your design process (specify on basis of earlier answers) has influenced your success in the BOP?

When looking back, how do you think your business model and the role local people played in the (specify on basis of earlier answers) has influenced your success in the BOP?

**Final**

What have you learned from your activities in the BoP?

What were/are the greatest challenges?

What would you say is the most valuable you have gained from your activities in the BoP and how did you realize this?

Is there any information you would like to add that you feel is important and we have not yet talked about?

Thank you for your participation in this research.