

INCLUSIVE HEALTH CARE INNOVATION IN AFRICA.

A CASE STUDY ON THE COMMUNITY LIFE CENTRES APPROACH



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Abstract

Multinational enterprises (MNEs) increasingly look for opportunities outside of the well-defined business markets and search for 'Fortune at the Bottom of the Pyramid (BOP)'. These businesses target seemingly large markets in emerging economies where companies can make a profit and at the same time contribute to inclusive development. However, this has proven not to be an easy ride as the BOP context is generally characterized by resource constraints and institutional voids. One approach to overcome these challenges is frugal innovation. However, despite its growing importance, frugal innovation studies tend to adopt a strong focus on the technical design of products and there is still little understanding of the conditions under which innovations flagged as frugal are likely to offer development opportunities for local stakeholders on the one hand and business opportunities for companies on the other. In this paper, we aim to identify conditions for frugal innovation in the interface between local networks and business models. In this regard, this paper explores frugal innovation in healthcare through the case of the Philips Community Life Centres (CLC) in Kenya. This case study provides insight into inclusive business strategies adopted by MNEs, the role of co-creation and partnerships and the conditions for scaling of frugal innovations. Finally, this paper discusses whether frugal innovation presents a novel approach to do business at the BOP or if it is just 'business as usual?'

1 INTRODUCTION

The Sustainable Development Goals (SDGs), launched in 2015 presented the world with a call to action for to eradicating poverty, promoting peace and equality, fuel inclusive growth, and protect the environment. Inclusiveness by ensuring that all marginalized and excluded groups are engaged in processes of international development, is at the heart of the SDGs which is built on the premise of 'leave no-one behind'. However, inclusive development is not a quick fix and in order to achieve the SDGs, complex, global issues have to be addressed. The SDGs can as such also be classified as '*wicked problems*'. Wicked problems are issues that are difficult to solve because: 1) there is incomplete or contradictory knowledge about the issue, 2) the diversity of opinions and possible solutions is too large to come to a concrete strategy, 3) there is a substantial economic burden associated with addressing the issue, 4) the desires and stakes of the different stakeholders are incongruent. Wicked problems are cross-sectoral and materialize between public and private interest (PrC, 2016). Due to their complex nature, addressing wicked problems requires actors to rethink their strategies and come up with novel solutions.

In development discourse, it is increasingly acknowledged that the private sector plays a key role in addressing wicked problems and achieving the SDGs. Through their innovative capacity and strong position in supply chains, companies are able to act as 'agents of change'. However, they can also act as barriers to further progress if they are not be able to include the new paradigm into their overall business models (Van Tulder and Da Rosa, 2011). Wicked problems can as such not only be framed as a problem but also as an opportunity for engagement. In this regard, companies that are willing and able to develop an inclusive business strategy can contribute to inclusive development while enhancing their business opportunities.

In this paper, we examine the case of Dutch Multinational Philips that aims to address the wicked problem of inclusive healthcare in Africa through its CLC approach. We do this by exploring three domains of inclusive business: 1). Frugal innovation and inclusive business strategies, 2) processes of co-creation and 3) strategies for scaling inclusive innovation.

1.1 Frugal innovation and inclusive business strategies

Multinational enterprises (MNEs) increasingly look for opportunities outside of the well-defined and often saturated markets in developed countries. In emerging economies a large part of the society is often not included in the value proposition of companies and therefore underserved in the global market economy. These markets potentially present a 'blue ocean' of uncontested market space, as opposed to 'red oceans' where competitors fight for dominance (Chan Kim and Mauborgne, 2005).

These underserved markets, also referred to as the Base of the Pyramid (BoP), include the four billion people who live on less than \$2/day (Prahalad and Hart, 2002). Doing business in these markets by not seeing the BoP only characterized by a lack of financial resources but also by a potential they represent as an underserved community of consumers and producers, can presents not only untapped potential for businesses to expand their market share but also provide an opportunity to contribute to sustainable development issues through inclusive innovation (Prahalad and Hart, 2002). As Prahalad wrote in his seminal book *The Fortune at the Bottom of the Pyramid*: "If

we stop thinking of the poor as victims or as a burden and start recognizing them as resilient and creative entrepreneurs and value conscious consumers, a whole new world of opportunity will open up” (Prahalad, 2004). However, finding ‘Fortune at the Bottom of the Pyramid’ has proven not to be an easy ride. As BOP contexts are characterized by resource constraints and institutional voids (Seelos and Mair, 2007; Mair and Marti, 2009), doing business at the BOP requires multinationals to come up with novel approaches and fundamentally new market entry strategies (London and Hart, 2004). This results in what Christensen calls an ‘innovators dilemma’ (Christensen, 1997). MNEs, that are typically used to “sustaining innovations” by improving product and service features that their mainstream customers demand, need to come up with ‘disruptive innovations’ i.e. designing simpler, more convenient and more affordable products or services that serve consumers with affordability constraints in complex institutional environments (Christensen and Raynor, 2003).

Designing innovative products and services that address market affordability, resource constraints and institutional voids without sacrificing user value for BOP consumers is also referred to as frugal innovation (George, Mcgahan and Prabhu, 2012; Tiwari and Herstatt, 2012; Bhatti and Ventresca, 2013). This concept, coined and publicized by the Economist in 2010, referred to reconfiguring existing technologies to lower the costs of production and thereby able to reach more consumers. The initial conceptual understanding of frugal innovation was focused on technological innovation, offering “good enough products”, which are often stripped down versions of Western consumer products. Most known examples are the Tata Nano car, the one Laptop Per Child campaign and a variety of cooking stoves being put on the market. However, as frugal innovation has become a strategic business imperative for multinationals doing business at the BOP, it is increasingly recognized that businesses need to move beyond the simple BOP 1.0 proposition. BOP 1.0 focuses on the BoP as mere consumers, by lowering the price point of products and services. However, as scholars now recognise, the real potential lies in the active engagement of the BoP as partners, advisors and innovators (Simanis, Hart and D., 2008; London, Sheth and Hart, 2014). This approach is referred to as BOP 2.0 where the BoP is considered as change agents in the value chain.

In line with the BOP 2.0 proposition, frugal innovation is therefore not just about redesigning products and services; but involves rethinking entire production processes and business models (Economist, 2010). As such, frugal innovation encompasses both processes and outcomes and thereby has overlapping meanings. The definition of frugal innovation used in this study deals with these two interlinking meanings: *“Frugal innovations redefine business models, reconfigure value chains and redesign products to use resources in different ways and create more inclusive markets by serving users with affordability constraints, often in a scalable and sustainable manner”* (Bhatti, 2012). Frugal innovation focuses in this regard not only technological, but also on social and institutional innovation (Van De and Hargrave, 2006; Bhatti, 2012).

Critics have argued that frugal innovation, especially when taken up by MNEs, is not necessarily inclusive innovation and can also have negative effects such as “crowding out local entrepreneurs”, or exploiting vulnerable groups (Dolan, 2012). Some even question the key assumptions underlying the BOP proposition and the role of business in poverty reduction (Karnani, 2007). In order to address issues of inclusiveness, companies need to create opportunities that enhance social and economic well-being for disenfranchised members of society (George, Mcgahan and Prabhu, 2012). In this respect, firms have to take into account the 4 A’s of inclusiveness: 1). **Accessibility:** Enabling access such that even consumers in remote locations are able to get access to the products or

service; 2). **Affordability:** Ensuring that the product or service is affordable, good value for money; 3). **Availability:** Establishing an uninterrupted supply of products and services and 4). **Awareness:** Creating an awareness of the product and service such that the BOP consumers and producers know what is on offer, and how to use it (Anderson and Markides, 2007).

In order to achieve this, MNEs need to develop inclusive business strategies that are ingrained into the core business of the company and target a triple bottom line; not only striving towards a financial return on investment but also creating a positive social and environmental impact thereby creating mutual or shared value; thus the greater the value created for those living at the BOP, the greater the value created for the venture (London, 2007).

1.2 Co-creating innovations with the BOP

In line with the BoP 2.0 approach, inclusive businesses need to develop strategies that involve the BoP not only at the end of the line as consumers, but also as partners in the innovation process. This approach can be facilitated through a process of co-creation which can be broadly described as an *interaction where companies and non-traditional stakeholders such as communities, (local) civil society organisations and institutions integrate their knowledge in order to generate novel value, products, services or business strategies* (Prahalad and Ramaswamy, 2004; Seelos and Mair, 2007). As Prahalad already recognized in 2004 “*vision...is the co-creation of a solution to the problem of poverty. The opportunities at the BOP cannot be unlocked if large and small firms, governments, civil society organizations, development agencies, and the poor themselves do not work together with a shared agenda*” (Prahalad, 2004).

This principle of co-creation distinguishes inclusive business and frugal innovation from typical corporate and development strategies that rely on importing pre-existing approaches and technologies into BOP markets (London, 2007). Whereas traditional business models and organizational structures of multinationals are designed for developed markets, they often lack affinity with and experience in BoP markets and hence experience difficulties in entering these markets (Hammond and Prahalad, 2004; Zeschky, Widenmayer and Gassmann, 2011).

As foreign companies often lack the local contacts and knowledge that are needed to align the business model with local cultural, social and political realities (Sethi and Judge, 2009; Dahan *et al.*, 2010) multinationals experience a certain level of (Dahan *et al.*, 2010) institutional distance (Verbeke, 2009). This institutional distance in terms of capital, labor markets, regulatory system and mechanisms for enforcing contracts creates challenges for companies to do business as they cannot rely on their traditional strategies of market penetration (Khanna and Palepu, 1997; Khanna, Palepu and Sinha, 2005; Seelos and Mair, 2007)

In order to overcome this institutional distance there is a need to create a deep understanding of and integrate with the local environment, a capacity London & Hart (2004) call *social embeddedness*. Social embeddedness is the ability to create trusted connections with a web of organisations, institutions and communities to facilitate bottom-up development of an innovation process (London and Hart, 2004) thereby combining resources and knowledge developed at ‘top of the pyramid’ with the wisdom and expertise found at the BoP (Whitney and Kelkar, 2004) Rather than relying on

imported solutions from the developed world, the innovation is co-created among a variety of partners (Hart and Sharma, 2004).

Co-creation with the community

At the level of the community, the traditional 'company centric' view of multinationals makes way in favour of a 'customer centric view' thereby relegating some of their decision making power and instead looking for mutual value creation. Prahalad & Ramaswamy suggest that co-creation should be guided by four general principles: 1). Dialogue, 2). Access, 3). Risk reduction and 4). Transparency, in short: DART (Prahalad and Ramaswamy, 2004). Within this framework, dialogue refers to a process of creating shared meaning through understanding the emotional, social and cultural contexts that shape the consumer's experience. Access, meaning access to value by using a particular service or product and having access to the process of innovation, challenges the notion that access can only be generated by ownership of a service or product. As customers become part of the value creation process through co-creation, they demand more information on potential risks of products and services. Finally, transparency of information is needed to create trust between institutions and individuals.

However, as critics of the co-creation approach recognize, there is a significant challenge in terms of power dynamics in co-creation between businesses and consumers at the BoP (Arora and Romijn, 2011)). As Chatterjee (2014: 893-894) notes: "*notions that poor local communities can deal with the large private firms on an 'equal basis' reveals a serious gap in the understanding of issues of power, authority and domination*" (Chatterjee, 2014). In many cases, innovation that is flagged as frugal or local co-invention, is in fact merely an adjusted product or service from an MNE that is distributed among the BoP (Kolk, Rivera-Santos and Rufin, 2014). Therefore, in order to facilitate interaction between business and society a novel approach to co-creation of frugal innovation that takes into account the different context specificities at the BoP is required.

Co-creation with civil society organisation

At an organisational level, co-creation refers to cross-sector collaborations where parties "*contribute complementary capabilities along each stage of the value chain to develop products or services that neither could produce alone, creating and delivering value in novel ways while minimizing costs and risks*" (Dahan *et al.*, 2010:326). Collaboration with non-market actors such as NGO's can provide businesses with access to different resources, competencies and capabilities than internally available in the firm (Verbeke, 2009; Dahan *et al.*, 2010; Webb *et al.*, 2010). Business-NGO partnerships can in this respect provide value in on multiple levels; associational, e.g. legitimacy or credibility, transferred by subsidies and market intelligence, interactive; access to networks and improved relationships and synergistic through learning and innovation (Austin and Seitanidi, 2012). Moreover, by forming strategic partnerships MNEs can co-develop new innovative business models for the BoP (Dahan *et al.*, 2010). However despite the great potential cross-sector partnerships can provide, it should not be seen as a panacea. As Nahi (2017) shows, co-creation efforts are often hindered by sectoral and cultural differences, paradoxical role expectations, unequal power relations as well as limited expertise and trust (Nahi, 2017). Business-NGO collaborations, just like any other form of partnerships really, require continuous reflection, recalibration and alignment of motives and operations (van Tulder *et al.*, 2016).

When it comes to frugal innovation, business and scholars alike acknowledge the important role local actors play in making BOP ventures a success and realize that in order to “find a fortune *at* the BOP”, companies need to include the BoP in the innovation process and hence “*create a fortune with the BOP*” (Simanis, Hart and D., 2008; Nakata, 2012). Due to its polycentric nature, combining top-down and bottom-up innovation processes as well as different actors, frugal innovation might enable more inclusive innovation and development (Knorringa *et al.*, 2016). However, despite this recognition, our collective knowledge on inclusive business and co-creation is still limited and empirical evidence is scarce (Nahi, 2017). Co-creation has in many ways become a one-size-fits-all approach and contextual variables and local needs have received little attention (Kolk, Rivera-Santos and Rufin, 2014). In this regard, this study aims at providing insight into the conditions and organization of co-creation processes of frugal innovation.

1.3 Scaling inclusive innovations

A core underlying assumption of the inclusive business discourse is the potential to develop scalable innovations that contribute to inclusive growth and inclusive development (Hammond and Prahalad, 2004; Prahalad, 2004). Scaling is important both from a business perspective, to reach commercial viability by compensating for low margins that are common in BoP context, and from a development point of view, to meet the needs of the 4 billion people living in poverty (Prahalad, 2004).

MNEs are seen to possess the capital, managerial capability, global production and sourcing capabilities and distribution networks to develop large-scale solutions and catalyse wealth creation in poor communities (Dahan *et al.*, 2010; Ansari, Munir and Gregg, 2012). According to Hart & Christensen (2002) “*business models that are forged in low-income markets travel well*” and can be applied to different BOP contexts as they are adaptable and there is less competition (Hart and Christensen, 2002:52). However, to date the promise of scaling inclusive innovations has failed to fully materialize and relatively few companies have managed to realize inclusive business’ potential for growth and development impact at scale (London and Hart, 2004; Gradl and Jenkins, 2011).

Barriers to scaling

Within the context of the BoP there are several aspects that hamper the scalability of inclusive business efforts and frugal innovations. Firstly, there are institutional barriers. Due to the nature of BoP markets ‘untapped potential’, markets and related distribution channels often still need to be developed and complex institutional environments make it more difficult for MNEs to replicate their business model to BoP contexts (Webb *et al.*, 2010; Mair, Marti and Ventresca, 2012). In addition, as BoP ventures often have longer expected payback periods and higher perceived risk, standard business protocols and evaluation methods are not fit for purpose (Olsen and Boxenbaum, 2009). MNEs consequently need to develop new activities, capabilities and organizational processes that cater for the diverse nature of the BoP context (Hammond and Prahalad, 2004; Verbeke, 2009) and allow for a higher degree of autonomy and flexibility in the development of inclusive innovations (Zeschky, Widenmayer and Gassmann, 2011). As described in the previous section, institutional distance between BoP markets, limits transferability of inclusive business models (Arora and Romijn, 2009; Webb *et al.*, 2010). Investing in social embeddedness and co-creation is in this respect crucial to bridge the institutional distance. However, this in turn can make it difficult for businesses to scale

these ventures as profitability might be capped by the need to tailor the products and the business model to each context (Nahi, 2017). In this regard, a “replication dilemma” exists between the benefits of replicating a template precisely and adapting it to fit the salient characteristics of new environments and incorporate new learning (Chiova and Ringov, 2017)).

Approaches to scaling

When it comes to inclusive business there are different approaches to achieve scale; either by developing new products or services, entering new markets or a combination of both. London (2011) identifies three scaling strategies for businesses operating in the BoP: 1) scaling-up, 2) scaling wide, and 3) scaling deep (London and Hart, 2011).

Scaling up- This strategy entails enlarging the current business model across familiar contexts. In the most basic sense this strategy increases its market share in a country by selling existing products or services to more consumers. This is generally a low risk growth strategy because companies can leverage current resources and capabilities.

Scaling wide- When scaling wide, companies target additional geographical markets, distribution channels or customer segments with existing (or slightly adapted) products or services. In this regard, companies expand their business by penetrating new market- and customer segments. This strategy is deemed more risky because companies have to develop new local (distribution) networks, capabilities and knowledge about the institutional environment. Especially in BoP contexts, where social embeddedness is a crucial element of engagement, scaling wide can be challenging.

Scaling deep- With this strategy, businesses scale their operations by offering new products or services to existing market segment. This approach requires long-term engagement with existing local networks and additional research and development (R&D). Therefore, scaling deep might bring about risks as companies need to develop new capabilities and expertise to serve the same market in a more comprehensive manner.

The three approaches to scaling developed by London (2011) built upon the work of Ansoff (1957), who proposed product marketing strategy is a joint effort of four growth areas: market penetration, market development, product development, and diversification (Ansoff, 1957). Ansoff’s framework, also known as the Ansoff Growth Matrix, matches the framework of London (2011) but adds one additional growth strategy: diversification. Diversification focuses on developing new products or services for new markets. This strategy is deemed the most risky because companies can for a large extent not build on existing capabilities and expertise in particular markets but have to develop completely new business models and structures.

Table 1 below provides an overview of the product-marketing strategies for growth by Ansoff (1957) and the scaling strategies framework by London (2011).

APPROACHES TO SCALING FRAMEWORK	Existing Markets	New Markets
Existing Products	Market Penetration Scaling up	Market Development Scaling wide
New Products	Product development Scaling deep	Diversification

Table 1: Overview of scaling approaches. Table adapted from Blokhuis & Van Tulder (2016) and London 2011.

Scaling as an iterative process

Success in scaling seems to rest on finding a good balance between different approaches to scaling. Whereas top-down approaches often fail because they do not have a deep understanding of the local environment and do not have local contacts to facilitate the scaling process (London 2011), initiatives that are exclusively organized bottom-up often fail to develop business models and skills that are transferrable to different contexts or markets. Striking the right balance is therefore crucial to the development of a scalable inclusive business strategy. Hence, in inclusive business, what is scaled is often not so much a technical solution but rather a set of arrangements that stimulates the adoption and continuity of an improved solution or practice.

In inclusive business scaling is therefore an iterative process and is dependent on the success in all stages of the business development (London 2011). Especially the early stages require careful attention as they can have significant negative consequences on the subsequent stages of the development process and thus on the scaling initiative. When it comes to scaling one must therefore take into account the whole innovation process.

The case study presented in this paper aims at looking at the different approaches to scaling taken in frugal innovation and how these strategies are translated into inclusive business models and strategies.

2 METHODOLOGY

This study looks at frugal innovation and inclusive business from a healthcare perspective. The main research question guiding this exploration was: *What are the conditions for co-creation and scaling in the interface between local networks and business models in inclusive healthcare in Africa?*

In this regard we look at three interrelated topics and questions:

1. How are inclusive business models and strategies developed and implemented for innovations flagged as frugal?
2. How are co-creation processes organised in frugal innovation?
3. Which strategies are employed for scaling innovations in BoP markets?

This study makes use of a qualitative case study research methodology. This type of methodology is particularly useful in explorative research that seeks to address 'how' or 'why' questions and, as is the case with the chosen subject, the researcher has little control over events because the focus is on a current phenomenon in a real-life setting (Yin, 1994). In this regard, a single case study methodology was chosen to provide rich, contextualized information that gives opportunity for a fresh perspective to be used for theory building (Eisenhardt, 1989).

The research made use of a combination of qualitative research methods. First a document analysis was conducted, using both internal documents such as: business strategy reports, presentations, positioning document of the CLC, notes of co-creation sessions, partnering agreements and external documentation, such as: annual reports, brochures, press releases and journalistic articles appearing in various media. Secondly, fieldwork was conducted in Kenya from February-March 2017 consisting of participant observation of the CLC and in-depth, semi-structured interviews with staff from the Philips Innovation Hub, medical staff from the CLC and a county government representative. Finally, semi-structured interviews with Philips staff were held at the Philips Headquarters in Eindhoven and through various skype conversations. Based on the document analysis and initial interviews a narrative of change was developed by constructing a timeline where relevant changes and events in relation to the case were documented (see appendix). The subsequent interviews and fieldwork enriched the initial data collection and created a further understanding of the inclusive business and frugal innovation process.

The empirical study has largely been abductive (Dubois and Gadde, 2002) as I engaged in on-going analysis of the data and chose my theoretical perspectives by going back and forth between my early materials and relevant previous research. Literature on inclusive business strategies, co-creation of business models, cross-sector partnerships, and organization studies, strategy and management guided the research process. As such, this research has taken an interdisciplinary approach by integrating concepts and insights from several disciplines to address the research questions.

This case study research has been part of the Inclusive Business Strategies in Sub-Saharan Africa programme, a three-year action-oriented research programme funded by the Dutch Science for Global Development NWO/WOTRO¹. The research project is run jointly by RSM, the Eastern and Southern Africa Management Institute (ESAMI), and the Netherlands-Africa Business Council (NABC)

¹ <https://www.rsm.nl/prc/our-research/projects/inclusive-business-strategies-in-sub-saharan-africa/>

and brings together a large consortium of companies, knowledge institutes, NGOs and government agencies from the Netherlands and six African countries: Ethiopia, Kenya, Mozambique, Rwanda, Tanzania, and Uganda. Philips was part of the core consortium of this research project and has as such agreed to partake in the research by sharing internal documents, being available for interviews and follow-up questions and providing feedback on the manuscript.

As this study was part of a larger research project, the case study only shows a particular moment in the development of the process with reflections on the development of the project as it stood at that moment. The interviews with Philips' staff and the analysis of documentation provided by Philips were the main basis for the description of this case study. Consequently, this study is based on their representation of processes and reality and cannot be seen as representative for the whole inclusive business community. To compensate for the subjective nature of the interview data, the statements made by respondents were cross-checked by comparing statements of interviewees and the external documentation. A full account of the innovation process requires further study on the perspective of other participants engaged in the project. Hence, this study should be regarded as an explorative study providing insights that can be studied more in-depth in the future

3 CONTEXT ANALYSIS

This chapter provides relevant background information for the case. First the health care context and related challenges, particularly in the healthcare sector in Kenya are described. Secondly, the motivation and logic behind Philips engagement with the primary health sector is explained. Finally the Community Life Centre approach is documented.

3.1 The healthcare context

Providing inclusive health care is still a challenge in many African countries. People In Sub-Saharan Africa rate their health and the health care system among the lowest in the world (Deaton and Tortora, 2015). An Afrobarometer (2016) study of 36 countries in SSA found that, people living in Sub-Saharan Africa consider healthcare their second-most important problem (after unemployment) and in 31 of 36 countries, health care ranks either first or second on the list of citizens' priority sectors for additional government spending. A lack of access to quality care, unhealthy environments and underfunding of public healthcare services are some of the main barriers in this sector. As the World Health Organization's (WHO) 2006 World Health Report states: "The African region has 24% of the burden of disease but only 3% of health workers, and commands less than 1% of world health expenditure." In order to bridge the gap in access to healthcare, the Universal Healthcare Coverage (UHC) framework was adopted as one of the targets under Sustainable Development Goal 3, to ensure healthy lives and promote well-being for all at all ages. UHC entails that *"all people and communities can use the promotive preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship."*²

The Kenyan government adopted the UHC framework in its long term strategic plan: Vision 2030, promising to provide equitable and affordable health care at the highest achievable standard to all Kenyans. Key areas of focus for Kenya's health sector, as laid out in the Vision 2030 document, are access, quality, capacity and institutional development in the healthcare sector.³ To put this vision into practice, the Kenyan government initiated an implementation strategy: the Kenyan health sector strategic and investment plan (KHSSP)⁴. This programme is focused on providing access to healthcare for every Kenyan citizen by: 1) The provision of a robust health infrastructure network countrywide; 2) improving the quality of health service delivery to the highest standards, 3) promotion of partnerships with the private sector; 4) providing access to those excluded from health care for financial or other reasons.

Following the promulgation of the new Kenyan constitution in 2010, a devolved system of governance was created with two levels of power at the National government level and at County government level (Okech, 2016). This constitutional change also influenced the healthcare sector. The Ministry of Health remained responsible for the development of national policy, provision of

² http://www.who.int/health_financing/universal_coverage_definition/en/

³ Strategic Plan 2014-2018. Sustainable Financing towards Universal Health Coverage in Kenya: http://www.nhif.or.ke/healthinsurance/uploads/strategic_plan/Strategic_Plan_2014-2018.pdf

⁴ Transforming Health: Accelerating attainment of Health Goals. Health Sector Strategic and Investment Plan (KHSSP)

technical support and monitoring overall quality and standards in health services provision. The 47 county governments became responsible for the provision of infrastructure and equipment for primary and secondary health facilities and recruitment of additional health workers (Okech, 2016).

However, despite the voiced commitment of the Kenyan government, the healthcare system in Kenya experiences considerable institutional voids and resource constraints in terms of providing adequate and accessible health care services to its community. Public health expenditure in Kenya has stagnated and is one of the lowest in the East African region⁵. In 2013, the country spent 4.5% of GDP on health care, compared to figures of between 7% and almost 11% for these other East African economies⁶. The total public healthcare expenditure is far below the 15% as agreed by the Abuja Declaration in 2011⁷. Moreover, secondary and tertiary facilities have absorbed 70% of the health budget and of the 20,000 registered clinical officers in Kenya, only 5,000 work in public hospitals. Moreover, healthcare spending is heavily skewed in favour of urban populations. As the Afrobarometer (2016) shows, as much as 57% of the rural population does not have a nearby health clinic present. Access to healthcare in Kenya is therefore greatly defined by the geographic availability of healthcare facilities. Residents living in rural areas have to make long and costly trips to access health care services (Mwangi, 2014). In addition, since only 25% of the Kenyan population is covered by a public, private or community-based health insurance scheme, the amount of Out Of Pocket (OOP) spending is high which leads people into poverty as people at the BoP are often not able to save or prepay for healthcare⁸.

Other institutional complexities such as the dynamics at the national political level play a role in healthcare provision in the country. At the time of fieldwork in February-March 2017, medical doctors were on strike nationwide for better pay and working conditions in the public sector. The three month long strike had profound impact on the health sector as more complex medical procedures could not be carried out at the public level, driving the population towards private health clinics or avoiding care in case of insufficient funds⁹. A number of people were reported to have died during the strike as they could not afford private healthcare¹⁰.

Finally, due to a lack of skilled healthcare workers and poorly maintained infrastructure, public healthcare facilities are often poorly equipped to meet the need of health care provision in the country. Despite large donations of medical equipment, local staff often does not know how to operate or maintain the technologies and as much as 70% of equipment is unused¹¹. The quality of public healthcare facilities is therefore generally low. The low trust the general public has in these facilities coincided with the low quality and consequently many patients 'bypass' care at the nearest

⁵ World Bank Group, Laying The Foundation For A Robust Health Care System In Kenya: Kenya Public Expenditure Review VOL II, December 2014

⁶ Netherlands Enterprise Agency (2016) *Kenyan Healthcare Sector: Opportunities for the Dutch Life Sciences & Health Sector*: https://www.rvo.nl/sites/default/files/2016/10/2016_Kenyan_Healthcare_Sector_Report_Compleet.pdf

⁷ In April 2001, the African Union countries met and pledged to set a target of allocating at least 15% of their annual budget to improve the health sector and urged donor countries to scale up support. For more information visit: http://www.who.int/healthsystems/publications/abuja_declaration/en/

⁸ Netherlands Enterprise Agency (2016) *Kenyan Healthcare Sector: Opportunities for the Dutch Life Sciences & Health Sector*: https://www.rvo.nl/sites/default/files/2016/10/2016_Kenyan_Healthcare_Sector_Report_Compleet.pdf

⁹ <http://www.reuters.com/article/us-kenya-strikes-idUSKBN16L1Z5>

¹⁰ <http://www.bbc.com/news/world-africa-39271850>

¹¹ WHO (2010) Medical Devices: Managing the Mismatch. An outcome of the Priority Medical Devices project)

facility to seek care at secondary and tertiary healthcare facility or in the private sector.¹² This leads to major inefficiencies in the health care system as higher care facilities are overburdened with non-critical cases resulting in longer waiting times for treatment and higher levels of mortality.

3.2 Philips in Africa

Royal Philips N.V. (from now on referred to as Philips) is a Dutch multinational specialised in electronics, healthcare and lighting. The company has been working in Africa for over 100 years. Its mission *'improve people's lives through meaningful innovation'*¹³ translates into the company's healthcare mission: *'Make the world healthier and more sustainable through innovation'*. Philips contributed to this goal through its EcoVision sustainability approach that spanned the years 1994 to 2015. In regards to healthcare, Philips mainly focused on making a positive contribution to Millennium Development Goal (MDG) 4: reduce child mortality and MDG 5: improve maternal health.

In 2014 Philips decided to separate its HealthTech and lighting division in two stand-alone listed companies¹⁴ and Philips Healthcare renewed its ambition to promote inclusive healthcare in a new 5-year sustainability program: Healthy people, sustainable planet. As Frank van Houten, Chief Executive Officer of Philips stated: *"Inclusive innovation means you create locally relevant solutions for unmet needs of people who are excluded today"*¹⁵. The aim of sustainability program is *"to improve the lives of three billion people a year in 2025 by making the world healthier and more sustainable through innovation"*¹⁶. These objectives are based on three pillars: 1) creating value for Philips' customers through sustainable solutions, 2) leading by example in its sustainable operations, and 3) multiplying its impact by driving sustainability through its supply chain. This entails that 95% of Philips' revenue is linked to three SDGs in particular; SDG 3: to ensure healthy lives and promote well-being for all at all ages; SDG 12: to ensure sustainable consumption and production patterns and SDG 7 'to ensure access to affordable, reliable, sustainable and modern energy for all'.

Philips healthcare strategy had traditionally mainly been focused on selling equipment to private clinics and large public hospitals in European and American markets. However, in order to reach the target of 3 billion improved lives, Philips realised it needed to look beyond healthcare innovation in the top tier of the healthcare system and focus on improving healthcare in BoP markets¹⁷. In 2015 Philips was reaching only 5% of the population in 8 African countries¹⁸ and was mainly active in higher levels of care. In order to expand its reach in Africa, Philips decided to increase its focus to impact the whole healthcare continuum- from community to tertiary care- by shifting its focus to primary health care as the pathway to change. In line with the WHO, Philips saw primary care as 'the

¹² Akin J, Hutchinson P. Health-care facility choice and the phenomenon of bypassing. Health Policy Plan 1999.

¹³ Philips (2015) *Working together to transform Healthcare in Africa*

¹⁴ Philips annual report 2015. Access: <https://2015.annualreport.philips.com/#!/home/tab=downloads>

¹⁵ World Economic Forum (2016): Social Innovation A Guide to Achieving Corporate and Societal Value. Accessed via: http://www3.weforum.org/docs/WEF_Social_Innovation_Guide.pdf

¹⁶ Philips Press backgrounder June 20, 2016: <http://www.philips.com/a-w/about/news/archive/standard/news/press/2016/20160620-philips-launches-new-sustainability-program-2016-2020-healthy-people-sustainable-planet.html>

¹⁷ Philips (2015) *Working together to transform Healthcare in Africa*

¹⁸ <https://www.devex.com/news/ppps-key-to-improved-health-access-in-africa-88932>

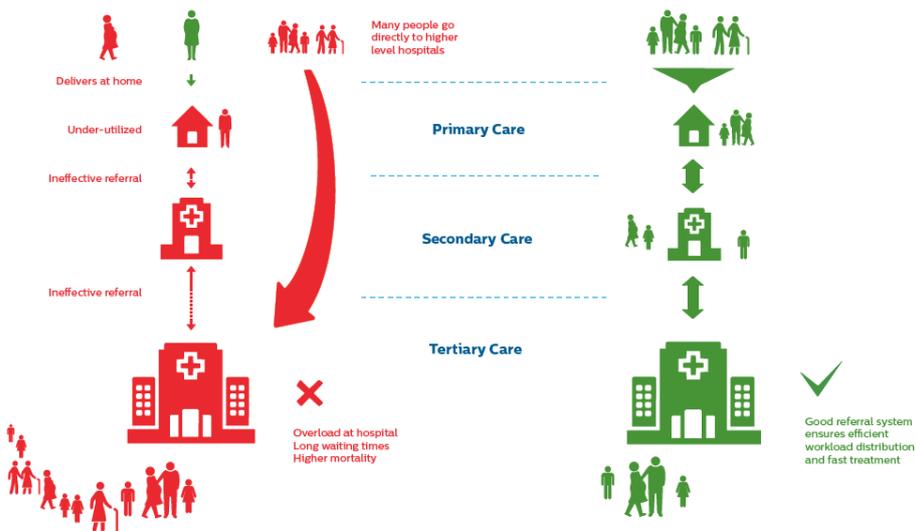
most efficient, cost-effective way to organize a health system’ and the most effective way of contributing to the broader goal of UHC and the SDGs ¹⁹.

This new direction in healthcare provision provided Philips with an ‘innovators dilemma’ as described in chapter 1, whereby its current business model and target market was not fit for purpose to its new strategic objective. To overcome this dilemma Philips chose for an internal venturing strategy. This allowed the company to build ventures under its own control so the ventures could either be promoted to a division within the core business or phased out if there was no interest in strategic control. As one employee states: *“This strategy allowed us to learn fast and fail cheap by applying a rigorous process to assess value potential early. It matched our ambition to develop new innovations for a new market segment and was therefore a perfect fit. (Interviewee 8, 2017)”*

To guide this process a local research and innovation department was established at the East African headquarters in Nairobi, Kenya: the African innovation hub (AIH). This hub coordinates application-focused research and product development in the areas of lighting and healthcare. In the AIH, several internal start-ups are matured in an incubator which functions as an ‘innovation funnel’ to test whether the innovations are ready for market. One of the solutions that came out of the venturing process in the AIH is the Community Life Centre (CLC) approach. For a full description of the development of the idea and the decision-making around the Community Life Centre approach see the time-line description in the appendix.

3.3 Community Life Centres

The CLC aims to strengthen the link between community and primary care by improving access and the quality of care by providing locally relevant technologies and solutions²⁰. One of the key elements of the approach is optimizing patient referral along the healthcare continuum (see figure 1 below).



The healthcare referral system - optimizing patient referrals is key to ensuring cost-effective care provision and reducing mortality.

¹⁹ Dr. Margaret Chan, Director-General at the WHO in Philips (2017) Community Life Centre brochure.

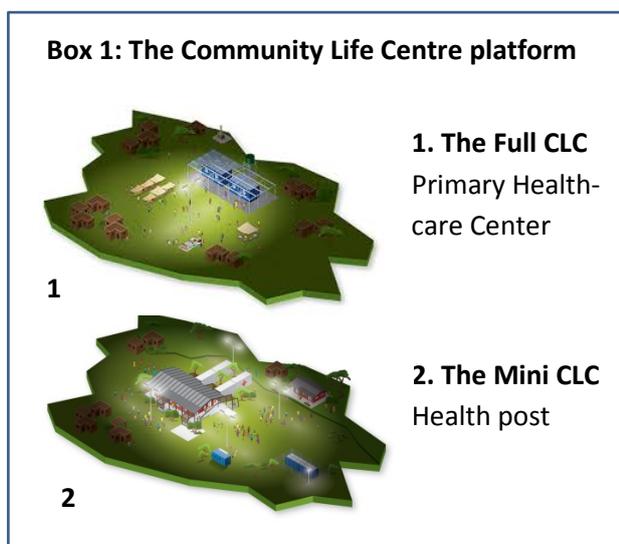
²⁰ Philips (2016)The Community Life Centre. A community-driven and holistic platform for strengthening primary healthcare

Figure 1: Visualisation by Philips of the healthcare referral system in Kenya²¹

The idea of the CLC was developed in line with Philips previous explorations in the primary healthcare domain in Africa through the Emergency Obstetrical Care programme (EMOC) in South Africa and Namibia and the Philips Community Light Centres (see appendix for a more elaborate description). The CLC approach aimed to combine the experience from these programmes by creating a community-driven and open platform for strengthening primary healthcare²². The CLC approach addresses healthcare innovation in several domains and designed modular solutions in the areas of: infrastructure, medical equipment, tooling, training & tracking, sustainable energy & lighting and additional non-healthcare services.

Infrastructure- This module is designed to put the required infrastructure in place in a community either by transforming existing health facilities or by designing new health infrastructures (Interviewee 11, 2017). The infrastructure can be provided in two broad formats (see box 1):

1. The Full CLC is a primary Healthcare Center with a catchment area of 25.000 to 30.000 people. The full CLC provides comprehensive care and includes a maternity ward and a laboratory.
2. The Mini-CLC is equivalent to a health-clinic and provides basic primary care restricted to outpatient services serving 6.000-10. 000 people. The facility is targeting fragile (post-conflict) areas and typically provides medical care and a social, educational area.



Medical equipment- The medical devices hosted at the facility mainly consists of diagnostic, monitoring and triage tools and are mostly delivered by Philips or sourced with third parties. Two specifically designed devices for low-resource and primary/community-care settings such as the CLC are the Children's Automated Respiration Monitor (ChARM) and the Wind-up Fetal Doppler. The ChARM is a monitor which automatically detects respiratory rates in children under the age of 5 and helps community health workers establish a more accurate measurement of a sick child's breathing rate to improve the diagnosis of pneumonia²³. The Wind-up Fetal Doppler is a portable heart rate monitor that does not require batteries but can be charged through a wind up mechanism built into the unit.²⁴

Tooling, training & Tracking – Innovations in this domain aim at connecting the community level of care with the rest of the healthcare system by enabling better monitoring and referral services. One

²¹ Philips (2015) Working together transform Healthcare Africa: https://www.philips.com/c-dam/corporate/about-philips/sustainability/healthy-people/fabric-of-africa/focus/Philips_Working_together_to_transform_HC_in_Africa.pdf

²² Philips (2016) The Community Life Centre. A community-driven and holistic platform for strengthening primary healthcare

²³ <https://www.philips.com/a-w/about/sustainability/charm-monitor.html>

²⁴ <https://www.philips.com/a-w/about/sustainability/healthy-people/supporting-communities/fabric-of-africa/programs/philips-fetal-doppler.html>

of the central features here is the CLC outreach kit²⁵. The CLC outreach kit provides a backpack with a number of mobile devices for Community Health Workers (CHWs) and midwives. Using mobile monitoring equipment CHWs perform basic maternity triaging in people's homes. Through mHealth technology such as Mobile Obstetric Monitoring (MOM), CHWs and midwives can share these clinical findings with professionals at healthcare centers for potential advice and intervention. The CLC backpack is linked to both the Full and Mini CLC as an outreach strategy. In addition, the CLC provides training services to care givers to strengthen their skilled health capacity. Finally, several IT services are provided such as Remote Monitoring of the functionality of existing devices in the CLC, operational monitoring of key performance indicators, electronic medical record systems, and Mobile Obstetric Monitoring.

Sustainable energy & lighting. The lighting and electricity solutions consist of indoor and outdoor LED lighting and solar energy. The energy is provided by a solar power unit that provides off/grid first line power backed up by a generator.

Additional services- Additional non-health services include infrastructure to provide clean water, such as water storage containers, an incinerator for waste management and additional service through call center support and warranty.

²⁵ Philips (2017) The Community Life Centre Outreach Kit. Key tools and services for community healthworkers and midwives.

4 FINDINGS

In this chapter the findings of the case study research are presented to provide insight into the main question of this study: *What are the conditions for co-creation and scaling in the interface between local networks and business models in inclusive healthcare in Africa?* The theoretical framework presented in chapter 1 is used to guide the empirical data of this study exploring the frugal innovation proposition in the healthcare sector in relation to the Community life centre approach adopted by Philips.

4.1 Inclusive business models and strategies

“Inclusive innovation means you create locally relevant solutions for unmet needs of people who are excluded today. You may need to change the approaches or business models that are customary. Create local ventures with autonomy to break away from existing conventions, while leveraging assets.” Frans van Houten, CEO of Philips (2016)²⁶

As this quote shows, inclusive innovation requires a new way of doing business; developing strategies and solutions that focuses on including the BoP community into the core business model of the firm thereby creating mutual value both for the company and for the community. In this section the strategies of inclusive business and the related business models are discussed in relation to the CLC approach.

Inclusive business strategy

The CLC approach aims to improve access to healthcare by optimizing patient referral and improving the quality of care by providing locally relevant technologies and solutions²⁷. To achieve this goal the business strategy needs to adhere to the specific criteria of inclusiveness summarized as the 4A's of inclusion: accessibility, availability, affordability, awareness and appropriateness (Anderson and Markides, 2007).

Accessibility- One of the key aspects of inclusive healthcare provision is accessibility. Especially in rural or semi-urban areas health facilities are scarce and patients often have to travel long distances to receive the care they need. Enabling access such that even consumers in remote locations can receive quality care is therefore crucial. Building CLC clinics in rural areas with high maternity deaths and providing outreach services through the CLC backpack so that even at community-level patients receive basic care, contributes to the aim of making healthcare more inclusive. The outdoor lighting that is provided at the CLC also increases the safety of the area, making the clinic more accessible. This increased accessibility also comes with a number of challenges. Due to the interest in the CLC, people from different districts come to the facilities to seek care. This increase in patient numbers is not always matched with increased funds leading to insufficient staffing capacity and hence long waiting hours for the patients and high work pressure for the medical staff (Interviewee 4, 2017).

²⁶ World Economic Forum (2016) *Social Innovation A Guide to Achieving Corporate and Societal Value*. Accessed through: http://www3.weforum.org/docs/WEF_Social_Innovation_Guide.pdf

²⁷ Philips (2016) *The Community Life Centre. A community-driven and holistic platform for strengthening primary healthcare*

Availability- This aspect covers the precondition of creating an uninterrupted supply of service that customers can rely on. In the case of healthcare this means patients are assured of service at the primary healthcare domain and do not have to look for care elsewhere. Due to the limited staffing capacity of public healthcare in Kenya, lower-level care facilities are often only manned during the day. As most babies are delivered at night, required care is therefore not always locally available. Because of the solar power unit and LED area lighting, the CLC can operate in the evenings and the availability of care in the region has been greatly improved. Also providing an ultrasound in the CLC means that care-providers are able to detect high-risk pregnancies early-on and expectant mothers have all the information needed for referral. However, on the side of the medicine availability, issues have been reported. As the Pharmacist of the CLC acknowledges (Interviewee5, 2017), the supply is very low and the pharmacy often does not have important medical supplies available for an extended period of time. Also, as the CLC is a primary healthcare facility, it does not have an obstetric theatre. In case of emergency procedures patients have to go elsewhere to receive care (Interviewee 4, 2017).

Affordability- Crucial to the frugal innovation proposition is the issue of affordability. Contrary to other type of frugal innovations, where low-cost, simpler alternatives can be provided, in healthcare providing alternative solutions is more challenging as the quality of care cannot be compromised. Developing lower-cost alternatives is challenging for a multinational such as Philips, as the devices have to abide by Philips extensive quality standards and rigorous testing, bringing the costs of production and marketization up (Interviewee 6, 2017). Therefore in addition to developing medical devices such as the ChARM and Wind-up Fetal Doppler that are specifically designed for BoP markets, the open innovation character of the CLC platform allows Philips to source innovations from a third party which brings the total cost of ownership down.

Awareness/Appropriateness- Inclusive health care, rather than only affordable care, promotes health service delivery that is not only financially but also socially and culturally acceptable to BoP patients. This requires creating awareness of a product or service so that BoP consumers know what is available and how to use it. Through working with CHW, the CLC provides health education to the community and links them to the CLC so awareness of available services is provided. In terms of appropriateness, the Philips conducts an extensive needs-assessment to identify the most pressing healthcare issues in a particular the community. However, one of the key challenges in terms of appropriateness is the digital referral provided by the CLC. As the pharmacist of the CLC explains, many of the patients are concerned about privacy when it comes to sharing medical information. With the digitised system that is operated at the CLC, patients receive their medication prescription together with their diagnosis. However, as medicines are not always available at the CLC pharmacy, patients have to go to a different pharmacy or ask a relative or friend to pick up their prescription. Patients have expressed concern in sharing their diagnosis or medical status (in regards to for example HIV/AIDS) with a third party because this may lead to stigmatisation (Interviewee 5, 2017). Failing to deal with these issues might lead to decreased community support of the CLC.

Table 1 below provides an overview of the different strategies employed by the CLC approach and the related challenges in terms of the 4A's of inclusive health care provision.

4A's	Definition	Inclusive Business strategy	Related challenges
Accessibility	Enabling access so that even consumers in remote locations are able to receive the products or service	<ul style="list-style-type: none"> - Building clinics in rural areas with high maternity deaths - CLC backpack enables community outreach - increasing safety through outdoor LED lighting 	<ul style="list-style-type: none"> - Increased patient numbers cause a lack of staff at the facilities, leading to long waiting hours for patients and high work pressure for the medical staff.
Availability	Establishing an uninterrupted supply of products and services	<ul style="list-style-type: none"> - CLC is able to provide good quality care at all time; medical devices such as an ultrasound improve the quality of care - Increased opening hours, because of outdoor LED lighting 	<ul style="list-style-type: none"> - Medical supplies are not always available -Lack of obstetric theatre in case of emergencies
Affordability	Ensuring that the product or service is affordable, good value for money	<ul style="list-style-type: none"> - Reducing costs by providing free services such as ultrasound and giving better referral to higher level care facilities. - Sourcing medical devices from third parties through open innovation strategy. 	<ul style="list-style-type: none"> - Developing cost-effective medical equipment is a challenge because of Philips' high quality standards
Awareness & Appropriateness	<p>Awareness: consumers know what is on offer, and how to use the service/product</p> <p>Appropriateness: Product or service is adapted to local needs and accepted by consumer and producer.</p>	<ul style="list-style-type: none"> - Community outreach by CHW through CLC backpack provides preventative care and health educational to the community - Using a process of co-creation, the CLC is catered to local needs and environment. 	<ul style="list-style-type: none"> - Digitising patient data leads to concerns for privacy for the patients and possible decreasing support for the CLC because of the fear of stigmatization.

Table 1: Inclusive business strategy for health care innovation

The Inclusive business model

A necessary precondition for inclusive business and frugal innovation is that inclusiveness is integrated into the core business model of the company. The business model describes the rationale of how a company creates, delivers and captures value (Osterwalder and Pigneur, 2010). Frugal innovation goes in this regard beyond the traditional concept of technical innovation and includes business model and institutional innovation (Bhatti, 2012; George, Mcgahan and Prabhu, 2012).

Currently the business model of the CLC is mainly rests on input financing or capital expenditure (CAPEX). This is in line with the traditional large scale project protocol Philips uses in its business development process. In regard to the CLC, Philips charges its clients- either local government or multilateral organisations- for the infrastructure of the health facilities, the medical equipment and the services offered. To make the health facility more financially autonomous and contribute to local socioeconomic development, Philips has diversified its strategy by also providing additional services such as renting out commercial space to entrepreneurs and commercialising water supply. Philips also attempted to sell some of its other consumer products at the CLC in Langata such as a smokeless cook stove and home solar lighting products, but this endeavour was cancelled because of insufficient demand in that location.

Philips experienced some major challenges with this business model. As one of the Philips employees explains: “Most African governments have tight health budgets that are usually allocated to operational costs such as salaries of medical staff and medicines. Asking them to make an upfront investment, especially in more than one CLCs at the same time, is a challenge (Interviewee 6, 2017). In light of this challenges Philips realized it needed to develop alternative business models. In the words of one of Philips’ employees: *“To address healthcare issues in Africa we need to find innovative ways of altering traditional value creation and capture mechanisms (Interviewee 11, 2017)”*

In this regard Philips is looking at alternative finance models to overcome the finance barrier in the CAPEX. One of these models is the management equipment service contracts. This is a type of leasing model where the initial costs of instalment are not paid by the client directly but by a financial service provider such as a bank or impact investor. The client does not have ownership of the product but pays for the usage and maintenance costs²⁸. Another finance solution Philips is exploring is working through Development Impact Bonds (DIB). DIB are a performance-based investment model where upfront funding for development programs is offered by private investors, who are then remunerated by donors or host-country governments. In the case of the CLC, Philips would provide the initial investment into the development of the CLC and would on the basis of the outcomes be reimbursed by the local government or by a donor or a combination. In both business models, Philips would be the owner of the CLC while the local government are responsible for the financial sustainability.

The second business model Philips is exploring is the franchise model. This model can take shape in to possible ways. Either the CLC becomes a social franchise in which private providers are engaged in a contractual arrangement to provide standardized health services under a common brand name such as McDonalds. The idea is that a network operating under this type of contractual arrangement can deliver improved health services in terms of access and quality and the private partners can share risks and benefits. The other option Philips is exploring is micro-franchising whereby Philips co-develops health-related business propositions with local entrepreneurs that would operate under the brand name of the CLC in return for a fee from the franchisee.

The third business model explored by Philips is a public-private hybrid business model. This could either be facilitated by integrating private care services in the public health facility. For example, in the CLC in Kiambu county, an ultrasound service is available. At a private clinic this service would cost up to 1500 Kenyan Shillings (€12,00) while in the public health facility it is free. Commercialising this service and other services could provide additional income to the CLC (Interviewee 6, 2017). Another public private business model is delivered through Public-Private Partnerships (PPP) whereby the public sector outsources the service delivery to the company and pays for the outputs, for example based on the number of patients served, or the number treatments given. This type of output financing would be covered by the national health insurance as it saves costs on their pay outs. The final option in this regard is setting up PPPs with international donors such as the United Nations that would pay for part of the CLC approach. How these partnerships are shaped is described further in the next chapter.

²⁸ Philips applies a similar model to its European market, as Hans de Jong explained during the Max Havelaar Lecture 2015, in a partnership with Schiphol Airport in the Netherlands, Philips offers light as a service which means that Schiphol pays for the light it uses, while Philips remains the owner of all fixtures and installations.

At the time of writing, Philips is assessing the different business models based on the risk, reward and impact each of these models could generate (Interviewee 6, 2017).

4.2 Co-creation in inclusive innovation

This principle of co-creation distinguishes the BOP perspective from typical corporate and development strategies that rely on importing pre-existing approaches and technologies into BOP markets (Prahalad, 2004, London, 2007). Co-creation can broadly be described as an *interaction where companies and non-traditional stakeholders such as communities, (local) civil society organisations and institutions integrate their knowledge in order to generate novel value, products, services or business strategies* (Prahalad and Ramaswamy, 2004; Seelos and Mair, 2007). Co-creation in the BOP context can thus occur at multiple levels; at the community- and at the organizational or institutional level.

Co-creation with the community

The importance of co-creation with the community is recognised by Philips. As one employee states: *“If we really want to improve health care, we can’t just talk about providing X-ray or MRI equipment — we need to talk about how the community accesses health care. That means we need to talk to the community, and truly understand their health-seeking behaviours before we look for solutions.”* With the CLC, Philips has taken an end-user centred approach, formulating a proposition bottom-up based on the needs of the consumers. The co-creation approach was used for a needs identification, design of the facility and implementation (Interviewee 2, 2017).

Within Kiambu county, two sub-county locations were chosen to organise co-creation sessions: Langata and Kamae. Within these two settings focused-group discussions were conducted with four customer segments, respectively,

1. Female community-level representatives,
2. Male community-level representatives
3. Care givers: nurses, clinical officers and Community Health Extension Workers (CHEWs);
4. Sub-county level representatives: chief and county government officials.

Needs identification- The first step in the co-creation process was a participatory-based needs assessment where healthcare and community specific needs were assessed on the basis of six broad categories: 1). Healthcare, 2) . Education, 3). Safety, 4). Hygiene, 5). Commercial activities, 6) Social and recreational activities. Langata is a rapidly urbanising community with about 150,000 residents from various backgrounds and income levels. The community was found to face many infrastructural challenges: access to clean water, reliable energy supply, and adequate primary and secondary health care services. Low-income pregnant women were most affected by the poor access to primary care as some cannot afford to reach well-equipped hospitals for health checks and delivery. Many pregnant women consequently choose to give birth at home in poor hygiene conditions leading to a high maternal death rate.

Design- Subsequently, the participants were asked to prioritise short-term requirements and design a desired health facility. On the basis of the discussions and the drawings of the facility, Philips came up with two designs for the CLC and presented these to the governor of Kiambu.

Implementation-Based on the assessment Langata was chosen as the site for deployment of the first pilot. The motivation for this choice was that access to healthcare was particularly low in this region with only one primary healthcare clinic for a population of 46.000 people and very poor infrastructure and a lack of safety. Choosing the most challenging environment for the CLC was a deliberate choice as one of the staff recounts: *“If you want to build a modular approach you need to test many different aspects of healthcare delivery. We therefore chose Langata as the site for our pilot project because we felt we could learn as much as possible here.”* Another key factor that came into play was the willingness to support the pilot initiative through relevant government support, community-level engagement to promote utilization of potential services and a match in public health priorities at the Langata sub-county (Interviewee 1, 2017)

As discussed in the context analysis (chapter 3.1), one of the key issues in the Kenyan healthcare context is the low-level of trust by the community in public healthcare facilities. According to the Philips employees that were present in the co-creation sessions, this distrust also became apparent when talking to the community members. Many of them regularly bypassed the system because of a lack of confidence that they would receive quality care in the primary health facilities. According to the Philips staff the co-creation process was crucial to build trust and buy-in from the community by giving them a voice and sense of ownership. According to one employee, the endorsement of key stakeholders in the community led to more people visiting the facility from outside the community (Interviewee 2, 2017).

However, there were also challenges. One of the issues is that Kiambu provides a rapidly growing and changing context and many people who were part of the initial co-creation had moved to a different location. Follow-up and validating results was therefore difficult to organise. Also, as the community members were selected by the county government it turned out that one important stakeholder group, the community health committee, a group of community volunteers in healthcare and community outreach, was not involved the meetings. When it was realized that this group played a crucial role in local engagement and outreach, a separate co-creation session was organised to involve them in the process (Interviewee 3, 2017).

Co-creation with the government

The co-creation process with the government focused on identifying the clinical gap in terms of disease burden and determining a costing strategy for building the CLC (Interviewee 1, 2017). According to one employee the main question Philips tried to answer in these sessions was: *“What is the pain of the government and how can the CLC alleviate this?”* (Interviewee 2, 2017).”

Discussion with the governor provided insight into the very diverse needs of a public body when it comes to healthcare provision. In addition to pressing health care issues in terms of family planning, pharmacy upgrades and maternity services, the county government also voiced some other non-healthcare related concerns such as youth employment, education opportunities, safety and clean water (Interviewee 2, 2017). This gave impetus to the creation of the commercial spaces of the CLC and priority was given to providing a clean water supply. Finally, in terms of implementation, the government wanted to prioritise ‘visible changes, i.e. tangible changes such as infrastructural development and innovative medical appliances so that the community could see the improvements.

In the next phase of the co-creation process a memorandum of understanding was signed between the county government of Kiambu and Philips that specified the responsibilities of both parties. Philips took responsibility of the infrastructure, medical devices, the energy supply through solar power units, indoor and outdoor lighting and providing training to care givers. The county accepted responsibility for the staffing of the facilities and a regular drugs supply. In addition, the county invested in infrastructural development.

According to the county, the co-creation process made them aware that healthcare is not only providing services as a public good, but can also be a business opportunity (Interviewee 7, 2017). As one county government official reflects: *“Working with private sector partners gives us the chance to source financial resources and expertise and increase our impact as a county (Interviewee 7, 2017)”*

Some challenges in the co-creation process with the county were concerned with time management; having different timelines, staffing; finding a specialised sonographer to work at the CLC and timely drugs supply. Moreover, paradoxically, the success of the CLC in attracting patients to its facility has had some challenging financial implications for the county. With devolution in Kenya, healthcare provision and related budgets has been decentralised to county level and the county receives money based on the population of its community. When people from neighbouring Nairobi come to seek care at the CLC in Kiambu, the facilities are threatened to be overburdened because the healthcare budget does not allow for hiring additional staff. Finally, a challenge has been the limited partnering capacity of the county government. At county level, there is no experience with setting up public-private partnerships in healthcare. PPP policies and protocols have not yet been developed. Matters of accountability in different levels of the public healthcare, i.e national government and county level, remains unclear. Philips fears this could potentially pose a threat to the sustainability of the project (Interviewee 6, 2017). To mitigate this challenge, the Dutch enterprise agency RVO has agreed to fund a government to government support trajectory both on national and county level. .

Co-creation with civil society organisations

Within the healthcare sector in Sub-Saharan Africa, primary healthcare has traditionally also been the domain of non-governmental organisations (NGOs). Especially in a context with substantial institutional voids and lack of access to care, NGOs traditionally have stepped in to provide services to low-income populations (Riviera Santos et al., 2012b). However, initiatives by NGOs in the healthcare sector have concentrated much of their effort on cutting the rates of individual infectious diseases. As a result, healthcare initiatives have often been set-up in isolation²⁹. In order to reach Universal Health Coverage by 2030 a significant step has to be made in coordinating these approaches, in other words: moving from silo’s to synergy. For this ambition a strategic partnership approach is crucial as one Philips employee recognises *“We need to work according to an ecosystem approach where different players are mapped and collaboration is sought with relevant partners.”* (Interviewee 8, 2017)

²⁹ <https://www.economist.com/news/leaders/21727068-changing-burden-disease-requires-better-approach-keeping-people-healthy-why>

Motivations for cross-sector collaboration

Many studies have found that NGOs can contribute valuable knowledge, capabilities, contacts and legitimacy to inclusive business initiatives in BoP contexts (e.g. Dahan *et al.*, 2010; Rivera-Santos and Rufin, 2010; Webb *et al.*, 2010). Co-creating innovations through cross-sector collaborations can therefore present opportunities for businesses operating in the BoP. This is also recognized by Philips and partnerships with civil society organisations are sought for a variety of reasons. One of the main motivations of engaging in cross-sector partnerships is the local knowledge and networks NGOs have in the BoP. As Philips is not very familiar in operating at the BoP, partnerships with NGOs can provide better access to low-income and vulnerable communities (Interviewee 9, 2017). In addition, as one Philips employee recognizes: “Many people have a predisposition when it comes to for profit businesses operating in the field of development. Especially in healthcare which is seen as a public good, there can be some animosity towards the private sector. Working with NGOs helps us to gain legitimacy and a ‘license to operate’ in this sector (Interviewee 6, 2017). Through, what Austin and Seitanidi describe as “*Associational Value*” (Austin and Seitanidi, 2012) NGO’s can build trust and create awareness with the community about the offered service and hence create a local buy in.

The second major advantage of partnering with a civil society organization for Philips is the “*Transferred resource value* (Austin and Seitanidi, 2012). Many donors require partnerships with NGOs for providing development funding . Therefore, being engaged in a multi-stakeholder network might provide funding opportunities for Philips that it could not have accessed alone.

A third motivation for engaging in cross-sector partnerships is the access to resources and knowledge which it cannot or does not wish to develop internally (Rivera-Santos, Rufin and Kolk, 2012). As Philips recognizes “*Some clients want to provide services that are out of the main scope of the business, such as water and sanitation programmes or training on specific medical capabilities. As we do not have the required expertise to provide these services we actively source partners who do have the required experience and capabilities* (Interviewee 1, 2017).”

CLC partnership ecosystem

In order to structure its partnerships Philips conducted a primary healthcare ecosystem mapping. In this exercise a distinction was made between different type of partners for the CLC³⁰. Strategic partners have a broad set of capabilities and a wide geographical scope. These are usually international partners that have local offices in several African countries. The most prominent strategic partners for Philips in this regard are AMREF Flying Doctors and the United Nations Populations Fund. In addition it is developing partnerships with other NGOs such as the Management Science for Health (MSH) and the International Red Cross. The second level of partners are the supporting partners. These organisations are active in particular countries or have specific capabilities and expertise such as the London School of Hygiene & Tropical Medicine and other knowledge institutes and research partners. Then further down the line are suppliers of particular products or services and ‘ecosystem enablers’ such as the media.

Choosing the right partner to work with in a particular context is done by Philips on the basis of three main criteria: capabilities, geographical reach and strategic fit (Interviewee 9, 2017). Partnerships can

³⁰ Internal powerpoint presentation

be demand driven; providing a particular service required by the client or supply-driven: exploring funding opportunities for the start of a CLC project.

To broaden its network Philips also takes part in other partnering initiatives around healthcare provision. At the beginning of 2017 Philips was the first private company to participate in the newly established SDG Partnership Platform a Partnership platform spearheaded by the United Nations and the Kenyan Ministry of Health. Although Philips was crucial in the initiation of the platform, the company does not want to take credit as they want to create a broad support base for finding innovative solutions for primary healthcare and novel finance models. In addition to this platform there are many more initiatives such as the Private Sector Health Partnership, a group of private sector companies and organisations working on improving health care services for women and children in Kenya. Through the Philips Foundation, Philips also contributes to the Maternal and Newborn Health Innovations Project together with UNICEF, Concern Worldwide, Maker and Gearbox.

Participating in these platforms gives Philips the opportunity to be influence the healthcare system. *“When we engage with NGOs and the government in a partnership platform we can influence decision making in terms of healthcare standards and provision. This gives us the opportunity to get ahead of the game and establish ourselves as the partner for primary healthcare (Interviewee 6, 2017).”*

Partnering challenges

As partners have different sectoral and institutional backgrounds (Rivera-Santos, Rufin and Kolk, 2012) working in cross-sector partnerships can, in addition to providing opportunities, also be challenging. As one Philips employee recognises: *“NGOs have a different mind-set than businesses. Their business model is focussed on obtaining donor funding and subsidies while we [Philips] strive for getting a return on our investment and make a profit in the long run. Our engagement in a project is therefore often in the initiation stage of a project, while NGOs often only invest time when there is money on the table (Interviewee 6, 2017).”* In this respect there is also a difference in timeframes when it comes to projects. Whereas NGOs are bound by funding streams and evaluation criteria of donor organisations, they usually engage in a project for up to four years. However, these type of innovations need a longer-term approach and are only sustainable after 7-10 years. Therefore, the responsibility and associated risk in sustaining innovations is often skewed towards the private sector. However, with development budgets decreasing, NGOs are increasingly looking outside of the well-defined donor frame and are becoming more commercial in their approach. This might enable businesses and NGOs to co-invest in these endeavours.

Another issue that often arises in cross-sector partnerships is trust. Philips experienced this several of its partnerships. Although the partnership managers of the organisations quickly agreed on the terms of the partnership, the alignment with the technical department and local officers was generally more challenging. Within these departments there often still exists a certain distrust towards private sector actors. Therefore, as one of the Philips employees states *“deepening personal relations with key stakeholders within the organisations and co-creating solutions instead of contracting partners as suppliers to the solution, are key in making cross-sector partnerships a success (Interviewee 8, 2017).”* This was a crucial element that was missing in the initial partnership between Philips and AMREF. As one Philips employee recognises *“The collaboration initially started*

on an unequal footing, rather as a contractor-supplier relationship than as a partnership. After three years we [Philips] questioned whether we needed to continue funding the activities of AMREF and renegotiated the partnership agreement in terms of sharing risks and benefits. By opening up the partnership in this way and by involving the organisation in a process of co-creation to co-develop a joint value proposition, AMREF got a larger sense of ownership and a long-term commitment to the project.”

This example shows the paradox that often exist in NGO-business collaborations: whereas clear and predictable roles help partners to articulate the objectives clearly, flexible roles are necessary for diverse partners to reach coherent understandings and bring forth the novel solutions they aim for (Nahi, 2016). Therefore moving from mere resource complementarity to achieving organizational compatibility is a crucial aspect in establishing effective cross-sector partnerships (Austin and Seitanidi, 2012). Co-creation can play a crucial role in establishing strategic alignment between partners and furthering internalization of the partnership within the respective organisations. Hence, co-creation can accelerate the evolution from transactional collaborations to transformational partnerships (Austin and Seitanidi, 2012; PrC, 2016).

4.3 Scaling inclusive business

“The CLC is a scalable, self-sufficient concept for primary healthcare delivery that Philips is pioneering in Africa, which it aims to introduce across the continent.”³¹ This quote from a recent press release by Philips shows the scaling ambition Philips has for the CLC both within Kenya and abroad. As one Philips employee states: *“The Community Life Centers are our strategy to unlock the African market. (Interviewee 2, 2017)”*.

The key motivation for this scaling ambition of Philips is twofold. The first reason is that by scaling the CLC approach, the development impact of the programme can also be increased. To fulfill its commitment to UHC and the SDGs and reach the 3 billion lives by 2025 it pledged in its sustainability program: Healthy people, sustainable planet³², Philips needs to reach an additional 1 billion people in the next 8 years. The BoP market in Africa in this respect presents an impressive growth market for Philips as the company currently serves only 5% of the African market and is mainly focused on ToP innovations (Interviewee 8, 2017). A second related motivation for scaling is the need to reach commercial viability. As the margins in BoP contexts are generally low, achieving an economy of scale, by developing multiple CLCs at once, can be achieved. By increasing its level of production, Philips can reduce its production costs and hence increase the margins on its sales or lower the price (Lu, 2017).

Scaling strategies of the CLC approach

As we have seen in chapter 1.3, there are different approaches to achieve scale in Inclusive business either by developing new solutions, entering new markets or a combination of both. With the CLC, Philips makes use of scaling strategies on multiple levels.

³¹ Philips press release (2016) <https://www.philips.com/a-w/about/news/archive/standard/news/press/2016/20160512-philips-and-unfpa-collaborate-to-transform-lives-in-mandera-county-kenya.html>

³² Philips (2015) Working together to transform Healthcare in Africa

Scaling up- Philips has been actively working on sales of the CLC in Kenya. After launching the pilot project in Githurai in June 2014, Philips actively engaged with the government of Kiambu to increase the number of CLCs in the county (Interviewee 8, 2017). In the same period Philips developed a second CLC in partnership with UNFPA in Mandera, Kenya. Also here the plan is to scale up and build additional CLC in the county.

Scaling wide- In addition to focusing on the Kenyan market, Philips has look beyond these borders to sell the CLC solution in different African markets. In 2017, CLCs have been launched in Tadu-Village, in the DRC, and in Diepsloot, South Africa. Moreover, a number of other CLCs are in the pipeline, in other Sub-Saharan African countries.

Scaling deep- Developing and introducing new products and services to existing CLCs will be a next step in the scaling of the CLC approach. In this regard one can think of developing new products such as the ChARM and Wind-up Fetal Doppler that are part of the CLC outreach kit and can be integrated into the full or mini CLC. In addition, Philips can offer its clients mHealth solutions such as Mobile Obstetric Monitoring (MOM). As part of the CLC approach Philips also offers additional services to its clients such as clean water supply, waste management and LED area lighting for social, cultural or economic activities. Finally, infrastructure for a laboratory or pharmacy can be provided.

Diversification- Philips is working on developing solutions outside the domain of maternal and child health and is looking at the possibility of establishing services and products for prevention and treatment of non-communicable diseases. Philips could also provide training or consulting services .

Figure 3 below presents an overview of the different scaling strategies employed by Philips in regard to the CLC.

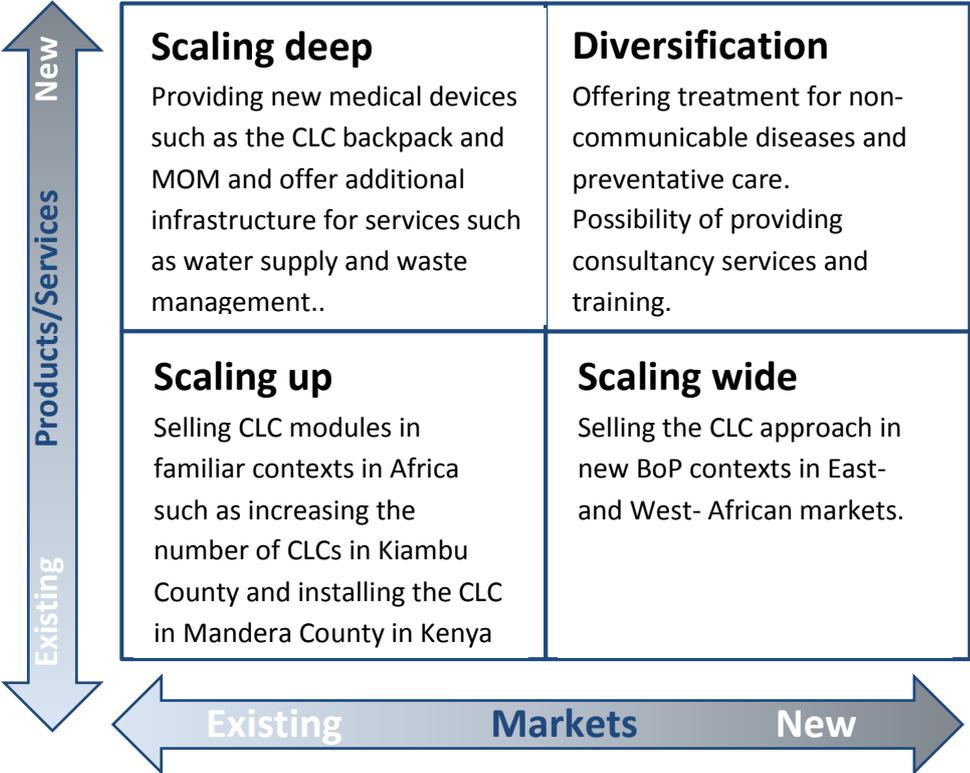


Figure 3: Scaling strategies of the CLC based on the framework developed by Blokhuis & Van Tulder (2016)

Barriers to scale

In addition to the broad range of opportunities that can be leveraged for scaling purposes, there are also factors that can hinder the scaling process.

Scaling up- Whereas scaling-up has the advantage of building on existing networks and business models, sustaining a competitive advantage in the market can be challenging (Blokhuis and Van Tulder, 2016). Because of institutional voids, formal structures and agreements are often not in place and competitive players might come in to capture a share of the untapped market. In the case of primary healthcare provision in Africa, GE Healthcare, one of the traditional competitors of Philips, has pledged \$300 million to healthcare in emerging markets through its Sustainable Healthcare Solutions (SHS) programme³³. GE Healthcare is operational in many of the same markets as Philips and focuses on the same market segment as the CLC.

In addition, because of the institutional voids, formal contracts do not have the same reliability in BoP context as they have in developed nations. A concern Philips has in scaling the CLC is whether African governments will respect the formal contracts and commit to upholding their promise. Especially in case a new government is elected it might be difficult to enforce agreements made with the previous government. In several of its projects Philips has experienced challenges in this regard where the lack of government support caused major delays and extra costs (Interviewee 6, 2017). In the context of the CLC in Kenya, Philips won a bid to build 4 CLCs with the outlook of extending to 60 CLCs but the order was cancelled by the county government because of a lack of funding.

Finally, political dynamics may hamper scaling efforts. The devolution of power in Kenya meant that negotiations and marketing had to be done at county level in Kenya which means that instead of signing a deal with the Ministry of Health as a client, you now have potentially 47 clients that all require attention, increasing the transaction costs substantially. In addition, there is virtually none experience with public-private health partnerships at county level which causes major delays (Interviewee 6, 2017).

Scaling wide & Scaling deep- The main challenges when entering a new market is the institutional distance and dealing with the heterogeneity of BoP contexts. Every context has its own healthcare standards and regulations to uphold and context specific needs.

As one employee acknowledges “*The CLC is not a one size fits all. We need to tailor our approach in such a way that it caters for the different needs of communities*” (Interviewee 2, 2017). To bridge this institutional distance, the CLC approach uses a process of co-creation to identify local needs and co-develop a health solution. Co-creation processes are however very labour-intensive and therefore costly (Interviewee 2, 2017). Pilot projects such as the CLC in Kiambu have catered for almost any need of the community however as a result, the CLC has become too big to replicate since the costs are too high and the margins too low (Interviewee 10, 2017). To reach an economy of scale, a certain level of standardization is needed, however by ‘capping its possibilities, does not fit with the aim of building a bottom-up solution for primary healthcare, which is part of the innovation strategy of the

³³ <http://www.genewsroom.com/press-releases/ge-healthcare-announces-300-million-commitment-support-emerging-market-health-281784>

CLC and one of its biggest selling points (Interviewee 8, 2017). Consequently, a replication dilemma arises, because while the CLC uses co-creation to customize its health approach, it needs a certain level of standardization for its scaling ambition.

In addition, with the integration of the CLC in the market division of the company, moving from a research project to a venture, brought about some internal or institutional challenges. While Philips has ample experience with scaling, this experience is largely with selling individual products. As one Philips employee remarks: “We know how to sell a million vacuum cleaners and can do this very efficiently, however selling the CLC which specific shape and products offered is not predetermined and the price is negotiable is a totally different ballgame” (Interviewee 8, 2017). Within the structure of Philips all projects are labelled according to their product-codes, however, since the CLC is tailor made to the context and the client, Philips is selling more than just medical devices, but is selling a whole package of solutions (Interviewee 6, 2017).

Moreover, as BoP ventures often have longer expected payback periods and higher perceived risk, standard business protocols and evaluation methods are not fit for purpose (Olsen and Boxenbaum, 2009). As an MNE, Philips has specific requirements and protocols of developing and testing products. As an MNC, Philips cannot risk products or services failing as it would damage its reputation. One example that was given was the need to install an extra-large solar power unit, in case one of the units would fail. However, governments are not always willing to pay for this extra security and other providers might have an advantage in providing low-cost alternatives. The risk-averse strategy employed by Philips in this regard, might pose a risk to the sustainability of the CLC. Moreover, these protocols also affect the agility with which Philips can open up new markets, as one employee remarks “*Placing the CLC within the structure of the core business of Philips is like placing a speed boat on to an oil tanker.*”

Overcoming challenges in scaling

One of the ways Philips is overcoming the barriers to scale in low resource settings with substantial institutional voids is by taking a proactive role in healthcare provision. Instead of waiting for market opportunities such as tender procedures to arise, Philips is setting up partnerships with governments and development actors to transform the healthcare system. The SDG platform (see chapter 4.2) of which Philips is one of the key players aims at translating improved outcomes to policy-level dialogues to improve healthcare standards and create opportunities of engagement (Interviewee 6, 2017). A crucial element to this is providing proof points to prospective customers showing that the solution works and can be implemented at scale. Philips has in this regard invited an external consultant to carry out an impact study that can demonstrate the clinical effects and cost-effectiveness of the CLC program (Interviewee 1, 2017).

Another key element in overcoming the barriers to scale is finding a balance between customisation of the approach through processes of co-creation and standardisation for scaling. By setting up larger programmes of 10-20 CLC Philips can create an economy of scale, minimising the operational costs and maximising the returns on investment. Philips can in this case host regional co-creation sessions that can be validated in different communities and the modules of the CLC can be altered where needed. As one of the Philips employees describes: “*The CLC becomes a sort of lego kit, whereby the*

colour and shape of the building blocks are predetermined but the exact constellation can be built by the customer”(Interviewee 11, 2017).

Partnerships can play an important role in bridging the divide between the need for customization and standardization in co-creation and scaling of inclusive innovations. Partnering with civil society organisations can provide the local knowledge, expertise and legitimacy needed to develop and scale up community-driven solutions. In addition, partners can also provide additional services, or building blocks, that further customize the solution. Moreover, when scaling wide, partners that operate across boundaries can leverage local networks and opportunities of engagement. By scaling not only solutions but also partnerships, lessons learned can be institutionalised in the partnership making the process of scaling not only more efficient but also more effective. Choosing the right partners and building a strategic partnership ecosystem is therefore crucial for the success of scaling.

Finally, internal alignment and creating a collective vision on the requirements for scaling is key. Philips has now developed a framework for scaling where the scaling potential is assessed on the basis of a number of factors 1).the size of the market, CAPEX 2). the operational management capacity- OPEX-, 3). The perceived risk of the project , 4) partnership potential and 5). the potential impact on primary healthcare provision (Interviewee 11, 2017) To guide this process a company has to develop new activities, capabilities and organizational processes that cater for the diverse nature of the BoP context. Creating an enabling environment within the company that internalises the lessons learned across different contexts is crucial. Scaling for inclusive business in this regard becomes iterative process, not only changing inside out but also outside in. Ad one employee reflects: *“Scaling is a continuous process of implementing, learning, adjusting and scaling. Even as a MNE, you are never too big to learn”* (Interviewee 11, 2017)

5 DISCUSSION AND CONCLUSION

Multinational enterprises increasingly look outside of the well-defined business markets for opportunities. Base of the Pyramid (BoP) markets present an untapped potential for businesses to make a profit while at the same time contribute to inclusive development by addressing *wicked problems*. However, doing business at the BoP has proven not to be an easy ride as these contexts are characterized by resource constraints and institutional voids (Seelos and Mair, 2007; Mair and Marti, 2009). Therefore, doing business at the BoP requires multinationals to come up with novel approaches and fundamentally new market entry strategies (London and Hart, 2004; Hart, 2005). Designing innovative solutions for the BoP is also referred to as frugal innovation (Bhatti, 2012; Tiwari and Herstatt, 2012). Frugal innovation considers constraints as those faced in emerging markets, not only as limitations but rather as opportunities to trigger new business models (Bhatti and Ventresca, 2013). Frugal innovation focuses therefore not only technological, but also on social and institutional innovation (Bhatti, 2012).

This paper explored the frugal innovation proposition for the case of primary healthcare provision in Sub-Saharan Africa through the Community Life Centre adopted by Dutch multinational Philips. The leading question to guide this exploration was: *What are the conditions for co-creation and scaling in the interface between local networks and business models in inclusive healthcare in Africa?* The paper looked at three interrelated topics: 1). Inclusive business models and strategies, 2). Co-creation processes and 3) Scaling strategies. This final chapter presents the conclusions from the case study and raises topics for further discussion and research.

5.1 The CLC approach to frugal innovation

The healthcare system in Kenya experiences considerable institutional voids and resource constraints in terms of providing adequate and accessible healthcare services to its community and hence presents a fertile ground for frugal innovation. In line with its sustainability strategy, Philips aims at “improving the lives of three billion people a year in 2025 by making the world healthier and more sustainable through innovation” In order to reach this target Philips needs to look beyond healthcare innovation in the top tier of the healthcare system by focusing on improving healthcare in the BoP.

As Philips has limited previous experience in the BoP context, capturing only 5% of the market share in Africa, it needed to come up with a new business strategy. Combining its expertise in healthcare and lighting, the Community Life Centre approach was seen as: “[The] strategy to unlock the African market” (Interviewee 2, 2017). With its CLC approach Philips aims at addressing inefficiencies and inequalities in the healthcare system by strengthening the link between community and primary care. By developing locally relevant medical devices and services, the CLC works on optimizing patient referrals within the healthcare system to increase the accessibility, availability and affordability of healthcare in Africa, thereby contributing to the broader goal of Universal Health Coverage and the SDGs.

The CLC approach is seen “*not as a one size fits all*” approach, but is co-created together with relevant stakeholders in the healthcare context. The CLC has as such become a modular approach that can be adjusted to the specific needs of the local community and the local context but also be

scaled within BoP markets and beyond. The CLC in this regard fits the frugal innovation proposition as it redefines business models and redesign products to create more inclusive markets by serving users with affordability constraints in a scalable and sustainable manner.

5.2 Lessons learned & further research

Although this research is not deemed to be representative for all inclusive business in Sub-Saharan Africa, the case study does provide important insights that contribute to the knowledge on inclusive business strategies and frugal innovation. On the basis of the findings of this case study, four main learnings can be discerned from Philips' experience with innovating for inclusive healthcare in Africa that can be utilized both by academics and practitioners and can inspire future research.

Firstly, as frugal innovations target the BoP there are substantial financial barriers since spending power is often low, while cost for developing new innovations and operational expenses to sustain the innovation are high. In the case of the CLC, local governments have limited purchasing power beyond staff and medical supplies and the initial investment and maintenance costs are at the expense of the company. The commercial viability of the approach is consequently at risk and alternative sources of finance have to be explored. By diversifying the investment portfolio and developing new business models such as development impact bonds, (social) franchising and public-private partnerships, businesses can manage the risk of doing business in the BoP and establish long-term partnerships. A necessary precondition for sourcing external funding is presenting evidence on the cost-effectiveness and clinical impact of the approach. Philips has in this regard contracted an external party to carry out an impact measurement to establish proof points of the CLC.

Secondly, inclusive business brings about tensions between the desire to organise development bottom-up through processes of co-creation and on the other hand develop strategies for scaling. A key feature of the CLC approach is the co-creation with the local community. By co-developing the CLC with the community, Philips can combine resources and knowledge developed at 'top of the pyramid' with the wisdom and expertise found at the BoP to customize the CLC to local needs, thereby bridging the institutional distance. However, as co-creation is costly, profitability might be capped by the need to tailor the products and the business models to each individual context. To create an economy of scale a certain level of standardization is required. However, this might go at the expense of one of its key selling points and innovative capacities: its needs-based flexibility. Overcoming this "replication dilemma", requires a balancing act between bottom-up and top-down innovation approaches. With the CLC Philips strikes this balance by working in adjustable modules. The CLC becomes a kind of 'lego kit' whereby the design of the building blocks is predetermined but the exact constellation is based on the needs of the end-user and the requirements by the customer. In addition, cross-sector partnerships can play a crucial role in bridging the divide between co-creation and scaling efforts. The local knowledge and networks of NGOs can be leveraged to engage communities in co-creation while the frugal innovation can be further customized with the specific skills and expertise of these organisations. Moreover the international networks of NGOs can create funding opportunities needed to scale the innovation and can be useful in transferring knowledge and skills across borders. Choosing the right partners and building an ecosystem of partnerships is therefore crucial for inclusive businesses operating at the BoP., international partners

Thirdly, internal alignment and creating a collective vision within the organisation is a key point of attention in frugal innovation. Especially with multinational enterprises an innovators dilemma exist between sustaining current innovations for an existing customer base and creating disruptive innovations for a potential new market segment. Within Philips rigorous testing and strict protocols guide the innovation process to reduce risk at the level of the core company. However, this risk adversity might hamper the development of new innovative projects where a certain level of agility to deal with rapidly changing contexts is required. Ambidexterity, the ability of an organisation to host different innovation streams, exploiting the present and exploring the future at the same time, is therefore a crucial aspect of inclusive business and frugal innovation (Tushman, et al., 2010). This requires a certain level of autonomy between different departments and space for 'intrapreneurship' (Halme, Lindeman and Linna, 2012) to proactively engage with ever-changing contexts and needs. Developing new capabilities and skills by investing in local talent and setting up a different funding pool are important steps in this process (Hammond and Prahalad, 2004). Most importantly however, is to facilitate processes of learning both within the organisation (Simanis, Hart and D., 2008) and across partnerships (van Tulder *et al.*, 2016).

Finally, by engaging in cross-sector collaborations and partnership platforms, the CLC has moved from a standalone initiative to an innovation platform that can inspire new institutional practices. By participating in the SDG Partnership Platform, Philips engages in a policy dialogue to strengthen governance within the healthcare system and address broader market, civic and government failure (Kolk, Van Tulder and Kostwinder, 2008). Cross-sector partnerships and innovation platforms as such create new proto-institutions for addressing wicked problems and contributing to the SDGs. Frugal innovation hence addresses not only technical and social but also institutional innovation and moves a BOP 3.0 approach establishing innovation ecosystems for radical change (Caneque and Hart, 2015).

In conclusion, the conditions under which frugal innovation strategies can be made into a mainstream business case (or even 'business as usual') is still open for further research. As this paper shows, working at the BoP requires new skills and knowledge and openness for collaborating with a diverse set of partners. Hence, doing business not just *at* the BoP but *with* the BoP by facilitating processes of co-creation and scaling as a novel approach to address wicked problems, not just in healthcare but beyond. The success of these innovations relies on the ability to integrate the lessons learned and institutionalise inclusive innovation in its core business. As one Philips employee said: "we have to *create a new business as usual*" (Interviewee 10, 2017).

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APPENDIX

Timeline: Development of the CLC approach

The idea of the CLC was developed on the basis of Philips' previous explorations in the primary healthcare domain in Africa through the Emergency Obstetrical Care programme (EMOC) and the Philips Community Light Centres (Interviewee 12, 2017). The EMOC programme started in 2007 with a collaboration between Philips and Stellenbosch University to develop emergency maternal care services for the public healthcare sector. This project was followed-up with a project in Namibia initiated together with the World Health Organisation and the Ministry of Health to provide medical equipment, services and training to reduce maternal & child mortality. The Community Light Centres was initiated during the Cape to Cairo road show following the World Cup football of 2010 in South Africa and was implemented in partnership with the Dutch Football Association KNVB. These initiatives were largely stand-alone projects and in 2013 Philips decided to focus on creating a "total solution for primary healthcare in Africa" combining its experience with EMOC and the Community Light Centres in Africa. This marked the beginning of the development of the Community Life Centre approach.

Over the course of the next years, Philips further developed this idea on the basis of the Bell Mason Venture Development Framework¹.

This is an established framework for monitoring progress in early-stage venture implementation and consists of 5 stages or phases (see box 1).

In the chapter below, the development of the idea and decision making process of the Community Life Centre approach is described along the lines of the Bell Mason framework. An overview of the timeline and most significant events can be found in figure 2 at the end of this chapter.

Box 1: Bell Mason Venture Development Framework 5 phases:

1. Concept phase. The concept phase is designed to move from an idea to a business plan and consist of three phases ideation, scouting and exploration.
2. Seed phase. In this phase the assumptions in the business plan are validated and a validity study on potential sales channels is done.
3. Alpha phase. In the Alpha phase, the business carries out limited sales with pilot customers to test the proposition and further develop the business model.
4. Beta phase. The aim of the Beta phase is to test whether the business model is scalable and increase the number of sales.
5. Market calibration. The purpose of the market calibration phase is to determine the product's average selling price and its cost of sales.

CONCEPT PHASE (August 2013- May 2014)

During this initial phase new business ideas are generated and a mapping is done of opportunities in different contexts. In 2013, two researchers from Philips visited 35 health care facilities in Kenya and Uganda to study the needs and challenges in primary healthcare in Africa based on MDG 4: reduce child mortality and MDG 5: Improve maternal health and the root causes underlying these problems. Through interactions with local government officers and healthcare professionals it became clear that an integrated solution for primary health care was needed.

The study also looked at opportunities in terms of business development for Philips. Kenya was decided to be the prime location for further developing the CLC approach because of its good track record on innovation and conducive business ecosystem. Especially in Nairobi, many international NGOs and multilateral organisations have their (regional) headquarters located in the city and the universities and other knowledge institutes are one of the best in the region. This was deemed promising in terms of partnering potential. In addition Nairobi initiated a number of innovation labs and a vibrant start-up scene has emerged in the last few years which could be beneficial in the effort to innovate and hire staff locally. Consequently, Kenya was chosen as the location for setting up a local Research and Development facility (Interviewee 2, 2017) and in March 2014 the Africa Innovation Hub (AIH) was launched in Nairobi.

Based on the initial assessment, the AIH received funds from the Philips headquarters to 'scout' the market and develop a value proposition. The government of Kiambu expressed an interest in hosting a pilot programme in its county and after assessment of 17 health facilities, two clinics were identified for further research; i.e. one in Githurai and one in Kamae forest. In the final stage of the concept phase, the exploration, Philips organised co-creation sessions with the Kiambu government and the community surrounding the two health care facilities to get a deeper understanding of the specific needs and desires of the consumers (see more on co-creation in section 4.2). On the basis of these sessions an initial proposition was defined: *"creating a modular approach that adapts to the community needs in primary health care by improving access to care, developing social, educational and commercial activities and enhancing the feeling of safety"* (Interviewee 1, 2017). This proposition led to the concept of the Community Life Centres (CLC) as a 'total solution' for primary health care in Africa.

The AIH in collaboration with the venture manager developed a business plan for the CLC and pitched this to the innovation board of Philips. The innovation board consists of high-level Philips managers -Ronald de Jong (executive vice-president), Peter van der Ven (General manager and vice president Philips Healthcare Africa), J.J. van Dongen (CEO Philips Africa), Henk van Houten (General Manager Philips Research)- who act as gate keepers deciding which projects continue from concept phase to business development. The CLC was approved to move to the next phase.

PRE-SEED PHASE (April 2014- June 2014)

The pre-seed phase was used as an extension of the exploration phase. In this phase the business plan is tested by developing a prototype or a pilot. During this phase Philips continued to work on the business plan and development of the first Community Life centre, which was officially inaugurated in June 2014 at the Githurai Langata Health Center in Kiambu County. Apart from an upgraded health facility the CLC hosted a number of other products and services such as clean water supply, smokeless cook stoves and home solar lighting products (for a more elaborate description of the CLC see section 3.3).

SEED PHASE (July 2014 – June 2015)

During this period Philips was working on improving its pilot project in Kiambu county and acquiring data on its performance. In addition, Philips was doing market research both in Kenya and abroad to scope other potential business opportunities. Philips and the county government of Kiambu developed an investment plan to build CLCs country wide and the county expressed an interest in the CLC approach by including it in the county investment plan.

At the end of June 2015, the results of the pilot were presented in a second pitch at the innovation board and the project went into the Alpha phase of the innovation process.

ALPHA PHASE (July 2015 – December 2015)

In the Alpha phase, the initial interest in the CLC was actualized. Through continuous conversations between Philips and the County government of Kiambu an agreement was reached that Philips would develop more CLCs in Kiambu county. Since public healthcare is a public good, a tender procedure had to be set up for developing a number of primary health care facilities in the county³⁴. Philips won this tender to build 4 CLCs and potentially scale up to 60 CLC over the course of the next few years in Kenya. Moreover, in partnership with the United Nations Population Fund plans were developed for building a second CLC in Kenya, in Mandera county, close to the border with Somalia. In the meantime, in Central-Africa, the government of the Democratic Republic of the Congo (DRC) expressed great interest in the CLC and Philips decided to start a pilot project in Tadu Village. in the Haut Uélé province.

Because of the interest and potential orders of substantial size, the management of Philips saw great potential in scaling the CLC and wanted to do this as soon as possible to avert competition from its traditional rivals in the healthcare industry in Africa. Even though the large-scale order of CLCs in Kenya was cancelled as the county government had to cut public spending on health care because of a national drought , at the end of the year the decision was made to scale the CLC further and move to the Beta Phase.

BETA PHASE (January 2016 – December 2016)

In 2016 a scaling project for the CLC was developed and the management of the CLC moved from the Research department at the Africa Innovation Hub to the Sales department within Philips HQ. This shift also meant a change in strategy whereby the CLC was productised to be marketed Africa-wide. This resulted in the development of three basic CLC models: 1). The Full- CLC., 2). The Mini-CLC, and 3). The Community Health Backpack (see chapter 3.3 for a more elaborate description). However, despite the interest that was expressed by many African governments and other donors in the CLC, the promise of large scale sales failed to materialise.

³⁴ Tender document for the design, supply and installation of level 3 health facilities in select Sub-Counties in Kiambu County-Community Life Centres. Link to document: <http://www.kiambu.go.ke/images/docs/other/26032015-CLC-Tender-Documents-Final.pdf>."

Because of the lack of sales in 2016, the CLC team had to go back to the drawing board in 2017 and in a sense that meant going back to Alpha phase to develop new business models and further testing of the proposition and development of new business models (see chapter 4.1). In addition, a terms of reference was drawn up to do an impact assessment of the CLC in Kiambu to establish proof points that could be beneficial in increasing the sales of the CLC.

During this period Philips also further developed its partnership strategy and initiated new partnerships with a number of other organisations including the Red Cross in the DRC and partook in a SDG Partnership Platform initiated by the Kenyan government and the United Nations in Kenya (see chapter 4.2 for more information on Philips partnership strategy).

In 2017 several CLCs were opened in respectively Tadu Village, DRC, Diepsloot ,South Africa and Dandu in Mandera County, Kenya and several CLCs are in development in East and West Africa. (Interviewee 10, 2017).

Figure 2: Overview of activities in linear order in Bell Mason innovation process

