

VU Research Portal

Technology Adoption at the BOP Markets

Muftugil-Yalcin, A.S.

published in

Sustainability in a Digital World
2017

DOI (link to publisher)

[10.1007/978-3-319-54603-2_19](https://doi.org/10.1007/978-3-319-54603-2_19)

document version

Publisher's PDF, also known as Version of record

document license

Article 25fa Dutch Copyright Act

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Muftugil-Yalcin, A. S. (2017). Technology Adoption at the BOP Markets: Insights from Turk Telekom's Focus on Inclusive Business. In T. Osburg, & C. Lohrmann (Eds.), *Sustainability in a Digital World: New Opportunities through New Technologies* (pp. 225-241). (CSR, Sustainability, Ethics & Governance (CSEG)). Springer. https://doi.org/10.1007/978-3-319-54603-2_19

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

Technology Adoption at the BOP Markets: Insights from Turk Telekom's Focus on Inclusive Business

Dicle Yurdakul, Seda Müftügil Yalçın, and Zeynep Gürhan-Canlı

1 Introduction

In this chapter, we examine Turk Telekom's "Life is Simpler with Internet" initiative, which we evaluate as an inclusive business activity that has contributed to both company's sustainable market development and also to sustainable development goals in the Turkish context. Our analysis is informed by a thorough literature review that was conducted on technology and innovation with respect to inclusive business and also a qualitative study based on an in-depth interview. We interviewed Corporate Social Responsibility Manager Tülin Kara Özgen and Corporate Social Responsibility Senior Specialist Hande Gürsoy, both working in the CSR department of Turk Telekom and who have been involved in the planning and execution of the project from the start of the initiative. Through its unique and innovative structure, Turk Telekom, a leading internet service provider in Turkey, was able to embark a holistic and sustainable effort to overcome the "digital gap" in Turkey while growing its business and creating social impact on the ground.

In the following pages, we will focus on the internal dynamics of this project whose main success factors stemmed greatly from the collaborative structure the initiative had, sustainable relations the company established with its new customers and with the skill development component existing in the project. We begin by providing brief information about inclusive business and development and how information and communication technologies (ICT) contribute to economic and human development in base of the pyramid (BOP) markets. Then, we will reveal

D. Yurdakul
Kemerburgaz University, Istanbul, Turkey
e-mail: dicle.yurdakul@kemerburgaz.edu.tr

S.M. Yalçın • Z. Gürhan-Canlı (✉)
Koç University, Istanbul, Turkey
e-mail: seda.muftugil@gmail.com; zcanli@ku.edu.tr

the details of the inclusive business activity conducted by Turk Telekom and explain the key success factors of the project, including the strong collaboration and commitment between its partners. The chapter concludes with the business and social impact of the project through the discussions on the link between consumer trust, adoption of innovation and attitude change. These discussions also show how ICT can contribute to development efforts and reducing the market separations in the BOP markets.

The growing literature on win-win strategies to address low-income communities has spelt the optimal characteristics of a pro-poor innovation (see for example: Prahalad and Hart 2002). This literature identified various strategies for ‘co-creation’ or joint-value creation with the user community through non-traditional forms of collaboration (Brugmann and Prahalad 2007; Franceys and Weitz 2003; London et al. 2006). Turk Telekom’s initiative provides an interesting case in that it presents an innovative approach to tackle a persisting problem in Turkey in a sustainable manner through its usage of technology. Moreover, the project shows a good understanding of the dynamic interplay between users’ skills and abilities, social contexts and technological artefacts/applications, which is required to serve to BOP customers profitably (Lal Dey et al. 2013).

Inclusive growth (and by extension inclusive innovation) has been widely acknowledged as a goal of public and business policy (George et al. 2012). The proliferation of cases similar to Turk Telekom’s initiative done by companies all over the world explicates that organizations can and do engage in social innovation activities to connect disenfranchised individuals and communities with opportunities that foster social and economic growth. As a result, inclusive growth diminishes trade-offs between growth and inequality because the poor become enfranchised as customers, employees, owners, suppliers, and community members (George et al. 2012). Abundant evidence shows that the efforts of private sector firms to engage the poorest “Base of the Pyramid” (BoP) households as consumers and producers—when successful—can result in significant improvements in the quality of life of the world’s poor (Hammond et al. 2007; Marquez et al. 2010; Prahalad 2010; Rangan et al. 2007).

According to UNDP “inclusive business models include the poor on the demand side as clients and customers and on the supply side as employees, producers and business owners at various points in the value chain” (UNDP 2008: 14). Similarly, this term is used by the alliance between the World Business Council for Sustainable Development (WBCSD) and the Dutch development organization (SNV), to mean an “economically profitable, environmentally and socially responsible entrepreneurial initiative, which integrates low-income communities in its value chain for the mutual benefit of both the company and the community” (WBCSD and SNV 2010: 13). According to G20 Inclusive Business Framework, there are three approaches to conducting inclusive business: Inclusive business models, inclusive business activities, and social enterprise initiatives (G20 Inclusive Business Framework 2016: 5). In order to be successful at each approach, a high-level commitment and a long term support is required. According to this G20 classification, companies

with an inclusive business model integrate the BOP into their core business operations. In this model “commercial viability of the business model is at the forefront for companies as they rely largely on commercial sources of financing for the business operations” (G20 Inclusive Business Framework 2016: 5). Inclusive business activities, just like inclusive business models, also include people at the BOP into companies’ value chains. However most of the times, these activities are not central to the commercial viability of the company nor do the BOP constitute an influential part of the base of customers, suppliers or business partners. The last approach; namely social enterprises on the other hand are not designed to maximize their profits for redistribution. Most of the time, profits are reinvested back into the enterprise in order to fulfil and strengthen its social mission (G20 Inclusive Business Framework 2016: 5). In this scheme, “Life is Simpler with Internet” of Turk Telekom proves to be an inclusive business activity carried out by the current CSR team in charge at Turk Telekom.

2 Technology and Innovation in the Context of Inclusive Business

The post 2015 agenda on sustainable development has emphasized the role of science, technology and innovation in promoting sustainable development (Chandran et al. 2015; Dosi and Freeman 1988; Fagerberg et al. 2010). Increasingly innovation has been proposed as a fundamental ingredient for development (Dosi and Freeman 1988; Fagerberg et al. 2010; Freeman and Soete 1997) and how innovation emerges and diffuses under conditions of resource constraint within developing countries has become a topic of increasing interest in the academic literature (Lundvall et al. 2009). Especially, Information and Communication Technology (ICT) is believed to be capable of reducing particular types of market separations between consumers and producers at the BOP, and thus facilitating market development at BOP (Tarafdar and Singh 2011). However, the literature also cautions that the purchase or use of ICT products and services is, at least as much as it is an economic or technological act, a social act (Burrell 2008; Horst and Miller 2006). ICT products are carriers of personal, social, and cultural meaning, such as establishing a new place in society, fulfilling an aspiration for the future (Kuriyan et al. 2008). Therefore, as Anderson and Billou (2007) argue, because of the nature of the BOP, if companies want to enter this market, they have to consider the 4As of awareness, acceptability, affordability and availability. In other words, MNCs should make sure that poor people are aware of the existence of their product and the advantages it can offer, that they can afford to purchase the product and the product is available in their village if they decide to buy it (Tasavori et al. 2015). In sum, it can be concluded that necessary conditions to the successful adoption of an innovation in the BOP context includes a real need, compatibility of innovation with need, positive consumer perception of innovation value, and the use of change

agents and accessibility to market in which the innovation is supplied (Simanis 2010). Turk Telekom's initiative addresses all these issues identified in the literature for adoption of internet among the poor.

3 Life Is Simple with Internet Initiative: Paradigm Shift at Turk Telekom

Türk Telekom Group is Turkey's integrated telecommunication and technology services provider. Turk Telekom Group Companies have a wide service network and product range in the fields of individual and corporate services. As of December 31, 2015, Turk Telekom has 12.9 million fixed access lines, 8 million broadband and 17.3 million mobile subscribers. Turk Telekom Group companies provide services in all 81 cities of Turkey with more than 34,000 employees. In January 2016, Turk Telekom unified its mobile, fixed voice, broadband and TV products and services under the single "Turk Telekom" brand.

TTNET, a former independent company in the Turk Telekom Group, was actually where the "Life is Simple" initiative was first born. It is now carried under Turk Telekom as the former brands dissolved under one brand as stated. TTNET, which was founded in 2006 as a communication and entertainment company joined the Business Call to Action in 2013 with a commitment to broaden internet access and internet literacy training and thus became the first Turkish company to join the Business Call to Action (BCtA). TTNET expanded internet access and educational opportunities to remote areas in Turkey since the inception of "Life is Simpler with Internet" project. The project aimed to increase the internet literacy rate in Turkey, providing capacity improvement support for using the e-Services offered by the public and private sectors, creating awareness on conscious use of the new media tools and providing information to the society on secure internet. The project introduced the online world to 12,000 people, who did not have the opportunity to use the internet before, with the cooperation of TTNET, United Nations Development Program (UNDP) and Habitat Development and Governance Association. Thus, it aimed a large audience who has not met with the online life yet. The project focused on middle age and above individuals, who were not internet literate and who needed basic information and skills, and aimed to facilitate their lives by supporting them to become internet literate. In more concrete terms, according to BCTA reports, the project, when started aimed to bring 250,000 people online to become regular Internet users in 2014, with a special focus on low-income consumers; provided up to 30,000 households with access to an online education platform; and delivered Internet literacy training to 12,000 disadvantaged people in 20 cities.

Ms. Gürsoy and Ms. Özgen revealed that the reasons of engagement in the project was multilayered and the idea of the project occurred at a time when they, as members of CSR department, were questioning the effectiveness and impact of

their CSR projects, which were then mostly based on philanthropic ad hoc investments (generally consisted of building schools or making donations to schools in Anatolia) that were not related to the company's business. As a CSR department, they were not able to measure the social impact of these donations most of the time, which rendered their activities invisible for the top management whose orientation was towards profit maximization. They were quick to realize that nonstrategic social responsibility projects were not being effective and sustainable for neither the beneficiaries nor the company itself. The research they conducted about the visibility of their CSR efforts in Anatolia with respect to philanthropic donations such as building schools turned out to be rather invisible even for the local communities where the schools were present.

Due to their previous experience from conducting philanthropic CSR activities, the CSR department came up with a new idea that might increase the traffic of telephones—which was simultaneously on the business agenda of the management team. The idea was to open a phone library for the visually handicapped people through audio books. The idea was very much liked by the top management and this project proved to be successful in increasing the reputation of the company and at the same time increasing the phone traffic as they predicted. Ms. Özgen said “They (top managers) were grateful. Because of this experience, the management team started to think the social responsibility could be done by supporting our business.” By this time, Ms. Özgen and Ms. Gürsoy were already knowledgeable about concepts of inclusive business and struggling to show its possible merits to the top management. They knew that this project was an inclusive business activity but they said that by then “the term inclusive business was still within their department” and the term was not frequently used by the top management.

In 2012, the size of the market appeared to be not growing, fixed at six million internet users. A call conference was made inside the company, inviting different departments to think about what might be done to grow the market. Ms. Özgen and Ms. Gürsoy were also invited to these sessions and they thought that non-users were an important group that could “actually be covered through corporate social responsibility”. They thought; “If we design this project with business objectives, we can share the project with the management and get their support.” Their strategy proved right and that was how they convinced the managers to design the project with an inclusive business lens. “We talked about our vision of social responsibility; tried to design a project in such a way that it is related to our business.” Backed by the top management, Ms. Özgen and Ms. Gürsoy had a full mandate to carry on their project proposals and materialize it through financial and motivational support.

The literature indicates that level of commitment and its longevity are key determinants of success in inclusive business, specifically due to the long-term returns of these practices. In terms of corporate commitment for responsible business four components are proposed as key factors for long-term engagement and holistic development. These are respectively; top management and supplier support (Hoejmose et al. 2012), shared values and objectives within the organization, a robust ethical foundation (Del Baldo 2013), and increasing leadership and stakeholder activity and motivation (Duran-Encalada and Paucar-Caceres 2012). In

the Turk Telekom case, all of these four components have been existent albeit with varying degrees.

Collaboration

One of the major reasons for the need to form collaborations is that partner heterogeneity affects the environmental outcomes as these partnerships tend to follow more proactive strategies compared to inter-firm alliances (Lin 2012). Collaborating with the government is specifically important for the BOP markets mainly due to the scope of the problems and capacity gaps. Public–private partnerships are suggested to increase the social impact of the responsible initiatives in which the role of the partner is policy implementation, while the role of government is policy development (Galea and McKee 2014).

Similarly, Blok, Sjauw-Koen-Fa and Omta (2013) call for attention to the importance of collaboration between for profit and not-for-profit organizations, customers and all stakeholders to achieve both economic and social goals at the BOP markets. Partnership of local entrepreneurs and development partners such as civil society groups, the government and corporations may suggest an opportunity to create a fortune with the BOP, rather than at the BOP (Calton et al. 2013). Decentralized stakeholder networks, global action networks and a more human focused and inclusive perspective are required to reach the expected benefits of collaboration (Calton et al. 2013).

“Life is Simple with Internet” initiative was designed as a collaborative one from the beginning encapsulating an NGO, namely Habitat, and International agency, UNDP and government. “We talked to UNDP, Habitat and Ministry of Development and it is through this collaboration that the content and the design of the project emerged,” said Ms. Özgen. Previous research lays out various reasons for collaboration among different stakeholders such as social capital for development (Gatune 2010, Fisher et al. 2009), social license and corporate–community involvement (Idemudia 2009a, b). Collaboration between central and local governments, local partnerships and change agents is proposed to secure sustainable development (Nielsen and Thomsen 2011), to ensure environmental management (Cheung et al. 2009), and to increase the expected impact of these initiatives (Sanneh et al. 2014).

A major stream of research on collaborations focus on cross-sector partnerships especially in the BOP markets, which help companies in overcoming the problems faced in unfamiliar BOP markets (Schuster and Holtbrügge 2014). Furthermore, partners from multiple sectors may help in addressing the problem of institutional gaps in these markets (Rivera-Santos et al. 2012). For example, partnerships with NGOs can help in eliminating the contextual problems MNCs face in BOP markets, thanks to NGOs knowledge of the context, and their social embeddedness (Webb et al. 2010).

Not only Ms. Gürsoy and Ms. Özgen were aware of the fact that they needed to work with a local NGO present in the underdeveloped cities targeted, but they were also aware that this cooperation had to be of a certain quality. “We had great advantages by cooperating with Habitat” they stated. Habitat was the civil society organization that managed and found volunteers who actually gave the internet literacy trainings in the project. Instead of spending time and effort to do this by themselves, project leaders clearly opted out to work with Habitat, who chose volunteers, most of the time local young people who were aware of the cultural context of the cities where the trainings took place. CSR team at Turk Telekom was clearly attuned to the literature which stated that innovations that are social in focus should match the members of that society, its context, and the environment (Reynoso et al. 2015). Their close connection with the local youth, and their constant feedback loop made this process rather effective. We were told that these young people, who were most of the time from that particular city where the training was given, tried different methods to attract people; especially for older women who were hesitant to go outside home. In some cases, these volunteers came up with innovative solutions and carried out the trainings in the homes of women where they were gathering to socialize and thus changed the place of training, thinking this might increase the efficiency of the program. In other cases, these young people were trying to fight with “prejudices and biases about internet usage’s potential to destroy marriages” prevalent in a specific region, in cunning ways so that they ensured attendance to the trainings. Cultural barriers like these, according to the CSR team, could be better addressed through local partners that have experience on these issues.

Hahn and Gold (2014) suggests that, generally to initiate an alliance one partner must have the ability to identify potential partners with synergetic potential. This ability according to these scholars, are influenced by several factors. These factors can be enumerated as prior alliance experience that helps to spot potential partners and their resources. This also indicates that the companies should have the ability to screen potential partners for their capabilities and resources (Liao et al. 2008). In addition, “an information-rich position in the socioeconomic network ensures superior access to reliable information about (potential) partners that makes fitting partnerships more probable and their exploitation more effective” (Hahn and Gold 2014:1323).

Our in-depth interview indicated that “Life is Simple with Internet” initiative clearly carried the elements of these several factors, which made this initiative a success. The literature on inclusive business suggests that the success of partnerships among the MNCs, NGOs, and the poor are contingent on establishing trust through dense networks, partnering with well-reputed NGOs and MNCs, and establishing both voluntary and enforceable codes of conduct among the partners (Shivarajan and Srinivasan 2013). Collaboration among businesses, governments, consumers, civil society and financial sector is needed to reach mutual goals and to

minimize social and environmental costs through holistic solutions (Al-Tabbaa et al. 2014; German et al. 2011; Rotter et al. 2014; Vidal-Leon 2013).

4 Business and Social Impact of Life Is Simple with Internet Project

As emphasized in post-2015 agenda, science, technology and innovation have a key role in sustainable development (Fagerberg et al. 2010; Chandran et al. 2015). Even though the households that have access to internet have risen from 60.2% (2014) to 69.5% (2015), 29.5% of the population—and especially the economically disadvantaged groups—still lack internet connection in Turkey. Considering the proliferation rate of internet technologies, BOP is a market to be tapped in with very low levels of saturation. Previous studies show the willingness of disadvantaged groups to accept ICT thanks to the increase in penetration rates after successful projects customized for these groups (Urquhart et al. 2008). As a first step to create this market, TTNET delivered internet literacy training to 12,000 disadvantaged people. However, as the literature points out, long term efforts and iterative activities are needed to ensure the adoption of these technologies (Venkatesh and Bala 2008).

Inclusive business activities are focused on creating a win-win situation for all stakeholders. Therefore, by definition, these activities aim to create both social and business impact, which is fundamental for their sustainability. Considering the opportunities that may arise through internet access in the base of the pyramid (BOP) markets, TTNET designed the project as an inclusive business activity primarily focusing on the social impact, as explained by Ms. Gürsoy:

In fact, as the corporate social responsibility department, our first driver was the social impact. After all, we are communicators and we need to contribute to the reputation of the company. If you are a communicator, your primary job is to create a project, which can appear in the news, which can contribute to reputation. But social responsibility projects shrink in time. The reason for getting closer to inclusive business was this: we can plan the project with the business impact and can show this to the top management. We no longer say to the top management that “this has been on the news, and this number of people watched it”. We see in the impact report that this project created an attitude change, people started to say that the internet worth the money they pay. We also think in line with this because we are able to get approval easily. We can get the budget approval as the top management is easily convinced this way.

Social impact provided their department with the required support from within the organization. The CSR team also states that they did not want to have a commercial focus in this project as the core aim is to create attitude change; even though, in the long run, they have an expectation of market development as a business outcome. This outcome requires systematic, long-term efforts due to the fact that neither attitude change nor the behavioral change that follows comes quickly. The team thinks that the motivation for this project was equally divided

between social and business impact (market development on one side, and social impact on the other).

Another reason for the business impact to be in the second place in their agenda was the barriers for marketing TTNET products during and after the project. The marketing team developed a new, affordable offering customized according to the needs of the BOP market. However, they were not able to promote this product, as one of the main partners of the project did not approve its promotion as it is against the rules of fair competition. On the other hand, TTNET had a 2-year free offering of a low quota internet connection for the first time users, which they wanted to offer to the participants of the training program. However, due to the same concern, this offer was not approved either. This was not perceived as a major problem by the company as the primary aim was not an increase in sales, but to create an attitude change as a first step to be taken in their efforts for tapping into BOP market. Furthermore, Ms. Gürsoy states that as per their previous experiences, providing the free package did not lead to a change in consumers' attitudes, while the survey conducted after the training shows a positive change in favor of internet adoption.

Still, to overcome this barrier, they created an offering including internet connection and a limited-term subscription to an online training platform for children, and priced it accordingly (9.90 TL per month). However, the ICT sector is regulated in Turkey and the Information and Communication Technologies Authority (BTK) did not allow TTNET to offer this package only in regions with development priority, with the concern of equal opportunity. Consequently, TTNET provided this special offer to the whole country, but promoted it only in these regions through customized advertising campaigns in these cities.

Due to these reasons, and TTNET's focus on the social impact, it was not possible to track the business impact of the project in terms of its contribution to sales, brand preference or brand image. On the other hand, social impact was measured and reported, which also gave the company important clues about the potential business impact of the project in the forthcoming years.

The data clearly reveals the attitude change; however, there is no data at hand to see whether this change in consumers' attitudes have led to a behavioral change (such as subscriptions or effective use of the internet after the training). On the other hand, TTNET tracked that the trainees were using internet services such as e-government services, social media and other tools during the training, which can be considered as an indicator of their future use.

5 Technology Adoption at the BOP Markets and the Design of the Project

Co-creation with the community becomes a key success factor for the offerings in the BOP market (Brugmann and Prahalad 2007; Hart 2005; London 2008). Consequently, one of the major steps to be taken was to have a solid knowledge about the

context. TTNET solved this problem through their volunteers, as they were citizens themselves who are aware of the potential cultural, social and economic problems, and able to propose innovative and effective ways to solve them. Furthermore, the training program was formulated with a consideration of the barriers for internet use in the low income communities which were identified through previous research of Turk Telekom and TUIK (Turkish Statistical Institute). The project was designed according to the data received from TUIK about the attitudes of non-users towards the internet. In addition, the marketing department conducted a research on non-users, which showed that the basic reasons for not using internet was its price, followed by lacking a device to connect to the internet, and problems associated with mistrust in the technology.

According to the well-known technology acceptance model (TAM) of Davis (1989), perceived usefulness and perceived ease of use are two main drivers of individual's adoption intention and usage of technology. Venkatesh and Davis (2000) extended the TAM model and argued that social influence processes (subjective norm, voluntariness and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability and perceived ease of use) are factors that significantly influence the acceptance of technology. On the other hand, Roger's (2003) diffusion theory reveals that users' acceptance of an innovation is influenced by their perception of its relative advantage, compatibility, complexity, trialability and observability. The innovation adoption increases if the innovation provides a relative advantage, is compatible with users' existing experiences and values, easy to use, give opportunities for trial and if the benefits of adopting the innovation is easily observable. Considering the important role of ICT in development, further studies have been conducted on technology adoption at the BOP markets. In their study on mobile banking, Ismail and Masinge (2011) argues that perceived usefulness, perceived ease of use, perceived cost and consumer trust were effective in the adoption of mobile banking.

According to TUIK data, low literacy, training and income levels contributes to the perception that internet is an unsafe, addictive and harmful tool. In line with the TAM model, the data reveal that:

- Perceived usefulness: 59.5% of the non-users think that they do not need internet.
- Perceived ease of use: 44.7% does not have internet as they do not know how to use it.
- Perceived cost: 38.5% thinks that the price is too high while 36.5% thinks that they do not have devices to connect to the internet as the prices of these devices are too high for them.

With a similar set of findings, the research conducted by TTNET with the participants before the training shows that:

- Perceived cost: 70% thinks that having an internet connection at home will be too costly.

- Consumer trust: 52% thinks that internet is not safe, while 41% state that they are afraid of using internet. On the other hand, 61% of the participants think that internet can pose a threat to their marriage and 71% thinks that it is dangerous for their children. Seventy nine percent believes that internet weakens the communication between family members.

In light of these results (which are congruent with the findings of previous studies), TTNET customized their training programs accordingly in order to create a positive change in the attitudes of the participants towards internet use. Social impact of the project was measured through post-participation surveys, revealing the positive change in the attitudes. The percentage of participants who think that:

- Having an internet connection will be too costly decreased from 70 to 60%.
- Internet is not safe decreased from 52 to 37%.
- Afraid of using internet decreased from 41 to 29%.
- Internet can pose a threat to marriages decreased from 61 to 45%.
- Internet is dangerous for the children decreased from 71 to 52%.
- Internet weakens the communication between family members decreased from 79 to 55%.

Considering the perceived usefulness, participants revealed in the post-tests that internet is a necessity of the modern life, provides them with opportunities to connect to their relatives and loved ones, and help them in bridging the generation gap between themselves and their children. After the training, 65% of the participants started using e-government services, 58% of the participants started using online communication tools, and 56% started using social media and news websites. Participants' knowledge about the tools available to their use through internet (such as e-government services, online banking services and online shopping) increased for all types of services. Furthermore, the training also contributed to democratization as it gives the opportunity to become more participative and to communicate with the government and other authorities. On the other hand, one of the major business impacts of the activity was that, participants' attitude towards the cost of internet has changed as they reveal that the money they will be paying for the internet will worth it.

6 Discussion

As the data reveal, the training contributes to the evaluations of the participants regarding the main drivers of technology adoption, namely, perceived usefulness, perceived ease of use, perceived cost, and most importantly, consumer trust. Consequently, through the attitude change, the training contributes to the adoption of ICT, which shows us the significance of the social impact, as well as the potential business impact of the activity.

Even though TTNET did not measure the business outcome due to their focus on the social impact, it is clear that the training program contributes to their efforts of market development. Improved levels of trust in ICT may lead to the adoption of the technology which can contribute to the market share and future profitability of the company. On the other hand, in consideration of the reciprocity principle, it is likely that the participants may develop a positive attitude towards the brand, affecting their brand preference and brand loyalty. Finally, considering the very high levels of satisfaction among participants (93%), the training may also enhance the brand image.

Lack of access to goods and services due to problems related to accessibility and affordability is a major problem in BOP markets (Karnani 2007; Prahalad 2005). ICT can play a key role in reducing these market separations between consumers and producers in the BOP markets (Tarafdar and Singh 2011). Closing these gaps lead to market development. According to Bartels's theory of market separations (1968), there are four types of separations in BOP markets: spatial (geographical distance between buyer and seller), temporal (time difference between production and consumption), informational (informational asymmetry between producers and consumers in terms of products, market conditions etc.) and financial (lack of financial resources to purchase).

As argued in the previous studies, and supported by the data from the social impact measurement of this project, ICT contributes to bridging the separation (Tarafdar and Singh 2011). In this case, easy access to online products and services reduces the temporal and spatial separation. Financial separation is reduced through making products and services more affordable to the BOP consumer. Consumers could search for alternative products and services and find the best offers available in the market through the internet. Therefore, ease of access to information through ICT reduces both the informational separation and financial separation. Finally, it is possible to argue that internet may also reduce the financial separation due to ease of access to skill development and job opportunities.

Previous studies also emphasize that technology adoption does not guarantee the effective use of technology (Dhir et al. 2012; Walsham 2010) as it needs to be appropriated through continuous interactions between users and technological applications (Dey et al. 2013). Furthermore, technology appropriation is context dependent and influenced by macro environmental factors as well as individual abilities (Dey et al. 2013). Considering the fruitful outcomes of this project, and business and social impact that could be created through the proliferation of ICT in BOP markets, we recommend companies to employ long-term, iterative efforts of awareness creation, knowledge and skill development and technology appropriation to reap the desired benefits.

References

- Al-Tabbaa O, Leach D, March J (2014) Collaboration between nonprofit and business sectors: a framework to guide strategy development for nonprofit organizations. *Voluntas* 25(3):657–678
- Anderson J, Billou N (2007) Serving the world's poor: innovation at the base of the economic pyramid. *J Bus Strategy* 28(2):14–21
- Bartels R (1968) The general theory of marketing. *J Mark* 32(1):29–33
- Blok V, Sjauw-Koen-Fa A, Omta O (2013) Effective stakeholder involvement at the base of the pyramid: the case of Rabobank. *Int Food Agribus Man* 16(A):39–44
- Brugmann J, Prahalad CK (2007) Cocreating business's new social compact. *Harv Bus Rev* 85(2):80–90
- Burrell J (2008) Problematic empowerment: west African internet scams as strategic misrepresentation. *Inform Technol Int Dev* 4(4):15–30
- Calton JM, Werhane PH, Hartman LP, Bevan D (2013) Building partnerships to create social and economic value at the base of the global development pyramid. *J Bus Ethics* 117(4):721–733
- Chandran VGR, Kwee NB, Yuan WC, Kanagasundaram T (2015) Science, technology and innovation for inclusive development: reorganizing the national and regional systems of innovation. *Tech Monitor*, Jan–Mar:14–19
- Cheung DKK, Welford RJ, Hills PR (2009) CSR and the environment: business supply chain partnerships in Hong Kong and PRDR, China. *Corp Soc Resp Env Ma* 6(5):250–263
- Davis FD (1989) Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quart* 13(3):319–340
- Del Baldo M (2013) Corporate social responsibility, human resource management and corporate family responsibility. When a company is “The best place to work” Elica group, the hi-fi company. *Ekonomika istraživanja – Econ Res Special Issue* 26:201–224
- Dey BL, Binsardi B, Prendergast R, Saren M (2013) A qualitative enquiry into the appropriation of mobile telephony at the bottom of the pyramid. *Int Market Rev* 30(4):297–322
- Dhir A, Moukadem I, Jere N, Kaur P, Kujala S, Yla-Jaaski A (2012) Ethnographic examination of studying information sharing practices in rural South Africa. In: Paper presented at the 5th international conference on advances in computer-human interactions. www.academia.edu/1405296/Ethnographic_Examination_for_Studying_Information_Sharing_Practices_in_Rural_South_Africa. Accessed 20 Jan 2013
- Dosi G, Freeman C (1988) Technical change and economic theory. In: Dosi G, Freeman C, Nelson R, Silverberg G, Soete LL (eds) *Laboratory of economics and management (LEM)*. Sant'Anna School of Advanced Studies, Pisa
- Duran-Encalada JA, Paucar-Caceres A (2012) A system dynamics sustainable business model for Petroleos Mexicanos (Pemex): case based on the global reporting initiative. *J Oper Res Soc* 63(8):1065–1078
- Fagerberg J, Srholec M, Verspagen B (2010) Innovation and economic development. In: Hall B, Rosenberg N (eds) *Handbook of the economics of innovation*, vol II, North Holland, pp 833–872
- Fisher K, Geenen J, Jurcevic M, McClintock K, Davis G (2009) Applying asset-based community development as a strategy for CSR: a Canadian perspective on a win-win for stakeholders and SMEs. *Bus Ethics* 18(1):66–82
- Franceys R, Weitz A (2003) Public private partnerships in infrastructure for the poor. *J Int Dev* 15(8):1083–1098
- Freeman C, Soete L (1997) *The economics of industrial innovation*, 3rd edn. MIT Press, Cambridge, MA
- G20 Inclusive Business Framework (2016) http://www.ifc.org/wps/wcm/connect/f0784d004a9b1f2ea5f0ed9c54e94b00/Attachment+G++G20+Inclusive+Business+Framework_Final.pdf?MOD=AJPERES. Accessed 20 Dec 2015
- Galea G, McKee M (2014) Public-private partnerships with large corporations: setting the ground rules for better health. *Health Policy* 115(2–3):138–140

- Gatune J (2010) Africa's development beyond aid: getting out of the box. *Ann Am Acad Pol Soc Sci* 632:103–120
- George G, McGahan AM, Prabhu J (2012) Innovation for inclusive growth: towards a theoretical framework and a research agenda. *J Manage Stud* 49(4):661–683
- German L, Schoneveld GC, Pacheco P (2011) Local social and environmental impacts of biofuels: global comparative assessment and implications for governance. *Ecol Soc* 16(4):29–43
- Hahn R, Gold S (2014) Resources and governance in “base of the pyramid”-partnerships: assessing collaborations between businesses and non-business actors. *J Bus Res* 67(7):1321–1333
- Hammond A, Kramer WJ, Tran J, Katz R, Walker J (2007) The next 4 billion market size and business strategy at the base of the pyramid. World Resources Institute, Washington, DC
- Hart SL (2005) Capitalism at the crossroads: the unlimited business opportunities in serving the world's most difficult problems. Wharton School Publishing, Upper Saddle River
- Hoejmoose S, Brammer S, Millington A (2012) “Green” supply chain management: the role of trust and top management in B2B and B2C markets. *Ind Market Manag* 4:609–620
- Horst HA, Miller D (2006) The cell phone: an anthropology of communication. Berg Publishers, Oxford
- Idemudia U (2009a) Assessing corporate-community involvement strategies in the Nigerian oil industry: an empirical analysis. *Resour Policy* 34(3):133–141
- Idemudia U (2009b) Oil extraction and poverty reduction in the Niger delta: a critical examination of partnership initiatives. *J Bus Ethics* 90:91–116
- Ismail T, Masinge K (2011) Mobile banking: innovation for the poor. United Nations University, UNU-MERIT working paper series. <http://collections.unu.edu/eserv/UNU:419/wp2011-074.pdf>. Accessed 14 Feb 2016
- Karnani A (2007) The mirage of marketing to the bottom of the pyramid: how the private sector can help alleviate poverty. *Calif Manage Rev* 49(4):90–111
- Kuriyan R, Ray I, Toyama K (2008) Information and communication technologies for development: the bottom of the pyramid model in practice. *Inform Soc* 24(2):93–104
- Liao SH, Chang WJ, Lee CC (2008) Mining marketing maps for business alliances. *Expert Syst Appl* 35(3):1338–1350
- Lin HY (2012) Cross-sector alliances for corporate social responsibility partner heterogeneity moderates environmental strategy outcomes. *J Bus Ethics* 110(2):219–229
- London T (2008) The base-of-the-pyramid perspective: a new approach to poverty alleviation. *Acad Manage Proc* 1:1–6
- London T, Rondinelli DA, O'Neill H (2006) Strange bedfellows: alliances between corporations and nonprofits. In: Shenkar O, Reuer JJ (eds) *Handbook of strategic alliances*. Sage, Thousand Oaks
- Lundvall B, Vang J, Joseph K, Chaminade C (2009) Bridging innovation system research and development studies: challenges and research opportunities. In: 7th Globelics conference, Senegal
- Marquez P, Reficco E, Berger G (2010) Socially inclusive business: engaging the poor through market initiatives in iberoamerica David Rockefeller center for Latin American Studies. Harvard University Press, Cambridge, MA
- Nielsen AE, Thomsen C (2011) Sustainable development: the role of network communication. *Corp Soc Resp Env Ma* 18(1):1–10
- Prahalad CK (2005) The fortune at the bottom of the pyramid: eradicating poverty through profits. Wharton School Publishing, Upper Saddle River
- Prahalad CK (2010) The fortune at the bottom of the pyramid: eradicating poverty through profits. Pearson Education, Upper Saddle River
- Prahalad CK, Hart SL (2002) The fortune at the bottom of the pyramid. *Strategy Bus* 26:1–14
- Rangan K, Quelch J, Herrero G, Barton B (2007) Business solutions for the global poor: creating social and economic value. Jossey-Bass, San Francisco

- Reynoso J, Kandampully J, Xiucheng F, Paulose H (2015) Learning from socially driven service innovation in emerging economies. *J Serv Manage* 26(1):156–176
- Rivera-Santos M, Rufin C, Kolk A (2012) Bridging the institutional divide: partnerships in subsistence markets. *J Bus Res* 65(12):1721–1727
- Rogers EM (2003) *Diffusion of innovations*, 5th edn. Free Press, New York
- Rotter JP, Airike PE, Mark-Herbert C (2014) Exploring political corporate social responsibility in global supply chains. *J Bus Ethics* 125(4):581–599
- Sanneh ES, Hu AH, Njai M, Ceesay OM, Manjang B (2014) Making basic health care accessible to rural communities: a case study of Kiang West district in rural Gambia. *Public Health Nurs* 31(2):126–133
- Schuster RT, Holtbrügge D (2014) Benefits of cross-sector partnerships in markets at the base of the pyramid. *Bus Strat Environ* 23(3):188–203
- Shivarajan S, Srinivasan A (2013) The poor as suppliers of intellectual property: a social network approach to sustainable poverty alleviation. *Bus Ethics Q* 23(3):381–406
- Simanis E (2010) Needs, needs everywhere, but not a BoP market to tap. In: London T, Hart S (eds) *Next generation business strategies for the base of the pyramid: new approaches for building mutual value*. FT Press, Upper Saddle River
- Tarafdar M, Singh R (2011) A market separations perspective to analyze the role of ICT in development at the bottom of the pyramid. In: *Proceedings of SIG GlobDev 4th annual workshop, Shanghai, 3 Dec 2011*. https://www.researchgate.net/profile/Ramendra_Singh3/publication/265351953_A_Market_Separations_Perspective_to_Analyze_the_Role_of_ICT_in_Development_at_the_Bottom_of_the_Pyramid_A_Market_Separations_Perspective_to_Analyze_the_Role_of_ICT_in_Development_at_the_Bottom_of_the_Pyramid/links/55b7068808aec0e5f43803b6.pdf. Accessed 12 Feb 2016
- Tasavori M, Zaefarian R, Ghauri PN (2015) The creation view of opportunities at the base of the pyramid. *Entrep Region Dev* 27(1–2):106–126
- UNDP (2008) *Creating value for all: strategies for doing business with the poor*. http://www.rw.undp.org/content/dam/rwanda/docs/povred/RW_rp_Creating_Value_for_All_Doing_Business_with_the_Poor.pdf. Accessed 20 Aug 2015
- Urquhart C, Liyanage S, Kah MM (2008) ICTs and poverty reduction: a social capital and knowledge perspective. *J Inform Technol* 23(3):203–213
- Venkatash V, Bala H (2008) Technology acceptance model 3 and a research agenda on interventions. *Decis Sci* 39(2):273–315
- Venkatash V, Davis FD (2000) A theoretical extension of the technology acceptance model: four longitudinal field studies. *Manag Sci* 46(2):186–204
- Vidal-Leon C (2013) Corporate social responsibility, human rights, and the world trade organization. *J Int Econ Law* 16(4):893–920
- Walsham G (2010) ICTs for the broader development of India: an analysis of the literature. *Electron J Inform Syst Dev Countries* 41(4):1–20
- WBCSD and SNV (2010) *Inclusive business: creating value in Latin America*. WBCSD and SNV, Geneva and The Hague. <http://www.wbcsd.org/Pages/EDocument/EDocumentDetails.aspx?ID=43&NoSearchContextKey=true>. Accessed 10 July 2015
- Webb JW, Kistruck GM, Ireland RD, Ketchen DJ (2010) The entrepreneurship process in base of the pyramid markets: the case of multinational enterprise/nongovernment organization alliances. *Entrep Theory Pract* 34(3):555–581