Value Co-Creation as a Dialectical Process: Study in Bangladesh and Indian Province of West Bengal]

Rahman, M., Bose, S., Mohiuddin Babu, M., Dey, B. L., Roy, S. & Binsardi, B.

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Dr. Mizan Rahman, University of Lincoln
University of Lincoln
Brayford Pool
Lincoln
Lincolnshire
LN6 7TS
United Kingdom

Dr. Sunny Bose, ICFAI Business School, Hyderabad, India
ICFAI University, Hyderabad, India
18, Chandi Charan Ghosh Road,
Barisha, Kolkata – 700008, India.

Dr. Mujahid Mohiuddin Babu, Coventry University
School of Marketing and Management
Coventry Business School
Faculty of Business and Law
Coventry, United Kingdom CV1 5FB

Dr. Bidit L. Dey, Brunel University London (Corresponding author)
Brunel Business School
Kingston Lane Campus, UB83PH
00441895267039
bidit.dey@brunel.ac.uk

Dr. Sanjit K Roy, University of Western Australia
UWA Business School
Marketing (UWA Business School)
The University of Western Australia (M263)
35 Stirling Highway
CRAWLEY WA 6009, Australia.

Dr. Ben Binsardi, Glyndwr University
Plas Coch Campus, Mold Road, Wrexham, LL11 2AW, United Kingdom

Abstract

The process by which technological innovation is adopted and diffused within an industry persists as a key research interest in the existing literature. Furthermore, the innovation and diffusion of ICT (information and communications technology) in general and smartphones in particular are viewed as a useful resource to support and foster socio-economic wellbeing in developing countries. As such, sustainable design and development of smartphone industry in developing world and their contribution to socio-economic wellbeing has drawn significant research attention. In the current study, we explore and analyse various factors and their inter-relationships that initiate, support and disseminate technological innovation within the smartphone industry in Bangladesh and Indian province of West Bengal who share linguistic, historical and cultural ties. Drawing on the concept of co-creation of value we develop a dialectical perspective toward multi-stakeholder involvement in smartphone industry's creation of value. Through in-depth interviews with senior government and private sector employees, industry experts, researchers, and small and medium enterprise owners, we conclude that the development of ancillary industries, contextually appropriate apps and innovation by

small enterprises and inter-industry collaborations contribute to current and future innovation and sustainable development of smartphone industry.

Keyword: dialectic co-creation, smartphones, ICT for Development, smart technology

Introduction

It is argued that the adoption and use of digital technologies can enable consumers in developing countries to improve the quality of their lives (Kapoor et al, 2015; Pick et al., 2014; Heeks and Jagun, 2007; Bayes, 2001) as Internet and mobile telephony have the potential to contribute to human development and increase market efficiency (Thapa and Sæbø, 2014; Donner a Escobari, 2010; Rashid and Elder, 2009). Thus ICT (information and communication technologies) for development research recommends contextually appropriate design and use for ICT to deliver the benefits of technological innovation to various parties within the socio-economic spheres of developing countries who may have different needs and wants compared to those of the developed world (Thapa and Sæbø, 2014; Dey et al. 2018).

Furthermore, it has been acknowledged that innovation requires the visualisation of a range of potentialities that may seemingly be hidden, but now are believed to be accessible (George et al. 2012). Organisations can create new markets utilising these opportunities (Prahalad, 2010). With globalisation and advancement of information technology, competition in the global markets has intensified, forcing the organisations to do something better and different, both commercially and socially, to meet the stakeholder needs and maximise their profits in the global value chain (Karnani, 2011; Khavul and Bruton, 2013; Vogel, 2005). This orientation implies the crafting of entirely new business solutions, sometimes in a co-created and co-technological manner, in relation to buying, manufacturing, packaging, marketing, distributing, and advertising of products and services (Dinica and Motteau, 2012; Rahman et al., 2013). Many organisations have integrated this orientation into key areas of business operations where decisions on new products and markets are made and executed (Olsen and Boxenbaum, 2009; Simanis, 2012; Viswanathan et al., 2010).

There is however scant empirical evidence of how various stakeholders symbiotically interact and co-create ideas, processes and outcomes of smart technology led innovation in developing countries where large multinationals have limited access and engagement. Smart technologies overcome some of the inherent limitations of other ICT devices and bring Internet connectivity within affordable and manageable reach of poor communities in developing countries (Dey et al. 2018). As such, this would be particularly important to assess how smart technologies in mobile phones have changed and contributed to these dynamics. Co-creation however is a composite concept that has attracted a lot of academic attention and debate (Ranjan and Read, 2016). The conceptual ambiguities and differences in opinions in current literature (Dey et al. 2016; Dey et al. 2018) call upon further clarity and advancement. This is a crucial aspect particularly for smart technology led innovation and subsequent use in developing societies which have different socio-economic characteristics and constructs. At the same time, dialectical perspective toward this assessment is important in order to appreciate and recognise how their interrelationships or a lack thereof influence the process and contribute to the creation and/or destruction of value.

The paper reports on research conducted in Bangladesh and the Indian province of West Bengal. The selection has been motivated by the fact that both regions hold linguistic, cultural and historic links. Emanating from the unified Bengal Presidency, one of the largest

subdivisions of British India, the two regions continue to keep the cultural links over the years since the Partition of British India despite their different political and national identities and trajectories. Although not quite industrialised, the consumer culture has been taking off in Bangladesh and West Bengal and interesting micro-level and technology-based multi-sectoral innovations in conjunction with the government, non-government and the private sectors have brought about worldwide attention and acclaim (e.g. Grameen Bank, who were a part of Grameenphone, won the Nobel Prize). A number of articles contributed by authors from both Bangladesh and India in this regard would corroborate this (e.g Kapoor et al 2015, Ahmed et al., 2012; De Silva et al., 2011; Dey et al., 2016; Dwivedi et al., 2007; Rashid and Rahman, 2009).

Furthermore, Bengali, world's sixth most popular language and second after Hindi in the Indian sub-continent[1], is spoken in these two regions that have long and rich tradition in arts, literature and culture. As language and culture constitute the identity of the population of these two regions (Gangopadhyay, 2012), they can be used as a common denomination for segmentation, promotion and marketing of goods and services. This would be quite relevant for smart technology based devices and applications that have significant influence from and association with drivers such as culture, language and government regulations. Some of these factors also develop the industrial ecosystem and characterise the interaction amongst various stakeholders. As such, a study on smartphone industries of these two regions can help us in building a more robust conceptual underpinning by facilitating the analysis of the commonalities and peculiarities of the two regions.

Although, mobile technology has been adopted and diffused in this region over more than a decade, the local population's use of smartphones remains an understudied area. Despite the formidably large population of this region (around 250 million), there is limited presence of large multinationals such as Apple. Unlike the early days of mobile telephone penetration, when Nokia and Siemens had notable direct engagement with the market (Dey et al. 2013), in recent times the region's potential for smartphone adoption and use has not been fully explored by companies such as Apple. As such, it remains to be seen how the local consumers and business environments deal with smartphones and its applications to obtain optimal value.

Hence the objectives of this study is threefold:

Research objectives:

1) To analyse the nature and outcome of the dynamics and kinetics of value co-creation in the smartphone industries of Bangladesh and West Bengal.
2) To investigate the caveats and challenges in the innovation and use of smart digital technologies in the chosen regions and analyse how large and small companies have been dealing with these challenges.
3) To develop a holistic understanding of dialectical nature of value co-creation through multi-stakeholder engagement.

Our paper begins with an introduction, which is followed by an extensive review of the literature on two major streams of scholarship – ICT for Development and co-creation of value (with particular focus on its dialectical nature) – to highlight the gaps in the extant literature. The next section explains the qualitative methodology underpinned by interpretivist philosophy, followed by the findings and the conclusions drawn from the

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[1] https://www.statista.com/chart/12868/the-worlds-most-spoken-languages/

qualitative data. The paper ends with a discussion of the managerial implications of our findings, limitations of the study and proposed avenues for future research.

Literature review

The conceptual underpinning of this research is informed by two major streams of scholarship – ICT and development and co-creation of value. First, we review the ICT and development (widely known as ICT for Development) literature. Subsequently we look into the theoretical concepts surrounding value co-creation with particular emphasis on value co-destruction.

ICT and development

Many of the developed countries' global organisations have opened their factories in the developing countries. It has been assumed that multinational private sector investments will generate more employment opportunities and it will also contribute to the revenue stream of governments in the developing countries. This scenario was true indeed and in the 1980s the private sector of the rich economies helped out the under-developed economies by dint of investments (Blowfield, 2005). International organisations, e.g. the United Nations (UN), World Bank and Department for International Development (DFID) within the United Kingdom (UK), have paved the way for such investments. However, according to these agencies, the private sector has been restricted in performing their social role and can play a much better role now to achieve societal goals such as poverty reduction, paving way for collaborative initiatives by government and non-government organisations (Newell and Frynas, 2007; Lii and Lee, 2012). This is against the backdrop of the view that if the private sector followed more socially responsible practices globally, then the sector could enjoy better growth and may play a pivotal role in economic development globally (Bradley et al., 2012; Jenkins, 2005).

It is interesting to note that due to changes in consumers' social requirements and behaviour, most of the organisations have had to revisit the nature of possible social innovation in developing countries. Many organisations may find social innovation as a moral obligation and increasingly as a new field of opportunity to better their business performance in the global value chain (Foster and Heeks, 2013). According to O'Sullivan (2000), the term innovation means the process by which productive resources are developed and utilised and it in turn generates higher quality and/or lower cost of products than what had been available in the global value chain.

ICT has a role to play in this respect as it can be a powerful tool for transforming social, economic, and political life of people globally (Uddin, 2012; Pick et al., 2014). Some authors believe that the development and distribution of ICT did actually help the poor economies improve their economic conditions (e.g. Foster and Heeks, 2013; Quibria and Tschang, 2001). There is a common belief that new technologies and their adoption can improve the quality of life and it can also provide better living standards for the people in developing societies (Pick et al. 2014). ICT strengthens and creates new economic and social networks (Alalwan et.al., 2015) and enables people to improve their economic conditions by increasing the process efficiency and expanding their socio-economic networks (Dwivedi et al., 2007).

ICT can play an important role both as an industry sector to drive economic growth and as an enabler to help achieve other goals in areas such as education, health and governance. Hence, economic development can be achieved through either or both ways: the commercial proliferation of ICTs, and their use in development activities. ICT for development (ICT4D)

scholarship broadly looks into three areas: ICT adoption and application, ICT impact and ICTs' socio-cultural appropriation. In conjunction with the UNDP's (United Nations Development Programme) classification, Donner (2006) has also found two different research themes within each of the aforementioned research approaches. One group deals with the commercial aspects of the diffusion of ICTs (which he defines as non-ICT4D literature) and the other tries to relate it to socio-economic development (ICT4D literature). However, mixed perspectives and overlapping issues are not uncommon. For example, Internet diffusion and its barriers are investigated in both the ICT4D (Foster and Heeks, 2013) and the non-ICT4D literature (Hermeking, 2005). A separate stream of literature takes a sociological perspective toward diffusion and adoption (Alalwan et al., 2015; Dwivedi et al., 2007) and impact (Jackson et al., 2005) of ICT use. Scholars mentioned above agree upon considering ICTs as viable means for social mobility and economic development.

Scholars (Dey et al., 2016; Kapoor et al., 2015; Prahalad, 2012) point to the success of ICT as a whole and the mobile phone industry in particular as proof that market opportunities exist in developing countries and their citizens are both willing and able to adopt new technologies. Furthermore, mobile telephony has opened up new opportunities for supporting businesses and created some kind of space for the development of new business models as well as innovations in areas such as mobile banking (Rahman et al., 2017). In this regard, Village Phone in Bangladesh (Rashid and Rahman, 2009) and Vodacom Community Services in South Africa (Mutula and Mostert, 2010) represented a rather different approach. This involved mobile phone companies and either government or NGOs supporting local entrepreneurs to set up phone shops which sold mobile access to rural and/or disadvantaged communities (Aminuzzaman et al., 2003). These efforts provided affordable access to improved communications, better access to information and reduced the need for travel. While the increasing penetration of mobile phones must be regarded as *prima facie* evidence that access to mobile telephony at current prices is improving people's lives, it is important to understand how sustainable and continuous improvement of the technology in developing societies can be ensured and achieved.

As such, a shift of emphasis is suggested to focus on the development and use of technology at the market level in developing countries, which can not only expand the market potential of large multinationals, but also contribute to the capacity-building and wellbeing of wider population belonging to various strata of the economic pyramid (Viswanathan and Sridharan, 2012; Donner, 2008; Aker and Mbiti, 2010). In the context of the developing world, the marginalised and poor population have gained new significance and are a focus for the marketers (Payaud, 2014; Prahalad, 2012; Rangan et al., 2011). But many macro-environmental constraints are posing challenges for the organisations to serve them (Banerjee and Duflo, 2007; Viswanathan and Sridharan; 2012). Examples of these constraints include economic, political and infrastructural ones. Economic constraints include low income, low gross domestic product, high inflation, etc. Political ones include poor governance, political instability in developing countries, weak legal system, and corruption. There are also many infrastructural challenges like weak distribution channels, lack of consistent electricity, and unreliable transport (Subrahmanyan and Tomas Gomez-Arias, 2008; Rahman et al., 2012; Ramani et al., 2012; Viswanathan, 2007), giving rise to a new questioning of government's role in this nexus.

Dialectical nature of co-creation of value:

Co-creation of value has received academic and practitioner attention after the term was formally introduced into the management literature by Prahalad and Ramaswamy (2004).

These authors challenged Porter's (1985) traditional value chain concept, as it does not explicitly consider customers' role in the value creation process. The service-dominant (S-D) logic of Vargo and Lusch (2004) offers a new paradigm to value creation in markets. The fundamental argument of S-D logic is that more value can be created by engaging customers via communications and experiences (Vargo and Lusch, 2016). Foundational principle one (FP1) of S-D logic states that service is the fundamental basis of exchange. This is ably complemented by foundational principle six (FP 6) which states that value is co-created by multiple actors and it always includes the beneficiary (Vargo and Lusch, 2016). Thus value is always created by the joint activities of the partied involved. In addition, 'actors cannot deliver value but can participate in the creation and offering of value propositions' (Vargo and Lusch, 2016, p. 8). In a competing view to value co-creation, Grönroos and Voima (2013) propose the service logic which underscores that co-creation of value occurs in the joint sphere of customer-provider interaction. The service provider acts as the value facilitator and the joint sphere is characterised by the joint actions of the service provider and customers to create value, as a result of direct interactions (Grönroos and Ravald, 2011).

Value co-creation (VCC) is defined as "reciprocal promises of value, operating to and from suppliers and customer seeking an equitable exchange" (Ballantyne and Varey, 2006, p. 344-345). This reciprocal value creation represents the efforts and resources invested by all the actors involved in the value creation process (Sugathan et al., 2017). In a recent conceptual piece Ramaswamy and Ozcan (2016) define the co-creation of value as enactment of interactional creation across interactive system-environments. This definition is congruent with the argument that *interactions* are the basis of value co-creation with two additional premises i.e. "co-creation experiences are the basis of value", and "the individual is central to the co-creation experience" (Prahalad and Ramaswamy, 2004, p. 15). Thus, interaction as the locus of value co-creation finds support in extant literature (Malshe and Friend, 2018).

There is an emerging consensus in the literature that value co-creation should be characterised through the roles of the customer, the firm and the other actors in the value spheres (Storbacka et al., 2016). As such, the customer-firm dyadic interrelationship may not be sufficient, especially in developing societies where customers often do not have close interactions with large firms, dealing instead with their fellow community members and small and local businesses, which emerge as the *de facto* service providers (Bryson et al., 2017; Jang and Grandzol, 2016). For instance, local tea-shops in rural Bangladesh offer top-up services for mobile telephones (Dey et al., 2013).

Co-creation can thus occur when two or more groups influence or interact with each other (i.e. customers and the organisation or customers and support service providers: Grönroos and Voima, 2013; Grönroos and Gummerus, 2014). Thus, the process of this collaboration between marketers, customers and other relevant businesses for improved innovation, design and development of products has defined the co-creation of value, as suggested in more recent literature (Breidbach and Maglio, 2016).

Payne et al.'s (2008) process-based framework offers a more holistic understanding of co-creation by identifying the three major processes: the customer value-creating process, the supplier value-creating process and the encounter process. Hence, value can be created at the customer end, at the supplier end and/or during the encounter between the two. Most of the academic literature focuses primarily on value creation induced by suppliers and/or conducted at the encounter stage. There is only partial understanding of community engagement (Hollebeek and Brodie, 2009; Pongsakornrungsilp and Schroeder, 2011) and individual and situational factors (Takenaka and Ueda, 2008; Sandström et al., 2008) which

influence the creation of value in remote situations (that do not involve direct personal interaction between marketers and customers). Ramaswamy and Ozcan (2016) provide an illustration of an interactional framework of value co-creation which encompasses the interactive system-environments, the actors (e.g. customer, service providers), the material entities (e.g. devices), and the digital technologies (e.g. ICTs). The different components of the interactional value creation are the organisational artefacts, persons, processes and the technological interfaces.

Co-production argued to be a significant part of co-creation (Ranjan and Read, 2016) consists of direct or indirect coworking with customer (Hu and McLoughlin 2012). It is also often defined as customers' participation in the product/service design and their role in knowledge and information sharing with the firm ((Lemke et al. 2011; Boselli et al. 2008). Co-production is executed through collaboration (Lusch et al. 2007) and dialogue (Grönroos 2012) which is key to value creation. This relates to Prahalad and Ramaswamy's (2004) DART model for co-creation that identifies dialogue as a cornerstone for co-creation. The complex nature of industrial development and market dynamics constituted by informal players in developing societies (Dey et al., 2016; Rashid and Rahman, 2009) are also not considered in the traditional value chain concept. Essentially, all parties involved in the production and consumption processes exchange resources and ideas to create value, and hence value creation is not the result of producers' endeavours alone. This is also argued by Vargo and Lusch (2008; 2016), who suggest that customers and other stakeholders in the supply chain are involved in the value creation process.

Value can also be co-destructed. Value Co-destruction (VCD) is defined as an interactional process between service systems that results in a decline in at least one of the systems' well-being (Plé and Chumpitaz Cáceres, 2010). It is argued that co-destruction can happen when customers are unwilling or unable to obtain the value in use. For instance, if an automobile is not properly maintained by the user, it is likely to lose its value. However, value co-destruction can also happen due to failure in the system (Plé and Chumpitaz Cáceres, 2010; Echeverr and Skålén, 2011). Nevertheless, value co-destruction is often cited as an outcome of the failure of producer-customer dyadic system, as Smith (2013) theorises VCD process from a resource integration perspective. She argues that VCD needs to be studied in line with organisational capabilities and customer needs. As such, the role of other stakeholders in the VCD process remains an understudied area. Furthermore, a critical perspective toward the process by which VCD is linked with VCC could also provide deeper insights into the roles and responsibilities of various stakeholders in obtaining optimal value.

Thus, we can notice that there is a dialectical interrelationship between VCC and VCD which has not been looked into in the current literature. In our paper we resort to the conceptual and philosophical underpinning of dialectical nature of various phenomena. 'Dialectical materialism' by Karl Marx and 'dialectic of enlightenment' by Frankfurt School philosophers for instance held significant currency in sociology and political economy. Schumpeter was one of the pioneers in conceptualising the dialectical nature of innovation through an economic lens (Parker, 2012). He derived it from the concept of dialectic materialism by Karl Marx and Friedrick Engels and popularised it as a theory of economic innovation and business cycle. The concept is close to Hegel's concept of sublation (i.e. thesis, anti-thesis, synthesis) in philosophical terms.

In his book 'theory of economic development' (1934), Schumpeter argued that the entrepreneur is in fact a creator, innovator and catalyst, and or in other words game changers. Furthermore, according to Schumpeter's point of view, the entrepreneur brings about the

change through introducing new technological process/processes, replacing the old processes/products with new ones in the marketplace. This phenomenon is called creative destruction (MacDonald and VanDuinkerken, 2015; Nightingale, 2015). Several studies suggest that this phenomenon is highly associated with economic growth (eg. Zhou et al., 2017; Kim et al., 2018). However, some theorists argue that the Schumpeterian view has failed to explain entrepreneurial imbalance (Diamond, 2006).

Schumpeter elaborated the concept despite criticism, making it central to his economic theory, which was later taken up as a major doctrine of the so-called Austrian School of Free-Market economic thought. Overall and in sum, the doctrine is of the view that capitalism requires the perennial gaze of creative destruction, the derivative of which is co-creation. Nevertheless, in general many other economists also insist that the economic development of a country and innovations are dependent on each other and can also largely benefit each other (Angulo-Guerrero et al., 2017; Decker et al., 2014; Galindo and Mendez, 2014). Thus, the current literature relating to the above concepts could be advanced and enriched by analysing the concept of co-creation emanating from market dynamics in emerging and developing societies.

Methodology

Obtaining a deeper understanding of the policies and processes leading to the development, advancement, diffusion and use of smartphone device and applications in Bangladesh and the Indian province of West Bengal, was the main driver behind formulating the research strategy. An interpretivist approach is deemed appropriate in this regard, as it offers the opportunity to identify and analyse the processes, challenges, outcomes and iterations that shape the co-creation. Notable use of interpretivist approach is found in relevant and recent research in this area (Dey et al. 2018; Filieri et al. 2017). As such, in-depth interviews with policy makers, industry experts, company employees and SME (small and medium enterprises) owners from two regions, namely Bangladesh and the Indian province of West Bengal, were conducted to gather a more holistic understanding.

Relevant scholarly work, government policy documents and consultancy reports indicated the roles of key organisations that have bearing on the innovation, diffusion and use of smartphone led services that co-create and/or co-destruct value for various parties. In total, 28 (twenty eight) in-depth interviews were conducted (please see Appendix 1 for respondent profiles) following maximum variation sampling. The criteria for selection were guided by maximum variation purposive sampling to cover the relevant expertise and experiences of different groups and individuals. Following relevant sampling literature (Bryman, 2012; Denzin and Lincoln, 2000), maximum variation sampling was applied to obtain responses from a wide variety of stakeholders of smartphone industry. Ensuring the variety in the composition of respondents was also an attempt to minimise bias as suggested in extant literature (Dey et al. 2016; Filieri et al. 2017). A combination of face-to-face, telephone and Skype-mediated interviews were conducted to ensure convenience and optimise response rates. On average, each interview took between thirty (30) to forty five (45) minutes.

Varied interview protocols were used for different types of respondents. For instance, the government employees were asked about policy related issues, which were not the central point of discussion with private sector personnel. However, certain issues, such as their opinions regarding government policies, historical development of the industry, current and future challenges and ways to address them, constituted the major themes in all of the interviews.

In the study, eight (8) of the respondents, all of whom were employees from multinational and local companies and government organisations, did not provide consent to record their responses. The rest of the interviews were recorded. Five (5) interviews were conducted in Bengali and the rest in English. Interviews were transcribed and when necessary were translated to English before being recorded in NVivo.

Data analysis:

The transcripts were coded using the NVivo software package. Analysis of data started with the development of a coding template and identification and classification of themes and constituting codes. In this research, four broader themes were applied: co-creation, co-destruction, co-production and dialectical inter-relationship. Against each theme there were two kinds of codes – theory driven and data driven, as suggested and practised in previous scholarly work (Chen et al., 2011; Fereday & Muir-Cochrane, 2006) including ones in more relevant areas (Filieri et al. 2017; Sharma and Conduit, 2016). Once the information related to the research objectives had been identified, data were analysed using a constant comparative method (Rocca et al., 2014). The emergent themes were then compared with the extant literature. For example, the relevant existing theoretical constructs pertaining to co-creation (such as dialogue, access and relevance) were codified. Simultaneously, new codes emerged from the data, such as lack of coherence in government policies, constant change in industry initiatives, support service development, flexibility/rigidity in management approach. We found that the existing theoretical codes either do not have evidence in the data or do not fully capture some of the aforementioned phenomena. As such, we further scrutinised and classified those codes to theorise dialectical nature of value co-creation. Likewise, the final discussion section and the conceptual framework was structured on the bases of the themes and constituting codes.

Interviews in Bangladesh preceded the data collection in West Bengal. In effect, the interview responses in Bangladesh worked as a prima facie indicator and thus were collated with the existing theories. Nevertheless, there was continuous iteration between theories and data analysis which enabled the researchers to understand that theoretical saturation was achieved. The data collection and subsequent analysis in West Bengal also followed this method.

Triangulation was a useful part of the data analysis. Triangulation of methods was used in this research to compare and contrast the data collected from multiple sources (i.e. in-depth interviews and secondary data) to ensure the validity and reliability of the findings and resulting claims. Following the recommendations of Farmer et al. (2006), we meticulously went through the scripts of the in-depth interviews and corroborated the excerpts with those supporting materials (secondary data such as government websites and published materials). As such, the supporting materials were categorised under relevant themes and codes and are used in support of our arguments in the following sections of this paper. For instance, in the findings section, we have referred to secondary data on '*Pathao*' services in Bangladesh.

Validity and reliability:

An influential group of researchers argues that validity and reliability of qualitative data analysis are not as important as they are for quantitative research (Creswell and Miller, 2000; Stenbacka, 2001). They argue that the essence of validity and reliability and concerns for bias contravenes the fundamental philosophies and ethos of interpretivism that attests to the

subjective and contextual interpretation of a phenomenon. For this research, we resorted to a number of measures including investigator (multiple authors) and methodological (interviews and secondary data) triangulation, meticulous and thorough review of the interview scripts and their coding (as shown in the form of excerpts in the findings section) to ensure the validity and reliability of the analysis as suggested in extant literature (Ratcliff, 1995; Golafshani,2003; Lewis-Beck et al. 2004).

Findings:

As discussed in the methodology, our initial interviews with industry experts and concurrent secondary research defined the boundary and key components of this research, which also lent itself to the formulation of the structure of the findings section. As such, this section revolves around a number of actors and their inter-relationships. We have analysed both macro- and micro-level issues and actors that shape the industry. Our investigation on the one hand critically assesses the role(s) of the government, being the strongest entity and institution; on the other hand, it scrutinises individuals and entities such as small and medium enterprises that implement the innovation and technological advancement. Additionally, the roles of large multinational and local enterprises, as well as not-for-profit organisations, are also analysed in this paper.

Co-creation at the policy level:

Since 2009, the slogan 'Digital Bangladesh' has been used as political rhetoric and identified and listed as a means of poverty alleviation and overall economic development. In line with the World Bank's taxonomy of ICT-led development provisions, the Bangladeshi government has also identified and worked on two broader areas: ICT as a sector and ICT as a facilitator for other development imperatives.

> Participant 27: "*The policy designed in 2008 by Professor Jamilur Reza Chowdhury, an exponent of science and technology research and studies in Bangladesh, was far more pragmatic, visionary and detailed compared to the one we had in 2002. Of course, the first policy had teething problems. The second ICT policy identified the weaknesses within government bureaucracy and recommended more coordination between policies and strategies for implementation.*"

In 2009, there was a change in the government; the new regime revised the policies, created a dedicated Ministry of ICT and took a range of steps to bring ICT to the core of public and private organisations. These measures coincided with a surge in the adoption of mobile telephony, Bangladesh's connectivity with fibre-optics and the emergence of 3G Internet coverage.

ICT has also been identified as a potential sectorial area that can flourish and generate employment and export proceeds. Interview findings and secondary research indicate that ICT as a sector and facilitator complement each other. The success of smartphone led development initiatives has been supported by technological innovation and diffusion. Mobile apps, value added services and Bengali software packages in particular have made notable impacts on enhanced usability and expedited diffusion across the socio-economic strata. Participants 12 and 13, both senior academics, consider that the government's ICT initiatives are interwoven with combined and/or concurrent efforts from NGOs and multinational and local corporations that led to the development of ICT sector in the form of

software development, the establishment of call centres and business processing units, hardware businesses and so forth.

> Participant no. 12: *"The Government of Bangladesh, as part of its ICT policy and act, has established innovation cells in every district. Moreover, from its service innovation funds, the government supports various innovative projects from NGOs and other organisations with a view to bringing people under the umbrella of technology. ICT-related businesses as a result have mushroomed in recent times. We now have many young entrepreneurs who develop apps for smartphones."*

> Participant no. 13: *"The success of the government's ICT-based initiatives could be credited to NGOs, MNCs (network operators), the availability of the Internet, the growth of smart devices, the role of the media (including social media) and people's increased awareness of ICT. The younger generation in every family are very much tech-savvy and they play the key role in disseminating the government's e-services to the masses."*

Government's ICT policy considers mobile technology in general and smartphones in particular as central to current and future development. As Participant 9 (an industry expert and government employee) opines:

> Participant no. 9: *"With a view to bringing the services to people, when the government of Bangladesh develops and implements any project, it considers ICT and smart phone apps as an integral part (in many cases, feature phones are also considered). For instance, we can mention the classroom 'management system' app (as part of the A2i project) and the 'Uttoradhikar' app (for the proper distribution of inherited property), which are accessible through webpages and smart devices."*

West Bengal government has framed the ICT policy with a view to making information available and affordable. The primary focus of the state's ICT policy is enabling the rural people (particularly farmers) get critical meteorological, market and technical information for their livelihood. In addition, the government is also focussed on harnessing the full potential of ICT in public utilities.

> Participant 24: *West Bengal government is trying its level best to use mobile technology in rural areas for providing crop related information, weather info and market prices. The 'Matir Kotha' initiative is one such case, where the government is trying to integrate all crop related issues faced by the farmer or anyone dealing with the sector into one App. However, it is still a long way to go for the farmers to understand the technological advancements, and adapt themselves to the mobile phone based technology.*

Use of ICT for transportation related issues is another aspect that the state government is venturing upon. Kolkata (state capital) is a metro city and one of the largest urban population congregations in India. Enabling commuters to have information about public transport services is one of the key focus areas of the transport ministry. The 'Pathadisha' App is one such venture of the state's surface transport department.

> Participant 26: *Having access to public utilities is not a citizen's privilege but a right. If I am standing at the SDF bus stop (IT hub in Kolkata) after a hard day's work, I have the right to choose between a bus or a much more expensive taxi. Don't you think as a citizen I should know when my route's bus is going to arrive? In that case, I*

don't have to shell out Rs 300 for just 10 kilometres on a taxi. This Pathadisha App is about this right. Now, people like you and me would at least know how much time we need to wait lest 'be taken for a ride' (sarcastically) by the cabbie.

Operating as a state within the broader policy spectrum of India's federal government's policies, the West Bengal government endeavours to offer policies that are at the same time contextually appropriate at the state level, and consistent with the federal policies. It is different in the context of Bangladesh due to the absence of state-centre dichotomies. Nevertheless, the failure of some of the initial policies in Bangladesh exhibits that a lack of vision, leadership and political commitment to formulate and implement policies can be counter-productive.

While appropriate policies in both regions have supported the growth of the industry in recent times, the concurrent innovation both at the global and local levels also contribute to an organic development of the smartphone industry in both regions. There is nevertheless evidence of caveats and concerns. Value is not objectively defined as various stakeholders within the industry have different interests. Value of ICT is often subjectively assessed in relation to that of competing products/services. For instance, we see that '*Pathadisha*' app in West Bengal was considered a better option in relative terms. Its introduction to the market could well affect Kolkata's traditional taxi business. Thus, the value co-creation for one product may involve value co-destruction for other products/services.

Co-creation at the industry level:

In the mobile telecom sector of Bangladesh, which is dominated by MNCs, the local government organisations, NGOs and international donor agencies work in a very integrated way. The mobile telecom sector is the main backbone of communication for people from all walks of life, irrespective of their organisational orientation. The pervasive diffusion of the technology and its subsequent impact on the community has increased its number of stakeholders and expanded the periphery of the industry over the years.

> Participant no. 9 *"The MNCs that provide mainly network services have close professional ties with government and other NGOs through both formal and informal chains. However, the MNCs that deal with smart devices have hardly any formal links with the NGOs."*

As stated above, the nature and size of the industry have expanded, and so has the form of inter-industry collaboration. As discussed before, small traders and entrepreneurs have become part of the industry. There has also been larger cooperation between commercial and not-for-profit organisations. Government's participation through public-private partnerships/ joint projects has also increased.

> Participant no. 10 *"The Government has signed several memoranda of understanding (MoU) with various MNCs, universities and local and international NGOs for the purpose of creating and delivering services to the public. The creation of e-service delivery is one of those outputs, which was generated through a tripartite initiative between Government, the telecom industry and local NGOs."*

The success of the smartphone industry in Bangladesh started through the MNCs operating in the industry, providing network services (e.g. Grameenphone, Robi Telecom) and selling mobile handsets (Samsung, Huawei, Apple). However, alongside the MNCs, the huge uptake of smartphones in the market can mostly be credited to local companies and SMEs. These

local companies (such as Walton, Edison group and other dealers) are importing mobile handsets and their parts to supply to the local market. MNCs like Samsung and Huawei are also playing a key role through their strong brand position in the marketplace.

SMEs also play another key role in distributing mobile phone sets in rural, urban and suburban areas of the country. A large proportion of the smartphones that are sold in Bangladesh, including Apple and Samsung, enter the country through illegal channels and are eventually distributed through SMEs (www.thedailystar.net, accessed on 15/09/2017). Along with handset sales, these SMEs also offer after-sales services, particularly for imported brands. Local brands like Symphony and Walton also have strong customer service networks through which they offer after-sales services (www.theindependentbd.com, accessed on 15/09/2017).

A number of globally renowned NGOs, such as BRAC (www.brac.net), Grameen Bank (grameen.com) and Asa (asa.org.bd), originate from Bangladesh, which is proud to have been associated with NGO-led social reform programmes and social innovation for decades. One of the most successful social innovations led by joint commercial and not-for-profit organisations in Bangladesh is bKash, which is a mobile platform based financial service (MFS). The development of bKash has followed a multi-stakeholder approach to operating social innovation ventures, which yielded success in the past. Its management team includes an independent private researcher agency, NGOs, mobile technology providers, and government. Although bKash has been criticised for causing market disruptions and being a disruptive social innovation in the financial services sector, it is commended as a contextually appropriate social innovation, as it aims to achieve technology mediated financial inclusion. As participant 10 mentions during the interview:

> Participant no. 10 *"The MFS market in Bangladesh is growing at an exponential rate thanks to the government's favourable policy, available technology in the form of ICT and mobile networks and logistics. However, it is a matter of great concern that the level of competition in the MFS market is not fair: this should be overlooked for the greater benefit of the relevant stakeholders".*

The success of MFSs rose to international level when bKash teamed up with MasterCard and Western Union to launch a new, international remittance-receiving service in Bangladesh (www.bankingtech.com). As participant 8 explains:

> Participant no. 8: *"The evolution of bKash, in the form of MFS, has mostly benefitted the subjective well-being of the marginalised population. The service, strongly backed up by ICT and cellular technology, provided a very reliable, trustworthy platform and an easy method to bring financial services to a largely unbanked population of the country"*

Notwithstanding its widespread acceptability, bKash has been in the news for some negative issues, including fraudulent activities using bKash, money laundering activity, violating the MFS laws, untraceable payments, and financing illegal and destructive activities (www.dhakatribune.com, www.newagebd.net).

> Participant no.16: *"...along with the boons of technology there come the banes!! A significant loophole in bKash is that people have used this service for unscrupulous intentions, as after a point, the sender of the funds remains untraceable."*

Inter-organisational participation is a typical trait in the agricultural and social sector in West Bengal. Internet service providers are often tying up with 'core service' provider of that particular sector to create value for the customer or user. What is primarily observed in such cases is that the mobile service provider delivers the information accessibility whereas the other entity (NGO/ commercial/ enterprise/ government) provides the core service(s) to the user.

> Participant 21: "*In a few colleges, we have provided free Wi-Fi services. Upfront it serves two purposes – one, it falls in line with our social vision of an educated India, and two it creates prospective users of our network. So you see, as an Internet service provider the job of providing access to information is natural to us and it brings us new opportunities.*"

> Participant 25: "*Commercial enterprises have joined hands with NGOs and governments for providing farmers with various benefits. For example, Airtel and IFFCO had tied up to issue Kisaan Green Cards for farmers. Information is the key in today's world across all sectors and farming is no different. Therefore, you cannot have an integrative agricultural information service system without the mobile service provider.*"

Even in commercial context, inter-organisational participation and joint usage of services is one of key features in the growth of mobile technology and smartphones in West Bengal. A lot of Apps have become popular because they help users effectively use another set(s) of Apps. This has particularly happened in the case of paying various services.

> Participant 27: "*Today payment Apps like PayTM and Mobikwik are essential parts of our daily transactions. I have got two connections say, Airtel and Vodafone; so instead of visiting their Apps individually, I can load money via my PayTM App and then recharge each one of them as and when required. Best of all, I can pay for my Uber rides from there, so neither do I require to carry significant amount of cash nor do I struggle with my cards inside the car. All I require is just fund my PayTM account. So I can avail multiple services from one service.*"

Here we can notice the intra and inter organisational collaboration that are leading to co-innovation and co-production of ideas, products and services. However, there is simultaneous and competing role of inappropriate innovations leading to a complex and value destroying experience. Nevertheless, co-creation appears to be a cumulative outcome of the co-innovation/ co-production and co-destruction.

Co-creation at the meso and micro level:

The advent of mobile telecom services in Bangladesh has facilitated the development of support industries, which could be categorised as software-based, hardware-based and service-based. In addition, it has initiated a separate value chain, and introduced a separate and innovative distribution system. The value-added service (VAS) industry was developed as an ancillary service industry to the mobile telecom industry. The VAS market was worth ten million USD in 2012 (www.thedailystar.net, accessed on15/09/2017). Value-added services involved mobile telephone based voice and data services that disseminate useful information to customers. For instance, by dialling 789, customers could access a 24/7 medical helpline. Cell bazaar was a popular VAS that enabled customers to trade their goods. It was a customer-to-customer mobile business similar to a mobile version of eBay.

VAS was also a significant development as far as the use of technology was concerned. Consumers found new opportunities to explore the use of mobile telephones transcending the boundary of hardware devices and started to conceive the idea that mobile telephones offer a lot more than voice calls only. It also had important implications for small and medium enterprises and software developers, who increasingly started to make their way in the mobile telephone industry. Many of these developers later mastered skills in developing apps for smartphones.

> Participant no. 6 *"...now we see a paradigm shift in subscribers' preference for handheld mobile devices, which could be attributed to the availability of smartphones at a very affordable price. Customers' behaviour has definitely encouraged the development and flourishment of the apps market."*

Over this period, the VAS market has been replaced by the VAS based apps market because of the availability and monumental growth of smart devices. The evolution of the VAS and apps markets certifies a shift of power as a result of technology adoption. Earlier, the industry developed and flourished around hardware, including the infrastructure and handheld devices.

While smartphones are widely used in developed countries, feature phones are still very much prevalent in the developing world; however, high demand for mobile Internet access and the availability of affordable smartphones have driven the adoption of smartphones (Baumuller, 2016). As a result, in Bangladesh, importers expect that smartphones will account for 60 percent of the total mobile imports in 2017 and 80 percent in 2018 (www.thedailystar.net, accessed on15/09/2017).

In addition, it has been noted that a large volume of smartphones are brought to Bangladesh through informal means, as non-resident Bangladeshis send their relatives second-hand/new handsets. These informally sold sets open up business opportunities for smaller traders who jailbreak the smartphone operating systems to break the country codes. Owners of second-hand devices also need to visit these small traders for troubleshooting services such as resetting their iTunes/iCloud passwords, which are usually unfamiliar to less tech-savvy customers. This lack of technical expertise of the users and the market dynamics are addressed by smaller entrepreneurs, as Participant 17 mentions:

> Participant 17: *"I started my business as a fax/phone service provider in the late 1990s. In those days there were no mobile telephones, and not many people had landline telephones either. When mobile telephones first came, I started to do flexiload (an electronic top-up service). It turned out to be a good business. I still do that, but additionally I offer support for smartphone devices. ... People bring their phones sent by relatives abroad, as they do not know how to update software."*

Thus, the smaller entrepreneurs respond to the dynamic nature of the industry. However, it is also important to mention that these traders are not a formal part of the industry, although they do make a contribution to the expansion of the market and the diffusion and effective use of the technology.

The story of VAS in the broader context of mobile communications in West Bengal is somewhat similar to that of Bangladesh. Today VAS is primarily getting replaced by Apps. Even some years ago one of the most common site in a residential and market areas of any town in West Bengal would be small stores that dealt with providing VAS to users of feature phones like downloading songs and uploading antivirus software or update their Java systems. Today, such stores are primarily focussed on providing mobile recharge services,

selling new connections and linking of '*Aadhaar*' (unique identification number) for Indian citizens. The act of uploading music has minimised to a negligible level as users primarily download them or in many cases mobile service providers provide a varied choice of music as VAS. In the words of such a shop owner:

> Participant 19: *Even six seven years ago I would spend most of my evenings dealing with customers primarily young people and even middle aged men uploading different types of songs in their mobiles. Or else, it would be selling recharge coupons. On weekend a decent number of virus scanning and formatting customers would be present. Today, thanks to YouTube and various kinds of music download apps the customers are not required to come to me. Formatting requests are still there but those numbers have decreased as well. However, with increased number of dual SIM phones, new connections and recharge numbers are going up.*

Consumers' natural migration to smartphones so as to be connected through Internet has made marketers venture into a platform based business model using Apps. The VAS Apps that are generally provided today are primarily different from VAS mentioned in the previous paragraph in the sense that these VAS are more remote based and do not necessarily require physical presence. Interestingly, Apps such as Uber, Ola (taxi aggregators), Amazon, Flipkart (e commerce) or for that matter non-commercial Apps like Google Maps are one of the primary reasons for consumers to buy smartphones and use mobile Internet. It is the Apps that enable mobile service providers to co-create value. As we can gather from our participant 20:

> Participant 20: *One of the primary reasons why I use a smartphone is because of the Apps. Now, thanks to Ola and Uber I don't need to run after traditional taxi service. Similarly, BigBasket delivers at my home and that too at a lower price, I don't even need to go to my bank every time. I would therefore, be dumb if after knowing all these, I don't use a smartphone.*

The smartphone market has created opportunities for localised apps in Bangladesh market. Inventive and contextually appropriate apps such as ride hailing (Pathao, Amar bike, Ezzyr), food delivery (Hungry Naki, Food Panda), balance recharging (Udoy, Easy.com.bd), financial services (banking apps), medical (CriticaLink; Tonic, Doctorola, Rx71), language (Lipikaar, Avro) and shopping (bikroy) offer value to customers and relevant businesses. Of all these apps, Pathao could be regarded as the local version of Uber; however, unlike Uber, Pathao uses motorbikes for ride sharing and delivery, as motorbikes can move faster through busy traffic. This is particularly helpful for young office goers to avoid the horrendous traffic jam in the streets of the capital city of Dhaka. Pathao, one of the most successful start-ups in recent years, started initially as a web-based application but experienced success with its mobile phone based apps[2].

Use of mobile Apps particularly payment wallets got a huge boost due to the demonetisation decision taken by the Government of India in November 2016 (Adhikari, 2017). Acute cash crunch in the bank ATMs forced Indians particularly in the urban areas to use mobile wallets for daily financial transactions. Suddenly these wallet apps PayTM in particular were making huge profit though card usage was still more or less the same. Gradually, the commercial banks joined this payment wallet bandwagon.

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[2] http://www.thedailystar.net/bytes/top-5-uber-alternatives-bangladesh-1321312

Participant 26: *Just imagine the role PayTM, MobiKwick etc. played during the demonetisation crisis! We can and have been using our cards (debit and credit) to make payments but those are in big commercial establishments. Just imagine, my local photocopier shop or the 'chaa-er dokaan' (local tea stall) accepting a credit card (laughs)! PayTm literally saved them and us.*

Participant 24: *One cannot deny that demonetisation was bolt from the blue! However, it definitely forced people like me to try alternate media like cards and wallets. I was forced to download apps like PayTM because a lot of stores do not accept cards. Whether good or bad I cannot tell but the fact is this demonetisation brought about boom for these wallet apps.*

Smartphones are also getting increased acceptances due to their multimedia capabilities. Interestingly, the capabilities of smartphones as multimedia devices have created a new line of demand. VAS in the form of preloaded movies or other entertainment contents is slowly becoming one of the most important reasons for the growth of smartphone usages in semi urban and rural West Bengal. While deliberating on the key success factors for one of India's fastest growing mobile communications network, the marketing executive responsible for one of the circles in West Bengal observed that:

Participant 21: *"The low cost Internet that we provide our customers enable them to watch movies that they have access to once they become our subscribers. We therefore, see a lot many users of traditional feature phones migrate to smartphones so that they can avail the VAS that we are offering. The smartphones coupled with our network have become a very affordable substitute for cable television."*

It may thus be concluded that in the context of West Bengal, the natural migration from physically delivered VAS to App based VAS is one of the key contributing factors to the growth of mobile technology and smartphones in particular.

As such, innovation remains at the core of the process. Innovation is not always confined within one organisation, nor is a monolith in terms of its forms. Rather innovation has its spill over effect and it is co-supported by other industry partners if it is to be successful. Innovation is key to entrepreneurial thrust that characterise the continuous development of the market and value for multiple stakeholders.

Discussion

As the extant literature testifies, contexts can contribute to theorising the distinct nature of certain phenomena (Tian and Belk, 2005) and the interaction between under-investigated subjects and their spatial and temporal conditions (Crockett and Wallendorf, 2004). We are mindful of the fact that over-emphasis on the context (Bangladesh and West Bengal) may diminish the strength of the contributions to relevant theories and concepts. As such, the epistemological stance in this research is neither extremely phenomenological in terms of emic descriptions of contextualised and fragmented phenomena, nor is it an endeavour for grand social theorisation on a more aggregate level. We attempt to take both into account, as suggested by Askegaard and Linnet (2011), by paying attention to the 'contexts of context' (Askegarrd and Linnet, 2011) in the form of institutional, political and historical issues that define various stakeholders' contextualised responses in the interviews. Consequently, whilst this research investigates a contextual phenomenon, it simultaneously seeks to make a meaningful theoretical contribution.

Effective use of technology and its subsequent impact on social and organisational developments is achieved through mutual shaping of technology and human agents, resulting from their iterative interactions in a given context (Donner and Tellez, 2008; Orlikowski and Iacono, 2001). In this research, we analyse the design and development of smartphone device and apps and explain how it can evolve through the iterative interrelationship between marketplace actors. The process can have both positive (co-innovation and co-production) and negative (co-destruction) dimensions that eventually constitute co-creation. Hence, we argue that co-creation is the outcome of a dialectical process that involves co-destruction. Furthermore, the process is not just based on dyadic interrelationship between buyers and sellers, as often suggested in academic literature. Multiple stakeholders engage and interact at multiple levels that constitute co-innovation and co-production of ideas, processes and outcomes. This is consistent with the propositions of Alexander et al. (2018) on advancing the knowledge on value co-creation by adopting a multi-actor service ecosystem approach grounded within S-D logic. Likewise, co-destruction can also happen at multiple levels by multiple stakeholders. As such, our paper strengthens and advances current understanding of co-creation and presents a robust model grounded on primary and secondary data. Based on these findings, we seek to expand on the existing literature on ICT4D (Pick et al., 2014; Foster and Heeks, 2013; Donner and Escoberi, 2010), co-creation (Dey et al., 2016; Prahalad and Ramaswamy, 2004; Payne et al., 2008) and technology upgrading (Ernst, 2008; Yoruk, 2013; Ernst, 2014; Radoseic and Yoruk, 2014) by analysing and weaving the empirical data into multi-disciplinary theoretical concepts.
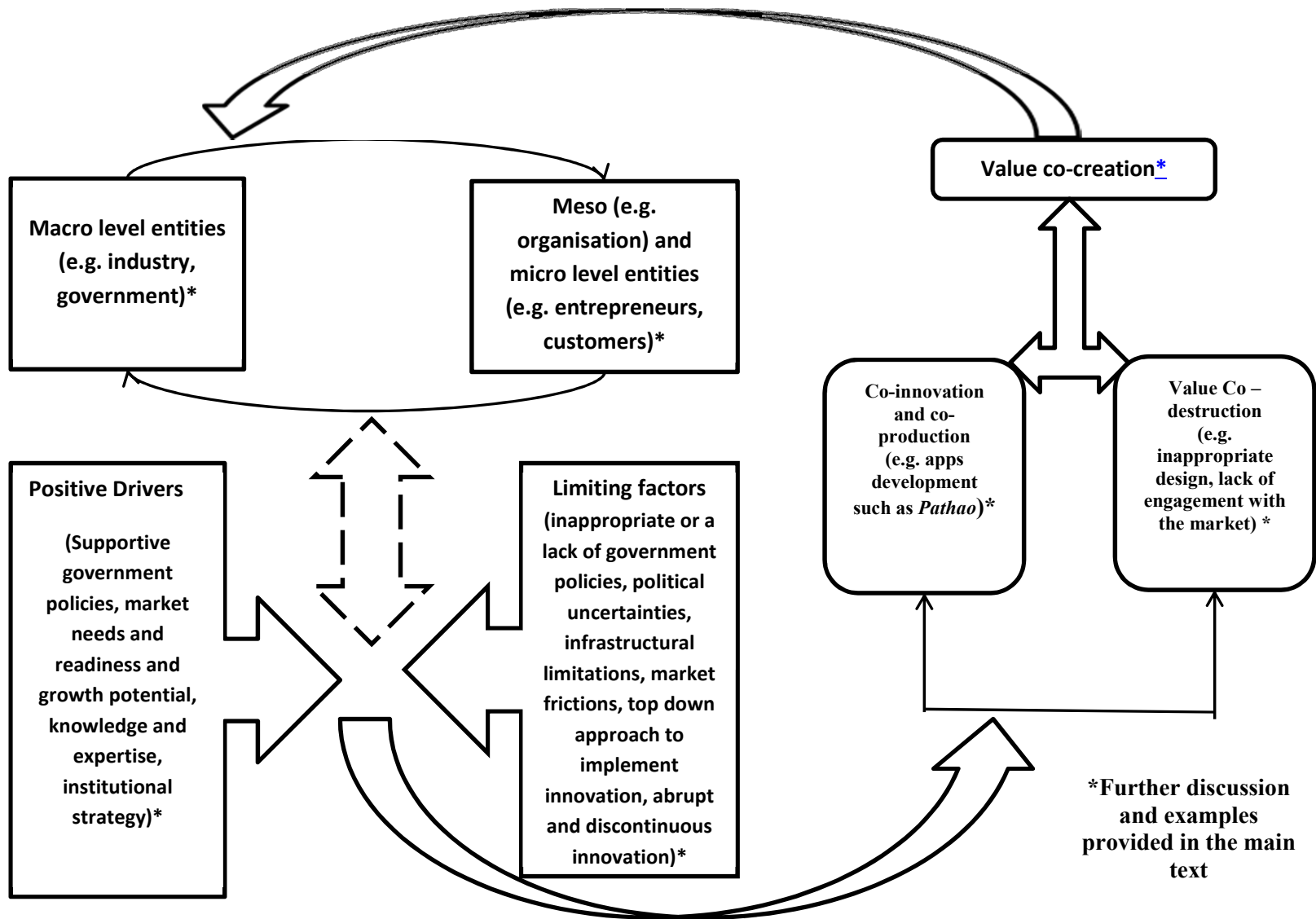
Macro level entities (e.g. industry, government)*

Meso (e.g. organisation) and micro level entities (e.g. entrepreneurs, customers)*

Value co-creation*

Positive Drivers

(Supportive government policies, market needs and readiness and growth potential, knowledge and expertise, institutional strategy)*

Limiting factors (inappropriate or a lack of government policies, political uncertainties, infrastructural limitations, market frictions, top down approach to implement innovation, abrupt and discontinuous innovation)*

Co-innovation and co-production (e.g. apps development such as *Pathao*)*

Value Co – destruction (e.g. inappropriate design, lack of engagement with the market) *

*Further discussion and examples provided in the main text

Figure 1: Multi-stakeholder and dialectical model of co-creation

Figure 1 exhibits the multi-dimensional and dialectical model of co-creation in the smartphone industry of Bangladesh and West Bengal. The model has three main components which are:

 (a) inter-relationship between macro, meso and micro level entities that go beyond dyadic nature,

(b) drivers and limiting factors that characterise the dialectical nature of the whole process and

(c) the outcome part that comprises three major constructs – co-innovation, co-destruction and co-production, with co-creation being the final outcome.

(a) *Inter-relationship between macro, meso and micro level entities:*

Su and Moaniba (2017) suggest fusion of technology originating from different industries can play a vital role in developing designs for outstanding innovation. We argue that the knowledge and expertise within and beyond industrial boundaries are also a key factor in this regard. This has been the case in the mobile telephone industry in Bangladesh and West Bengal. Grameenphone, one of the most successful mobile telephone service providers in Bangladesh, emanates from a joint collaboration between commercial and not-for-profit ventures and builds on the worldwide reputation of Grameen Bank. As findings suggest, for the last twenty years Grameenphone and other service providers, along with a number of NGOs, funded by leading global donors, have embarked on myriads of social innovations to contribute to the wellbeing of the general populace, which have also received attention from scholars (Rashid and Rahman, 2009; Bayes, 2001). Mobile financial services (bKash), being a topical venture, have also been critically assessed in this paper. As discussed in the findings section, developing regions such as Bangladesh and West Bengal do not often attract large multinational companies due to a lack of business and profit potential. Hence, companies such as Apple have limited engagement with the local market. Although the likes of Samsung, LG and Nokia have closer relationships with the market, often their services and outlets are only available in metropolitan cities and urban areas. Large regional (Indian/Chinese) multinational companies such as Huawei have made good use of the vacuum left by global multinationals. The role of the local distributors is also very important because of the warranty and after-sales support they provide in addition to regular distribution and retail services. As a result, the adoption and sustainable use of smartphones is hugely dependent on the local small and medium enterprises. Dynamics in the consumer market is also a notable factor in this regard. Consumers' willingness and increasing purchasing power to adopt new products encourage and boost the success of small and large scale innovations and entrepreneurial ventures.

Again, these small application developers for smartphones and the developers of VAS are useful and relevant actors in the market as they co-innovate and engender spill over effect across the market. This co-innovation may or may not be linked with global value chain. It is important to highlight the dynamic nature of these ventures, driven by inventive and creative vision and changing market needs. They provide a bridge between the users and the technology designers, with or without being recognised as a formal part of the industry.

It is important to mention that there can be a wide range of macro and meso factors that can have influence on this process. The ones presented in this research are indicative, not exhaustive.

(b) *Drivers and limiting factors:*

While we find the involvement of not-for-profit organisations a useful addition to the industry in terms of channelling attention to public welfare and creating more opportunities for social innovation at various levels of the socio-economic pyramid, the absence of an appropriate regulatory framework impedes the ethical and sustainable success of mobile financial services in Bangladesh. Thus, it is important to conceptualise the macro-level inter-relationships between the actors. As identified in the findings there can be two different types of factors and drivers that in tandem influence and shape macro, meso and micro level entities. While appropriate and supportive government policies can support the development of organisational and industrial potential, an absence of these or inappropriate policies may have an impact on the industrial relationship and innovation. The recent Indian government policy on demonetisation while creating uncertainties had encouraged application developers to offer creative solution to liquidity crisis. The growing and sustained demand in the consumer market also have trickle-down effect on the supporting businesses which provide thrust and motivation for new product development, process innovation and business modelling.

(c) *Co-innovation, co-destruction and co-production:*

Our findings concur with Ranjan and Read (2016) as we include co-production as a part of co-creation. Nevertheless, we also argue that innovation at the product and process level is key to the creation of value. In this regard, the innovation and production both can be triggered by one or many organisations in the industry or across the stakeholders involved in the process. VAS providers' transformation to apps development, new service innovation such as 'Pathao' in Bangladesh denotes the innovation that is sustained by mutual support and symbiotic inter-relationship. As such the bricolage of industrial partnership supports and encourages co-innovation and co-production. However, this value generation, as we argue is also intertwined with value co-destruction. This can have multiple meanings and interpretations. Innovation and production while generate value for some parties, can destruct value for others. New innovation not necessarily and fully replaces an old technology or system, rather often exists in a parallel manner. In doing so, it can diminish the value for other parties. As such, value co-destruction is an integral part of value co-creation which has not been fully conceptualised in the current literature.

Multi-stakeholder and dialectical nature of value co-creation

While the paper presents empirical data and in-depth analysis of the smartphone industry in Bangladesh and the Indian province of Bengal, it contributes to the theoretical understanding of value co-creation in a number of ways. By concurring with Payne et al (2008) and Alexander et al. (2018), it is purported to give the view that value co-creation is not an outcome of a dyadic interrelationship between producer and customer. It involves the roles of multiple stakeholders instead. We provide a broader and holistic perspective by assessing the roles of stakeholders at macro, meso and micro levels and analyse the dynamics and kinetics of value co-creation. While some scholars (Neghina et al. 2017; Grönroos, and Voima, 2013; Grönroos, 2011) emphasise on consumers' roles in value co-creation, we argue that this constitutes a partial understanding as various organisations including government and statutory organisations play a critical role in the creation of value. Furthermore, we address the long standing academic debate regarding value co-creation and value co-production. Concurring with Ranjan and Read (2016) we regard co-production as a part of co-creation.

However, we argue that co-innovation should also be considered alongside co-production as co-production does not always capture the entrepreneurial thrust and innovation, proven to be critical for product and service development.

Nevertheless, the major contribution of this paper comes as we conceptualise the dialectical nature of value co-creation. We argue that co-destruction of value needs to be considered as an integral part of value co-creation. It may happen due to various reasons including deficiency in the environmental and/or infrastructural facilities, inappropriate policies and innovation. Thus, value co-destruction may happen for reasons other than lack of customer knowledge and experience as suggested by Dey et al. (2016) and system failure (Plé and Chumpitaz Cáceres, 2010; Smith, 2013). We also argue that often value co-destruction is an inevitable by-product of the value co-creation process. Innovation of one product/service can destroy value for competing products/services. With all its shapes and forms as discussed above, value co-destruction is inextricably interwoven with co-production and co-innovation. The net outcome of the dialectical inter-relationship between the two gives rise to value co-creation. We apply the concept of creative destruction by Schumpeter and Hegel's concept of sublation. This is one of the first efforts to our knowledge that value co-creation has been assessed as an outcome of a dialectical process that would enable researchers and practitioners to conceive the broader picture of value co-creation. The practical implications are stated in the conclusion section.

Conclusion

This paper emphasises on the dialectical process of co-creation. As such, we aim to establish that co-destruction shadows co-creation as we our analyses of qualitative empirical data suggest that the two concepts are inextricably inter-twined. Classic Hegelian philosophy of dialectical evolution, subsequently adopted by Marx-Engels, suggests that anti-thesis complements thesis and thereby it is equally important to acknowledge the presence of anti-thesis in order to ensure thesis' evolution to synthesis. By adopting this underlying assumption we argue that co-destruction is an integral part of the co-creation process. Co-destruction may happen due to imperfect system/policy/practice; furthermore, it may also happen as a result of deliberate measures of a company. For instance, by agreeing to Apple/Samsung's software update request, consumers may end up slowing down their smartphones 'destroying' its value, and shortening the life span of their handsets. Our paper enriches co-creation concept by defining it as a combination of co-innovation, co-production and co-destruction. This is a novel perspective and can potentially address some of the inherent conceptual deficiencies and ambiguities in existing theoretical perspectives.

It is important for practitioners to fully comprehend the concept of co-destruction. Although the likes of Apple/Samsung managed to reduce the lifespan of their handsets, they have been fined for 'planned obsolescence'[3]. Hence, co-creation (software update for improved usability) can involve co-destruction (diminished value for both parties). Appropriate product design and marketing programmes should be undertaken to minimise the effect of co-destruction. Co-innovation with customers and more engagement with other stakeholders through co-production can outweigh, if not negate, the impact of co-destruction and provide optimal co-created value.

One of the major limitations of our research relates to its reliance on interviews and secondary data. Participant observation in various organisations would have enriched the data and the rigour of its analysis. Reference to other Indian provinces could have also been useful

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[3] https://www.bbc.co.uk/news/technology-45963943

in corroborating the data to get a bigger picture. While future research can be conducted with special attention being paid to these issues, there is also scope for quantitative analyses to validate the framework presented in this paper. In recent times, major constructs for value co-creation have been operationalised, creating more opportunities for positivist work in this area. However, to the best of our knowledge, we do not have items and measurement scales for co-destruction. Future research can be directed to address this issue.

References:

Adhikari, A. (2017), "Post demonetisation no big jump in card usage, but mobile banking and wallets gather big momentum", Business Today, 6 November, 2017 [accessed on 25 May, 2018)

Abraham, R. (2007), "Mobile phones and economic development: evidence from the fishing industry in India", *Information Technologies and International Development*, Vol. 4, No.1, pp.5-17.

Aghion, P., Howitt, P., Blundell, R., Prantl, S. and Griffith, R. (2004) 'Entry and Productivity Growth: Evidence from Microlevel Panel Data', *Journal of the European Economic Association*, 2(2-3), pp. 265-276.

Aker, J.C. and Mbiti, I.M., (2010), "Mobile phones and economic development in Africa", *Economic Perspectives,* Vol. 24, No. 3, pp. 207-232.

Ahmed, S. S., Rayhan, S. J., Islam, M. A., and Mahjabin, S. (2012), "Problems and prospects of mobile banking in Bangladesh", *Journal of Information Engineering and Applications*, Vol. 1, No.6, pp. 16-34.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., Lal, B., and Williams, M. D. (2015), "Consumer adoption of Internet banking in Jordan: Examining the role of hedonic motivation, habit, self-efficacy and trust", *Journal of Financial Services Marketing*, Vol. 20, No.2, pp.145-157.

Alexander, M. J., Jaakkola, E., and Hollebeek, L. D. (2018), "Zooming out: actor engagement beyond the dyadic", *Journal of Service Management*, Vol. 29, No. 3, pp. 333-351.

Aminuzzaman, S., Baldersheim, H. & Jamil, I. (2003), "Talking back! Empowerment and mobile phones in rural Bangladesh: a study of the village phone scheme of Grameen Bank", *Contemporary South Asia*, Vol. 12, No.3, pp. 327 - 348.

Anderson, P. and Rosengvist, C. (2007), "Mobile innovations in healthcare: customer involvement and co-creation of value", *International J. Mobile Communication*, Vol. 5, No.4, pp.371-388.

Angulo-Guerrero, M., Perez-Moreno, S. and Abad-Guerrero, I. (2017), "How economic freedom affects opportunity and necessity entrepreneurship in the OECD countries", *Journal of Business Research*, Vol. 73, pp. 30-37.

Askegaard, S. and Linnet, J.T. (2011), "Towards an epistemology of consumer culture theory. phenomenology and the context of context", *Marketing Theory*, Vol. 11, No.4, pp.381-404.

Ballantyne, D. and Varey, R.J. (2006), "Creating value-in-use through marketing interaction: the exchange logic of relating, communicating and knowing", *Marketing Theory,* Vol.6, No.3, pp. 335-348.

Banerjee, A. V., and Duflo, E. (2007), "The Economic Lives of the Poor", *Journal of Economic Perspectives*, Vol. 21, No.1, pp.141-167.

Barrientos, S., Gereffi, G. and Rossi, A. (2010), "Economics and Social Upgrading in Global Production Networks: Developing a Framework for Analysis", *Working Paper 2010/03*.

Barringer, B.R. and Harrison, J.S. (2000), "Walking a tightrope: creating value through interorganizational relationships", *Journal of Management*, Vol. 26, No.3, pp.367-403.

Bayes, A. (2001), "Infrastructure and rural development: insights from a Grameen Bank village phone initiative in Bangladesh", *Agric. Econ* Vol. 25, pp.261–272.

Blowfield, M. (2005), "Corporate social responsibility: reinventing the meaning of development", *International Affairs*, Vol.81, No. 3, pp. 515–524.

Bradley, S. W., McMullen, J. S., Artz, K., and Simiyu, E. M. (2012)., "Capital is not enough: Innovation in developing economies", *Journal of Management Studies*, Vol. 49, No.4, pp. 684-717.

Breidbach, C. F., and Maglio, P. P. (2016), "Technology-enabled value co-creation: An empirical analysis of actors, resources, and practices", *Industrial Marketing Management*, Vol. 56, pp. 73-85.

Bryman, A. (2012), Social Research Methods, Oxford University Press, Oxford.

Bryson, J., Sancino, A., Benington, J., and Sørensen, E. (2017), "Towards a multi-actor theory of public value co-creation", *Public Management Review*, Vol. 19 No. 5, pp. 640-654.

Burger-Helmchen, T. and Cohendet, P. (2011), "User communities and social software in the video grame industry", *Long Range Planning,* Vol.44, No. 5-6, pp. 317-343.

Creswell, J. W. and Miller, D. L. (2000), "Determining validity in qualitative inquiry", *Theory into Practice,* Vol. *39*, No.3, pp. 124-131.

Crockett, D. and Wallendorf, M. (2004), "The role of normative political ideology in consumer behaviour," *Journal of Consumer Research,* Vol. 31, No. 3, pp. 511-528.

De Silva, H., Ratnadiwakara, D., and Zainudeen, A. (2011), "Social Influence in Mobile Phone Adoption: Evidence from the Bottom of the Pyramid in Emerging Asia", *Information Technologies & International Development*, Vol. 7, No. 3, pp.1.

Decker, R., Haltiwanger, J., Jarmin, R. and Miranda, J. (2014), 'The Role of Entrepreneurship in US Job Creation and Economic Dynamism', *Journal of Economic Perspectives*, Vol. 28, No. 3, pp. 3-24.

Del Prete, D., Rungi, A. (2015), "Organizing the Global Value Chain: a firm-level test", *EIC working paper series* #4/2015 IMT Institute for Advanced Studies Lucca.

Denzin, N.K. and Lincoln, Y.S. (Eds) (2000), Handbook of Qualitative Research, Sage Publication Inc, London.

Dey, B.L., Babu, M.M, Rahman, M., Dora, M. and Mishra, N. (2018), "Technology upgrading through co-creation of value in developing societies: Analysis of the mobile telephone industry in Bangladesh", *Technological Forecasting and Social Change, (in press:* https://doi.org/10.1016/j.techfore.2018.05.011)

Dey, B. L., Binsardi, B., Prendergast, R. & Saren, M. (2013), "A qualitative enquiry into the appropriation of mobile telephony at the bottom of the pyramid", *International Marketing Review,* Vol. 30**,** No,4, pp. 297-322.

Dey, B.L., Pandit A., Saren, M., Bhowmick, S. and Woodruff-Burton, H. (2016), "Co-creation of Value at the Bottom of the Pyramid: Analysing Bangladeshi Farmers' Use of Mobile Telephony", *Journal of Retailing and Customer Services,* Vol. 29, No. 2, pp. 40-48.

Diamond, A. (2006), 'Schumpeter's creative destruction: A review of the evidence', *Journal of Private Enterprise*, Vol. 22, No. 1, pp. 120-146.

Dinica, I., and Motteau, D. (2012), *The market of the bottom of the pyramid: Impact on the marketing-mix of companies: A quantitative study of three African countries*. Thesis. UMEA University.

Donner, J. (2006), "Research approaches to mobile use in the developing world: a review of the literature", *Conference paper presented at the International Conference on Mobile Communication and Asian Modernities*, City University of Hong Kong, available at: (http://research.microsoft.com/~jdonner).

Donner, J. (2008), "The rules of beeping: exchanging messages via intentional missed calls on mobile phones", *Journal of Computer Mediated Communication*, Vol. 13, pp 1-22.

Donner, J. and Escobari, M. X. (2010), "A review of evidence on mobile use by micro and small enterprises in developing countries",*Journal of International Development*,Vol 22, pp 641–658.

Donner, J. and Tellez, C. (2008), "Mobile banking and economic development: linking adoption, impact and use", available at http://research.microsoft.com/apps/pubs/default.aspx?id=74446a; accessed on 02 September 2012.

Dwivedi, Y. K., Khan, N., and Papazafeiropoulou, A. (2007), "Consumer adoption and usage of broadband in Bangladesh", *Electronic Government, an International Journal*, Vol 4, No.3, pp. 299-313.

Echeverri, P., Skålén, P. (2011), "Co-creation and co-destruction:: A practice-theory based study of interactive value formation", *Marketing Theory*, Vol. 11, No. 3, pp. 351-373.

Farmer, T., Robinson, K., Elliott S.J. and Eyles, J. (2006), "Developing and implementing a triangulation protocol for qualitative health research", *Qualitative Health Research*, Vol.16, No.3, pp. 374-394.

Fillieri, R., Chen, W. and Dey, B. L. (2017), 'The importance of enhancing, maintaining and saving face in smartphone repurchase intentions of Chinese early adopters: an exploratory study'. *Information technology and People*, Vol. 30, No. 3, pp. 629 - 652.

Foster, C., and Heeks, R. (2013), "Innovation and scaling of ICT for the bottom-of-the-pyramid", *Journal of Information Technology*, Vol. 28, No.4, pp.296-315.

Galindo, M. and Mendez, M. (2014), 'Entrepreneurship, economic growth, and innovation: Are feedback effects at work?', *Journal of Business Research*, 67(5), pp. 825-829.

Gangopadhyay, S. (2012), *Purba Paschim*, Ananda Publishers. ISBN-13: 978-9350401972.

George, G., McGahan, A. M., and Prabhu, J. (2012), "Innovation for inclusive growth: Towards a theoretical framework and a research agenda", *Journal of Management Studies*, Vol. 49, No.4, pp.661-683.

Golafshani, N. (2003), "Understanding reliability and validity in qualitative research", *The Qualitative Report,* Vol.8, No.4, pp. 597-607.

Grönroos, C., and Gummerus, J. (2014), "The service revolution and its marketing implications: service logic vs service-dominant logic", *Managing Service Quality*, Vol. 24 No. 3, pp. 206-229.

Grönroos, C. & Voima, P. (2013), "Critical service logic: making sense of value creation and co-creation", *Journal of the Academy of Marketing Science*, Vol.41, pp.133-150.

Heeks, R. and Jagun A. (2007), "m-Development: Current issues and Research Priorities", Short paper by Development Informatics", *IPDM, University of Manchester*, available at: http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/index.htm#sp accessed on 21/06/ 2017.

Heinoen, K., Strandvik, T. and Voima, P. (2013), "Customer dominant value formation in service", European Business Review, Vol. 25, No.2, pp.104-123.

Hermerking, M. (2005), "Culture and Internet consumption: contribution from cross cultural marketing and advertising research", *Journal of computer-mediated communication*, Vol. 11, pp 192-216.

Heinoen, K., Strandvik, T. and Voima, P. (2013), "Customer dominant value formation in service", European Business Review, Vol. 25, No.2, pp.104-123.

Hermerking, M. (2005), "Culture and Internet consumption: contribution from cross cultural marketing and advertising research", *Journal of computer-mediated communication*, Vol. 11, pp 192-216.

Hollebeek, L. D. & Brodie, R. J. (2009), "Wine service marketing, value co-creation and involvement: research issues", *International Journal of Wine Business Research*, Vol.21, pp.339-353.

Holbrook, M.B. (2006), "Consumption experience, customer value and subjective personal introspection: An illustrative photographic essay", Journal of Business Research, Vol. 59, No.6, pp. 714-725.

Hu, Y., & McLoughlin, D. (2012), "Creating new market for industrial services in nascent fields", *Journal of Services Marketing*, Vol. 26, No. 5, pp. 322 – 331.

Humphrey, J and Schmitz, H. (2006), "The Impact of China on Asia" – Agenda Setting paper presented for DFID, Institute of Development Studies, Brighton.

Jackson L.A., Eye, A.V., Barbatasis, G., Biocca, F., Fitzgerald, H.E. and Zhao, W. (2005), "Instructional set and Internet use by low-income adults", *Cyber Psychology and Behaviour,* Vol. 8, No.5, pp 465-472.

Jang, S. H., and Grandzol, C. (2015), "Value co-creation in emerging economies: planting and harvesting innovation perspectives", International Journal of Services Sciences, Vol. 5 No. 3-4, pp. 171-181.

Jenkins, R. (2005). Globalization, corporate social responsibility and poverty. International Affairs, Vol. 81, No. 3, pp.525.

Kaplinksy, R. (2004), "Spreading the gains from globalization: what can be learned from value chain analysis?", *Problems of Economic Transition*, Vol. 47, pp.74-115.

Kapoor, K. K., Dwivedi, Y. K., and Williams, M. D. (2015), "Empirical Examination of the Role of Three Sets of Innovation Attributes for Determining Adoption of IRCTC Mobile Ticketing Service", *Information Systems Management*, Vol. 32, No.2, pp.153-173.

Karnani, A. (2011), "Social Entrepreneurship: Beyond the Hype", *Innovations*, Vol 6, No. 2, pp. 99- 116.

Khavul, S., and Bruton, G. D. (2013), "Harnessing Innovation for Change: Sustainability and Poverty in Developing Countries", *Journal of Management Studies*, Vol. 50, No. 2, pp. 285–306.

Kim, K., Baek, C. and Lee, J. D. (2018), 'Creative destruction of the sharing economy in action: The case of Uber', *Transportation Research Part a-Policy and Practice*, 110, pp. 118-127.

Lemke, F., Clark,M., &Wilson, H. (2011), "Customer experience quality: an exploration in business and consumer contexts using repertory grid technique", *Journal of the Academy of Marketing Science*, Vol. 39, No. 6, pp. 846 – 869.

Lewis-Beck, M.A., Bryman, A. and Liao, T.F. (2004), The SAGE Encyclopedia of Social Science Research Methods, Sage Publications Inc, London, pp. 163-187.

Lii, Y. S., and Lee, M. (2012), "Doing right leads to doing well: When the type of CSR and reputation interact to affect consumer evaluations of the firm", *Journal of Business Ethics*, Vol. 105, No. 1, pp.69-81.

Lusch, R. F., Vargo, S. L., and O'Brien, M. (2007), "Competing through service: Insights from service-dominant logic", *Journal of Retailing*, Vol.83, No.1,pp. 5–18.

MacDonald, K. and VanDuinkerken, I. (2015), 'Libraries surviving as entrepreneurial organizations: a creative destruction perspective', *New Library World*, Vol. 116, No. 7/8, pp. 406-419.

Malshe, A., and Friend, S. B. (2018), "Initiating value co-creation: Dealing with non-receptive customers", *Journal of the Academy of Marketing Science*, Vol. 46 No. 5, pp. 895-920.

Mariscal, J. (2005), "Digital divide in a developing country", *Telecommunication Policy*, Vol. 29, pp 409-428.

Mutula, S.M. and Mostert, M.J. (2010), "Challenges and opportunities of e-government in South Africa", *The Electronic Library*, Vol. 28 Iss 1 pp. 38 - 53

Newell, P., and Fryans, J.G. (2007), "Beyond CSR? Business, poverty and social justice: an introduction", *Third World Quarterly*, Vol. 28, No. 4, pp. 669-681.

Nightingale, P. (2015) 'Schumpeter's theological roots? Harnack and the origins of creative destruction', *Journal of Evolutionary Economics*, Vol. 25, No. 1, pp. 69-75.

Olsen, M., and Boxenbaum, E. (2009), "Bottom-of-the-Pyramid: Organizational Barriers to Implementation", *California Management Review*, Vol. 51, No.4, pp.100-125.

Orlikowski, W. J. (1992), "The duality of technology: rethinking the concept of technology in organisations", *Organisation Science*, Vol. 3, No.3, pp 398-427.

O'Sullivan, M. A. (2000), "The Innovative Enterprise and Corporate Governance", *Cambridge Journal of Economics*, Vol. 24, pp. 393-416.

Parker, S. (2012), 'Theories of Entrepreneuship, Innovation and the Business Cycle', *Journal of Economic Surveys*, Vol. 26, No. 3, pp. 377-394.

Payaud, M. A. (2014), "Marketing strategies at the bottom of the pyramid: Examples from Nestle, Danone, and Procter & Gamble", *Global Business and Organizational Excellence*, Vol. 33, No. 2, pp. 51-63.

Payne, A.F., Storbacka, K. and Frow, P. (2008), "Managing the co-creation of value", *Journal of the Academy of Marketing Science*, Vol.36, pp.83-96.

Pick, J. B., Gollakota, K., and Singh, M. (2014), "Technology for development: Understanding influences on use of rural telecenters in India", *Information Technology for Development*, Vol. 20, No. 4, pp. 296-323.

Plé, L. and Chumpitaz Cáceres, R. (2010), "Not always co-creation: introducing interactional co-destruction of value in service-dominant logic", *Journal of Services Marketing,* Vol.24, No.6, pp. 430-437.

Prahalad, C. K. (2012), "Bottom of the Pyramid as a Source of Breakthrough Innovations." *Journal of Product Innovation Management*, Vol. 29, No. 1, pp.6-12.

Prahalad, C. K. (2010), *The Fortune at the Bottom of the Pyramid: Eradicating Poverty through profits*. 5th Anniversary Edition, Pearson Education, New Jersey.

Prahalad, C.K. and Ramaswamy, V. (2004), "Co-creation experiences: The next practice in value creation", *Journal of Interactive Marketing,* Vol. 18, No. 3, pp.5-14.

Pongsakornrungsilp, S. & Schroeder, J. E. (2011), "Understanding value co-creation in a co-consuming brand community", *Marketing Theory,* Vol.11, 303-324.

Porter M. E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press: New York.

Quibria, M. G., and Tschang, T. (2001), "Information and communication technology and poverty: An Asian perspective", *Working Paper Series*, No. 12, Tokyo: Asian Development Bank Institute.

Rahman, M., Haque, S.E., and Rashid, A.T. (2012), "Nonprofits' engagement with the private and the public sectors: The case of providing essential healthcare in rural Bangladesh", *The Marketing Review*, Vol. 12, No. 1, pp. 5-16.

Rahman, M., Hasan, M. R., and Floyd, D. (2013), "Brand Orientation as a Strategy That Influences the Adoption of Innovation in the Bottom of the Pyramid Market". *Strategic Change*, Vol.22, No. 3/4, pp.225–239.

Ramani, S. V., SadreGhazi, S., and Duysters, G. (2012), "On the diffusion of toilets as bottom of the pyramid innovation: Lessons from sanitation entrepreneurs", *Technological Forecasting and Social Change*, Vol. 79, No.4, pp. 676–687.

Ramaswami, V. and Ozcan, K. (2016), "Brand value co-creation in a digitalized world: An integrative framework and research implications", *International Journal of Research in Marketing,* Vol.33, pp. 93-106.

Ranjan and Read (2016), "Value co-creation: concept and measurement", *Journal of Academy of Marketing Science,* Vol.44, pp. 290-315.

Rangan, V., Chu, M., and Petkoski, D. (2011), "Segmenting the base of the pyramid", *Harvard Business Review*, (June), p.193.

Rashid, A.T. and Elder, L. (2009), "Mobile phones and development: an analysis of IDRC-supported projects", *Electronic Journal of Information Systems in Developing Countries*, Vol. 36, No. 2, pp 1-16.

Rashid, T. A., and Rahman, M. (2009). "Making profit to solve development problems: the case of Telenor AS and the Village Phone Programme in Bangladesh", *Journal of Marketing Management*, Vol. 25, No. 9-10, pp.1049-1060.

Ratcliff, D. (1995). *Validity and reliability in qualitative research*. Retrieved from http://qualitativeresearch.ratcliffs.net/Validity.pdf

Ravald, A. and Gronroos, C. (1996), "The value concept and relationship marketing", *European Journal of Marketing,* Vol. 30, No.2, pp.19-30.

Sandström, S., Edvardsson, B., Kristensson, P. & Magnusson, P. (2008), "Value in use through service experience", *Managing Service Quality: An International Journal*, Vol.18, pp.112-126.

Schumpeter, J.A., 1934 (2008), *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, Transaction Publishers, London (U.K.):.

Sharma, S. and Conduit, J. (2016), "Co-creation of value in healthcare organisations", *Journal of Service Research,* Vol. 19, No. 4, pp. 438-457.

Simanis, E. (2012), "Reality Check at the Bottom of the Pyramid", *Harvard Business Review*, Vol. 90, No.6, p6.

Smith, A. (2013), "The value co-destruction process: a customer resource perspective", *European Journal of Marketing*, Vol. 47, No. 11/12, pp. 1889–1909.

Stenbacka, C. (2001), "Qualitative research requires quality concepts of its own", *Management Decision,* Vol.39, No. 7, pp. 551-555.

Storbacka, K., Brodie, R. J., Böhmann, T., Maglio, P. P., and Nenonen, S. (2016), "Actor engagement as a microfoundation for value co-creation", *Journal of Business Research*, Vol. *69* No. 8, pp. 3008-3017.

Subrahmanyan, S., and Tomas Gomez-Arias, J. (2008), "Integrated approach to understanding consumer behavior at bottom of pyramid", *Journal of Consumer Marketing*, Vol. 25, No.7, pp. 402-412.

Sugathan, P., Ranjan, K. R., and Mulky, A. G. (2017), "Atypical shifts post-failure: Influence of co-creation on attribution and future motivation to co-create", *Journal of Interactive Marketing*, Vol. 38, pp. 64–81.

Tian, K., & Belk, R. W. (2005), "Extended self and possessions in the workplace," *Journal of Consumer Research*, Vol. 32 (September), pp. 297-310.

Thapa, D. and Sæbø, Ø. (2014), "Exploring the link between ICT and development in the context of developing countries: a literature review", *Electronic Journal of Information Systems in Developing Countries,* Vol. 64, No. 1, pp. 1-15.

Uddin, M. M. (2012), *Bangladesh's mobile telecom industry & Grameenphone limited - A strategic analysis*. Dhaka: Department of Business Administration, East West University.

Vargo, S. L., and Lusch, R. F. (2016), "Institutions and axioms: an extension and update of service-dominant logic", *Journal of the Academy of Marketing Science*, Vol. 44 No. 1, pp. 5-23.

Vargo, S.L., and Lusch, R.F. (2008), "Service dominant logic: continuing the evolution", *Journal of the Academy of Marketing Science*, Vol. 36, No.1, pp1-10.

Viswanathan, M. (2007). "Understanding product and market interactions in subsistence marketplaces: A study in South India", *Advances in International Management*, Vol. 20, pp. 21-57.

Viswanathan, M., Sridharan, S., and Ritchie, R. (2010). "Understanding consumption and entrepreneurship in subsistence marketplaces". *Journal of Business Research*, Vol. 63, No.6, pp570-581.

Viswanathan, M., and Sridharan, S. (2012). "Product development for the BoP: insights on concept and prototype development from university-based student projects in India" *Journal of Product Innovation Management*, Vol. 29, No.1, pp.52-69.

Vogel, D. J. (2005). "Is there a market for virtue? The business case for corporate social responsibility. California Management Review", Vol. 47, No. 4, pp.19–45.

Zhou, Y., He, C. F. and Zhu, S. J. (2017), "Does Creative Destruction Work for Chinese Regions?", *Growth and Change*, 48(3), pp. 274-296.