

# Harnessing the BOP Ecosystems of China and India for Competitive Advantage

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Received: August 8, 2022

Accepted: September 21, 2022

Online Published: September 24, 2022

doi:10.5430/jms.v13n2p1

URL: <https://doi.org/10.5430/jms.v13n2p1>

## Abstract

Sustainable development of the base-of-the-pyramid (BOP) is a critical issue in a global society. This study provides an ecosystem framework to develop the BOP segment, particularly in China and India. The BOP segment is the low-income household, mainly residing in rural areas. Traditionally, the BOP segment has been understood as a customer segment. We suggest that the BOP can be suppliers, employees, entrepreneurs, and customers. In other words, a BOP venture exists within an ecosystem and contributes to the ecosystem. This ecosystem includes shareholders, governments, the general public, communities, competitors, non-governmental organizations, special interest groups, employees, supply chain partners, and customers. Specifically, we explain how the BOP can play multiple roles, using the context of the fast-moving consumer goods (FMCG) industry in China and the telecommunications industry in India. To mitigate inequality within nations and enhance the standard of living, governments should also nurture the BOP ecosystem. This framework is applicable in other parts of the world.

**Keywords:** bottom-of-the-pyramid, BOP ecosystem, FMCG, telecommunications industry

## 1. Introduction

China and India have radically changed their economic and social institutions since the 1990s (Rein, 2012; Srinivasan, 2006). These developing countries now have obtained a more robust economic and political position in the global society, leaving the period of colonialism and economic isolation. To capture the growing business opportunity, multinational companies (MNCs) have given much attention and effort to middle-income households in China and India. During the last thirty years, the wealth of middle-income households in China and India has grown significantly (Milanovic, 2016). Yet, income inequality within countries (Dervis & Qureshi, 2016; Milanovic, 2016; Lakner & Milanovic, 2013), social anxiety, and demands for social mobility have forced the governments to start giving attention to low-income households (Chatterjee, 2006). The base-of-the-pyramid (BOP) is a low-income 'demographic segment' (Hart, 2008). This low-income segment accounts for approximately 4.5 billion people globally. They have the potential to become productive suppliers, customers, employees, and entrepreneurs. Thus, the BOP segment represents one of the most significant opportunities for business growth and nations' prosperity in this century. Developing the BOP market mindfully is critical for global environmental sustainability as well. The imminent poverty forces people to exploit the environment, sacrificing long-term sustainable development. Kirchgeorg and Winn (2006:172) summarize that "the struggle for daily survival associated with poverty often causes rapid environmental degradation." Uncontrolled growth in the BOP segment will cause a waste of resources, worsening the resource scarcity in the BOP segment (Zhao, Cavusgil, & Zhao, 2016).

This study suggests a holistic framework to further our understanding of the BOP ecosystems. Using examples in China's fast-moving consumer goods (FMCG) industry and India's telecommunications industry, we illustrate how MNCs and their stakeholders can enjoy mutual benefits from the BOP ecosystems. MNCs can apply the lessons to develop the BOP ecosystems in other emerging economies. Nation leaders can also consider using the framework to craft public policies to gain a sustainable competitive advantage at the national level.

## 2. Literature Review

### 2.1 BOP Review

The increasing income inequality between the rich and the poor in recent years across all the indicators of the Human Development Index (HDI) has forced governments in emerging markets to exercise greater control to combat this

trend. Admittedly there has been a rise in the incomes and the standard of living of the BOP in recent years (World Bank's Poverty and Shared Prosperity Report, 2018), but it has not kept pace with the increasing population in this segment. Existing research on the BOP segment has been limited and has focused mainly on its role as a potential customer. While this worthwhile objective has expanded our knowledge base, it is equally important to understand the BOP's role as supplier, employee, and entrepreneur. This shift in thinking will result in more significant opportunities to reshape and implement public policies that will narrow the gap between the rich and the poor over time.

In 2002, Prahalad and Hart published a landmark paper about the bottom of the pyramid. Even before their manuscript was published in 2002, their working paper (1999) had been circulated and debated. Scholars, practitioners, and policymakers have given attention to the topic of the BOP. Karnani (2007) argues that the BOP does not offer many opportunities and, at best, is a "harmless illusion." Others like London (2009) and London and Anupindi (2010) assert that companies can create mutual value by serving the BOP. Over time, Kolk, The BOP concept has evolved, with more BOP business models and case studies (Kolk, Rivera-Santos & Rufin, 2014; Landrum, 2007) illustrating mutual value for businesses and the BOP population (London & Anupindi, 2010). The literature about socially inclusive business (e.g., Arya & Salk, 2006; Mair, Marti, & Ventresca, 2012) explains business's role in improving the BOP segment by engaging the BOP segment. They argue that low-income households are more than laborers. They can also function as suppliers and producers. Dacin, Dacin & Matear (2010) has also suggested that hybrid enterprise models can produce positive social impact while companies enjoy profits.

### *2.2 BOP and Sustainability*

The BOP literature has given more attention to BOP development's economic and social dimensions. The environmental dimension of the BOP development still has not gained much attention from academia (Wijen, 2008). Few scholars argue that the environment should be the BOP discussion's primary concern (Heuer & Landrum, 2016).

Some highlight the MNC's role in environmental sustainability and poverty alleviation in the BOP segment (Arnold & Williams, 2012). Others emphasize 'multi-stakeholder collaboration' to address the sustainability challenges (Kandachar & Halmes, 2017). For example, Wijen summarizes the environmental sustainability solutions with 1) market-driven solutions and 2) non-market-driven governance. The market-driven solutions are further divided into three: a) market-clearing, b) innovations and c) corporate social responsibility (CSR). Wijen (2008) also proposes three different levels of non-market governance: a) government regulations, b) self-regulations, and c) civic actions. Here, Wijen (2008) shows that the responsibility for environmental sustainability falls upon everyone, including governments, civic communities (including NGOs), corporations, and individuals, as indicated by self-regulation.

### *2.3 BOP of China and India*

It is difficult to estimate the poverty level in India and China due to the lack of recent quality data (World Bank/IBRD, 2020). Nevertheless, the World Bank/IBRD (2020:31) estimates that between 109 million to 152 million people live in extreme poverty in India. Here the poverty line is USD 1.9-a-day. According to Hernández (2017), Xi Jinping plans to improve the lives of 43 million people in extreme poverty. Here the poverty line is USD 0.95-a-day. Approximately 400 million Chinese live on USD 5.5 a day, according to Chow (2018). Both countries provide appropriate context to understand the BOP initiatives.

China and India's long-term challenges disproportionately impact the BOP segment, including inadequate social infrastructure, domestic abuse and gender violence, limited employment, and financing opportunities, and insufficient access to basic needs such as health, safety, water, and energy. The BOP in India faces additional challenges, including poor hygiene and limited access to primary and higher education (Chand, Raju, & Pandey, 2007; Deaton & Dreze, 2007; Mukherji, 2009). In China, poverty refers mainly to the rural poor. However, the Chinese economy's structural reforms have also worsened income inequality and rising unemployment in urban cities (Hussain, 2003).

On the positive side, the BOP's access to information technology has exponentially increased in recent years due to significant infrastructure improvements across India's breadth and depth (Mukherji, 2009) and China (Zhou, Tong, & Li, 2012).

## **3. The Ecosystem Framework**

The BOP is a complex topic and needs to be examined in the context of the macro environment and the entire competitive landscape if we want to tap into its true potential. The Ecosystem framework is a holistic approach to understanding the true potential of the BOP as a customer, employee, supplier, and entrepreneur. The term "ecosystem" was initially coined by botanist A.G. Tansley in 1935 (Willis, 1997) and, in recent decades, has been applied in numerous disciplines, including business. Figure 1 displays the generic Ecosystem system for the BOP,

where the macro environment forces, the immediate operating environment of the industry sector under consideration, and the firm-level value chain functions interact to create a dynamic system.

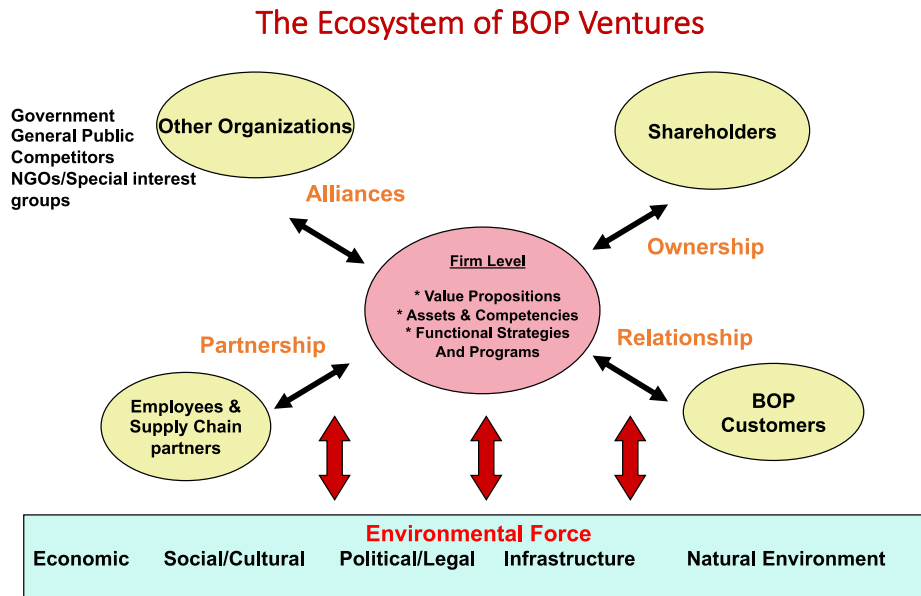


Figure 1

For any BOP venture, the ecosystem is influenced by the nation’s macro-environmental factors, namely political and legal landscape, economic forces, natural resources, infrastructure, and socio-cultural and demographic forces (Mukherjee, 2009; Kolk et al., 2014). The continuous assessment of these factors will help the firm identify the threats and potential opportunities. The central circle (The Firm) in Figure 1 represents any organization operating in a BOP market with the ultimate goal of helping the shareholders grow their investments. The conventional business strategy focused only on three areas: (1) strengthening internal efficiencies and effectiveness in the typical business functions and their competencies; (2) building relationship with their customers and satisfying customers’ needs/wants/preferences in the pursuit of higher profitability that benefits the shareholders. With the heightened anti-globalization sentiment, MNCs face criticisms and scrutiny from governments, consumer advocates, special interest groups, the local community, and global consumers. Aggressive BOP market expansion plans adopting outdated and narrow views are now being criticized and perceived as a form of predatory marketing that has disrupted BOP consumers, the local community, and the environment (Jose, 2006; Karnani, 2007). Going forward, MNCs must adopt a more inclusive philosophy and create strategies promoting sustainable growth and success. They will be better served if they are willing to engage with local governments proactively, the general public, special interest groups, the employees and supply chain partners, the BOP consumers, and even the competitors to forge alliances and partnerships to create mutual value and share the value of their BOP expansion success with the larger group of stakeholders, not just with their shareholders.

An application of the BOP ecosystem framework to the Fast Moving Consumer Goods (FMCG) in China and Telecommunications in India appears below.

### 3.1 China’s BOP Ecosystem- Application to the FMCG Sector

In 2018, China’s FMCG market accounted for \$190 billion (China Economic Review, 2018). In 2019, the FMCG market grew by 5.3 percent (Kantar World Panel, 2020a). Even with the pandemic in 2020, the spending on FMCG in China went up by 4.1% during Q3 (Kantar World Panel, 2020b). The poorer regions in the West and South, where most of the BOP populations are located, continue to serve as growth engines in this market. Overall, the critical distribution format in the FMCG market is the individually owned mom-and-pop shops or kiosks. Foreign investors

must use them to reach lower-tier cities in the country's vast interior. On the other hand, the government has been promoting the rapid expansion of modern trade as an affordable means of opening up modern retailing in rural markets (Juan, 2019). On the e-commerce side, the rural areas have shown higher growth in digital spending on Alibaba's e-commerce than the first-tier cities such as Beijing, Shanghai, Guangzhou, and Shenzhen (Xinhua Net, 2019).

In the following paragraphs, we summarize China's BOP-FMCG ecosystem and discuss the impact of this ecosystem on the BOP and the China economy.

### 3.1.1 The BOP as a Customer

BOP, as a critical customer group in the FMCG market, offers tremendous growth opportunities for other sectors such as infrastructure construction and modernization, agriculture, manufacturing, financial service, information technology, data analytics, omni-channel retailing, education and training, market research, media & advertising, and supply chain management. These sectors form the ecosystem that supports the functioning of the FMCG sector and, at the same time, will benefit from its growth.

Alibaba has been on a broader search for growth as its scale expands and traditional market segments are saturated. They have been looking beyond young, well-educated city dwellers and heading for the countryside and rural settlements. Many villages are in remote mountainous regions out of the reach of traditional retailers (Makinen, 2016). This presented enormous opportunities for MNCs and major local FMCG players such as Alibaba to forge alliances and leverage partnerships with other stakeholders such as local governments, private sectors, and even competitors to invest in infrastructure construction and technology modernization of the rural regions in China (Kapur, Kapur, & Ahuja, 2014). There are also tremendous opportunities for local and foreign businesses to invest in BOP learning and strategic sensemaking (Cheung & Belden, 2013; Cheung, Rust, Blocker, & Park, 2014) via market research, education and training, media and advertising, data analytics, information technology, and supply chain management. These efforts will lead to better adaptation of their organizations to succeed in the China BOP FMCG markets.

### 3.1.2 The BOP as Employee and Supplier

For BOP as suppliers, one specific area of partnership opportunity is agriculture. Farmers can now turn to live-streaming and other prevalent online marketing tools, such as Alibaba's online shopping platforms, to conduct sales of agricultural products. In 2020, state-level impoverished BOP counties sold goods worth over USD 256.7 billion (Lei, 2020). One of the well-known cases where the BOP act as suppliers and employees is the Suguna poultry case (Ramesh, 2010). Farmers in rural areas use their backyards. Suguna provides chick packages to the farmers. Once the chicken is ready, Suguna buys it from the farmers, adds the Suguna brand, and sells it to retailers. In this case, the farmers are their suppliers and partners. Similar business models to raise and distribute chicken were introduced in East Africa and India (Beesabathuni, Lingala, & Kaemer, 2018). MNCs will continue to collaborate with BOP suppliers in the agricultural sector and incorporate them as their producers and suppliers in the offerings of FMCG products. Further, for BOP employees, there are enormous opportunities for MNCs to integrate education and employee training as part of their corporate social responsibility programs to help China close the gap of unequal educational opportunity.

### 3.1.3 The BOP as an Entrepreneur

The critical distribution format in the FMCG market is the individually owned mom-and-pop shops or kiosks. It will continue to be the case as high unemployment in the BOP population increasingly prompts them to set up their small businesses. In addition to microfinancing to aid these BOP entrepreneurs, there is also a need to provide financial literacy, strategic advice, and business consulting assistance to help these BOP entrepreneurs succeed. These services and opportunities can be from NGOs, local governments, or private companies. Government investments and private-foreign investments in the entire BOP ecosystem within the FMCG segment will improve the quality of life of the BOP population. It is also one of the effective ways to alleviate poverty.

## 3.2 India's BOP Ecosystem- Application to the Telecommunications Industry

With a more than 1.3 billion population (CIA Factbook, 2020), India offers a significant business opportunity for the telecommunications industry. As of 2018, the internet penetration rate in India was only 28% (Purnell, Kim, & de Acoasta, 2018). Owing to recent investments from both domestic and foreign capitalists (Jain, 2020; Purnell, 2018), e-commerce in India is experiencing "astrological development" (The Economist, 2019).

According to the Telecom Regulatory Authority of India (TRAI) 2015, the mobile user base in India crossed the 1

billion mark in 2015. As of December 2020, the number of broadband subscribers is 705.20 million, and the number of rural telephone subscribers in India is 522.42 million (TRAI, 2020). Bhattacharya (2016) reports that 77% of the bottom income quartile of India now possesses a mobile phone. The Table 1 below is a summary of India’s BOP-Telecommunications ecosystem and reveals the impact of this ecosystem on the BOP and the Indian economy.

Table 1. BOP- Telecommunications Ecosystem

<b>BOP’s role in Telecommunications</b>	<b>Sectors influenced by BOP-Telecommunications-relationship</b>	<b>Government Investment in the ecosystem</b>	<b>Private and Foreign Investment scope in the ecosystem</b>
Customer	Infrastructure: Construction and Modernization Agriculture Banking Leisure/Entertainment E-Commerce Consumer Goods	Banking Infrastructure: Construction and Modernization Agriculture:(subsidies, Supply Chain Functions) E-commerce Education Health	Infrastructure: Construction, Modernization, state-of-art-IT, E-Commerce, IT, Data Analytics Micro financing Media & Advertising Entertainment Education Health Consumer Goods
Entrepreneur	Construction Banking Entertainment Retailing Agriculture Consumer Goods, services E-commerce	Banking E-Commerce Construction Agriculture IT	BOP as a contractor in: E-Commerce Media and Advertising Retailing, Entertainment, Micro-financing

From a review of the business and engineering literature, the primary value chain functions of the telecommunications industry include recycling, value-added services for end users and B2B users, telecom operators and service providers, equipment manufacturing, infrastructure and networks, and content providers (Podobnik, Trzec, & Jezic, 2007). The telecommunications sector has forged deep partnerships with India’s BOP, which now plays a vital role in the BOP-Indian telecommunications ecosystem as an end-use customer, business-to-business customer, employee, supplier, and entrepreneur.

### 3.2.1 The BOP as a Customer

Some industries where the BOP is a critical customer group and which have undergone significant changes due to telecommunications include transportation and infrastructure, agriculture, banking, E-commerce, and entertainment (Subrahmanyam & Gomez-Arias, 2008; Krishnan, 2016). In recent years, telecommunication has played a vital role in the construction, modernization, and improvement of road services, airports, ports, and metro and railways. These infrastructure improvements have proven very useful for the BOP since ease of travel positively impacts the availability of products and services to the BOP. Domestic and foreign investors should tap into India’s growing telecommunications network and continue integrating infrastructure projects to bring India’s vast rural network into the digital economy. Another key industry for the BOP heavily influenced by telecommunications is agriculture, which is vital for India’s BOP. Greater private investment in information technology (IT) will create a better institutional environment for farmers. In recent years, telecommunications has had a significant hand in restructuring and digitizing India’s banking sector. With the introduction of the Aadhar card (biometric ID) in 2009 for all Indian residents, the BOP segment will have greater access to the organized banking sector.

Telecommunications is the glue that holds the E-commerce sector. With the rise in the standard of living of the BOP

and the trillions of disposable income in their hands, the E-commerce sector has a tremendous opportunity (Erisman, 2017). Since most BOP customers use cash to make their purchases and a significant proportion are migrant laborers, their potential must not be overlooked. Walden (2020) observes that banks are exploring the option of launching contactless credit and debit cards using state-of-the-art systems such as near-field communication (NFC). Millions of people in the BOP have access to smartphones, social media, and the Internet. Using telecommunications to implement digital advertising and promotion strategies to target the BOP and innovative payment methods (similar to Mpesa in Kenya) will further consolidate the Indian E-commerce industry. Finally, telecommunications has significantly impacted all facets of India's growing entertainment industry. The BOP is a crucial customer segment; radio, television, music, and digitization have enabled customers to access entertainment on demand. Complementary and supporting sectors in the ecosystem (entertainment industry, government, banking, and E-commerce) must work in unison to capture this opportunity (Raj & Aithal, 2018).

### 3.2.2 The BOP as Employee and Supplier

India's BOP accounts for a large proportion of the country's unorganized labor pool. In the infrastructure development activity associated with the telecommunications industry (cellular towers, fiber optics cable construction), the BOP is employed on a contract basis. The BOP segment is also used in the equipment (cell phone) manufacturing and assembly function. As per *Bloomberg* and other sources, India is one of the leading destinations for cell phone manufacturers. The MNCs in this space include Samsung Electronics, which has opened the world's largest cell phone manufacturing facility in India, Chinese manufacturers Xiaomi, LeEco, Gionee, and Oneplus, Indian company Reliance Communications, and other Asian countries, including Singapore and Malaysia. MNCs, including Huawei, have also expanded their presence in the service function of the telecommunications sector. Since all these companies want a share of India's burgeoning cell phone market, an ecosystem approach will enable the government and other public policy officials to create job opportunities and establish checks and balances for a fair living wage for the BOP employees in this industry.

The BOP as employee and supplier can also be found in industries closely associated with the telecommunications sector, such as agriculture, infrastructure and transportation, E-Commerce, and entertainment, which are moving toward increased digitization of services. The BOP as supplier and employee in India's telecommunications industry offers rich research potential.

### 3.2.3 The BOP as an Entrepreneur

The BOP's role as an entrepreneur in telecommunications is evidenced in the Internet kiosks established in rural India in recent years. Women in the BOP segment have been empowered to make their income by managing Internet kiosks (Bullough et al., 2015; Pines, Lerner, & Schwartz, 2010). Drawing on social network theory, Venkatesh, Shaw, Sykes, Wamba, & Macharia (2017) conducted a 7-year longitudinal quasi-field study in twenty (20) villages in rural India. Their study revealed that females who had strong ties to family and community increased their entrepreneurial activity and entrepreneurial profits. As solid family ties are already a core feature of India's social system, community support such as local government support and the support of NGOs and other voluntary groups will further accelerate entrepreneurial activity among the BOP women.

From basic sanitation (Ramani, SadreGhazi, & Duysters, 2012) to alternative energy (Surie, 2017; Bandi, Sahrakorpi, Paatero, & Lahdelma, 2020), India's BOP segment provides business opportunities for entrepreneurs in all critical sectors associated with telecommunications, such as transportation, infrastructure, media and entertainment, retailing, agriculture, and FMCG. The BOP's main challenges are procuring funding at reasonable payment terms and insurance, lacking accurate information, and lacking business acumen. Using a Public-Private Partnership (PPP), entrepreneurial initiatives by the BOP should be encouraged and funded. The partnership requires the participation of MNCs, NGOs, communities, local and federal governments, and financial institutions, including micro-financing. The BOP should be provided loans at very nominal interest rates and should be educated and trained to manage their meager finances. Even with the controversies (Sriram, 2010) and crises (Mader, 2013) about microfinancing, one cannot deny that microfinance has effectively alleviated poverty for millions of people in India (Nair, 2001; Dasgupta, 2005). Information Technology is proliferating in rural India and in the poor communities of urban India, which should result in the availability of timely and accurate information to the BOP to assist with their entrepreneurial endeavors in transportation, infrastructure, media and entertainment, retailing, agriculture-procurement, distribution, marketing) and FMCG.

## 4. Conclusion and Implications

The study offers lessons for key constituencies, including researchers, MNCs, governments, and public policymakers.

The BOP Ecosystem topic has enormous research potential, as evidenced by the arguments advanced in this study. Based on the two industries profiled in this study, FMCG in China and Telecommunications in India, the breadth and depth of the BOP's role in these industries are apparent. The BOP's scope of involvement is substantial; it is a customer, supplier, employee, and entrepreneur in these two industries. The BOP's depth of involvement is also extensive, as evidenced by the diversity within the BOP and the interconnectedness of each industry to other sectors in the nation's economy. The growth in the field of customer and business analytics in recent years should provide researchers with the data and the tools to test portions of the BOP ecosystem in empirical settings. Empirical research can help build a knowledge base on the breadth and depth of the BOP's role in the economies of China and India.

The implications for MNCs and other organizations are significant. Given the complexity of China and India's economies, companies need to examine the BOP in the context of the host nations' macro and operating environments. The macro environmental challenges about political influence in business, legal regulations, health, safety and environmental concerns, demographic differences and income disparity, infrastructure constraints, and regional disputes that these two nations face with each other and with other neighboring countries need to be factored into any BOP strategy (Chikweche & Fletxher, 2012). The operating environment is equally complex and highly competitive, spanning multiple industries. Companies should treat the BOP not merely as a customer base or as cheap labor but as an equal partner (Reficco & Marquez, 2009) and forge strategic partnerships with complementary firms, suppliers and distributors, government, NGOs (Pitta, Guesalaga, & Marshall, 2008), and other key players to effectively address their needs.

Simanis and Duncan (2014) have proposed a multipronged approach to cater to the BOP segment. Their system has two main principles; First, companies need to rethink the business fundamentals by creating products and services primarily for the BOP, and second, companies need to reconfigure the primary functions of their value chains so that the product or service can effectively reach this segment. Companies need to include a third principle, given the fragmentation and diversity within the BOP (Rangan, Chu, & Petkoski, 2011; Thorat, Vanneman, Desai, & Dubey, 2017). The differences arise from urban versus rural BOP, gender, age, religion, ethnicity, income levels, hierarchical and paternalistic culture in Asian societies, and state-level laws and rules (Ahluwalia, 2002), which can impact government policies for the BOP segment and the strategies of companies competing in this space.

Since politics and business are highly interconnected in China and India, the ability to understand and navigate the political system becomes even more critical. MNCs and other companies are expected to play a positive and proactive role in nation-building activities. Infrastructure development, products and services to expand education and health care (Bhartnagar & Grover, 2013), and water and energy availability for the BOP segment will be viewed especially favorably by the communities (Bhoshale, 2016). As illustrated in this study, the ecosystem framework will help all constituencies understand their role in these government initiatives and, for companies, will provide the insight to forge deeper connections with the governments. Strategies crafted for the BOP should be viewed as a public service function and not solely as a profit-making endeavor. Policies can be crafted and effectively implemented in all industries at the national level only if the BOP is given a seat at the table. In India, this is evident from the success of the cooperatives in the agriculture sector (Birthal et al., 2017).

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