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# Strategy, Resource Orchestration and E-commerce Enabled Social Innovation in Rural China

Authors: Cui M, Pan SL, Newell S and Cui L.

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## Abstract:

E-commerce enabled social innovation is becoming increasingly important as a way of reducing poverty in developing countries and yet has not been studied much by the IS community. We utilize the concept of resource orchestration as a theoretical lens to develop a fit model that explicates how resources are orchestrated under the guidance of either an indigenous, exogenous or collaborative strategy to achieve e-commerce enabled social innovation. The findings show how resources are orchestrated through the following specific resource-focused actions (collaborating, linking and enriching), which are influenced by the types of strategies applied. Our study also identifies different resource portfolios that influence the type of e-commerce enabled social innovation that can be achieved. This research benefits both academics and practitioners by contributing to cumulative theoretical developments related to e-commerce enabled social innovation and the resource orchestration perspective, and by offering corresponding practical insights to achieve fit between strategy, resource orchestration and social innovation.

**Keywords:** Social innovation; E-commerce; Resource orchestration; Resource portfolio; Strategy

## 1. Introduction

Social innovation refers to innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social (Mulgan, 2006). Outcomes of social innovation range from improving the life conditions of disenfranchised individuals to meeting unmet basic needs for society as a whole (Austin et al., 2007), with ultimate goals including justice, fairness, welfare, environmental preservation, improved health, arts and culture, better education, and eradicating poverty (Phills et al., 2008; Pol and Ville, 2009). Some conventional examples of social innovations are neighborhood nurseries, self-build housing, community wind farms, collective insurance against sickness and poverty, etc. (Phills et al., 2008; Mulgan et al., 2007).

The development of information and communication technologies (ICTs) has recently helped to accelerate social innovation. ICT enables social innovation practitioners to better manage and transfer knowledge (Bolisani and Scarso, 1999), communicate and cooperate within and across organizations (Lee et al., 2014), introduce novel services (Xu et al., 2014), respond to crises and natural disasters (Leidner et al., 2009), implement government services (Chan et al., 2011) and anticipate environmental turbulence (Oeij et al., 2011). E-commerce, as a specific form of ICT, has an increasingly important role in prompting and supporting social innovations, as it offers a platform for communication and cooperation, human development, and the trading and delivery of goods and services, thus fostering economic growth and improving living conditions for those previously in poverty. E-commerce enabled social innovation, the particular focus of this paper, is a special type of e-commerce enabled innovation – a hybrid of social and

business innovation. A significant difference between e-commerce enabled social innovation and non-social innovation (or e-commerce enabled pure business innovation) lies in the fact that a more diverse range of players are involved in e-commerce enabled social innovation and these players (or actors) include those whose primary motivation is not only to improve their own prosperity, but also local prosperity – they are motivated by a social conscience or affects (Miller et al., 2012). Of course, even with conventional e-commerce (or simply economic development) there are players, like local governments, who act to improve the conditions for local businesses to prosper, but in e-commerce enabled social innovation, as we will see, there are also private individuals who are motivated by their spiritual-religious, guilt, compassion etc. to improve the lot of their community (Sandeep & Ravishankar, 2015). These individuals, who we can describe as social entrepreneurs, play a significant role in stimulating the conditions and organizing the processes that allow local businesses to thrive and so help to lift a region out of poverty (Sandeep & Ravishankar, 2015). Therefore, given the importance of social innovations (Cajaiba-Santana, 2014) and the emerging critical role of e-commerce, it is important to investigate the underlying mechanisms of e-commerce enabled social innovation.

Although social innovation is as old as mankind, academic studies on the subject have appeared only recently and have been scattered across different fields (Cajaiba-Santana, 2014). Existing studies on innovation have focused considerable attention on business innovations rather than social innovations (Mulgan, 2006; Mumford, 2002). Consequently, the absence of systematic studies holds back the practice of social innovation (Mulgan, 2006). Existing studies on social innovation recognize the role of resources in social innovations (Gerometta et al., 2005; Novy and Leubolt, 2005), and pay attention to social entrepreneurs, local governments, associations and other agents' resource-focused actions (Mulgan, 2006; Austin et al., 2006; Lettice and Parekh, 2010). Furthermore, social innovation requires corresponding strategic arrangements (Le Ber and Branzei, 2010) and/or contexts.

In line with these studies, we aim to develop a fit model that explicates how resources are orchestrated in different strategic contexts enacted by social entrepreneurs to achieve social innovations, i.e. the relationships between strategy, resource orchestration and social innovations. In doing this, we adopt a resource orchestration perspective (Sirmon et al., 2011), which is in line with the trend of emphasizing social entrepreneurs' resource-focused actions in social innovations. This perspective is developed based on resource-based theory (RBT<sup>1</sup>) but emphasizes that the static possession of resources does not necessarily guarantee competitive advantages; rather resources must be effectively orchestrated by agents to gain competitive advantages (Sirmon et al., 2011; Barney, et al., 2011). We use this theoretical lens to investigate the following research question: ***How do social entrepreneurs orchestrate resources to achieve e-commerce enabled social innovation?*** Social entrepreneurs play critical roles in e-commerce enabled social innovation. Resource orchestration here is undertaken by individuals or organizations who are motivated not just by the desire to fulfill their own commercial success, but who are also motivated to want to help others in their community achieve commercial success from e-commerce that will help to lift the community out of poverty. In other types of e-commerce development these social entrepreneurs are absent and so by focusing on the resource orchestration activities of social entrepreneurs we can examine what such socially motivated actors can do to fulfill their goals of helping to reduce poverty in a region.

Investigation of this question will not only be helpful for practitioners seeking to implement social innovations, especially given the limited availability of resources, but also theoretically, will contribute to the incremental development of social innovation theory and the resource orchestration perspective. We

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<sup>1</sup> Barney, J. B., Ketchen Jr, D. J. & Wright, M. (2011) suggest that, after a 20-year development period, RBT, built on the resource-based perspective, has reached maturity as a theory.

address our question by investigating the relationships between e-commerce strategy, resource orchestration by social entrepreneurs and social innovation in three Chinese villages implementing e-commerce enabled social innovations.

## **2. Theoretical Background**

One of the striking features of our society is the incessant quest for the creation, adoption and diffusion of innovations (Pol and Ville, 2009). Interestingly, the number of social innovations exceeds that of business innovations (Mulgan, 2006; Phillips, 2011; Cajasanta, 2014). As the importance of social innovations has been acknowledged (Cajasanta, 2014), an increasing number of researchers have stepped into this field. Nevertheless, on the one hand, relevant studies are still limited; and on the other hand, the extant works are scattered across a variety of fields, such as urban and regional development, public policy, management, social psychology and social entrepreneurship (Cajasanta, 2014). Studies in the field of information system (IS) are limited. Due to the limited understanding of mechanisms that can help to promote, adapt, and scale up social innovations (Mulgan, 2006) or direct innovators, philanthropists, foundations and governments (Mulgan et al., 2007; Lettice and Parekh, 2010; Cajasanta, 2014), a large number of social innovation projects fail (Mulgan, 2006; Westley and Antadze, 2010). Therefore, it is necessary to investigate the underlying mechanisms that can promote social innovations.

### ***2.1 Social innovation strategies***

Strategies play a key role in social innovations (Vitale, 2004). Social innovation strategies reflect social innovators' ideas about improvement, including their vision of how certain changes could add public value and detailed plans of how to realize innovations (Cels et al., 2012), so that they can help to direct a social innovation project (Mulgan et al., 2007). Although the importance of social innovation strategies is recognized, existing studies have only just started to investigate different types of social innovation strategy. Some studies classify strategies according to the degree of change. For example, Cipolla and Moura (2011) identify four types of strategy, including empower, multiplier, envisioner and connector. Other studies, investigate social innovation strategies from the perspective of resources, as they believe the most serious challenge of social innovation is resource collection (Cels et al., 2012). In line with the focus on resources, several studies divide strategies into three types, including indigenous, collaborative and exogenous strategies (Cajasanta, 2014; Alvord et al., 2004; Vitale, 2004). An indigenous strategy refers to the situation where social entrepreneurs or enterprises rely heavily on resources within organizations, communities, etc. where social innovations are implemented (Lettice and Parekh, 2010). A collaborative strategy is in line with Heiskala (2007)'s definition of social innovation – "...changes in the cultural, normative or regulative structures of the society which enhance its collective power resources and improve its social performance". Thus, this strategy requires collaboration between different social groups, and leverages both internal and external resources. In contrast with the indigenous strategy, the exogenous strategy mainly relies on external resources to achieve social innovation.

### ***2.2 Resources in social innovations***

Resources occupy the dominant position in social innovation research (Lettice and Parekh, 2010; Neumeier, 2012; Cajasanta, 2014), and are recognized as the basis for social innovations (Gerometta et al., 2005; Novy and Leubolt, 2005).

There are three types of salient resources in social innovations – physical (such as facilities, equipment, agricultural products), financial and human resources (Short et al., 2009; Austin et al., 2006; Pot and Vaas,

2008; Wheatley and Frieze, 2006; Mulgan et al., 2007). The availability of adequate resources, especially elite support (Austin et al., 2006) can strengthen the vitality of social innovations (Pot and Vaas, 2008). Meanwhile, other resources, such as relational resources (Murray et al., 2010) and political recognition and support (Mulgan, 2006), also play critical roles in social innovations, helping to attract external resources and build internal motivation (Murray et al., 2010), and encouraging the exchange of ideas and resources (Wheatley and Frieze, 2006). Therefore, in this context, RBT has become one of the most important theoretical foundations for studying social innovations (Short et al., 2009).

### ***2.3 Toward a resource orchestration view of social innovations***

Despite the recognition of the basic role of resources in social innovations, more recently the focus has been on the dynamic features of resources. Thus, in recent studies, social innovation is viewed as a complex process, which involves profound changes in resources (Westley and Antadze, 2010), and a variety of resource reconfiguration actions of social entrepreneurs (Sandeep & Ravishankar, 2015; Cajasanta, 2014; Mulgan, 2006). Social innovations are viewed as stemming from a new combination of ideas that had previously been separate (Mulgan, 2006), and social innovations are achieved through reconfiguration of collective, intentional and goal-oriented actions of social entrepreneurs (Cajasanta, 2014). These actions consist of disembedding/embedding, asset-building, combination, collaboration, coordination and marshalling. Disembedding and embedding social cultural element helps social entrepreneurs get a better sense of the most pressing needs of communities where social innovation happens (Sandeep & Ravishankar, 2015). Asset-building is recognized as the fundamental characteristic of social innovations (Adam and Hess, 2008). Social innovations are usually new combinations of existing elements (Mulgan et al., 2007). Collaboration enables organizations to engage in collaborative learning to build on each other's expertise (Montgomery et al., 2012). Coordination between different actors (Neumeier, 2012) and scarce resources (Chell, 2007) are also important for success. And taking a good idea to scale requires the ability to marshal resources of social entrepreneurs (Mulgan, 2006). Therefore, social innovations involve many resource flow changes (Westley and Antadze, 2010), which result from resource-focused actions of social entrepreneurs.

The shift from studying static resource elements to resource-focused actions is in line with the development of the resource orchestration perspective, which is derived from RBT (Barney, et al., 2011). RBT indicates that resources with valuable, rare, inimitable and non-substitutable features have the potential to render competitive advantage for an organization (Barney, 1991). However, the static nature of RBT has been increasingly challenged with authors pointing out that strategic resources do not appear by magic (Chadwick et al., 2015) and that firms do not inherently know how to leverage resources to gain competitive advantages (Ndofor et al., 2011); therefore, managers must typically take an active part in their development (Chadwick et al., 2015). Meanwhile, research has found that even possessing similar resources, firms are different in their performance; the traditional RBT is unable to explain this phenomenon (Sirmon et al., 2011; Helfat et al., 2007). Therefore, some scholars have proposed the competitive dynamics perspective, which investigates how resources affect performance by studying the role of resource-focused actions (Hunt & Morgan, 1996; Ndofor et al., 2011; Chan et al., 2011).

Studies based on this perspective have shown that managers' actions bridge resources and performance (Sirmon et al., 2007). By combining studies of RBT and competitive dynamics, some studies suggest both resources and actions have critical roles in gaining competitive advantage (Hunt & Morgan, 1996; Kozlenkova et al., 2014; Tan et al., 2014), and that the two streams of research complement each other as they emphasize different aspects (Hanse et al., 2004; Chen et al., 2007; Sirmon et al., 2008). In line with

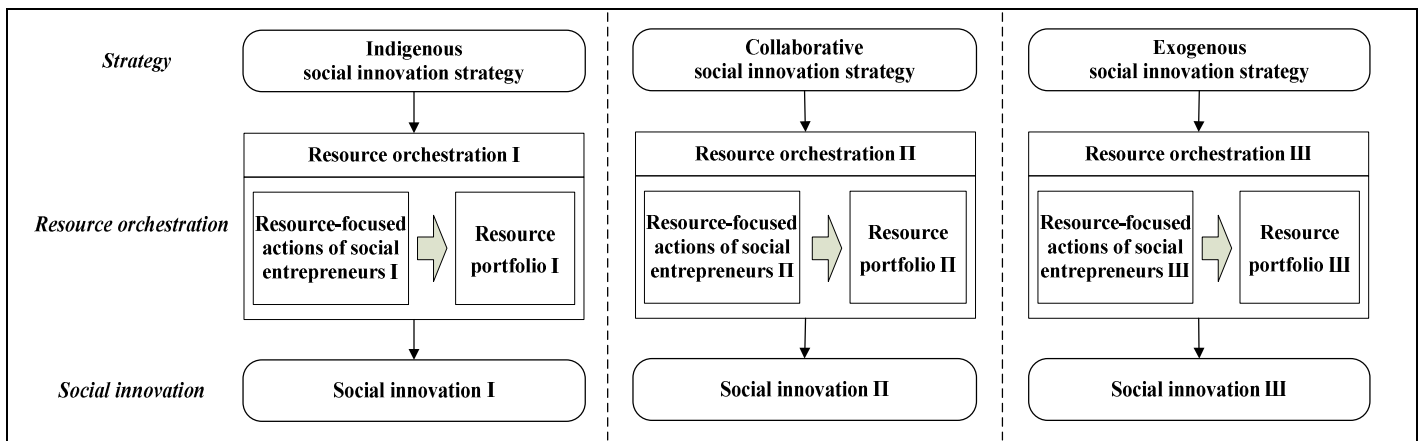
this idea, Hunt and Morgan (1995, 1996) first proposed the resource-advantage theory to highlight the importance of the effective use of resources, such as better managing existing resources, obtaining the same or equivalent value-producing resource, and/or seeking a new resource that is less costly or produces superior value. Later, Sirmon et al. (2011) focus on both resources and managers' resource-focused actions, combine the asset orchestration concept (Helfat et al., 2007) and the resource management concept (Sirmon et al., 2007), and develop the concept of "resource orchestration", which refers to how managers achieve resource-based competitive advantage by orchestrating resources.

These scholars have further proposed a framework that describes three resource orchestration actions – structuring, bundling and leveraging. Structuring refers to the structuring of a resource portfolio, including acquiring, accumulating and divesting; bundling is the process of using resources to build capabilities, i.e., stabilizing, enriching and pioneering; and leveraging emphasizes leveraging capabilities in the marketplace to create value, i.e., mobilizing, coordinating and deploying (Sirmon et al., 2011). These resource-focused actions will finally change resource portfolios of organizations (Sirmon et al., 2011; Cui & Pan, 2015). In line with the idea proposed by Sirmon et al. (2011), several studies pay attention to the resource orchestration process to reveal how an orchestrator orchestrates resources to reach a certain goal. For example, Chan et al. (2011), in their study on e-government system implementation, reveal the resource portfolio changes in the process of planning, developing and operating. Cui and Pan (2015), in their study on the transformation of a traditional manufacturer to an online-to-offline firm, reveal the evolution of resource-focused actions and resource configurations in the phase of the introduction of a call center, the introduction of an online sales channel and the integration of online and offline networks.

#### ***2.4 Strategies, resource orchestration and social innovations***

Resource orchestration indicates that it is necessary to act on resources rather than merely foster valuable, rare, inimitable and non-substitutable resources. Resource orchestration is also conditional and requires co-alignment of multiple factors (Chirico et al., 2011), among which strategy occupies a critical position. Thus, it is suggested that strategies have significant impact on social innovations (Mulgan et al., 2007) and resource-focused actions (Haugh, 2006), and that to gain competitive advantage, resource orchestration must synchronize with organizational strategies (Sirmon and Hitt, 2009; Wright et al., 2012; Hitt, 2011).

The above review of the literature on social innovation strategies and resources and resource orchestration in social innovations suggests that strategies, resources and resource-focused actions of social entrepreneurs are vital for social innovations; with resource orchestration bridging social innovation strategies and social innovations (Figure 1). Yet the literature has not specified how social entrepreneurs orchestrate resources to achieve social innovation, including processes for achieving social innovations (Wright and Stigliani, 2012) and the specific synchronized resource-focused actions of social entrepreneurs (Trahms et al. 2013). To address the research question of "how social entrepreneurs orchestrate resources to achieve social innovation", we first divided social innovation into three types – indigenous, collaborative and exogenous – according to Cajaiba-Santana (2014)'s study. This categorization takes into account of communities' internal and external resource situation and is closely related to RBT and the resource orchestration perspective; this thus provided the theoretical lens for this study. And by selecting case samples according to the categories and using a multi-case study approach, this paper reports on research that investigated three e-commerce villages in China to reveal the relationships between strategy, resource orchestration and social innovation.



**Figure 1** The relationship between strategy, resources, resource-focused actions and social innovation

### 3. Research Methodology

The multi-case research methodology is particularly appropriate for this study for several reasons. First, this paper aims to answer the “How” question, i.e. “*How do social entrepreneurs orchestrate resources to achieve e-commerce enabled social innovation?*”, and the case study method is particularly suitable for answering the “How” question (Eisenhardt and Graebner, 2007), as this method allows researchers to understand the nature and complexity of the processes taking place (Benbasat, et al., 1987). Second, since there is limited knowledge of social innovation (Cajaiba-Santana, 2014) and the resource orchestration perspective (Barney et al., 2011), we need to develop theories to explain social innovation practices. Case study methodology is effective to build new theories (Eisenhardt, 1989). Third, case-based research allows researchers to investigate the phenomenon of interest, embedded in specific contexts (Eisenhardt and Graebner, 2007). This is important because social innovation practices, such as resource-focused actions, and contexts, such as strategies and the underlying reasons, are difficult to separate. Thus, a case study approach is suitable for this study. Furthermore, as we aim to reveal how social entrepreneurs orchestrate resources and social innovation strategies vary, it is necessary to examine social innovation practices under the three types of strategies – indigenous, collaborative and exogenous, and thus the multi-case study method is essential.

Given the research question, the social innovation cases selected were subject to two conditions. First, the social innovation needed to have achieved success, allowing us to investigate how social entrepreneurs orchestrated resources to achieve social innovation. The selected case samples include Qingyanliu village (QYL), Suichang County (SC) and Bei Mountain Village (BM), which are all well-known villages due to their successful social innovations. Table 1 explains the social innovations in each of these three villages. Second, the three cases needed to each exhibit a different strategy towards social innovation practices, allowing us to investigate the relationship between resource orchestration and social innovation conditioned by different strategies. The three villages applied indigenous, exogenous and collaborative strategies respectively, and thus cover the three strategies proposed by Cajaiba-Santana (2014).

<b>Table 1</b> The social innovations in QYL, SC and BM		
<b>Villages</b>	<b>Motivations</b>	<b>Social innovation practices and impacts</b>
QYL	For the social entrepreneur, Wengao Liu, to increase the rental of the many empty apartments in the village and so revitalize the village.	Attracted and cultivated online shops in the village by relying on the nearby Yiwu International Trade City, the world’s largest small commodity wholesale market. QYL was named as the first Taobao village in China. In 2010, the number of its villagers had increased to

		8,000 from 1,486 in 2005. The turnover of QYL's 2000 online shops achieved 330 million U.S. dollars in 2013.
SC	For the social entrepreneur to return to his hometown and sell the abundant local agricultural products of villagers, who up until this time had difficulty selling them due to limited traffic opportunities and poor information.	SC connected suppliers of agricultural products and online shops in the village, and also helped to process and package agricultural products to increase the added value. SC opened the first county-level online shop operating on Tmall – the largest B2C platform in China. Online sales of agricultural produce achieved 150 million RMB (24 million U.S. dollars) in 2012, and SC was awarded as “the best e-commerce county”.
BM	For the social entrepreneur to return to his village and work with relatives and friends and help this village.	BM introduced external products to the village and showed how to sell these online. BM is one of the 20 Taobao villages in China. The sales of the online stores in BM exceeded 100 million RMB (16 million U. S. dollars)

### 3.1 Data collection

Data collection was conducted in two steps. Research access was first negotiated. To determine the appropriate direction of data collection and facilitate on-site interviews, we first collected secondary data from a variety of sources. This was not difficult because QYL is the first e-commerce village in China, SC is famous for the first county-level online shop operating on Tmall, and BM is widely known for the Beishan Wolf brand. Thus, a large amount of relevant data was available across websites, magazines and newspapers (refer to Appendix A). The information gleaned from these sources served to enhance our sensitivity towards the unique aspects and pertinent issues of each case, and provided us with a basis for formulating interview questions during our subsequent site visit (Darke et al., 1998). Meanwhile, we selected and confirmed the theoretical lens – resource orchestration – we would employ in the study and read through both the classic and current literature. Combining the secondary data and the relevant literature formed an initial guide to design the interview questions. Meanwhile, we also paid attention to maintaining a considerable degree of openness to allow the emergence of new constructs and the development of the theoretical lens (Walsham, 2006). Furthermore, the collection of the secondary data and the adoption of the resource orchestration perspective enabled us to construct a preliminary theoretical framing (Pan and Tan, 2011), which we used as a guide for subsequent interviews and case analysis.

On-site data collection was conducted in the three villages. We spent on average two to three days in each village, and interviewed e-commerce practitioners and entrepreneurs, industry associations and government staff (refer to Appendix A). Both formal and informal interviews were used. We interviewed 54 informants, with interview questions tailored to each informant. With respect to formal interviews, we invited informants to interview rooms and carried out individual or group interviews. Each formal interview lasted approximately 60-90 minutes. We also asked the interviewees to introduce other appropriate interviewees to us, which is in line with the snowball sampling method, often used by case-based researchers as external interviewers can have difficulty in identifying the right informants (Biernacki and Waldorf, 1981). With respect to the informal interview, we visited e-commerce practitioners' offices, factories and warehouses. Each informal interview lasted approximately 20-30 minutes. Both the formal and informal interviews started with open questions to get acquainted with the entrepreneurial experiences, business development, changes in life conditions, or relevant regulations and government supports. This was followed with semi-structured questions derived after collecting and analyzing the secondary data, complemented with questions emerging from interviews (See Appendix B for a sample). All the interviews were digitally recorded and then transcribed. Combined, the interviews formed a



document of more than 200 pages. While the interviews formed our primary source of data, they were also supplemented by over 100 photos and 30 pages of observation notes, made during the field research. The transcript, photos and notes, with the secondary data collected before, during and after the case analysis were imported to a database, established to manage and analyze qualitative data.

### **3.2 Data analysis**

Data analysis was performed concurrently with data collection to take advantage of the flexibility that the case study research methodology affords (Eisenhardt, 1989). During the data analysis process, we deployed the temporal bracketing strategy, the visual mapping strategy, the narrative strategy and the continuous comparison strategy (Eisenhardt, 1989). First, data collected from the interviews as well as the secondary data was classified according to emerging and literature-generated themes. To craft the analysis, we continued to collect data through “informal and conversational” interviews (Gregory and Keil, 2014). Meanwhile, the data was processed in line with grounded theory, including open coding, selective coding, process analysis and theoretical coding (Bryant and Charmaz, 2007; Gregory et al., 2013). Second, to facilitate data management and deep analysis, we drew three visual maps for the three cases and integrated the data into three narrative cases. Third, the first author proposed the initial framing, and the other three authors played the role of devil’s advocates, constantly questioning the analysis, which prompted detailed discussions over the validity and credibility to the case analysis that helped to ensure alignment between theory, data and analysis (Pan and Tan, 2011; Gregory and Keil, 2014). By applying the continuous comparison strategy, the visual maps and the narratives were iteratively compared with the theoretical lens and the existing literatures to improve the emerging model until saturation was achieved, when no more data could be added to the cases and the model was no longer being improved (Eisenhardt, 1989).

To ensure credibility and validity, during the data collection and analysis phase, we primarily utilized the triangulation strategy, the informant and group check-up strategy and the case database strategy. The data used in the three narratives and analysis was all triangulated by at least two sources and agreed by at least two interviewers. After finishing the narratives and the case analysis, we sent them to informants and peers to check the description and the model until achieving an agreement.

## **4. Case Description**

### **4.1 Social innovation in QYL**

QYL, a village covering 280,000 square kilometers and located in Yiwu City, Zhejiang Province, had been involved in e-commerce and sold small commodities since 2005. In 2010, the number of its villagers had increased to 8,000 from 1,486 in 2005. The number of “golden crown”<sup>2</sup> level online stores in QYL once accounted for 1/10 of the total number of “golden crown” level online stores on Taobao, the largest e-commerce platform in China and a subsidiary of Alibaba.com. The turnover of QYL’s 2000 online shops achieved 330 million U.S. dollars in 2013.

In 2005, there were a large number of empty apartments in QYL as young people had left the village and moved to cities where there were more jobs. Villagers annual per capita net income was less than 10,000 RMB (1,613 U.S. dollars). To rent empty apartments, revitalize the village and improve villagers’ income, Mr. Wengao Liu, a villager who acted as a social entrepreneur, proposed renting the empty rooms to e-commerce practitioners, relying on its geographic advantages – only 6.7 kilometers to Yiwu International Trade City, which was evaluated as the world’s largest small commodity wholesale market. As Mr. Liu

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<sup>2</sup> Taobao classified online stores into four levels – red heart, blue diamond, blue crown and golden crown according to consumers’ comments.

recalled,

Our village had lost its vitality at that time. To make it recover, I proposed an idea of developing Taobao village. On the one hand, those empty apartments could be rented, and villagers could earn rent. And on the other hand, aging people and children need company of young people. The launch of the Taobao village initiative could help our village to revitalize.

Yiwu has a business area reaching four million square kilometers and more than 70,000 shops and 200,000 people (statistics provided by the United Nations, the World Bank and Morgan Stanley). More than 1.7 million types of products are sold in Yiwu, including art work, accessories, metal fittings, daily goods, electronic products, home appliance and toys, and prices are extremely low. It is estimated that more than 75 per cent of products sold online directly or indirectly come from Yiwu. Therefore, the proximity of QYL to this Trade City potentially endows an e-commerce practitioner in QYL with many advantages. This attracted a large number of people to QYL who were devoted to e-commerce. As an e-commerce practitioner recalled:

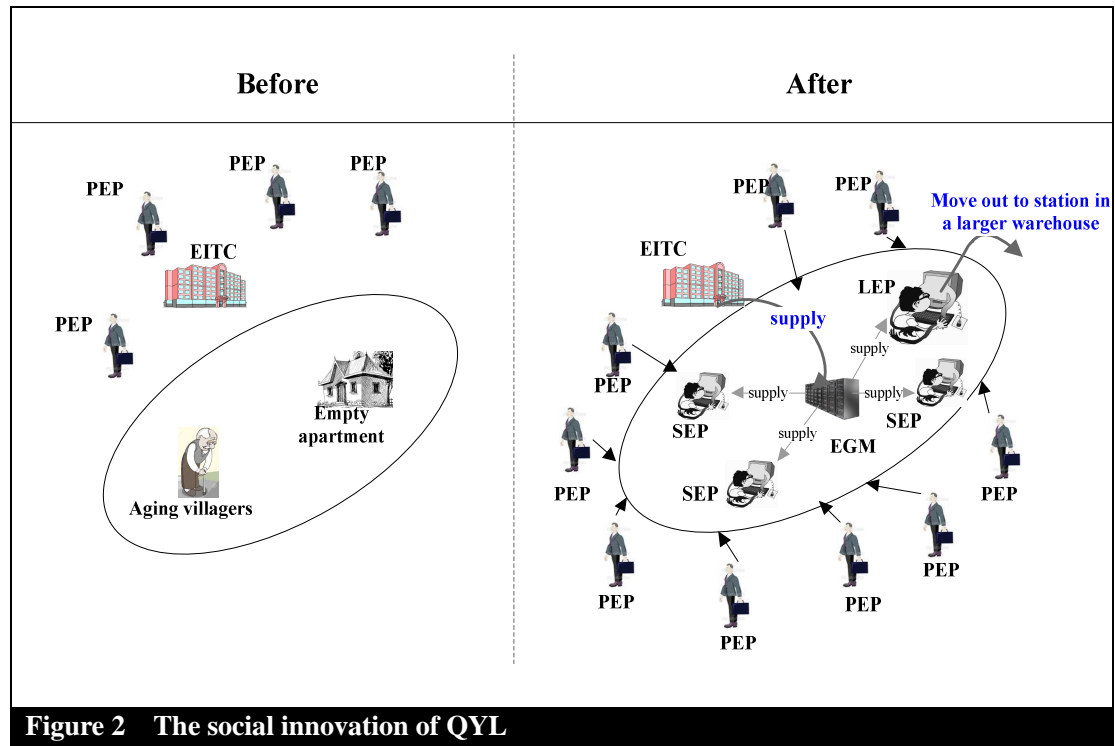
At that time, QYL was an empty village. Only elderly people lived inside...His (Mr. Liu) decision is a double gain. On the one hand, it addressed the villagers' concern – to rent the empty apartments; and more importantly, on the other hand, the introduction and leverage of external resources made the village come back to life and also pursue further development.

As increasing number of people flocked to QYL, to facilitate business development, Mr. Liu and other social entrepreneurs established an e-commerce association. Before the establishment of the association, business owners individually purchased products from the Trade City. Since quantities were small, purchase prices were relatively high, and e-commerce practitioners gained no price advantage compared to other online stores located in other areas. To lower purchase prices, the association arranged for online stores that had the largest purchase volume to take charge of joint procurement, photography, art design, and product description, and share these services with other online stores. However, as more new comers with limited capital resources moved to QYL, the collective purchase strategy could not meet their needs. To better support the new comers, the association launched an e-commerce goods market, which enabled new comers to open online shops without funding pressures. By renting an apartment in QYL and purchasing a laptop, individuals were qualified to run online shops. Shopkeepers were able to sell the products online, purchasing the products only after they had made the sale. In addition to the advantages of supply, an advanced logistics system further endowed e-commerce practitioners in QYL with a competitive advantage. More than 30 logistics companies came to operate in QYL. Given the large quantity of shipments – 80,000 daily – the association was able to negotiate with the logistics companies to lower freight. To further facilitate the operation of the online stores in QYL, the association organized various free training and communication meetings. The prosperous development of e-commerce in QYL further attracted professional photo studio, art designing and customer service agencies to move to the village, and formed a complete e-commerce industrial chain. Relying on the supermarket and QYL's support, dozens of practitioners succeeded in acquiring wealth and improved their living conditions. As a household item seller described:

I started my business in 2007, when I was alone. The first-year turnover reached 100,000 RMB (16, 000 U.S. Dollars). And it reached two million RMB (333, 000 U.S. Dollars) in the second year. Then I bought my first car. In 2009 and 2010, the turnovers were five million (833, 000 U.S. Dollars) and 20 million (3.3 million U.S. Dollars) respectively. I had to move out from QYL as

the warehouse was too small for my business...There were a dozen of people like me (had to move out from QYL due to the limited scale of warehouses) and new comers flood into QYL and pursue their e-commerce dreams.

The social innovation of QYL is demonstrated in Figure 2.



**Figure 2 The social innovation of QYL**

Note: PEP – potential e-commerce practitioner; SEP – small-scale e-commerce practitioner; LEP – large-scale e-commerce practitioner; YITC – Yiwu International Trade City

#### 4.2 Social innovation in SC

SC, a mountainous county, located in Lishui City, Zhejiang Province, had engaged in e-commerce since 2005. Before the implementation of social innovation, villagers annual per capita net income was less than 2,500 RMB (400 U.S. dollars), and SC was one of the 26 less developed counties of Zhejiang Province. The social innovation greatly improved living standards of the local population. Online sales of agricultural produce achieved 150 million RMB (24 million U.S. dollars) in 2012, and SC was awarded as “the best e-commerce county”. And in 2013, SC opened the first county-level local product shop on Taobao.

The geographic environment was quite suitable for agriculture cultivation, and the well-known local produce included bamboo, chrysanthemum rice, and sweet potato. However, it was difficult for local villagers to sell the local specialties before the launch of e-commerce due to the remote location and poor information channels. Therefore, Dongming Pan, who had worked in Shanghai and wanted to come back to his hometown to be close to his family and help increase prosperity in the village, led some villagers to deploy e-businesses to open markets. As Mr. Pan recalled:

I had been working in Shanghai after graduating from college. Although I had become a vice president of a firm with more than two thousand employees through my efforts, I always dreamed of coming back to my hometown and accompany my family and friends... Once, I found that there were plenty of agricultural produce in my village, however, due to traffic and technology barriers, it was difficult for peasants to sell those products, and they lived in poverty.

This strengthen my resolve... I determined to come back to lead villages to develop e-commerce and lead them out of poverty.

In 2010, through the efforts of Mr. Pan, the Suichang Online Store Association (SCOSA), a non-profit organization committed to bridging suppliers and online stores to realize resource and information sharing, launched by Suichang Mission County, County Business Council, County Trade Bureau, and Bi Yan Charcoal Company et al., was established to promote the development of e-commerce countywide. SCOSA collected raw agricultural produce from peasants, rural cooperatives and local factories, and shared these resources with local e-commerce practitioners. The platform effectively solved the difficulties of selling local specialties. By the end of June 2013, members of SCOSA reached 1,473, consisting of 164 suppliers, 1,473 online stores and 41 service agents, e.g. logistics, operators, photography and website design service companies. As three informants commented,

I've started my e-business since 2010. At that time, many villagers around me have gained his first pot of gold and got the living condition improved. Therefore, I decided to follow them and meanwhile I found other villagers did the same thing...Suddenly, people in the village became prosperous.

Before engaging in e-business, I had no formal occupation. In 2011, I joined SCOSA and began to investigate products with huge demands. Finally, I chose chrysanthemum rice, and registered a brand – Youcai. In the first year, my company sold 3,500 pound chrysanthemum rice. The number exceeded sales of those who operated offline for many years. In the second year, the sales of my company reached three tons. My own produce could not meet the demands, so I acquired produces from other villagers.

I'm the general manager of Lvdu bamboo shoot cooperatives. The cooperatives were established in 2006. At that time, our products were mainly exported to foreign countries and the price was quite low due to the disadvantageous position compared with foreign companies and trading companies. The financial crisis in 2008 resulted in our order sharply dropped. To reverse the situation, we tried to sell our products domestically through online stores. In 2011, we joined SCOSA and the sales in that year reached five million RMB (800 thousand U.S. dollars).

In 2011, SCOSA established a company – Suichang E-commerce Ltd. (SCEC) to provide value-added services to suppliers and sellers. SCEC created its own brand – Maitelong (MTL), and established MTL supermarket. To facilitate the development of e-commerce among peasants, given they lacked photograph and web design skills, SCEC took charge of product photography, web design and product shipping. Therefore, peasants, by joining SCEC, could focus merely on product selling. After selling products, they paid SCEC, who would deal with the subsequent logistics to consumers. As a villager described:

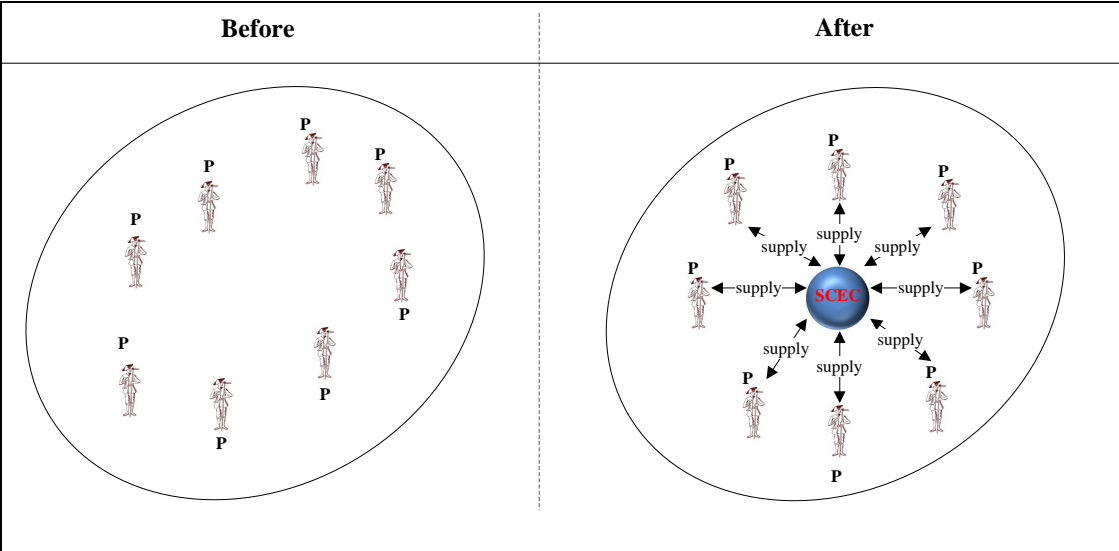
At first, I only sold original agricultural produce and the price was relatively low because the produce had no brand. After joining SCEC, I sold products of MTL brand, which is recognized by consumers, and the price is higher than the produce I sold before. Therefore, I can earn more.

In addition to SCOSA and SCEC, the local government also had a critical role in the development of e-commerce in SC. The government committed a large number of financial investments in infrastructure construction to improve the transportation and internet access conditions. More

importantly, the local government emphasized food safety, which was a main concern of Chinese consumers, by investing three million RMB (480,000 U.S. dollars) to establish an agricultural product testing center. Meanwhile, to ensure quality, the local government developed local specialty manufacturing and processing standards and a product source tracing system, took responsibility for product sampling and provided quality guarantees to consumers of Taobao. In 2013, based on the joint efforts of the government, SCOSA and Taobao, the local product shop of SC was established, which facilitated the overall marketing of local specialty products from SC. As an employee of SCOSA recalled:

Green tea of SC is high quality. However, consumers tell tea quality by place of origin... After the launch of the local product shop of SC, we promote our local tea and create our own brand – Longgu Beauty, which now is a well-known brand among tea lovers.

The social innovation of SC is demonstrated in Figure 3.



**Figure 3 The social innovation of SC**

Note: P – Peasant farmer

**4.3 Social innovation in BM**

BM, located in Jinyun County, Lishui City, and Zhejiang Province, was involved in e-commerce and had sold outdoor sporting goods, such as mountaineering jackets, tents, sleeping bags and alpenstock since 2006. Before the implementation of the e-commerce enabled social innovation, BM was the poorest county in Zhejiang Province, and villagers annual per capita income was less than 2,500 RMB (400 U.S. dollars). In contrast, to date, BM had been recognized as one of the Top 14 e-commerce villages in China. A quarter of outdoor sports products sold on Taobao come from BM. In 2013, the sales of Beishan Wolf, the largest outdoor sport product manufacturer and seller in BM, achieved 50 million RMB (eight million U.S. dollars), and the sales of the online stores in BM exceeded 100 million RMB (16 million U. S. dollars). The number of online stores located in BM exceeded 200, among which 27 were ranked as crown-level stores.

BM was located in a mountainous area and villagers traditionally made their living by feeding silkworms. However, earnings were quite limited. To improve living conditions, most young people chose to sell sesame seed cakes in Jinyun County and other adjacent areas. Therefore, BM was also called “sesame seed cake village”.

In 2006, Zhenhong Lv, a pioneer in BM started in e-commerce. Like other young people in BM, Mr. Lv once engaged in various businesses, including operating a manufacturing facility, a book store, and a sesame seed cake chain store. Before engaging in e-business, Mr. Lv sold accessories in Yiwu City. He learnt that one of his friends sold outdoor sports products online and was optimistic about this business. With start-up capital of four thousand RMB (645 U.S. dollars), a desktop, and help from his wife and brother, he started his own business. To save costs, photography, design and other relevant issues were all undertaken by his family. However, the sales of the first year were just equal to the rent. Therefore, he decided to move back to BM to operate the e-business. As Mr. Lv recalled,

Rent was a critical factor (to drive me to come back to my hometown). What's more, my brothers and wife and I are all desired to live in Beishan Village to accompany our family.

In the following two years, his business was booming. Meanwhile, Mr. Lv also helped 15 other villagers to open their own online stores on Taobao. He explained,

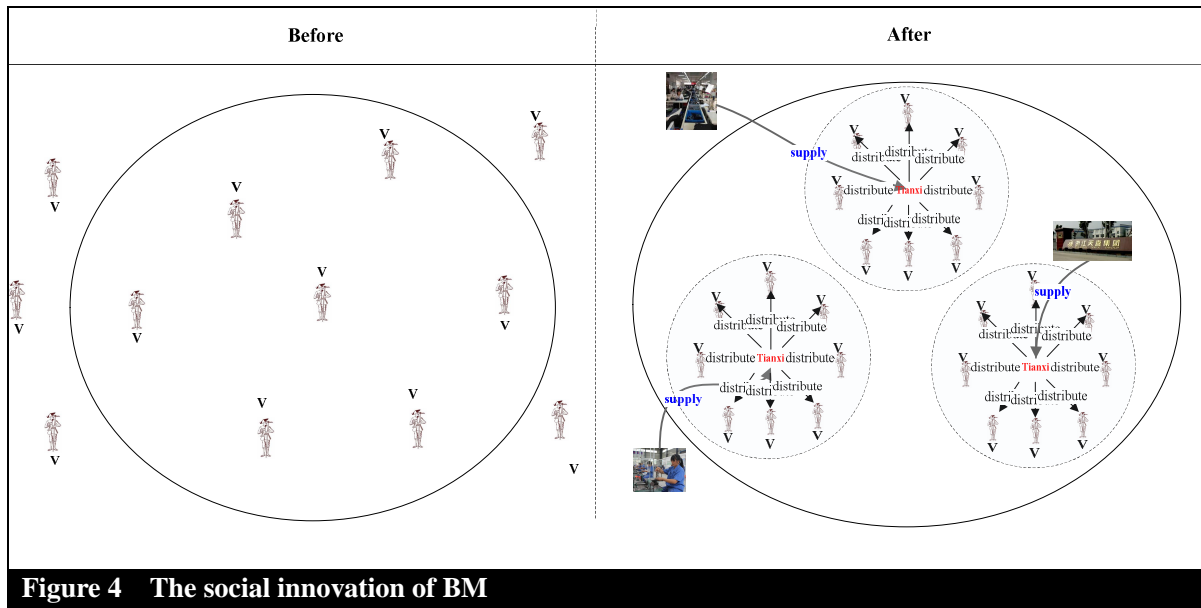
I had engaged in many businesses and understand the pain of being forced to leave home – homesick and be discriminated. Many of my fellow countrymen all lived the same lives... Since I have the ability to help them, I decided to lead them to engage in e-commerce... I purchased outdoor sporting goods from Yiwu and distributed the products to other villagers. The combination of external products and internal human resources lay the foundation for us to form a cluster advantage.

The quality of the products purchased from Yiwu could not be assured and soon negative ratings began to increase with increasing sales volume. Meanwhile, the purchased products were no different from many other products sold online, leading to price wars. To solve these problems, Mr. Lv decided to create his own brand – Beishan Wolf. He found an original equipment manufacturer (OEM) to produce outdoor sports products that were labeled as Beishan Wolf brand. The high quality, reasonable price and innovative products enabled Beishan Wolf to become a well-known brand. Sales of some products of Beishan Wolf, such as sleeping bags, alpenstock and inflatable cushions, occupied leading positions on Taobao. With the success of his own business, Mr. Lv committed more to helping other villagers by selling Beishan Wolf products online. He surrendered 20 per cent gross profit to the villagers and to relieve the burden of supply, capital and storage, the villagers were allowed to sell products online first and then purchase from Beishan Wolf. Mr. Lv also invited photograph, art design and other supplemental agencies to BM to assist villagers in conducting e-commerce business. In 2010, Beishan Wolf cooperated with Taobao College – the e-commerce major and also an e-commerce pioneer park run by Adult Literacy and Technical Schools of Hu County. The cooperative mode was the same as the relationship between Beishan Wolf and the villagers. Gradually, villagers' and trainees of Taobao College's e-commerce business matured and were no longer limited to selling Beishan Wolf's products but also outdoor sporting products of other brands as well as other products. As a pioneer said:

I'm involved in auto accessories e-business since 2010. At that time, the e-commerce in our village was not limited to outdoor sporting products. Some other pioneers began to sell auto accessory products online. Therefore, I purchased auto accessory products from one of my former classmates. Through these two-year-efforts, I gradually built my own sales team, created my own brand, and now run two online shops – one is a C2C shop in Taobao, and the other is a B2C shop on Tmall... I also adopt the distributor model of reselling my products to other

villagers to help them to gain wealth.

The social innovation of BM is demonstrated in Figure 4.



Note: V – Villager

## 5. Case Analysis

The purpose of this study is to generate insights that advance both research and practice in the field of e-commerce enabled social innovation. The resource orchestration perspective was applied as a theoretical lens to analyze the case of three Chinese rural villages in which villagers' living standards were improved under the guidance of the social entrepreneurs who desired to lead their countrymen out of poverty by implementing e-commerce enabled social innovation. Through the identification and analysis of the primary constructs – social innovation strategy, resources, resource-focused actions of social entrepreneurs and social innovation, this study examines the relationships between social innovation strategy, resources, resource orchestration and social innovation type, as shown in Figure 5.

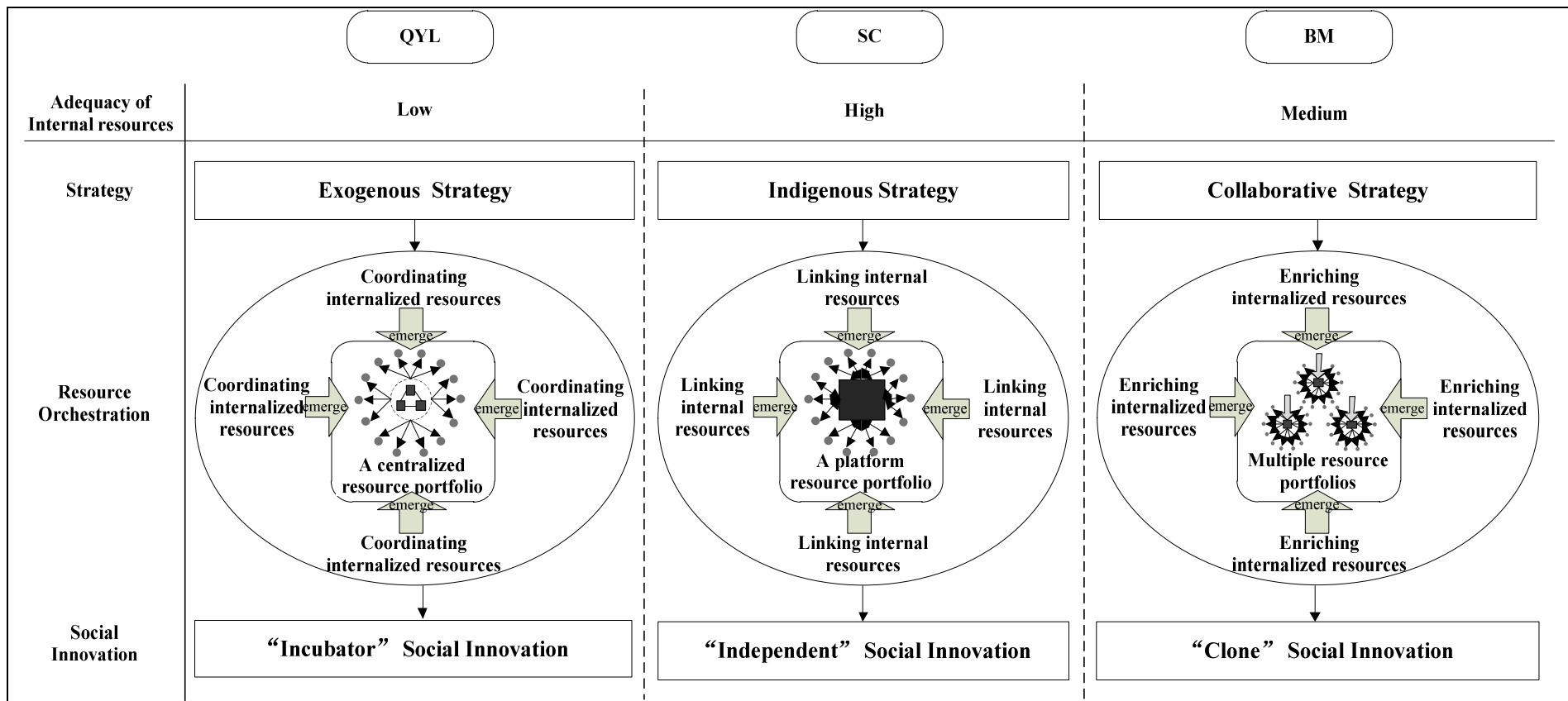


Figure 5 The relationship of the strategies, resource orchestration and social innovation types



### **5.1 The relationship between social innovation strategy and resource orchestration**

Existing studies suggest that to achieve a competitive advantage, there must be a fit between resource orchestration and the strategy implemented (Sirmon and Hitt, 2009; Wright, Clarysse and Mosey, 2012; Hitt, 2011). Accordingly, the case analysis of QYL, SC and BM revealed that: (1) the exogenous social innovation strategy fitted with the resource-focused action of coordinating internalized resources, and thus formed a centralized resource portfolio; (2) the indigenous strategy fitted with the resource-focused action of linking internal resources, and thus formed a platform resource portfolio; and (3) the collaborative strategy fitted with the resource-focused action of enriching internalized resources, and thus formed multiple resource portfolios. The social innovation strategies aimed to take advantage of the available resources to develop e-commerce in the rural villages, while resource-based actions of social entrepreneurs were the means to effectively utilize these resource elements to address weaknesses and to consolidate the strategy. This interactive activity ultimately resulted in the formation of a resource portfolio.

#### *(1) QYL: Exogenous strategy*

In the QYL case, the agents – the social entrepreneur and the association – followed an exogenous social innovation strategy, which relies on external resources to achieve social innovation (Cajaiba-Santana, 2014). The resources QYL leveraged in its e-commerce social innovation consisted of external products from Yiwu International Trade City with price and logistic advantages. However, there were also disadvantages in relation to resources for developing e-commerce that QYL had to address. As Mr. Liu recalled,

We had nothing at that time, except empty apartments...the only advantage we owned was that QYL was adjacent to Yiwu International Trade City. To develop e-commerce in the village, we must rely on this advantage to coordinate resources we needed.

Therefore, the social entrepreneurs acted on the resources that were available by coordinating internalized resources. First, QYL internalized external resources. By relying on the advantageous product resources, QYL attracted potential e-commerce practitioners to the village and these actors, in turn, purchased products from the Trade City. By attracting and internalizing these external resources, QYL addressed its weakness. Second, the social entrepreneurs coordinated the product and human resources by inventing the collective purchase mode and creating an e-commerce goods market, and they established the association and provided a communication platform for online sellers. The market and platform supplied e-commerce practitioners with everything they needed to conduct business. This coordination action allowed QYL to gain economies of scale and competitive advantage over other areas selling the same products online, and thus the e-commerce enabled social innovation in QYL was achieved. In short, the exogenous strategy allowed QYL to develop e-commerce enabled social innovation by relying on the advantageous external product resources, and to gain a competitive advantage, the social entrepreneurs addressed the weakness associated with lacking necessary resources by coordinating internalized resources. As Mr. Fan, the section chief of the e-commerce office of Yiwu City, summarized,

By relying on the geographic advantage, QYL attracts thousands of practitioners to the village. And the key to its success, in my opinion, lies in the product platform launched by the association. It provides cheap products to online stores.

As a result of the exogenous strategy and the corresponding resource-focused actions of coordinating internalized resources, the resource portfolio developed characteristics of a centralized resource network, in which large organizations capable of sharing resources acted as the center, while small organizations acted as the peripheral nodes to receive resources. As described by Mr. Liu,

After the establishment of the goods market, QYL improves the e-commerce business structure: large-scale online stores located in the center provide cheap products by relying on economies of scale, while small and new online stores depend on the large online stores.

*(2) SC: Indigenous strategy*

In the SC case, the agents – the association and the local government – followed an indigenous strategy, which relies on resources within organizations, communities, etc. where social innovations are implemented (Cajaiba-Santana, 2014; Lettice and Parekh, 2010). The abundant internal resources available within the County, including agricultural resources and human resources, allow SC to follow an indigenous strategy. To gain a competitive advantage, while relying on the advantageous resources, SC had to address its weakness that resources were scattered. As Mr. Pan, the president of SCOSA, recalled,

Before I came back to SC, I visited the county several times and found that it owned required resources to develop e-commerce. However, these resources were scattered. Therefore, it is necessary to establish SCOSA as a sponsor to plan for the e-commerce development in SC.

Therefore, in this case, the social entrepreneurs linked internal resources during the process. First, SCOSA was established and recruited members from local villages to link the scattered agricultural products with SCOSA. By linking the resources together, SC was able to gain economies of scale. Second, SCOSA and SCEC promoted their linkage with the local government. This linkage action, to a large extent, facilitated the achievement of e-commerce enabled social innovation in SC, as the local government played a critical role in adding value to primary agricultural products. SCEC created the MTL brand, processed the raw materials, e.g. processing bamboo into bamboo charcoal, dried bamboo shoots and bamboo charcoal peanuts, and the local government provided supervision, quality assurance and mailing services. These activities facilitated SC in becoming an agricultural product e-commerce brand and obtaining recognition from consumers concerned about food safety. Third, SC linked the SCEC and e-commerce practitioners by supplying MTL products to them to sell online, and thus the e-commerce enabled social innovation was realized. In short, the indigenous strategy allowed SC to develop e-commerce enabled social innovation by relying on the advantageous internal agricultural product resources and human resources, and to gain a competitive advantage, the social entrepreneurs addressed the weakness that resources were scattered across individual villagers by linking internal resources. As Mr. Pan commented,

The essence of e-commerce in SC lies in the advantageous agricultural resources, the link between resource suppliers and sellers, and the supports from the county government and the association.

As a result of the implementation of the indigenous strategy and the corresponding resource-focused actions of the social entrepreneurs, the resource portfolio demonstrated platform characteristics, in which the association supported by the local government played the role of the platform, bridging the supply and demand sides. As summarized by Taobao Institute,

SC mode could be concluded as a platform mode. And the association and the local government acted as the platform.

*(3) BM: Collaborative strategy*

In the BM case, the social entrepreneur followed a collaborative strategy, which relies on both internal

and external resources in social innovation (Cajaiba-Santana, 2014; Heiskala, 2007). On the one hand, BM village owned human resources, which laid a concrete foundation for implementing e-commerce enabled social innovation. On the other hand, however, to gain competitive advantage, BM also had to address its weakness, which was an absence of products to sell. As Mr. Lv and an organizer of the e-commerce association in BM recalled,

I could not get rich alone, it's important to guide the village to become rich. I analyzed the pros and cons of BM to develop e-commerce: an advantage was we have human resources who were able to support the e-commerce development; the most outstanding disadvantage was they do not have superior products. I could supply that...

In addition to the outdoor sporting product cluster, we also have other clusters led by other social entrepreneurs in our village. They purchased products from adjacent cities or villages.

Therefore, to develop e-commerce enabled social innovation, the social entrepreneur helped to enrich internalized resources. First, the social entrepreneur acquired external resources and internalized them. For example, The BM wolf company purchased outdoor sports products from Yiwu and labeled as the BM brand. Second, to enable the social innovation, on the one hand, BM enriched its own human resources by sending villagers, who lacked the skill to engage in e-commerce, to Taobao College to train. This action improved the quality of local human resources, and thus the social innovation was realized. On the other hand, to broaden and deepen the social innovation, some social entrepreneurs further enriched other product resources, and formed the corresponding product clusters. In short, the collaborative strategy directed BM to develop e-commerce enabled social innovation by relying on internal unused human resources, and to gain a competitive advantage, the social entrepreneurs addressed the weakness that BM lacked product resources by enriching internalized resources. As an organizer of the e-commerce association commented,

The implementation of e-commerce changed our village. First, a large number of people who sold sesame seed cakes outside came back, and the village is full of energy. Second, villagers life condition get improved. These should be attributed to the continuous introduction of external products.

As a result of the implementation of the collaborative strategy and the corresponding resource-focused actions, multiple resource portfolios were developed, in which social entrepreneurs were the center and connected with external entities through product resources; meanwhile, the villagers acted as the periphery. Besides, because the products were purchased from outside, there were a few different product options, which facilitated the formation of multiple portfolios. As Mr. Hong, the leader of the online store supervision team of the industrial and commercial bureau, described,

We have Mr. Lv, Mr. Lu and several other social entrepreneurs. They are the core to guide the development of the clusters. Villagers can freely choose the products to sell online.

## ***5.2 The relationship between resource orchestration and social innovation types***

In addition to the relationship between the social innovation strategies and resource orchestration, the case analysis also revealed the relationship between resource orchestration and social innovation types: (1) the centralized resource portfolio resulted in the formation of an incubator type of social innovation; (2) the

platform resource portfolio led to the development of an independent social innovation form; and (3) the multiple resource portfolios gave birth to the clone type of social innovation (refer to Table 2).

<b>Table 2 The social innovation types of QYL, SC and BM</b>			
	<b>Type</b>	<b>Meaning</b>	<b>Evidence</b>
QYL	Incubator	The incubator social innovation is defined as “a dynamic practitioner network, in which some will move out when growing strong enough, while new comers move in to acquire resources.”	<ul style="list-style-type: none"> <li>■ Large scale organizations, supplying resources with small scale organizations, were not able to obtain resources within the village. To realize further development, they must move out.</li> <li>■ Small scale organizations acquired advantageous resources from large scale organizations. Some achieved success and grew stronger, while others failed, and new ones moved in.</li> </ul>
SC	Independent	The independent social innovation is defined as “practitioners rely on their own resources to implement social innovations, when they are competent to interpret and solve their own social issues.”	<ul style="list-style-type: none"> <li>■ SC owned abundant original agricultural products and human resources.</li> <li>■ SCEC, taking charge of adding value to rare agricultural products with the support from the local government, bridged the supply side and the demand side.</li> </ul>
BM	Clone	The clone social innovation is defined as “continuous expansion and duplication social innovations, that potential practitioners join the programs when they become interested, and the mode is duplicated by others within the area.”	<ul style="list-style-type: none"> <li>■ Increasing number of villagers engaged in e-commerce and sold Beishan Wolf brand outdoor sports products.</li> <li>■ Other social entrepreneurs duplicated the Beishan Wolf mode to develop other e-commerce sub-clusters.</li> </ul>

In the QYL case, the centralized resource portfolio consisted of two types of organization – large and small – with product resources flowing from large organizations to small organizations. On the one hand, large organizations supply small organizations with product resources since it was difficult to gain internal resources within the village due to resource limitations. Once growing large, to chase further development, organizations chose to move out to other places. Small organizations, on the other hand, could obtain low price products within the village. Thus, new practitioners were continuously willing to move into QYL, taking the place of failed small businesses or large businesses that moved out. By referring to a term from industrial cluster literature – incubator, which is defined as “...providing a nurturing environment for new business start-ups”, we named this type of social innovation as incubator. The incubator type social innovation is dynamic and duplicated among the same type of individuals and organizations: some will move out when growing strong enough, while new comers move in to acquire resources. As Mr. Liu said,

QYL is similar with industrial parks. Here we offer basic resources to operate online stores...The most successful ones move out and new ones move in...Some journal and newspapers call us an incubator for e-commerce stores.

In the SC case, the platform resource portfolio was comprised of two types of entities – the social entrepreneurs and villagers, and the two-way product ties between them – raw materials from the villagers to SCEC and value added products from SCEC to the villagers. First, the villagers owned abundant raw materials, which laid the basis for SC to develop e-commerce enabled social innovation. The association

linked these resources to itself, and thus had the advantage of economies of scale. Second, SCOSA and SCEC linked themselves to the local government. With the support from the local government, SCEC took the responsibility of upgrading the original agricultural products. Compared with selling original agricultural products, the trading of value added products allowed the villagers to gain more profit, which increased their dependence on SCEC. Third, e-commerce practitioners, were linked with SCEC to acquire value-added MTL products. The two-way relationship between villagers and SCEC, was developed based on the complementary competencies of the two sides. Therefore, we name this type of social innovation as independent social innovation, which arises when practitioners are competent to interpret and solve their own social issues (Mulgan, 2006), especially with complementary resources. By relying on their own resources to implement social innovations, they could lower the costs, especially transaction costs, such as resource acquisition costs, bargaining costs, information costs, etc. As Mr. Pan described,

Our mode is something like self-sufficient as we are able to develop e-commerce in the county by completely relying on our own resources.

In the BM case, the multiple resource portfolios were composed of two types of organizations – large organizations like the Beishan Wolf Company and single villagers, and two-way ties – one was the product resource flow from large organizations to single villagers, and the other was the product resources from outside to the large organizations. The product resources of the Beishan Wolf Company acquired from the outside caused the formation of links between the resources and some unused human resources in BM. And following the success of some, increasing numbers of villagers joined in and ran their own online stores. In addition, this mode was further duplicated to other product sub-clusters. This demonstrates a clone mechanism, which is defined in medical science as “to reproduce a subject with identical genes”. By borrowing this concept, we name this type of social innovation as clone. The condition for the clone type social innovation is that potential practitioners will join the social innovation program when they become interested (Neumeier, 2012), and the mode will be duplicated by others within the area. As Mr. Hong described,

Mr. Lv first supported five or six families to engage in e-commerce. Then more villagers asked for help...Other clusters developed later by imitating Beishan Wolf.

## 5. Discussion

This paper has investigated three e-commerce enabled social innovation cases in rural China and revealed the relationship between social innovation strategies, resource orchestration and social innovation types. The findings indicate that to successfully achieve social innovation, it is necessary to realize the fit between the strategies, resource orchestration and social innovations. Consequently, our study responds to the need to examine the achievement paths of social innovation (Short et al., 2009) under the guidance of indigenous, exogenous and collaborative social innovation strategies. Furthermore, this paper has theoretical and practical implications for social innovation and the resource orchestration perspective, two concerns of existing studies (Cajaiba-Santana, 2014; Sirmon and Hitt, 2011).

First, our research reveals that to achieve social innovation, it is necessary to realize the fit between social innovation strategies and resource orchestration. By studying the three e-commerce enabled social innovation cases, our study concludes that the fit between the strategies and resource orchestration is a condition for successful implementation of social innovations. In particular, there are three types of fit between social innovation strategies and resource orchestration: the exogenous social innovation strategy

fits with the resource-focused actions of social entrepreneurs of coordinating internalized resources, and results in a centralized resource portfolio; the indigenous strategy fits with the resource-focused actions of linking internal resources, and results in a platform resource portfolio; and the collaborative strategy fits with the resource-focused actions of enriching internalized resources, and led to a multiple resource portfolio.

Second, our research identifies three types of social innovations, and further relates them to the corresponding resource portfolios formed under the guidance of social innovation strategies. Although some scholars have investigated different types of social innovation (Alvord et al., 2002; Christensen et al., 2006), these classifications and wordings are borrowed from business innovations, e.g. disruptive and incremental social innovations, and component, modular and architectural innovations, and lack attention to the essence of social innovations. Individuals and organizations, implementing business innovations, pursue their own profit. By contrast, a social entrepreneur, by implementing social innovations, while seeking his/her own profit, more importantly, seeks welfare of a whole community. Our study, considering roles social entrepreneurs play in social innovations, classified social innovations into three types, i.e. incubator, clone and independent. (1) In the incubator type of social innovations, social entrepreneurs construct resource platforms for individuals and small-scale organizations engaging in social innovations; (2) In the clone type of social innovations, social entrepreneurs not only provide platforms, but also bridge internal and external resources; meanwhile, another outstanding characteristic of this type of social innovation is that more social entrepreneurs will emerge in the community and duplicate the innovation mode, consequently, other similar social innovations will emerge; and (3) In the independent type of social innovation, the primary role of social entrepreneurs is to bridge the supplier side and the demand side to stimulate resource flows needed in social innovations. The identification of the three types of social innovations is valuable because it helps us to examine the different mechanisms associated with the orchestration of each, considered next.

The three types of social innovation are related to the corresponding resource portfolios, which are the results of the fit between social innovation strategies and resource orchestration. By tracing the ties between these constructs, the paths to realize social innovations can be identified: the exogenous, indigenous and collaborative social innovation strategies result in the incubator, independent and clone social innovations, respectively, through corresponding resource-focused actions by social entrepreneurs. This research finding can be valuable to rural areas to help design social innovations according to the adequacy of internal resources.

Third, our research also contributes to the development of the resource orchestration perspective. Although the basic role of resources in social innovations has received universal recognition, the latest studies propose that the effective orchestration of resources at least plays the same critical role as the static possession of resources in achieving goals (Sirmon et al., 2011; Barney et al., 2011). In this context, the resource orchestration perspective was proposed in 2011. Existing studies primarily focus on investigating the role of resource orchestration (Sirmon et al., 2011; Ndofor et al., 2011; Chadwick et al., 2015), and lack attention to the investigation of the construct itself (Cui and Pan, 2015).

In line with the idea proposed by Sirmon et al. (2011), we investigated the resource-focused actions of social entrepreneurs guided by different social innovation strategies. The actions, including coordinating internalized resources, linking internal resources and enriching internalized resources, demonstrate both

similarities and differences. The similarities lie in that: on the one hand, the possession of resources lays the foundation for social entrepreneurs to implement social innovations, so that communities lacking resources should first internalize resources, e.g. QYL and BM; and on the other hand, the coordinating, linking and enriching provide means to realize resource complementary, and thus social innovations. Meanwhile, these three actions differ from each other in the object of resource features and performances. In detail, first, resources coordinated by a social entrepreneur are those lacking complementarities per se, and coordinating offers a mechanism to create complementarities and economies of scale. For example, in the QYL case, in the process of coordinating resources, the social entrepreneur created complementarities between the e-commerce goods market and the Yiwu International Trade City, and complementarities between large and small online stores. Second, resources linked by a social entrepreneur are those with complementarities per se. And linking them can directly bridge the gap. For example, in the SC case, SCOSA and SCEC, by linking raw agricultural product resources, the local government and the e-commerce practitioners with themselves, enabled the village to gain economies of scale and realize social innovation. And third, resources enriched by a social entrepreneur are those with insufficient complementarities. And enriching deepens the complementarities between resources and economies of scope. For example, in the BM case, by enriching both products and human resources, complementarities between the two increased, and economies of scope and the social innovation were realized in BM.

By identifying specific resource-focused actions, the resource orchestration perspective provides managers guidance to gain a competitive advantage. The resource advantage theory, which also emphasizes the role of both resources and resource-focused actions (Kozlenkova et al., 2014; Hunt & Morgan, 1995; Hunt & Morgan, 1996), suggests organizations can leapfrog from a position of competitive disadvantage to a competitive advantage position through better managing existing resources, obtaining the same or equivalent value-producing resource, and/or seeking a new resource that is less costly or produces superior value. However, the resource advantage theory has not identified how to better manage resources to gain a competitive advantage. The resource orchestration perspective, in turn, provides a solution, including coordinating, linking and deepening. Therefore, by linking the resource orchestration perspective and the resource advantage theory, managers have a comprehensive framework to help them lead organizations to gain competitive advantage.

## **6. Conclusion**

Because social innovations have critical roles in modern society and we only have limited insight into this, there is a need to improve both the research and practice in this field; thus, an investigation of three e-commerce enabled social innovations in rural China was undertaken. E-commerce enables sellers to more easily access consumers scattered in different locations, and thus, to expand market scope. Meanwhile, it also effectively lowers management costs, e.g. store rent. These advantages are meaningful to practitioners, especially practitioners in rural areas, where traffic and communication are relatively underdeveloped. E-commerce enabled social innovation facilitates villagers in selling products to consumers located nationally or even inter-nationally, which was impossible before implementation of e-commerce. Therefore, e-commerce can effectively increase villagers' revenue and contribute to local economic development, so alleviating poverty. Given the importance of e-commerce in social innovations in rural villages with limited resources, orchestrating resources has a critical role; in this paper, we employ the resource orchestration perspective as a theoretical lens, and develop a fit model to help explain how social entrepreneurs orchestrate resources under the guidance of indigenous, exogenous and collaborative social innovation strategies. This model, on the one hand, specifies which strategy a rural village should choose according to their resource situation before the implementation of e-commerce enabled social innovation; on the other

hand, it also provides a reference for social entrepreneurs of how to orchestrate resources according to the strategy implemented. This research generates theoretical and empirical insights into e-commerce enabled social innovation and thus has important implications for both scholars and practitioners in the field.

With respect to future research, there is a need to further develop both research and practice in the field of social innovation by examining more cases. For example, resources are not identical, which means that the construct 'adequacy of resources' could be further analyzed, going beyond the low, medium and high adequacy division used in this paper. Such studies could more accurately reflect the idea of resource orchestration since they would consider detailed features of resources, and thus could more precisely reveal the fit relationship between social innovation strategies, resource orchestration and social innovation.

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<b>Appendix A Summary of data collection</b>		
<b>Case</b>	<b>Interviews</b>	<b>Secondary data (including follow-ups)</b>
QYL	<p><b>Association</b></p> <ul style="list-style-type: none"> <li>- Mr. Liu, presidents of the provincial-, city- and county-level e-commerce association</li> </ul> <p><b>E-commerce practitioners</b></p> <ul style="list-style-type: none"> <li>- Mr. Wu, a bamboo-charcoal online store owner</li> <li>- Mr. Zhuang, a furnishings online store owner</li> <li>- Other two anonymous online store owners</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>- Mr. Fan, the section chief of e-commerce office of Yiwu City</li> </ul>	<p><b>Books, magazines and newspapers</b></p> <ul style="list-style-type: none"> <li>- Chinese Taobao Villages (A book published by Electronic Industry Press)</li> <li>- Stories of Taobao Villages (A book published by China Citic Press)</li> <li>- Demystify Taobao Village (A report published in Xinhua Daily Telegraph)</li> <li>- Taobao Village earn money properly (A report published in China Securities Daily)</li> <li>- QYL of Yiwu: villagers' life in Taobao Village (A report published in Guangming Daily)</li> <li>- Images of Taobao Villages (A report published in Shanghai Securities News Daily)</li> <li>- E-commerce changes Chinese villages (A report published in Chinese Business News)</li> </ul> <p><b>Reports</b></p> <ul style="list-style-type: none"> <li>- SC in Zhejiang: a new development mode (An article published in The IT manager world magazine)</li> <li>- Taobao Villages: a new development mode for rural economy</li> <li>- QYL of Yiwu attracts thousand online stores (A report released by AliResearch)</li> <li>- From 200 million to 2 billion RMB, a visit to the first Taobao village – QYL (A report released by AliResearch)</li> <li>- A report on SC mode (A report released by AliResearch)</li> <li>- County-level e-commerce in SC: e-commerce breeds “a bite of SC” (A report released by AliResearch)</li> </ul>
SC	<p><b>Association</b></p> <ul style="list-style-type: none"> <li>- Mr. Pan, the president of e-commerce association of SC</li> <li>- Mr. Pan, an officer of e-commerce association of SC</li> <li>- Mr. Liu, an officer of e-commerce association of SC</li> <li>- Ms. Liu, the person in charge of the online purchasing and selling agent program</li> </ul> <p><b>E-commerce practitioners</b></p> <ul style="list-style-type: none"> <li>- Mr. Mao, a bamboo-charcoal online store owner</li> <li>- Mr. Wu, a agricultural product online</li> </ul>	<p><b>Reports</b></p> <ul style="list-style-type: none"> <li>- QYL of Yiwu attracts thousand online stores (A report released by AliResearch)</li> <li>- From 200 million to 2 billion RMB, a visit to the first Taobao village – QYL (A report released by AliResearch)</li> <li>- A report on SC mode (A report released by AliResearch)</li> <li>- County-level e-commerce in SC: e-commerce breeds “a bite of SC” (A report released by AliResearch)</li> </ul>

	<ul style="list-style-type: none"> <li>- store owner</li> <li>- Ms. Zhu, a children’s clothing online store owner</li> <li>- Mr. Zhu, the president of Ms. Zhu’s online store</li> <li>- Mr. Huang, an owner of an express company</li> <li>- Ms. Leng, a online store purchasing and selling agent</li> <li>- Other ten anonymous e-commerce practitioners</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>- Mr. Huang, the county head of SC</li> <li>- The head of agriculture department of SC</li> <li>- The head of quality inspection department of SC</li> </ul>	<ul style="list-style-type: none"> <li>- A county summit: SC (A report released by AliResearch)</li> <li>- Inclusive innovation and growth: A report on the Chinese agricultural e-commerce development (A report released by Zhejiang University and AliResearch)</li> <li>- The county-level e-commerce: The SC phenomenon (A report released by AliResearch)</li> <li>- Wangsheng: Seven characteristics of Jinyun mode in e-commerce development (A report released by AliResearch)</li> <li>- A research report of rural e-commerce ecosystem: Lishui – a pioneer of Chinese rural e-commerce village (A report released by Shanghai University of Finance and Economics)</li> </ul>
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Appendix A Summary of data collection (Continued)		
Case	Interviews	Secondary data (including follow-ups)
BM	<p><b>Association</b></p> <ul style="list-style-type: none"> <li>- Mr. Zhao, the president of the e-commerce association of Hu County</li> <li>- Mr. Lv, a secretary-general of the e-commerce association of Hu County</li> <li>- Mr. Lv, another secretary-general of the e-commerce association of Hu County</li> <li>- Mr. Lv, a director of the e-commerce association of Hu County</li> </ul> <p><b>E-commerce practitioners</b></p> <ul style="list-style-type: none"> <li>- Mr. Lv, an outdoor sports product online store owner</li> <li>- Mr. Lv, a auto accessory product online store owner</li> <li>- Mr. Lu, a auto accessory product online store owner</li> <li>- Mr. Lv, a BBQ grill product online store owner</li> <li>- Another six online store owners</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>- Mr. Ding, the secretary of the Youth League Committee of Hu County</li> <li>- Mr. Shang, a director of the Party committee of Hu County</li> <li>- Mr. Hu, a vice secretary of the Youth League Committee of Hu County</li> <li>- Mr. Li, the section in chief of the e-commerce department of Hu County</li> </ul>	<p><b>Cases and case studies</b></p> <ul style="list-style-type: none"> <li>- E-commerce clusters based on Taobao industrial chain: a case study on QYL village in Yiwu city (A case authored by Jian Qian and Zhifeng Zheng)</li> <li>- A basic relationship and mode of green development – the practices of business in Zhejiang and SC (A case authored by Fuxin Lv)</li> <li>- SC: Innovate rural e-commerce mode (A case authored by Hu Liu, Guohai Jiang and Xiao Deng)</li> <li>- A study of SC mode – From the perspectives of mountainous area economy and e-commerce (A case study authored by Jingwen Huang and Qing Wang)</li> <li>- Develop and cultivate online store association to promote the development of e-commerce industry – A survey of e-commerce association of SC (A case study authored by Hongjun Wang, Yixiu Zheng and Yingying Zhou)</li> </ul> <p><b>Websites</b></p> <ul style="list-style-type: none"> <li>- SC mode: A e-commerce path for local specialty 2013 (<a href="http://www.wshang.com/index/show/bid/277.html">http://www.wshang.com/index/show/bid/277.html</a>)</li> <li>- BM: Develop from a sesame seed cake village to a e-commerce village 2013 (<a href="http://finance.chinanews.com/it/2013/08-07/5133722.shtml">http://finance.chinanews.com/it/2013/08-07/5133722.shtml</a>)</li> <li>- Taobao Village: A new development path for villages? 2011 (<a href="http://zjnews.zjol.com.cn/system/2011/03/01/017328316.shtml">http://zjnews.zjol.com.cn/system/2011/03/01/017328316.shtml</a>)</li> </ul>

<ul style="list-style-type: none"> <li>- Mr. Hong, the leader of the online store supervision team of the industrial and commercial bureau</li> <li>- A officer of the online store supervision team of the industrial and commercial bureau</li> </ul>	<ul style="list-style-type: none"> <li>- An incubator of Taobao stores: Demystify of the first Taobao Village 2011 (<a href="http://zjnews.zjol.com.cn/05zjnews/system/2011/12/19/018086242.shtml">http://zjnews.zjol.com.cn/05zjnews/system/2011/12/19/018086242.shtml</a>)</li> <li>- The featured economy of Taobao Villages 2013 (<a href="http://event.sj998.com/html/2013-05-24/425506.shtml">http://event.sj998.com/html/2013-05-24/425506.shtml</a>)</li> </ul>
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## Appendix B Sample interview guide

### Semi-structured interview in QYL

#### Interview questions for e-commerce association of SC

- When was the association established? Who initiated the establishment of the association? What do the members do before the establishment of the association?
- What is the initial purpose to establish the association?
- What is the guiding principle in the operation? What are the roles of the association in the e-commerce development in SC? What are the roles of the members of the association? What is the relationship between the association and members?
- What is the relationship between the government and the association?
- What are the main contributions of the association to the e-commerce development in SC?

#### Interview questions for e-commerce practitioners

- When did you begin to run your online store? What are the main products? How about the performance of your store?
- What did you do before running the store? Why did you operate the online store? And why do you choose SC as your location?
- Where do you get your products? How do you sell them? How do you arrange the storage and logistics?
- Is there any support that you have gotten from the association? Is there any support that you have gotten from the government?

#### Interview questions for government officers

- Is there any specialized section that takes in charge of the e-commerce development in SC? What's the relationship of other government sections with the association and e-commerce practitioners?
- What the roles of the government are in accelerate the e-commerce development in SC?
- What are the contributions of the e-commerce development to the local society?