Digitally Enabled Social Innovation: A Case Study of Community Empowerment in Rural China

Research-in-Progress

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Abstract

Digitally Enabled Social Innovation (DESI) has generated a variety of important social benefits for communities across the globe. Yet, despite its importance in contemporary society, our review of the literature indicates that the concept has not been studied to a significant degree to date. To address this gap, this study seeks to address the research question: how do communities self-organize to achieve DESI? Based on a pilot case study of Daiji village, one of the most successful Taobao Villages in rural China, a preliminary process model of the attainment of DESI is presented in this research-in-progress paper. More specifically, our pilot study reveals that that the process of achieving DESI is contingent on a mechanism of bricolage, which consists of four steps: Recognition, Preparation, Recombination and Governance. Through the four steps, digital repertoires are formed and enacted for the attainment of DESI.

Keywords: Digitally Enabled Social Innovation, Community Empowerment, Case Study, Bricolage

Introduction

Social innovation is defined as changes “emerging from the creative recombination of existing assets (from social capital to historical heritage, from traditional craftsmanship to accessible advanced technology), which aims to achieve socially recognized goals in a new way” (Mulgan 2006, p.145). Information and communication technologies (ICTs) can be a powerful enabler of social innovation.
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(Gurstein 1999). In this research-in-progress paper, we refer to this specific type of ICT-enabled social innovations as Digitally Enabled Social Innovation (DESI). DESI has effectuated numerous social changes and generated a variety of important social benefits over the prior decade (Majchrzak et al. 2012). For instance, in Melbourne, Australia, an ICT-based embedded traffic management system has provided a solution to reduce the frequency of traffic accidents. This “SmartRoads” framework has improved safety and travel times dramatically (see Toran Pour et al. 2015). Similarly, ICT devices are becoming more widely used in Africa to enhance agricultural productivity and thereby address a series of social problems by improving incomes, decreasing crime rates, and offering improved access to resources, among other benefits (Maumbe et al. 2010). However, despite the importance of DESI in contemporary society, our review of the literature indicates that the role of ICTs in enabling social innovations has not yet been studied to a significant degree. In particular, a number of important gaps exist in the current literature.

First, although there are a handful of published works on DESI, most of these studies are conceptual in nature and unsupported by empirical evidence (e.g. Peterson et al. 2003; Pol et al. 2009; Smith et al. 2012). Despite the theoretical and practical implications of these works, without empirical corroboration, the propositions of these studies necessarily remain in the realm of guesswork and assumptions, potentially leaving practitioners at a loss in terms of practical discretion. Second, most existing studies of DESI (e.g. Heap et al. 2008; Majchrzak et al. 2012; Pol et al. 2009) focus on direct external interventions (i.e., what practitioners can do to induce social innovation within a community), whereas effective social innovation requires self-organization (McElroy 2002). The adage of teaching an individual to fish is applicable in this context. Implementing policies or providing extraordinary assets via direct intervention may create short-term social benefits. However, to continuously derive social benefits from DESI in the long term, a community must be inspired and empowered to harness the potential and possibilities afforded by ICTs for itself. Nonetheless, there is currently a lack of research on DESI from a self-organization perspective.

Using a preliminary study of Daiji Village, a community in rural China that has effectively utilized DESI to improve living standards and derive multiple social benefits, our research-in-progress paper seeks to address the previously mentioned gaps in a number of ways. With respect to addressing the paucity of research and lack of empirical corroboration in existing studies of DESI, one objective of our paper is to propose a preliminary process model that is grounded in the reality of Daiji village, which can be validated and extended in future studies. In addition, by examining the case of DESI in Daiji from a self-organization perspective, our paper will shed light on how a community that is inherently disadvantaged can leverage ICTs to generate lasting social benefits for itself. In accordance with these objectives, our study aims to answer the following research question: How do communities self-organize to achieve DESI?

**Literature Review**

**Digitally Enabled Social Innovation**

Social innovation is a topic that has drawn a great deal of research attention since the 1960s (e.g. Fairweather 1967). With its long and storied history, social innovation as a theoretical concept has been used in and enriched by diverse disciplines, such as economics (e.g. Freeman 2002), organizational behavior (e.g. Phillips et al. 2008), and technology management (e.g. Malecki 1997). At its core, social innovation strives to address the vital issues and problems of society at large (Moulaert et al. 2013; Nicholls et al. 2012; Young 2011). To this end, social innovations are required to not only be novel but also to have far-reaching impact because these innovations are new solutions to complicated social puzzles that benefit entire communities rather than merely individuals or organizations. Three specific mechanisms are crucial to social innovation: recombination, integration and diffusion (Heap et al. 2008; Mulgan 2006). In particular, recombination refers to the use of existing resources in new ways instead of the deliberate acquisition of new elements for a specific purpose (Moulaert et al. 2013). In contrast, integration refers to the combining of knowledge from different disciplines and the practical application of this integrated knowledge (Young 2011). Finally, diffusion refers to the spreading of innovation across individuals and/or groups; this growth in the number of involved entities generates unintended or additional consequences (Day et al. 2009).
The sheer array of disciplines in which the concept of social innovation has been used and applied has resulted in a body of knowledge characterized by a great deal of diversity (Bhattacharya 2013; Preskill et al. 2012). Nonetheless, the prescriptions in the literature for achieving social innovation can be classified into six categories (Mulgan 2006).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Source</th>
<th>Key arguments</th>
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<tbody>
<tr>
<td>Social entrepreneurship</td>
<td>Hall et al. 2012</td>
<td>Fragile organizations will not achieve expected outcomes if entrepreneurship policies rely only on economic indicators. However, when policies consider potential consequences from both economic and social perspectives, entrepreneurship will be enhanced.</td>
</tr>
<tr>
<td>Design</td>
<td>Brown et al. 2010</td>
<td>The establishment of long-term relationships among stakeholders to develop better networks for emerging design opportunities is the means to achieve social innovation from a prototyping- and infrastructure-based perspective.</td>
</tr>
<tr>
<td>Urban and rural development</td>
<td>Oliveira et al. 2012</td>
<td>Selective policies will benefit urban and rural development in different ways, and improving creativity is an approach for achieving social innovation in both urban and rural sectors.</td>
</tr>
<tr>
<td>Social movements</td>
<td>Benford et al. 2000</td>
<td>The initiation of social movements is a dynamic process that requires clarification of the links between social innovation and various contexts.</td>
</tr>
<tr>
<td>Public policy</td>
<td>Sørensen et al. 2013</td>
<td>Collaboration among diverse instructive policy management systems is helpful for achieving social innovations.</td>
</tr>
<tr>
<td>Digital enablement</td>
<td>Carretero et al. 2012</td>
<td>The leverage of ICTs can facilitate sustainability and encourage social movements.</td>
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</table>

In contrast to the rich literature on social innovation, few studies have addressed the topic of DESI. Despite this lack of research, ICTs have already produced a number of social innovations. We present four examples that are representative of DESI: the use of ICTs to create myriad job opportunities in New Zealand in response to a growing global brain drain (Sydney 2014), the use of ICTs in the prior two years to significantly improve living standards in communities across Kenya (see Hatakka et al. 2014), the use of ICTs in moving developing economies and communities toward becoming newly industrialized and modernized states with reduced poverty rates (Kozma 2005), and finally, the use of ICTs to generate reductions in inequality levels over time in locations where using ICT-enabled solutions to forge new connections between previously isolated communities is now possible (Peterson et al. 2003).

Traditional industries, existing inequitable social structures and enclosed cultures have been transformed by ICTs all across the globe (Bhattacharya 2013; Carretero et al. 2012). Moreover, the acceptance of ICTs has the potential to affect cultural transmission and exploitation (Baker et al. 2011). As such, ICTs are clearly an important catalyst for social transformation (Oeij et al. 2011). However, there has been a dearth of research on DESI to date. In the field of Information Systems, a number of scholars have investigated the use of computers and the World Wide Web for agricultural improvement, particularly in rural areas (Büyükbay et al. 2013). Others have examined the digital activities of women to enhance communication and mobilization with respect to participation in social events (Shirazi 2012). Yet, none of these studies have directly examined the underlying mechanisms through which DESI is achieved. The purpose of our case study is to address the lack of understanding in this area.

Based on the objectives of our study, we construct a theoretical lens to provide a better understanding of DESI by focusing on the community empowerment literature. As mentioned above, social innovation is grounded in self-organization. As community empowerment holds the key to self-organization (Kieffer
1984) the literature surrounding this notion is an especially appropriate starting point for our exploration of DESI.

**Community Empowerment**

Empowerment emanates from power. Weber (Weber 1966) proposed that the power in empowerment must be changeable and expandable, which suggests that it is an ongoing process (Page et al. 1999). In the 1960s, the social action ideology was introduced to break new ground for empowerment research. As the number of scholars involved in this research area increased in the 1970s, empowerment began to be explored as a form of self-organization (Kieffer 1984). This perspective has been widely used in most studies and can be traced to the civil and women's rights movements. For example, scholars suggest that the women's rights movement reflects self-organization. Women were aware that they had unequal rights and spontaneously organized a series of events to overcome these obstacles. Importantly, women felt empowered by these events (Solomon 1976). Over time, empowerment has also been studied in diverse disciplines, such as healthcare, management education and community psychology (Hur 2006).

Empowerment is defined as “*a process, a mechanism by which people, organizations, and communities gain mastery over their affairs*” (Rappaport 1987, p.122). In line with this definition, existing studies have examined empowerment at three different levels: individuals, organizations and communities (Perkins et al. 1995). As our interests lie in examining how an entire community can leverage and benefit from DESI, our focus is on empowerment at the community level.

Community empowerment is defined as a structure that harnesses (1) individual competencies, (2) natural helping systems and (3) proactive behaviors for the purpose of social change (Rappaport 1987; Sandoval et al. 2012). Accordingly, these three factors have served as the foci of prior research on community empowerment (Perkins et al. 1995; Rappaport 1987, p.569). More specifically, natural helping systems refer to entities in close proximity (e.g., neighbors, relatives or work associates) who form specific environments (D'Augelli et al. 1987) in which people naturally help each other (Blake 1999). Proactive behaviors, on the other hand, refer to taking the initiative to improve current resources or create new ones (Salanova et al. 2008). Table 2 outlines the three key enablers of Community Empowerment and their constituent elements.

<table>
<thead>
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<th>Enabler</th>
<th>Constituent Elements</th>
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<tbody>
<tr>
<td>Individuals competencies</td>
<td>Participation, Leadership, Problem assessment, Resource mobilization, Links with others (Laverack 2001)</td>
</tr>
<tr>
<td>Natural helping systems</td>
<td>Social norms, Reciprocity, Transaction costs (Wu 2008)</td>
</tr>
<tr>
<td>Proactive behaviors</td>
<td>Resources mediation, Personal initiative (Salanova et al. 2008)</td>
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**Research Method**

The case research method is adopted for our proposed study because the method allows for theory building in areas where there has been little previous research (Eisenhardt 1991), making it especially suited for research that are exploratory in nature (Siggelkow 2007). In addition, as we are interested in examining the process of how DESI is achieved, the method is well suited for our purpose as it strengths lie in exploring processes (Gephart 2004) and addressing “how” research questions (Pan et al. 2011; Walsham 1995).

We conducted a pilot study at Daiji village in Shandong, China. The case of Daiji is particularly appropriate for our study because it is recognized as one of the most successful Taobao Villages in China. “Taobao Village” is a term that was first coined in 2009 by Alibaba, a publicly listed Chinese e-commerce giant whose business include an online consumer-to-consumer (C2C) platform called Taobao (China's version of eBay). There are three defining characteristics of a Taobao Village. First, the village must be located in an undeveloped area in China. Second, at least 10% of the village’s households must operate an online shop. Third, the sum of their online transactions must be over USD $1.64 million per year. To date,
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approximately 20 such villages have been identified in China, and this phenomenon is attracting increasing attention with a number of special features dedicated to it on China Central Television (CCTV), China’s state-owned television network.

Taobao villages are especially suited for our study because they are widely recognized for their potential to alleviate China’s rural-urban divide, which is a major component of social inequality in China (Luo et al. 2008). More importantly, the rise of Taobao villages is entirely underpinned by the Taobao platform, and they showcase how rural communities can self-organize and develop their own capabilities with the help of ICTs, as opposed to simply relying on government interventions or aid (Tang et al. 2008).

Daiji is a particularly successful and illustrative example of a Taobao Village. It is currently the only location in China that hosts two Taobao villages at the same time. With a local industry that focuses on performance and role-play costumes, Daiji made more than USD $64 million in 2014 on the Taobao platform. Nearly 92% of the local villagers are currently e-merchants, and over 1000 online shops have been created by traditional Chinese farmers whose average annual income was a mere USD $583 just three years earlier. At Daiji, the Taobao platform has provided the villagers with the means to maximize their manufacturing capabilities and sell their products to the rest of China. In other words, the Taobao platform has empowered the community by enabling villagers to spontaneously explore and exploit their existing resources. However, Daiji’s unique capabilities and products were not enough to sustain its development. The entire community had to develop itself continuously to stave off the threat of imitation from current and future competitors on the Taobao platform.

Data Collection and Analysis

Research access was granted in August 2014. Before onsite data collection, we collected and analyzed secondary data from websites, newspapers and industry seminars, which served to prepare and provide direction for our field visit (Ritchie et al. 2013). Interviews were the primary means of data collection during our field visit (Myers et al. 2007). We recruited informants who represented 5% of all households in Daiji. Each interview lasted an average of 60 minutes and was recorded and transcribed to ensure data accuracy (Walsham 1995). Informants were identified via snowball sampling (Biernacki et al. 1981) and consist of e-merchants, their employees, government officials, e-commerce association leaders, and customers. The early interviews focused on gaining a broad overview of the phenomenon, whereas later interviews delved more deeply into the underlying processes of interest (Pan et al. 2011).

Data analysis was performed in tandem with data collection to take full advantage of the flexibility that the case research method affords (Eisenhardt 1989). From our review of the literature on DESI and community empowerment, we first distilled a set of themes and subthemes that served as a theoretical lens to guide data collection (Pan et al. 2011). These themes include the enablers of community empowerment, as well as the different mechanisms and factors that can facilitate DESI. The data collected was then coded using a blend of open, axial and selective coding (Strauss et al. 1998). We also established a systematic verification procedure to ensure that each finding was supported by at least two separate sources of evidence (Klein et al. 1999). In conjunction with the theoretical lens, the milestones in Daiji’s transformation from a rural village to a commercially successful Taobao village were documented in a visual map. A narrative describing the events, activities and decisions that occurred were also created. The visual map and narrative provided us the means to condense the voluminous amount of data into a manageable form (Langley 1999). The process of iterating between data, analysis and theory development (Eisenhardt 1989) continued until the state of theoretical saturation was reached (Glaser et al. 1967).

Preliminary Findings

Our pilot study reveals that the process of achieving DESI is contingent on a mechanism of bricolage, defined as the process of “making do” with the resources at hand (Baker et al. 2005). However, more specifically, it is the bricolage of digital repertoires, defined as the existing ideas, knowledge, competencies, and cultures being integrated and exploited through ICT, which makes DESI possible. For instance, in the case of Daiji Village, the digital repertoires were in form of its historical reputation, resources and skills surrounding garment manufacturing (Daiji has had a thriving local garment manufacturing industry since the 1990s), which were enabled by Taobao, the online C2C platform.
The bricolage of digital repertoires underpins community empowerment, which was crucial to the attainment of DESI (refer to Figure 1). The process of bricolage, in turn, unfolded in four steps: recognition, preparation, recombination and governance. Recognition is defined as the gaining of awareness of the existing IT capabilities and complementary resources (Marfo 2006) that can form the building blocks for DESI. In Daiji, its villagers first became aware of the existing assets and skills that were accumulated from its history as a center for garment manufacturing. The realization that these resources can be combined with the possibilities offered by e-commerce technology and the capabilities of Alibaba’s online C2C platform motivated the entire community to change their attitudes toward technology and accept the Taobao platform as a means of improving their living standards. A successful e-merchant from Daiji explained: “My first online shop was open by this computer which I used as playing video games, 1000 RMB is the totally investment for the first shop. You can search ‘How to open a new online shop on Alibaba by any search engine, it is quite easy to learn. If you can read Chinese you will be able to make it. All products were from my dad’s factories. His business was not going well, no market to sell. So I decided to help him...”

Figure 1. The process model for achieving Digitally Enabled Social Innovation

Preparation is defined as the actions taken to harness the IT capabilities and resources to develop the basis of engaging in bricolage (Baker et al. 2005) or what some researchers have termed a minimal structure (Eisenberg 1990). The minimal structure refers to the shared resources and knowledge within a collective that enables members to depart from conventional practices when acting in concert (Brown et al. 1991). It represents the fundamental conditions that must be satisfied for bricolage to occur. In Daiji, the minimal structure was primarily made up of a natural helping system (Blake 1999). In particular, after witnessing a number of their neighbors experiment with opening Taobao online shops to become successful e-merchants, the villagers sought their help. For the good of the community, these successful e-merchants were very willing to share their expertise and resources, and in turn, many of the villagers they helped served to grow their business as well by selling the e-merchants’ products on their online stores. A villager who used to be a farmer, but now owns a thriving business of three online shops and a costume
manufacturing factory explained: “Last year, after National Children Day (kids usually have performances to celebrate it), my elder sister bought a new car and rebuilt her house, I was very curious about what business she was doing. I went to her new house, she shared her Alibaba experience to me without thinking, and she taught me how to open the shops and offer me a job as needlewoman in her factory, she knew I had the sewing skills, actually almost every women in our village knows how to make clothes”.

Recombination is defined as the activation of the minimal structure and existing IT capabilities and resources for a new strategic purpose (Baker et al. 2005; Schneiberg 2007). In Daiji, this manifested in the way resources that were usually employed for a particular end were repurposed to facilitate DESI. For example, a villager who had a well-established business network became responsible for identifying potential markets for the rest of the village, while poorer, less connected villagers took on the mantle of providing online customer service. Some families who had spare rooms in their homes would even rent them to other e-merchants. An e-merchant who was disabled by polio at a young age explained how his role within the community co-evolved with Daiji’s transformation into a Taobao Village: “I had never worked before because of my disability, but now I have my own business. I didn’t have good education, my family was poor and couldn’t offer me the opportunity. Now, I hire 4 graduate students as designers and a professional Taobao online platform services team to help me develop the business”.

Governance is defined as the establishment of policies, procedures and institutions to curb opportunistic behaviors and sustain symbiosis within the online platform (Ostrom et al. 1999). At Daiji, this was especially crucial as negative competitive behaviors such as product imitation and price undercutting began to emerge with the commercial growth and success it was experiencing. For example, the Village Chief of Daiji explained the need to establish an e-merchants association to regulate the intra-community competition that was growing: “It is time to establish an association to normalize this ecosystem. We need more extra support! The developments have changed the primary work in our village from agriculture to open online shops, and now, our villagers have their own business and have significantly improved their living standards. We are able to change our life through it... but we have to ensure that this is not affected by the negative consequences of growth”.

Overall, the four steps of bricolage can be classified into two empowerment mechanisms: (1) power shifting, which refers to power shifts within the community (Aime et al. 2014) and power that stems from outside of the community to enhance the creativity of the community by aligning the capabilities with diverse requirements (Aime et al. 2014; HowArd 1988). This process consists of the recognition and preparation and pertains to the formation of digital repertoires. (2) Power reforming, which refers to the rearrangement and reconstruction of the power structure and diffusion of the power to more practitioners in the community (Castells 2011; Fentress 1976) This process consists of recombination and governance and pertains to the enactment of digital repertoires. The evidence from the Daiji case that corresponds to the four steps identified in our study is summarized in Table 3.

Concluding Remarks

While the present study is still ongoing, our preliminary findings hint at a number of important theoretical and practical contributions. First, this study is one of the earliest empirical studies to examine the underlying mechanisms through which DESI is achieved. In addition, it also approaches the phenomenon from a novel self-organization perspective, which is especially important given that effective social innovation demands self-organization (McElroy 2002). In doing so, it complements the existing studies that focus primarily on an interventionist perspective (e.g. Heap et al. 2008; Majchrzak et al. 2012; Pol et al. 2009) and, in turn, contributes to a more holistic understanding of the phenomenon.

Second, this study has uncovered the process of bricolage that underpins DESI, as well as identified the building blocks (i.e., Digital Repertoires), key stages (i.e., Power Shifting and Power Reforming), and steps (i.e., Recognition, Preparation, Recombination, and Governance) that constitute the process. All of these are conceptual innovations, and by extending these concepts, or by uncovering the boundary conditions of our theoretical arguments, our preliminary model can be used as a stepping-stone towards the development of a more nuanced and sophisticated process theory for the attainment of DESI.

In terms of contributions to practice, practitioners can use our findings as a step-by-step guide towards the attainment of community empowerment through the leveraging of ICTs and, subsequently, the
attainment of DESI. More specifically, our preliminary model suggests that, to achieve DESI, practitioners should first take stock of their existing resources with a particular focus on identifying the resources that have applications that can be enhanced or amplified by ICTs. Following that, practitioners would then have to acquire the minimal structure (Baker et al. 2005) for bricolage before repurposing both the minimal structure and their existing resources in the direction required for DESI. Finally, our preliminary model suggests that DESI, if successful, can nevertheless have unintended or even potentially negative consequences. Therefore, there may be a need for controls on DESI before conflicts that originate from within the community inhibit its effectiveness. Overall, our preliminary model has identified a number of steps that a community may have to traverse in their pursuit of DESI. It is hoped that resource-constrained communities in particular will be able to use our preliminary model as a roadmap to identify the appropriate actions and steps to undertake so that they can leverage ICTs to complement their existing resources and exploit their fullest potential.

<table>
<thead>
<tr>
<th>Table 3. Evidence from Daiji’s Taobao Village</th>
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<tbody>
<tr>
<td>Initial State of Community</td>
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<tr>
<td>Stage 1: Power Shifting (Forming Digital Repertoires)</td>
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<td></td>
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<tr>
<td>Stage 2: Power Reforming (Enacting Digital Repertoires)</td>
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<td>Digitally Enabled Social Innovation</td>
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</table>
References


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