

Legitimacy, Worthiness, and Social Network: An Empirical Study of the key Factors Influencing Crowdfunding Outcomes for Nonprofit Projects

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Published online: 4 June 2018

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Abstract Crowdfunding opened up new opportunities for nonprofits to mobilize resources in the increasingly competitive world. Systematic knowledge regarding key factors linked with funding outcome is lacking, making it hard to offer practical suggestions to help nonprofits launch successful crowdfunding campaigns. In this study, we looked at 109 grassroots nonprofit campaigns on Tencent Philanthropy, one of China’s largest nonprofit crowdfunding platforms. We investigated to what extent demonstration of legitimacy, arguments for worthiness and social network influence campaign outcome. Results show that Chinese donors do not care much about the organization’s legal status or accountability measures. Demonstration of organizational competence, the use of concrete personal stories in the pledge, and to offer low-risk solutions (such as direct cash and in-kind assistance) are linked with campaign success. Comparing with the pledger’s own social network and marketing capacity, viral network and viral marketing are more important in crowdfunding.

Keywords China · Crowdfunding · Grassroots · Fundraising · Philanthropy

Introduction

Crowdfunding, which raises capital through accumulated small contributions donated or invested by a large number of individuals on the Internet (Ahlers et al. 2015; Belleflamme et al. 2014; Davies 2014; Gierczak et al. 2014; Lehner 2013; Mollick 2014), has revolutionized the way that individuals and organizations obtain support for their ideas (Koch and Siering 2015). For nonprofit organizations facing increasingly severe resource shortages and fierce competition, particularly those at grassroots level which lack financial and human resources to run fundraising campaigns, crowdfunding platforms provide an affordable way to reach out to more potential donors around the world (Read 2013).

Practitioners and researchers have explored strategies that would increase the likelihood of succeeding in crowdfunding pledges. Many potential factors have been identified, such as communications and professionalism (Müllerleile and Joenssen 2015), the pledgers’ social capital (Giudici et al. 2013; Zheng et al. 2014), persuasive narratives (Mittra and Gilbert 2014), and media-rich content (Koch and Siering 2015). Generally, it is agreed that to increase the chance of success, pledgers would have to effectively utilize their social network, to demonstrate that they are legitimate and competent people, and to show that their projects are worthy of support.

Relatively few empirical studies have looked specifically at nonprofit crowdfunding projects. Nonprofit organizations are mission-driven and usually rely on public funding or donations. They have always needed to demonstrate to their stakeholders that their causes are worthy, and their behavior is desirable, proper, and appropriate, according to certain socially constructed systems of norms, values, beliefs, and definitions (Dowling

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and Pfeffer 1975). Only when they are perceived as legitimate and worthy, will they be able to mobilize resources (Tanaka and Volda 2016). With years of experience in offline fundraising, and fundraising using Web 1.0 technologies such as webpages and emails, they are bound to have developed many strategies to prove their legitimacy and worthiness and to utilize their own social network in mobilizing donors. However, crowdfunding which exploits the networked feature of Web 2.0¹ is different. In this open, participatory, and interactive world, success no longer depends on the pledger's own network and marketing capacity, but rather relies on ability to viral network and market, i.e., strategies that encourage individuals to pass on a message to others, creating the potential for exponential growth in the message's exposure and influence (Hemer 2011; Wilson 2000). Furthermore, it was found that online donors, particularly donors on social media platforms, have a specific preference in terms of the types of projects and organizations that they would be willing to support (Saxton and Wang 2014). To succeed in crowdfunding, nonprofits will need to know which of their conventional strategies can still be used with Web 2.0, which strategies need to be modified, and what new strategies will need to be developed. Empirical knowledge in this area is lacking, and those strategies identified for the commercial sector may not be suitable for the nonprofits.

To fill this knowledge gap, we studied 109 Chinese grassroots nonprofit crowdfunding projects on Tencent, one of China's biggest crowdfunding platforms. We analyzed the content of the pledges and also their efforts to promote their campaign on social media platforms. In this paper, we describe their different strategies, compare the successful campaigns to the unsuccessful ones, and identify factors that are associated with the likelihood of success in nonprofit crowdfunding campaigns.

Background and Theoretical Framework

Nonprofit Crowdfunding

Raising money from a large number of people, either through donation or through investment, is not a new

strategy. However, when the strategy met Web 2.0, which facilitates viral networks and marketing, this became a revolutionary idea: crowdfunding. Since the introduction of the first crowdfunding platform, ArtistShare in 2003, various crowdfunding platforms around the world have enabled many enterprises and individuals to implement their projects, gaining increasing popularity year after year.

Nonprofit organizations around the world have also been enthusiastic about the new opportunities offered by crowdfunding. With these affordable and interactive platforms, nonprofits were not only able to appeal directly to their existing donors but also solicit indirectly through these donors' social networks (Saxton and Wang 2014), which allows them to diversify their funding sources and improve their financial capacities (Read 2013). In 2014, US\$2.58 billion was raised globally for philanthropic causes through crowdfunding channels (Massolution 2015). On Tencent, the crowdfunding platform we studied in this paper, by the end of 2017, about US\$553.6 million (RMB 3.36 billion yuan) had been raised by nonprofit organizations and individuals with philanthropic causes, involving 152 million donors (Tencent 2018).

Despite the growing popularity of crowdfunding among nonprofit groups, few have attempted to systematically understand this phenomenon, and in particular, identify strategies which may increase the likelihood of funding success. Most of the existing empirical crowdfunding research is on commercial or art projects (Giudici et al. 2013; Müllerleile and Joensen 2015; Xiao et al. 2014). Factors such as legitimacy, worthiness, social capital, persuasive narratives, and professionalism have been identified to be associated with funding success. The very few theoretical studies on nonprofit crowdfunding seem to point in the same direction (Moritz and Block 2016; Tanaka and Volda 2016). However, since nonprofit organizations are mission-driven, their ways of demonstrating legitimacy and ways to argue for worthiness are intrinsically different from those of for-profit entities and art projects. For instance, in commercial fundraising, legitimacy and worthiness can be achieved by offering a financial reward to the contributors. An appealing reward structure, such as traditional equity investment terms, can increase the likelihood of success (Frydrych et al. 2014; Greenberg and Gerber 2014). Nonprofit organizations, however, cannot offer monetary rewards to donors. In order to launch successful crowdfunding campaigns, nonprofit leaders cannot merely borrow the strategies identified in the commercial field. The rather abstract concepts of legitimacy and worthiness will not be helpful either. To offer practical suggestions, an empirical investigation of the strategies that are associated with nonprofit crowdfunding success is long overdue.

¹ Web 2.0 is the network as platform, spanning all connected devices. Through an "architecture of participation," web 2.0 applications consume and remix data from multiple sources, including individual users. Services are constantly updated based on user data, creating better and richer user experience, which go beyond the page metaphor of Web 1.0 (O'Reilly 2009). Common web 2.0 applications include: blogs, micro-blogs, social networking sites, content sharing communities, wikis, social tagging tools, social bookmarking sites, and virtual communities (Ngai et al. 2015). It is sometimes used interchangeably with social media, although web 2.0 is a much broader concept.

Key Factors for Crowdfunding Success

Nonprofit organizations have almost always needed to demonstrate the worthiness of their causes and the legitimacy of their behavior. It is only when they can effectively send such information to their stakeholders that they will be allowed to continue to exist (Dowling and Pfeffer 1975; Gray et al. 2006; Suchman 1995).

With years of experience in fundraising, nonprofits have accumulated many strategies to engage potential donors, market their causes, and convince donors that they are competent and legitimate entities (Clarke 2001; Hager et al. 2002; Higgins and Lauzon 2003; Sargeant 1999). Some of these strategies can still work online, for the Web 2.0 technology has made information dissemination faster and easier. Some strategies, however, will have to be changed, because this new platform is virtual, social, interactive, decentralized, and democratic. The pool of donors online is different from the pool of donors that nonprofits used to deal with offline. For instance, Facebook donors do not seem to care about efficiency ratios (Saxton and Wang 2014), which was one of the key factors in the economic model of giving (Weisbrod and Dominguez 1986). Furthermore, to effectively utilize all the interactive features of Web 2.0, some new strategies or organizational capacities might need to be developed. For example, studies found that tech-savvy organizations are more likely to master Web 2.0 (Nah and Saxton 2013) and be successful in attracting donations on social media (Saxton and Wang 2014).

Here, we discuss three key factors identified in previous studies that are related to crowdfunding success and apply them to the nonprofit setting. By drawing on the relevant literature on nonprofit fundraising and nonprofit behavior in cyberspace, we attempt to identify potential strategies that may be associated with nonprofit crowdfunding success. Based on the discussion, we propose hypotheses for testing.

Demonstration of Legitimacy

Crowdfunding in a business setting prioritizes legitimacy for its effect on crowdfunding results (Frydrych et al. 2014; Lehner and Nicholls 2014; Tanaka and Volda 2016). Furthermore, in conventional fundraising literature, prior studies confirmed that a demonstration of legitimacy is able to foster potential donors' trust in an organization and thereby increase the possibility of giving (Lounsbury and Glynn 2001; Tanaka and Volda 2016; Zimmerman and Zeitz 2002). "The credibility argument" is identified as the most significant factor that influences campaign results (Goering et al. 2011; Handy 2000).

To be legitimate or credible, organizations will need to demonstrate that they are competent in what they do and

that they have appropriate accountability relationships with stakeholders (Black 2008). In a crowdfunding campaign, much the same way as with a traditional fundraising letter, an organization cannot provide all the information related to its competence and accountability practices because of space limitations. However, organizations can still disclose information which may increase their credibility, such as highlighting their charitable status (which implies that the organization follows certain laws and stakeholders' interests will be protected), stressing their long and proud history, or using celebrity endorsements (Handy 2000). They can also inform potential donors that they have a mechanism in place through which they make themselves accountable and that their stakeholders can react and impose consequences as a result. This leads to our first two hypotheses:

H1: Demonstration of legal status, accountability, and competence is positively associated with the amount of donation raised, respectively.

H2: Demonstration of legal status, accountability, and competence is positively associated with the likelihood of funding success, respectively.

Argument of Worthiness

In all crowdfunding campaigns, commercial or nonprofit, the ultimate goal is to convince potential backers that the pledgers' efforts are worthy of support (Goering et al. 2011; Tanaka and Volda 2016). Worthiness means low risk but high return (Tanaka and Volda 2016). In a similar way to commercial campaigns, in nonprofit settings, uncertainty is prevalent, since solicitation happens within certain time limits, and the projects are often at an early stage of development (Courtney et al. 2016), but unlike in commercial settings, in nonprofit settings, the return of the projects is usually a public good rather than financial or personal benefits for the donors (Burtch et al. 2013; Smith et al. 2015). Hence, efforts should be made to argue for minimum uncertainty and maximum public goods.

To decrease uncertainty, empirical evidence shows that concrete personal stories work better than abstract information with statistical evidence (Das et al. 2008; Hall et al. 2013; Small and Loewenstein 2003). This is because "people think narratively rather than argumentatively or paradigmatically" (Weick 1995, p. 127); concrete personal stories can provide more contextualized and detailed information, which can help prospective backers understand the situation and make informed decisions (Connor and Upton 2004; Katzev 1995; Larrimore et al. 2011). In terms of arguing for public good, previous studies in traditional nonprofit fundraising have examined the use of rational and affective language. These kinds of persuasion

strategies are popularly employed by nonprofits (Connor and Upton 2004), but their influence on donor behavior is much smaller when compared with the effect of the legitimacy/credibility argument (Goering et al. 2011). Nevertheless, it was found that the portrayal of the problem and the perceived effectiveness of helping will influence donor behavior, i.e., when the problem is short-term, less extensive, and easy to solve, donors are more likely to donate and give larger gifts (Warren and Walker 1991). This, in fact, can also be understood as a reduction in potential risk: When the donors believe a proposed solution can effectively solve the problem, the risk of getting their donation wasted is smaller. We therefore propose the following two hypotheses:

H3: Concrete portrayal of the cause and solutions that are of low risk are positively associated with the amount of donation raised, respectively.

H4: Concrete portrayal of the cause and solutions that are of low risk are positively associated with the likelihood of funding success, respectively.

Social Network

An individual's social network or social capital has long been recognized as a crucial factor for resource acquisition (Eng et al. 2012; Zhang 2010). Research on commercial crowdfunding found that the size of an individual's social network is positively associated with crowdfunding success (Giudici et al. 2013; Hui et al. 2015; Mollick 2014; Zheng et al. 2014). Saxton and Wang (2014) also confirmed that social networks matter: Nonprofits with more fans on Facebook raise more money.

However, as pointed out earlier, crowdfunding is essentially a Web 2.0 phenomenon. In this interconnected online world, the potential pool of donors is not limited to the individuals in the pledger's own network. If the pledger can mobilize his/her followers to promote the project to their families, friends and acquaintances, the project can reach a much larger audience and a much larger pool of potential donors (Hemer 2011). Social media applications have made viral network and viral marketing easier. The simple action of reposting or tagging can help spread the word. But how many people, after reading the pledger's project description, will in fact repost it, tag others, or even go out of their way to persuade others to donate? In the research literature on crowdfunding, empirical knowledge of viral network and viral marketing is still scarce. Most existing studies only took into consideration the pledger's network. In this study, we included the actual message spreaders, focusing on those who successfully convinced others to donate, to better understand viral network and viral marketing. Our last two hypotheses are as follows:

H5: The pledger's own social network and the number of successful message spreaders in the network will be positively associated with the amount of donations raised, respectively.

H6: The pledger's own social network and the number of successful message spreaders in the network will be positively associated with the likelihood of funding success, respectively.

To summarize, in nonprofit crowdfunding, according to the related literature, it seems that to succeed, pledgers need to demonstrate that they are credible entities with competence and effective accountability mechanisms. They shall use concrete personal stories to describe their projects and propose low-risk solutions. To reach as many potential donors as possible, they need to mobilize individuals in their own social network and to exploit the extended networks.

The Case of China

In this study, we use China as an example and focus on grassroots organizations' experience with crowdfunding. The country has the world second largest nonprofit sector (with 606,000 registered nonprofits, China Ministry of Civil Affairs 2014), and biggest social media market (731 million Internet users, Statista 2015; Tech in Asia 2017). Moreover, as the world's leader in e-commerce (RMB 1.4 trillion yuan online sales in the first quarter of 2017, PwC 2017), there is a well-established infrastructure for making transactions online, and citizens of China are also comfortable with paying online (Chen 2016; Guo and Liang 2016; Ou and Davison 2009). The World Bank estimated that by 2025, Chinese families will invest up to US\$50 billion per year in crowdfunding projects (Information for Development Program 2013).

Because of China's semi-authoritarian government and semi-free market economy, previous studies concerning nonprofits in China usually treat the country as a special case (e.g., Heurlin 2010; Hustinx et al. 2012; Ma 2002). In fact, Chinese nonprofits, especially the grassroots, bear lots of similarities to their Western counterparts. For instance, even though the unfriendly nonprofit registration rules prevent several million of grassroots organizations from getting legal nonprofit status (China Daily 2011; Deng 2010; Ma 2005; Watson 2008), for those that do register with the government, the law demands transparency and accountability (National People's Congress 2016; The State Council 2004). The unregistered organizations, which are technically illegal (China Ministry of Civil Affairs 2000), often have stricter transparency and accountability rules (e.g., posting financial details of every activities online including photographs of all receipts, establishing a board

or quasi-board, inviting external supervisors, and becoming a member of a grassroots transparency alliance), because this will make them appear more trustworthy to the public, and less vulnerable to government's abuse of administrative power (e.g., when government selectively takes down unregistered groups) (Zhou 2016; Zhou and Pan 2016). Moreover, for the unregistered organizations, it is crucial that they prove themselves competent in service provision not only to the public but also to the government, so that they will be allowed to continue to exist illegally (Spires 2011), or be granted a legal nonprofit status one day (Zhou 2011). A grassroots organization often has to work hard for years before it could finally meet the government's registration requirements (Zhou 2016). Thus, legally registered grassroots organizations often treat their registration status as a form of achievement, and they would put such information in an eye-catching place on their website. Sometimes they even claim to be the "first in the province" or "first in the region" to register with the government (Zhou 2011). By doing so, perhaps they are proudly sending a message to the public regarding their credibility.

Similar to their Western counterparts, Chinese nonprofits have to argue for their worthiness and provide sufficient information for donors to make decision. Although little research has been done on nonprofit persuasive strategies in China, studies in the commercial field found that personal story is an effective marketing strategy with Chinese consumers (Balmer and Chen 2015; Hsu et al. 2009). However, what is considered a low-risk solution in China might be slightly different from that in other countries, because comparatively speaking the Chinese nonprofit sector is relatively young, and the level of professionalization is low (Zhao et al. 2016). Many organizations, especially grassroots ones, are involved in cash and in-kind donations, such as child sponsorship, clothing drive, and book donations (Zhou 2012, 2015, 2016). The public is most familiar with this kind of work, and its social impact is almost immediately visible. Thus, the public may be most willing to support this kind of projects. Services provided by volunteers are also very common. However, in recent years, in both academic literature and the media, stories started to emerge about the lack of impact of such services and even side effects of such services (Zhou and Han 2018; Zhou and Shang 2011). This may discourage the public's support for volunteer services. Professional service is relatively a new thing in China. The government started to promote the professionalization of the nonprofit sector around 2010 (Boao Forum for Asia 2012). At the same time, wealthy business elites in China are also shifting from cash donation to making social impact through professional services (Deng 2015; Zhou et al. 2017). Thus, it is likely that supporting professional services will become a new trend among Chinese donors.

The Chinese cyberspace has also been treated as a special case in previous studies. Researchers believed that the government's "great fire wall" has separated China from the rest of the world (Zhang 2006). It is true that common Chinese citizens do not have access to popular social media applications such as Facebook and Twitter, or e-commerce platforms such as eBay, or search engines such as Google, or crowdfunding sites such as Kickstarter. However, the domestic Chinese social media applications, e-commerce platforms, search engines, and crowdfunding sites offer similar and sometimes more advanced functions (Chen 2016; Fannin 2008; Lien and Cao 2014; Ou and Davison 2009). It was also frequently argued that the Chinese cyberspace is heavily censored. However, empirical studies found that Chinese Internet users enjoy considerable freedom online (Esarey and Xiao 2008; Herold 2008; Rosen 2010; Tang and Yang 2011) and that they are more active than their Western counterparts in initiating topics and commenting on other people's posts on social media (Sullivan 2012). Chinese nonprofits are also actively using social media to disclose information, engage with stakeholders, and mobilize resources (Zhou and Pan 2016). Chinese grassroots organizations are particularly familiar with online mobilization, because many of them started as online organizations (Tai 2006). Lacking government and corporate support, grassroots organizations spend a relatively larger portion of their online time asking for donation (Zhou and Pan 2017). Furthermore, as grassroots usually do not have access to mainstream media and do not have resources to do advertisement, studying them will enable us to understand how active online promotion through social networks can contribute to crowdfunding success.

To summarize, despite the country's semi-authoritarian regime, the theoretical framework and all key factors discussed earlier should still hold true in China, although the operationalization of some concepts may be country-specific (e.g., accountability mechanism, competence argument, and argument for low-risk solutions). Understanding China will not only let us understand a large number of nonprofits in one of crowdfunding markets with the greatest potential, but also provide us with the theoretical and methodological framework that can be applied to other societies. In the next section, we describe the methodology and test our hypotheses.

Method

Platform

The study was conducted on Tencent Philanthropy (<http://gongyi.qq.com>), one of the most influential philanthropic

crowdfunding platforms in China developed by Tencent Holdings Ltd. The platform was linked with WeChat, also a Tencent product (similar to WhatsApp and LINE). WeChat is currently the most popular smartphone-based social media platform in China, proudly claiming 355 million monthly active users (Lien and Cao 2014). On Tencent Philanthropy, pledgers can promote their campaigns through WeChat by sharing the campaign with friends. Backers can easily make contributions through WeChat Pay on their smartphones. The campaign is also available in the conventional webpage version, which can be reposted to other popular social media platforms, such as Sina Weibo (similar to Twitter and Facebook), which has 297 million active users, and comprises 89% of the domestic microblogging market (Sina 2016).

Tencent crowdfunding is a donation-based one, which allows pledgers to keep all the funds donated by the end of campaign, regardless of whether they have reached the goal.² To start a Tencent campaign, the pledgers are required to write some basic information about their project, such as identity of the pledger, proposed budget, and fundraising goal. Every pledger can build a case for their pledge, with text, pictures, and videos, in any way they prefer.

Sampling

The sample consists of 109 projects initiated by grassroots nonprofits (i.e., organizations without governmental, corporate, religious background, and are not initiated by celebrities, or backed by overseas or international organizations). All these organizations were beneficiaries of a training and consultation program provided by Tencent Philanthropy and NGO2.0.³ This program admitted grassroots organizations only, aiming to enhance their capacity to build effective fundraising campaigns. As the sponsor, Tencent wanted the participants to represent different kinds of services and different types of campaign purposes (including disability and illness, poverty and natural disaster, education, animal and environment protection). Thus, the sample, even though were not generated through a

probability process, provides a good snapshot for grassroots fundraising projects on the Tencent platform.

All 109 projects started in 2015 or 2016. By the time we started data collection in August 2016, all projects were marked as “complete,” meaning that they had passed the fundraising deadlines which they set for themselves. Some of the projects had reached their funding goals, while others failed.

Data Collection and Measurement

A multipronged search strategy was used to collect the data both online and offline. Information about organizational demographics, organizational social network, the crowdfunding campaign, and the promotion of the campaign was gathered. Organizational demographics were mostly gathered from the organizations’ websites/blogs/social media platforms (and supplemented by offline enquiries, if online information was not available). Social network information was collected through WeChat and Weibo. Data regarding the fundraising campaign was collected mainly from Tencent Philanthropy’s project pages. These project pages were constructed by the pledging organizations, and contain information which the pledgers believed should help them attract donation. We acknowledge that the information on the project page is rather limited, and the potential donor may choose to gather additional information from, for example, the pledger’s website or blog, or mainstream media. However, since we could not find out to what extent individual donors will get additional information, we focused on the project pages. Additionally, using Sogou, which specializes in searching WeChat public account posts, we collected the promotional messages (if any) each organization sent to their circle of friends via WeChat.

Both top-down and bottom-up coding strategies were employed. This is especially useful when dealing with online behavior, as the most important thing is to understand what the individuals/organizations actually do online, rather than what some existing framework believe they should do (Lovejoy and Saxton 2012). The strategy is also useful in dealing with countries such as China, where the social context is different from the Western advanced economies, and hence, the operationalization of some concepts (e.g., accountability mechanism, competence argument, and argument for low-risk solutions) will also be distinctively different.

We first borrowed the frameworks proposed by previous crowdfunding and traditional fundraising studies and developed the initial coding manual. Then, we reviewed the content of a randomly selected 30 projects to explore how organizations on the Tencent platform behaved. The coding manual was revised, specifying coding rules and setting examples for each code (Table 1). Three native

² An organization may be tempted to set an unreasonably high funding target since regardless of whether they achieve the goals they can keep the money raised. However, unreasonable funding targets may make it hard for them to find a sponsoring foundation. The Chinese government allows only public foundations to raise funds publicly. All other types of nonprofits can receive donations, but are banned from running public fundraising campaigns. To conform to government regulations, the Tencent Philanthropy platform requires all organizations that wish to start a campaign find a public foundation to act as a sponsor. The sponsors thus need to make sure that the projects they take on are legitimate projects.

³ A platform that offers capacity building services to grassroots nonprofits in China.

Table 1 Coding rules and examples

Variable	Code	Example
Statement of legal status	Y/N	Registration time: <i>Since its registration in 1996, the Guangdong Handa Rehabilitation Association has devoted itself to rehabilitation work for people recovering from leprosy.</i> Registration type: <i>The Ginkgo volunteer group was established in 2006, and registered in Yunnan Province Department of Civil Affairs as a non-governmental and non-commercial enterprise</i>
Demonstration of competence	Y/N	Related service experience: <i>Ever since March 2013, Guangxi Yi Fang Charity Foundation, together with Shenzhen Long Yue Charitable Foundation and more than 20 other volunteer teams, have been providing services to the Anti-Japanese War Veterans. We have been serving 500 veterans in Guangxi, providing them with financial assistance, health care benefits as well as daily care</i> Past award: <i>We have won numerous awards, including the “Outstanding Volunteer Team” award issued by the Yunnan Provincial Department of Health, and the “Excellent Volunteer Team” award issued by the Bill Gates Global Philanthropy Fund</i>
Statement of accountability	Y/N	<i>We will publish the progress of the project in real time and accept the supervision of all social sectors</i>
Description of the target group	General	<i>Many children living in poor single-parent families are often either single-parent-dependent or dependent on grandparents</i>
	Specific and individual	<i>Little Haiyan, 11 years old, her father died 6 years ago. She has to assume the responsibility for caring for her younger brother, sister and sick mother. The family economic resources are only 200 yuan per month subsidized by the Government and 400 yuan per year for cane rent</i>
Proposed solution	Voluntary service	<i>More than 40 volunteers from Yunnan Dianchi College will enter Kunlun Guandu District and provide teaching and counseling service for students in Rongkun primary School</i>
	Cash and in-kind	<i>After investigation in this village, Volunteers estimated that the cost of house construction for each villager was RMB 99,570 yuan, including construction materials and labor fee</i>
	Professional service	<i>...In each session, we will invite experienced rehabilitation experts to conduct lectures ... through practical cases and Q & A, we will improve the skills of the rehabilitation workers</i>

Chinese speaking researchers were involved in the coding, with a Holsti intercoder reliability of 0.875, indicating good intercoder reliability (Holsti 1969).

For our dependent variable, funding result, we have two variables. The first is the actual donation amount (the donation amount models), which was logged because of skewness, and the second is a binary variable reflecting whether the organization has achieved its fundraising goal (the goal attainment models). Information for both variables is available on the project page. We are testing both models, as one reflects how much an organization can raise (and take home, because Tencent allows them to keep the money raised regardless of whether they achieve their goal), while the other tells us whether an organization can raise sufficient funds to cover its expected project cost.

Organizational Demographics

As a general sign of organizational capacity, we included the age of the organization. Variables such as organizational size, annual budget, and governance structure were

not included, because such information is not available for most grassroots organizations and not applicable to this group either (Zhou 2016; Zhou and Pan 2017). We included the registration type as a control variable. Because Tencent platform required organizations to have a sponsor, and the sponsors may be reluctant to deal with illegal entities, all organizations in our sample are registered as one of the following types: foundations (public and private), social organizations (SOs), non-governmental and non-commercial entities (NGNCEs), and internal organizations (of nonprofits or public institutions, such as a student organization in a university).

We included website PageRank (PR) as an indicator for the organizations' Internet capacity. PR can be interpreted as the frequency that a random surfer visits a web page, and it reflects the popularity of a web page (Avrachenkov and Litvak 2006). It is a more comprehensive measure than “inlinks” used by previous studies. We collected both Google PR and Sogou PR (which is more domestic) and took an average.

Project Characteristics

The target amount and fundraising industry have been found to influence the fundraising outcome and are standard control variables in nonprofit fundraising studies (Gleasure and Feller 2016; Saxton and Wang 2014). Industry was coded as: disability and illness, poverty and natural disaster, education, animal and environment protection. These codes were based on the original categorization on the Tencent platform.

Demonstration of Legitimacy

As Chinese grassroots often have very different accountability mechanisms (Zhou 2016), and each organization may have a different way of arguing for it on their project pages, we let the accountability indicator emerge from the data. It turned out because the project page has limited space, many organizations opted not to provide any information on accountability (although all sponsoring foundations had a standardized statement regarding a donation receipt, and a contact phone number for enquiries). For those organizations that did provide accountability information, they could not afford to write much, but provide a statement, such as “we would publish progress report and accept the supervision from the public” or “we will monitor the project closely, we welcome the public to monitor us.” Thus, we coded for whether an organization made an accountability statement.

For competence, using the bottom-up strategy, we coded whether an organization provided information such as past awards, related working experience, and the credentials of their staffs. Detailed information about coding is provided in Table 1.

As mentioned earlier, the legal status of Chinese grassroots organizations is a hard-earned achievement and a sign of credibility. It not only tells the public that an organization is now monitored by the government (accountability), but also sends a message regarding organizational competence. Even though all organizations in our sample are legally registered, we coded whether an organization made a clear disclosure of its legal status: no statement, and statement of legal status.

Argument of Worthiness

For the argument of worthiness, we specifically looked at how the problem and the proposed solutions were described by the pledging organizations. For a description of the problem, as shown in Table 1, there were generally two methods the pledgers used: (1) talking generally about the whole population in need and (2) a story about a specific individual. When both the general and the specific

description of the problem were used, we used word counts for each argument and classified the message based on the argument with a larger word count.

For the description of the output, the proposed solutions were grouped into three categories: services provided by professionals (e.g., social workers, nurses, and physicians), services offered by volunteers, and cash or in-kind assistance. Cash and in-kind assistance is coded as having the lowest risk. Such cases often involve giving books or clothing to children in need. Professional services are often offered to deal with more complicated problems, such as renovating a building, or providing counseling to patients (Table 1). The risk is coded as being higher, as even though there are professionals involved, it is not guaranteed to succeed. Volunteer services are offered to deal with problems that are slightly more complicated than those that could be solved by cash and in-kind donations. For example, an organization proposed recruiting volunteers to take children on field trips. However, it is hard to demonstrate effectiveness. Thus, this is coded as having the highest risk. There are very few cases proposing multiple solutions. In the few cases that do involve dual or triple solutions, we first coded for the solution that takes up the largest part of the project budget. When a detailed breakdown of budget is not available, we coded for the solution which is of the lowest risk possible.

Social Network

To measure the pledger’s social network, we counted the number of followers on the pledger’s Sina Weibo. Due to WeChat privacy regulations, it is not possible to count the number of subscribers to an organization’s public account. Nor is it possible to find out whether an organization has a private WeChat group or the number of people in that group.

We also looked at whether the pledger had made active efforts to promote the campaign via its WeChat public account. As Sina Weibo only allows the search for posts in the recent 3 days, we were not able to retrieve an organization’s Weibo promotion (if any). Neither were we able to retrieve WeChat promotions if it was done through a pledger’s private account, as private WeChat activities could only be seen by the account holder and his/her friends.

As far as viral networks and marketing were concerned, we used the number of successful message spreaders provided by the Tencent platform. This captures the number of reposts via WeChat which successfully resulted in a donation. It may not be the best measure for the size of a viral network or viral market, because even though the reposts were made by individuals other than the pledger, the unsuccessful ones were not counted. Due to privacy

issues, Tencent do not make individual's WeChat activities available for public use and only reported the successful message spreaders in an aggregated and de-identified format. However, the number of successful message spreaders is a good measure for the quality of the viral network as well as capacity in viral marketing, which are more important for fundraising: No matter how many people repost the message, if no donation is generated, the efforts are wasted.

Data Analysis

We used ordinary least squares (OLS) regression to test H1, H3, and H5, and logistic regression to test H2, H4, and H6. For both the tests on donation amount and goal attainment, we included four models: one full model and three models for legitimacy, worthiness, and social network, respectively. To guard against multicollinearity, the variance inflation factors were estimated. Results demonstrated that there was no need to exclude variables in all models.

Findings

Overview of the Sample

As shown in Table 2, the majority of organizations included are non-governmental and non-commercial entities (NGNCEs), which are essentially nonprofit service providers. Disability and illness, and poverty and natural disasters are the most popular causes for the campaigns. Comparing with Chinese grassroots in other studies, these organizations were younger (6–7 years old, comparing to 10 in Zhou and Pan 2017), and their Internet capacity was weaker (Web PR = 0.76 comparing to 4.4 in Zhou and Pan 2017). This could be the reason why they joined the Tencent-NGO 2.0 training and consultation program. On average, the projects were able to attract about RMB 43,600 yuan. This was a typical amount a project can raise on different crowdfunding platforms in China. According to the 2015 China Philanthropic Crowdfunding Development Report, 87% of the successful projects had a target lower than RMB 50,000 yuan (Sichuan Online Financial Innovation and Supervision Center and Zhongchou.com, 2016). However, in terms of the number of donors they attracted, these grassroots projects performed better than social service agencies in general (1097 in our study, vs. 633 in 2015 China Philanthropic Crowdfunding Development Report).

Comparing the successful projects to the unsuccessful ones, the successful organizations are slightly older and asked for a smaller amount. Even though the successful

ones do not differ significantly from the unsuccessful ones in terms of the number of donors they attract, donors tend to make twice as large a donation to the successful projects.

As for their demonstration of legitimacy, the successful projects are more likely to make an accountability statement and more likely to make arguments for their competence. The way of storytelling also differs between the successful and unsuccessful projects. The successful ones are more likely to use concrete personal stories, while the unsuccessful ones tend to describe the issue generally.

Factors Related to the Crowdfunding Outcome

We examined how far the pledger's demonstration of legitimacy, argument for worthiness, and social network influenced the campaign outcome. Table 3 shows our donation amount models, and Table 4 shows our goal attainment models.

When predicting how much money a project can raise, H1 is only partially supported, for only the competence argument seems to have a significant influence. H3 is supported: Concrete individual stories significantly increase the donated amount; compared to providing volunteer services, cash and in-kind assistance results in a higher amount of donation. H5 is also partially supported: The number of successful message spreaders is a significant predictor for donation, whereas followers on Sina Weibo cannot independently predict donation. In the full model, all the aforementioned factors except storytelling remain significant.

The picture for goal attainment is generally the same. H2 is partially supported: Not only competence, but accountability statement significantly influences the outcome. H4 is fully supported: Telling concrete individual stories increases the likelihood of achieving the fundraising goal. Both professional services and cash and in-kind donations are linked with a higher probability of reaching crowdfunding goals. H6 is again partially supported: The number of successful message spreaders is a significant predictor for goal attainment, whereas followers on Sina Weibo cannot independently predict fundraising success. In the full model, all the aforementioned factors remain significant, except for accountability statement.

Comparing the full models for fundraising amount and goal attainment, we can see that even though projects with higher targets seem to attract more donations, it is also harder to achieve the goal. In general, to succeed in crowdfunding (to raise more money and to reach the goal), it is essential that an organization demonstrates its competence, proposes a solution that is of low risk, and does so in the viral network and viral market. Statements of legal status and accountability do not seem to influence Chinese donors. As storytelling is significant only in the goal

Table 2 Overview of the projects and pledging organizations ($N = 109$)

	All (109)	Successful (64)	Unsuccessful (45)
Organizational demographics			
Registration type			
Foundation	4 (3.67%)	2 (3.13%)	2 (4.44%)
SO	32 (29.36%)	19 (29.69%)	13 (28.89%)
NGNCE	66 (60.55%)	39 (60.94%)	27 (60.00%)
Internal	7 (6.42%)	4 (6.25%)	3 (6.67%)
Mean age*	6.10	6.85	5.02
Mean PR	0.76	0.88	0.58
Project characteristics			
Industry			
Disability and illness	36 (33.03%)	22 (34.38%)	14 (31.11%)
Poverty and natural disasters	43 (39.45%)	28 (43.75%)	15 (33.33%)
Education	25 (22.94%)	13 (20.31%)	12 (26.67%)
Animals and environment	5 (4.59%)	1(1.56%)	4 (8.89%)
Mean target amount (RMB yuan)**	65,097.98	45,592.18	92,839.73
Mean amount raised (RMB yuan)	43,620.83	45,934.06	40,330.91
Mean number of donors	1097.82	1179.27	980.96
Mean donation/donor (RMB yuan)*	79.59	99.89	50.70
Demonstration of legitimacy			
Statement of legal status (Yes %)	92 (84.40%)	54 (84.38%)	38 (84.44%)
Statement of accountability** (Yes %)	19 (17.43%)	15 (23.44%)	4 (8.89%)
Demonstration of competence*** (Yes %)	50 (45.87%)	37 (57.81%)	13 (28.89%)
Argument for worthiness			
Way of storytelling**			
General description	47 (41.96%)	22 (34.38%)	25 (55.56%)
Concrete individual stories	62 (58.04%)	42 (65.63%)	20 (44.44%)
Proposed solution			
Cash and in-kind assistance	49 (44.95%)	28 (43.75%)	21 (46.67%)
Voluntary services	13 (11.93%)	6 (9.38%)	7 (15.56%)
Professional services	47 (43.12%)	30 (46.88%)	17 (37.78%)
Social network			
Weibo followers	3516.00	1798.52	5958.67
Mean successful message spreaders	292.32	270.64	323.16
WeChat promotion (Yes %)	38 (34.86%)	23 (35.94%)	15 (33.33%)

t test or Chi-square significant * $p < 0.10$; ** $p < 0.05$. *** $p < 0.01$

attainment full model but not in the donation amount full model ($p = 0.4$), it seems to suggest that even though competence, low-risk solutions, and viral marketing can bring in more donations, such an effect has a limit. For projects that have higher target amount, these factors alone cannot help to bring in enough donations to reach the project goal. Concrete individual stories, as a persuasion strategy, will significantly increase the likelihood of goal attainment.

Discussion and Conclusion

In this study, we investigated how far demonstration of legitimacy, argument for worthiness, and social networks influence the crowdfunding outcomes of nonprofit projects. Our results show that all three factors have a significant impact on crowdfunding success. Pledgers which appear to be more competent, use concrete stories to describe the cause, propose solutions that are of low risk, and mobilize individuals to viral market their projects are more likely to achieve their funding goals. It needs to be pointed out that since our data came from the pledger's campaign pages, it only contains information that the pledger put down for

Table 3 OLS models regarding the amount of donations raised (log)

Independent variables	Model 1 legitimacy	Model 2 worthiness	Model 3 network	Full model
Demonstration of organizational legitimacy				
Statement of legal status	– 0.21 (0.23)			– 0.18 (0.22)
Statement of accountability	0.29 (0.20)			0.01 (0.19)
Demonstration of competence	0.42*** (0.16)			0.45*** (0.14)
Argument of worthiness				
Description of the target group (ref: General)				
Specific and individual		0.29* (0.15)		0.12 (0.14)
Proposed solution (ref: voluntary service)				
Cash and in-kind		0.05** (0.26)		0.52** (0.23)
Professional service		0.36 (0.25)		0.29 (0.23)
Social network				
# message spreaders (log)			0.36*** (0.07)	0.35*** (0.07)
# Weibo followers (log)			– 0.05 (0.04)	– 0.04 (0.04)
WeChat promotion			– 0.04 (0.16)	– 0.12 (0.15)
Control variables				
Target amount (log)	0.86*** (0.08)	0.77*** (0.08)	0.62*** (0.09)	0.60*** (0.09)
Industry (ref: animal and environment)				
Disability and illness	0.26 (0.37)	0.08 (0.39)	0.02 (0.18)	0.14 (0.36)
Poverty and disaster	0.08 (0.38)	– 0.03 (0.40)	0.00 (0.19)	0.10 (0.37)
Education	0.30 (0.39)	0.18 (0.40)	– 0.23 (0.36)	0.21 (0.37)
Registration type (ref: SO)				
Foundation	– 0.46 (0.41)	– 0.57 (0.42)	– 0.25 (0.38)	– 0.31 (0.37)
NGNCE	– 0.21 (0.18)	– 0.17 (0.18)	0.10 (0.19)	0.06 (0.18)
Internal	– 0.30 (0.38)	– 0.05 (0.35)	– 0.23 (0.36)	– 0.46 (0.39)
Organizational age (log)	0.01 (0.12)	0.08 (0.12)	0.11 (0.11)	0.08 (0.11)
PR value	0.14 (0.10)	0.10 (0.10)	0.07 (0.10)	0.11 (0.10)
Observations	109	109	105	105
R^2	0.59	0.57	0.64	0.70
Adjusted R^2	0.54	0.52	0.58	0.63
P	0.00	0.00	0.00	0.00

Dependent variable is the amount of donations raised (log) during the solicitation period. Table shows regression coefficients, with standard error in parentheses

The p value of “statement of legal status” is 0.38 in legitimacy model and 0.27 in full model. The p value of “statement of accountability” is 0.25 in full model

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. $N = 109$

potential donors. A potential donor may search for more information, such as an organization’s annual report, related news, or even contact the pledger to ask for more information. To what extent such activities are prevalent, and how far this could influence the campaign outcome are beyond the scope of this study. Furthermore, as our sample consisted only the beneficiaries of the Tencent-NGO 2.0 training and consultation program, it may not be generalized to all Chinese grassroots organizations engaging in crowdfunding. Because Tencent did not release data on the demographics of all organizations using its platform, we

could not examine how representative our sample was. However, by comparing our sample to the 2015 China Philanthropic Crowdfunding Development Report, we show that at least in terms of donation amount, projects in our sample are similar to the majority of the projects on different crowdfunding platforms in China.

The current findings regarding legitimacy and worthiness largely conform with the results of previous commercial crowdfunding and conventional fundraising studies. This implies that whether writing an offline fundraising letter or an online crowdfunding pledge,

Table 4 Logistic regression models for goal attainment

Independent variables	Model 1 legitimacy	Model 2 worthiness	Model 3 network	Full model
Demonstration of organizational legitimacy				
Statement of legal status	– 0.66 (0.76)			– 0.89 (0.90)
Statement of accountability	1.31* (0.72)			0.95 (0.85)
Demonstration of competence	1.08** (0.72)			1.31*** (0.56)
Argument of worthiness				
Description of the target group (ref: General)				
Specific and individual		1.11** (0.48)		0.97** (0.56)
Proposed solution (ref: voluntary service)				
Cash and in-kind		1.74** (0.81)		2.25** (1.07)
Professional service		1.63** (0.80)		1.81* (1.04)
Social network				
# message spreaders (log)			0.73*** (0.27)	0.65** (0.32)
# Weibo followers (log)			– 0.13 (0.13)	– 0.14 (0.16)
WeChat promotion			– 0.06 (0.53)	– 0.37 (0.59)
Control variables				
Target amount (log)	– 0.83*** (0.30)	– 1.04*** (0.32)	– 1.32*** (0.35)	– 1.67*** (0.44)
Industry (ref: animal and environment)				
Disability and illness	1.83 (1.43)	1.02 (1.29)	0.03 (0.62)	1.45 (1.60)
Poverty and disaster	1.51 (1.44)	1.04 (1.32)	– 0.69 (0.64)	1.30 (1.59)
Education	1.37 (1.50)	0.77 (1.33)	– 1.33 (1.33)	0.97 (1.66)
Registration type (ref: SO)				
Foundation	0.06 (1.24)	– 0.01 (1.23)	0.69 (1.21)	0.40 (1.45)
NGNCE	– 0.51 (0.57)	– 0.40 (0.55)	0.30 (0.61)	– 0.29 (0.71)
Internal	– 1.11 (1.18)	– 0.13 (0.99)	– 0.65 (1.15)	– 1.98 (1.48)
Organizational age (log)	0.25 (0.37)	0.35 (0.35)	0.41 (0.37)	0.28 (0.43)
PR value	0.34 (0.33)	0.31 (0.35)	0.30 (0.38)	0.50 (0.45)
Observations	109	109	105	105
χ^2	31.55	31.60	31.60	49.37
<i>P</i>	0.00	0.00	0.00	0.00
Pseudo R^2 (%)	21.35	21.38	22.08	34.42

Dependent variable is whether the target amount was achieved during the solicitation period. The table shows regression coefficients, with standard error in parentheses

The *p* value of “statement of legal status” is 0.38 in legitimacy model and 0.42 in full model. The *p* value of “statement of accountability” is 0.16 in legitimacy model and 0.96 in full model

p* < 0.10; *p* < 0.05; ****p* < 0.01. *N* = 109

whether crowdfunding in business setting or for philanthropic cause, it is essential to provide information regarding the credibility of the organization and the nature of the social issue in a persuasive way. Our findings regarding social network, however, differ from previous studies. Saxton and Wang (2014), for instance, found that the number of fans on Facebook was a significant predictor. In our study, the number of followers on Sina Weibo was irrelevant to the fundraising outcome. There might be two reasons behind this difference. First, as discussed earlier, many theoretical discussions about crowdfunding have

pointed out that the success depends on viral networks and viral marketing rather than just the pledger’s own networking and marketing skills. In our data, promotion using WeChat measures the pledger’s efforts in marketing; followers on Sina Weibo measure the pledger’s own social network. Both failed to predict campaign outcomes. The number of successful message spreaders measures the network and marketing ability of individuals in the pledger’s social network. These individuals not only forwarded the crowdfunding page to their circle of friends, but also successfully persuaded their friends to donate. Thus, our

data confirm the hypothesis made in the previous theoretical discussions: To succeed in crowdfunding, the key is not how large a network one has but how many influential people will forward your message and convince their friends to donate. It would be even better, if people in the network of these influential individuals would also forward the message and convince their own family, close friends, and acquaintances to donate. When such a viral diffusion happens, the information dissemination happens much faster, and the reach is much further.

Second, a friend network and a fan network are very different. In our data, WeChat is a circle of family, close friends, and acquaintances: You need an individual's permission to add him or her as a friend. Sina Weibo is a fan network: No permission is needed to follow an account on Sina Weibo. Studies pointed out that compared to any type of message that originates from external sources, people are more inclined to believe something shared by their friends (Phing and Rashad Yazdanifard 2014). Moreover, within a circle of friends, there is peer pressure to donate (Meer 2011). This is perhaps why Saxton and Wang (2014) observed Facebook fans making a difference: Even though Facebook's "fans" feature works like followers on Sina Weibo, its "friends" feature works in a similar way to WeChat. Due to technical limitations, we were not able to track reposts on Sina Weibo. Nor could we count the exact number of friends each pledger has on WeChat.

Since our study was carried out on a Chinese crowdfunding platform, some of our findings may be China-specific. One of such findings is the preferred solutions. As expected, Chinese donors have a preference for cash and in-kind donations, because such programs are prevalent and have visible outcomes. Moreover, if a problem can be solved by cash and in-kind assistance, it is probably not particularly severe or complicated, and thus, the solution is of lower risk. Professional service, unlike what we had expected, is not a preferred solution. This is probably because professional social services are a new phenomenon. Even though larger donors such as the corporate elites are now shifting to this kind of programs, the small donors are yet to be educated.

Another China-specific finding is about the demonstration of legitimacy. Neither the statement of legal status nor the accountability statement was significant in the full models, meaning that compared to the argument for competence, proposed solution and viral marketing, statement of legal status and accountability are not so important for Chinese donors. One reason might be that since all pledgers have a sponsor on the Tencent platform, donors trust the sponsoring organizations. They leave it to Tencent and the sponsors to monitor the progress of the project. Hence, the short statements have little added value. Another reason could be that there are so many unregistered grassroots

organizations in China (Deng 2010). Despite being illegal entities (according to the Chinese law), unregistered grassroots organization have been able to mobilize resources and carry out their programs (Spires et al. 2014; Zhou 2016). It seems that the Chinese public is used to judging an organization based on factors other than legal status. Furthermore, it was found that within the Chinese cyberspace, there has emerged a grassroots philanthropy discourse, which emphasizes on personal dedication and discipline rather than formal organizational regulations and procedures (Zhou and Han 2018). It might be that this discourse has a stronger influence on small donors than the mainstream discourse which emphasizes on formal accountability mechanism.

A third China-specific finding is that the Internet capacity variable has failed to predict outcomes. In Western-based studies, Internet capacity has predicted fundraising success (Saxton and Wang 2014) and is also related to whether an organization will adopt social media and be active on social media (Nah and Saxton 2013). In our models, Internet capacity has no influence on the amount of donations raised, or goal attainment. This is probably because Internet capacity measures an organization's ability to build and maintain an influential website. It was assumed that organizations will transfer their capacity in maintaining a website to maintaining their social media accounts and marketing their crowdfunding campaigns online. The Chinese nonprofits are mostly digital natives, which developed hand-in-hand with the Chinese cyberspace (Tai 2006; Yang 2003). Our sample organizations were about 6 years old. These organizations probably established a website at the same time as when they registered a social media account (Sina Weibo, for instance, was established in 2009). Thus, the capacity to maintain a traditional website does not influence Chinese nonprofits in the same way as it does Western ones, particularly those with longer history.

Despite the China-specific elements, our conclusions for legitimacy, worthiness, and social network still have implications which hold true for nonprofits all over the world. In particular, our finding on viral marketing implies that nonprofits that wish to succeed in crowdfunding will need to develop strategies to promote such viral diffusion of information. In the literature related to viral marketing, it was agreed that "seeding strategy" is crucial for marketing success. In order to circulate a viral message, one needs to find out the number and type of people that could act as "seeds." "Seeds" will initiate the spreading of the viral message to other people and have considerable influence on the later round of viral diffusion process (Bampo et al. 2008; Hinz et al. 2011; Phing and Rashad Yazdanifard 2014). Due to technical limitations (mostly, the privacy regulations of the platforms), we were not able

to identify whether the pledgers in the sample used any seeding strategies, nor could we discover the identity and characteristics of the message spreaders. In future studies, some experiments on seeding strategies could be tested so that more practical suggestions can be offered to nonprofits.

To conclude, in this study, we have examined how far the demonstration of legitimacy, argument for worthiness, and social network influence crowdfunding outcomes. Even though nonprofit settings differ from their commercial counterparts, key factors that influence campaign outcome are similar. Some of the nonprofits' offline strategies could still be used online in the interactive Web 2.0 world, so long as they fit the social and cultural environment of the society the nonprofits operate in. However, to succeed, the nonprofit will have to utilize viral networking and promote viral marketing for their projects.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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