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Scaling inclusive digital innovation successfully: the case of crowdfunding social enterprises

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There is a growing interest in how organizations and initiatives that innovate to use information and communication technologies for development (ICTD) can scale their operations, reach and impact. This article takes a systemic and socio-technical approach to analyse the successful scaling of a crowdfunding social enterprise. It traces the growth of the 'innofusion' network of the world's first person-to-person microlending platform, with particular emphasis on practices of balancing along three dimensions: (1) the need for standardization to manage expansion across highly diverse geographical contexts and for adaptation, customization and diversification to produce locally meaningful impact; (2) online and offline strategies and (3) business and social aspects of the organization. Processes of techno-financial scaling made possible by organizational and technological innovation at the social enterprise, which is embedded in the San Francisco Bay Area's techno-entrepreneurial milieu, also enabled financial innovation among platform partners in developing countries.

Keywords: ICTD; scaling; information systems; inclusive innovation; crowdfunding; online microfinance

1. Introduction

There is a growing interest in how organizations and initiatives that innovate to use information and communication technologies for development (ICTD) can scale their operations, reach and impact (Fisac-Garcia et al. 2013). A recent overview article in this journal identified research on the scaling of inclusive innovations as a research priority (Heeks, Foster, and Nugroho 2014). This is not only because scaling up is often challenging for ICTD projects, many of which fail to move out of the pilot stage (Heeks 2002). It is also compounded by a lack of understanding of the processes at work in such scaling. What is clear is the integral relationship between innovation and scaling: 'Scaling is necessary for ICT innovations to have broad impact and… ICT innovation is necessary for scaling to be successfully undertaken' (Foster and Heeks 2013a, 297). Our article contributes to the emerging scholarship at the intersection of inclusive innovation and scaling by presenting a successful case of scaling by a crowdfunding social enterprise.

Crowdfunding refers to the practice of raising money from large numbers of people, usually by the way of the Internet. This is a growing industry that reached over US$ 5.1 billion in 2013 (Broderick 2013). Crowdfunding websites such as Kickstarter or Zopa are used by individuals and organizations of all types to raise funds for business ventures, artistic projects or personal expenses, among others. On some of these websites lenders are looking for a competitive financial return on their money. On others they are more interested in contributing to social causes, substituting social or emotional returns for little or no financial interest. It is in this second area of philanthropic crowdfunding where our case study of a social enterprise aiming to alleviate poverty through microlending is located. Whether commercial or philanthropic, however, crowdfunding platforms by definition can only be successful when large numbers of contributors give their money, often in very small amounts that get aggregated by the website. Crowdfunding platforms therefore have inbuilt reach and potential for scaling, aiming to attract growing numbers of users.

Our case study analyses how the world's first person-to-person microlending website has scaled successfully over the course of 10 years. Kiva.org was established in 2005 in San Francisco, California, to 'connect people through lending to alleviate poverty'.[1] It has been called the 'fastest-growing non-profit in US history' (Coates and Saloner 2009), expanding its operations from 7 borrowers in 1 country to over 1.5 million borrowers in 86 countries.[2] Kiva has channelled over US$680 million3 from close to 1.3 million lenders, mostly in $25 loans, to low-income borrowers via its online lending platform. It thus presents a fertile case for the study of scaling.

In this article, our first aim is to add specificity to the literature on scaling inclusive innovation: What are the particular practices and processes through which Kiva has grown? And how do they work together in online and offline environments? In addition, while much of the (admittedly small) inclusive innovation scaling literature has focused on innovations by corporations operating at the BoP (Foster and Heeks 2013a, 2013b, 2014), our case study examines a small to medium-sized social enterprise that is more similar to many development organizations than large commercial firms are. Our second aim therefore is to identify lessons from the Kiva case that might be useful to others in the inclusive innovation area.

We begin this article with a review of the ICTD literature on scaling and then introduce Kiva as an inclusive innovation organization. We continue by examining its geographical and techno-financial scaling and conclude with recommendations building on a summary of our main endings.

2. Conceptualizing processes of scaling inclusive innovations

Inclusive innovation is defined as 'structures and processes required to develop and deliver innovative technologies (goods and services) incorporating the needs and interests of the

poor' (Foster and Heeks 2013b, 334). One of the main questions is to what extent poor people themselves are actually included in the innovation process. Here, a ladder model has been proposed, ranging from innovations that are intended to addressing the needs of the poor at the one end to those that take place within an inclusive framework of knowledge production (Heeks, Foster, and Nugroho 2014). The scaling of innovation outputs at the lower end of the ladder is easier to achieve than the scaling of innovative structures at the higher end, which furthermore demands attention to systematic processes of exclusion that inclusive innovation aims to overcome.

To analyse these processes for Kiva, we also draw on the ICTD literature, which argues that scaling technological platforms 'is neither trivial nor automatic' (Monteiro 1998, 230). We define scaling as 'the processes and embedded practices by which heterogeneous networks around the technology are spread, enhanced, scoped and enlarged' (Sahay and Walsham 2006, 188). This is not a uniform process (Foster and Heeks 2013a), but can be analytically divided into different dimensions. While technological scaling refers to the technical extension of technology platforms, economic scaling examines how they can grow in relation to target markets and achieve economies of scale. Social scaling refers to the social and cultural implications of the extension of a technology platform, which is often related to human scaling that encompasses the growth of human resource capacity in terms of numbers of users and their technological skills and competence. Finally, geographical scaling analyses the extension of the geographical coverage of a platform (Sahay and Walsham 2006).

We also follow the 'systemic view of scaling' advanced by Foster and Heeks (2013a, 299). Moving away from traditional dualistic models that are based on opposing stages, Foster and Heeks show that scaling is an emergent, multi-way process that creates dynamic networks of innovation. To capture this movement, they borrow Fleck's (1993) concept of "innofusion"' to recognize the continuity of innovation during the diffusion (e.g. scaling) of a technology' (Foster and Heeks 2013a, 298). Correspondingly, models of innovation networks, rather than innovation partnership, better capture the relationships that are established through processes of innovation, where agents in the network often act as innovators themselves.

In particular, we focus on dynamics of standardization and local adaptation that arise during scaling. This emphasis is warranted because Kiva's processes of scaling have been mainly driven by the organization's expansion to diverse geographical locations. Operating as it does in 86 countries in all continents, predominantly in the global South, while headquartered California, means that Kiva is working across many different political, regulatory and socio-cultural contexts. Therefore, 'a key issue…is to find a way to enforce some notion of control and coherence across the different contexts' (Rolland and Monteiro 2002, 87). This can lead to tensions between the need to standardize to manage and maintain growth and the need to adapt to particular circumstances to ensure local relevance and impact.

Researchers have drawn attention to the fact that standards are not neutral but expressions of particular agendas (Sahay 1998). Adhering to standards sometimes results in assumptions that one-size-fits-all, as ICTD programmes like One Laptop per Child have done. Because such initiatives have often not been successful (Braund and Schwittay 2006), there arises a need for a pragmatic balance between the global and the local (Rolland and Monteiro 2002). Especially as technology networks grow, 'selection, presentation, and incentivisation of standardized innovations become ever-more risky, difficult, and skilled activities for the lead [organization]' (Foster and Heeks 2013a, 310). We show how Kiva has carried out this work through complementing standardization with adaptation, diversification and customization.

Local (technology) adaptation often deals with cross-cultural and political–economic issues. This has been explored in many different contexts, such as around processes of offshore software development (Aman and Nicholson 2003). Theories of neo- and post-colonialism have been used by Adam and Myers (2003) to examine the culturally inappropriate imposition of information systems (IS) through a case study of the Maldives Customs System. Paying attention to culture as a dynamic, changing system is also important (Liu and Westrup 2003). In this regard, the roles of local adaptation capacities (Bada 2002) and local stakeholders and their knowledge (Macome 2003; Puri and Sahay 2003) have been identified as crucial. While there is thus a large body of literature that examines scaling of commercial IS, not enough grounded understanding exists of how ICTD projects in the social enterprise field scale successfully. Specifically, our article begins to fill the gap of knowledge around how the need for standardization and local adaptations are reconciled. This in turn adds specificity to our understanding of the transformation of standardized technologies through 'mutually shaping processes with the local context of implementation' (Rolland and Monteiro 2002, 98). In addition, we pay particular attention to the interaction between online and offline processes in achieving this transformation.

3. Kiva.org: inclusive innovation in philanthropic crowdfunding

Kiva was founded in 2005 by a then husband and wife team, who married Silicon Valley's business acumen – Jessica Jackley holds an MBA from Stanford University – and its technology expertise – Matt Flannery was a programmer at Tivo. After hearing Muhammad Yunus, the founder of the Grameen Bank who received the 2006 Peace Nobel Prize for his work, speak at Stanford in 2003, Jackley went to work for a microfinance organization in East Africa. As part of her work, she had conversations with many small entrepreneurs, and these experiences convinced her – and Flannery when he went to visit her – that microfinance was an effective way to alleviate poverty (Flannery 2007).[4] Upon their return to the Bay Area, they conceived of the idea for Kiva, in part inspired by child sponsorship programmes that both had participated in through their families and churches.

Kiva's beta site, which was built by Flannery, connected 7 entrepreneurs in Uganda, recruited through Jackley's work connections and Moses Onyango, a local pastor, and 350 family members and friends on the couple's wedding list, who pitched in a small amount of money each

to fill the first 7 loans.[5] Other key people in Kiva's early innovation network were the handful of close friends who became the initial employees of the organization and the first members of the advisory board. These show how Kiva's co-founders were able to tap into Silicon Valley's corporate and philanthro-capitalist institutions, embedding it in an environment where technological innovation to make the world a better place is celebrated. The support of this early network was crucial for the organization's growth (Flannery 2007).

Central to Kiva's innovative business model are stories of Kiva Entrepreneurs presented on the website, which lenders can browse to find borrowers that match their personal preferences and risk appetites. They then lend a minimum of $25, which gets aggregated with the small loans from other lenders to make up the total loan amount. Once they have made a loan, lenders receive regular updates on the progress of the borrowers and businesses they have helped to fund. In other words, on Kiva stories operate as a form of narrative capital that sustains lenders' financial, social and emotional commitments to Kiva, its cause and its borrowers (Schwittay 2014). This is also important because lenders cannot receive financial interest because of US regulatory restrictions. The money is dispersed to the borrowers, and their repayments collected, by Kiva's 292 local partner organizations, which are mainly microfinance institutions (MFIs). While Kiva, which finances itself through charitable grants enabled by its non-profit status, optional donations by lenders and organizational transactions such as expired gift cards and the interest from lenders' money before it gets distributed to partner organizations (Flannery 2009a), does not charge the MFIs interest on its loans, the latter charge interest from their borrowers, in part to finance their own operations.

Kiva thus presents an inclusive innovation on several levels. It was built for the benefit of low-income people, who are able to raise loans for their businesses on Kiva. This in turn can, although not necessarily does, lead to an improvement of their lives.[6] It is also inclusive of poor beneficiaries' stories and to some extent voices. This situates Kiva firmly in the lower part of the innovation ladder, encompassing its intention to address poor people's needs, its consumption or use by poor people themselves (usually through an MFI intermediary) and its positive impact on their livelihoods (Heeks, Foster, and Nugroho 2014, 177).

Our analysis is based on research about Kiva conducted between 2009 and 2012, although we became familiar with the organization in its early days and had interactions with its co-founders as early as 2006. In 2010 and 2011, we carried out seven interviews with Kiva executives, staff and Fellows, including the two co-founders, two regional managers, one engineer and two communications managers. In addition, we undertook fieldwork at Kiva partners in Mexico in 2009 and Indonesia in 2010. The first location was chosen because of previous research experiences in the region. We conducted four interviews, consisting of the director, the technology director, the community outreach director and the community affairs director. As the organization was in the process of terminating its Kiva partnership, we gathered important information about the negotiations around this process. The second location was chosen because of the importance of micro-finance in Southeast Asia. Here, we interviewed six people in total,

consisting of the CEO, his personal assistant, the technical manager, the Kiva coordinator, one loan officers and one branch manager.

In Indonesia, we were also able to observe the work of a Kiva Fellow. Fellows are graduate students or young professional, often with a business, technical or finance background, mostly from the USA, who volunteer to spend at least four months with a Kiva partner organization to assist with its integration into Kiva's network (Schwittay 2014). Interviewing the Fellow and observing her work thus provided critical insights into the on-the-ground, offline work required to support Kiva's online expansion.

In addition, we were able to meet with two borrower groups in Mexico, consisting of five and six women, and one borrower group of Indonesia, consisting of four women. We were introduced to them through the respective organization, although the Indonesian group included a woman to whom we had made a Kiva loan earlier. Through open-ended conversations with the women, without a translator in Mexico and using the Kiva coordinator as a translator in Indonesia, we learned how Kiva's procedures were experienced by the borrowers themselves. Finally, we have been Kiva lenders ourselves for a number of years.

This primary research was complemented by an extensive analysis of the Kiva website, its official blogs and all Kiva documents posted online. Secondary research also drew on the growing number of business cases (Anderson and Ramirez 2007; Hartley 2010; Richman 2011) and academic articles (Black 2009; Gajjala and Birzescu 2011; Moodie 2013) about Kiva. We triangulated the data from the interviews, documents and website to assure the validity of our analysis and check for possible research biases.

We build on this primary and secondary research to conduct the first systematic analysis of how Kiva has successfully scaled its operations over the last ten years. Following a sociotechnical view of scaling that recognizes the closely interlinked nature of technological artefacts and their social use (Foster and Heeks 2013a), we show how both geographical and techno-financial expansion cannot be separated from the organizational, social and political implications of processes of scaling.

4. Kiva's geographical scaling

From its small, localized beginnings of Tororu, Uganda and a home office in San Francisco, Kiva now works in 86 countries. Initially, Flannery told us, 'there was some reluctance to working outside of East Africa, because it seemed disrespectful to lump together poor people from all over the world'. However, after a Daily Kos blog post that launched Kiva's public recognition, he received emails from many MFIs outside of Africa and recognized their need for alternative funding sources. Therefore, after Premal Shah joined Kiva as President, Kiva launched its strategy to partner with MFIs in more than one country (Flannery 2007). In reality, it was more of a push–pull situation, as our research in Indonesia shows. Kiva's geographical scaling is dependent on recruiting new partner MFIs in new countries. This is managed through processes of

online standardization. By contrast, new partner incorporation, which demands more attention to local adaptation, is supported by a small but strategic offline presence in the form of Kiva Fellows. This section shows how Kiva's efforts to scale through striking a balance between standardization and adaptation have resulted in a focus on catalytic growth

4.1. Scaling through standardization: recruiting new partner organizations

As described above, Kiva's very first partner organization in Uganda was created by Pastor Moses Onyango in order to formalize Kiva's relationship with its first seven borrowers. Since then, the process of recruiting new partners has been standardized to work coherently across different national contexts. A Guide to Kiva for Potential Field Partners, which is a 36-page document on the website, is a first point of information for potential Kiva partners. It explains the application process, outlines the tasks each field partner has to fulfil and includes sample partnership proposals. The Guide, which is written in accessible English and also available in French, Spanish and Russian, also streamlines and decreases the upfront work Kiva staff has to do in dealing with potential partners. To this end, it posts simple questions that allow organizations to gauge their ability to fulfil Kiva requirements.

Interested organizations then have to submit an online application questionnaire consisting of a five-page word document template that is downloadable from the Kiva website. Applicants have to answer 40 questions about how they would fulfil the Kiva requirements. Ability to answer the sometimes very detailed questions provides the first step in selecting appropriate partners. The questionnaire manifests how Kiva has institutionalized its selection process and the particular agendas at play (Sahay 1998). Early on, Kiva aimed to cast a wide net in its recruitment of new partners, with a mandate to work with less experienced MFIs that might not have access to conventional funding (Flannery 2007). Now, as Kiva is well established, completely new organizations need not apply, as it looks for established groups that can carry out the work its takes to be a Kiva partner. In addition, partners have to fulfil a set of minimum requirements, which include, among others, 'a strong commitment to serving the needs of poor populations', being legally registered in its country of origin and 'being able to legally accept and repay US Dollar debt capital and manage currency risk'.[7]

In order to grow, Kiva has also expanded the range of organizations with which it partners, from standard MFIs to social businesses, schools and non-profit organizations. To accommodate this diversity, Kiva has introduced different levels of partnership, with different levels of application due diligence and maximum credit lines. New partners are encouraged to start with an 'experimental partnership' to see whether a good fit can be established, after which they can be graduated to 'basic' or 'full' partnerships. This shows that Kiva sees itself as part of a partner organization's long-term future, by providing capital that must be used to make loans in keeping with Kiva's inclusive innovation mission of poverty alleviation. Creating such a tiered admission system is one way in which the diversity that comes with growth has been managed.

Our interviews with partner MFI staff disrupt the narrative of MFIs seeking out Kiva, at least in the beginning. The CEO of the Indonesian MFI where we conducted research recounted that he received a letter from Matt Flannery in 2006, inviting his organization to join Kiva. Flannery had become aware of the MFI because it was part of the Opportunity International network.[8] In its early days, Kiva recruited its partners through established MFI networks such as Opportunity's and World Vision's. The CEO told us:

> At first, I did not answer the letter because I was concerned that Kiva does all transactions in US Dollars. I was worried about possible problems with currency exchange losses. A year later, after watching Kiva, I decided that becoming a partner would give us lots of good international publicity.

The CEO was still concerned about currency issues, however, and asked if Kiva could make its loans in local currencies rather than US dollars, but Kiva declined. As a result, the Indonesian MFI has at times incurred significant losses in its Kiva transactions, as the CEO showed us by drawing a series of financial charts and diagrams on the whiteboard of his office. Dispersing loans in US dollars and leaving the management of exchanging money into local currencies, with all its attendant risks, to its 292 partner organizations is one of the clearest examples of standardization on Kiva. Using the currency of its home country has obvious advantages for Kiva, as it reduces its own risk exposure and simplifies its operations.

4.2. Scaling through adaptation: incorporating new partner organizations

When partner organizations are nominally approved, many of them are assigned a Kiva Fellow who helps them manage the technical and operational challenges of becoming a full-fledged part of Kiva's innofusion network. By spending at least four months of fulltime, in situ (volunteer) work with the partners, Fellows provide crucial on-the-ground assistance, without which Kiva's online expansion would not have been possible.

As part of their job, Fellows train dedicated Kiva Coordinators, who are newly created staff positions responsible for carrying out the administrative tasks required from Kiva partners. They train loan officers, whose workload often increases because of Kiva's borrower story requirements. Fellows also help in writing borrower business updates and their own blog posts contribute to the narrative capital that is so dear to many Kiva lenders. They thus act as translators and enable all members of Kiva's network to obtain the information they need. On the one hand, they bring stories from far-flung places to Kiva lenders and on the other they make the rationalities and technologies of a social enterprise steeped in Silicon Valley techno-entrepreneurship understandable to partner organizations working in often radically different contexts. In this way, they are critical enablers of local adaptations.

A good example of this adaptation is the client confidentiality waiver that Kiva requires its borrowers to sign, whereby they agree that their personal information is posted on the Internet.[9] During our research in Indonesia, the Kiva Fellow at the time was helping the MFI to implement

the waiver, which Kiva had made mandatory a few months earlier. This had become necessary because borrowers sometimes did not know that their personal information and pictures were posted on the Kiva website. We found this out when we showed a woman to whom we had made a loan a printout of her Kiva profile, complete with picture. From her facial expressions, we could see that she had never seen the picture before and indeed was surprised about where we had found it. The MFI's Kiva coordinator, who was translating, confirmed that the borrower did not know anything about Kiva. He explained to us: 'We don't tell our borrowers that their loans are coming from abroad, because then they think they don't have to repay them'. He elaborated that this was because international money has long been regarded as charity and therefore free money. The waiver had the potential to challenge that story, by informing borrowers about Kiva as the source of their loans. It was the Fellow's job to work with the Kiva coordinator on the wording of the waiver, trying to find a compromise that would serve the MFI's needs while upholding Kiva's transparency requirements. In the end, the waiver still did not mention Kiva, but informed borrowers that their information was displayed in a public space where it can be seen by people around the world, including Indonesia, who then contribute money to fill their loan. In this way, the wording of the client waiver and the process of translating it from English into a local idiom that borrowers, who sometimes have no experience of the Internet, can understand allows for local adaptations. Such negotiations require the physical, longer term presence of Kiva representatives, and Kiva Fellows enable this aspect of Kiva's geographical expansion at relatively little financial cost.

Sometimes MFIs cease to be Kiva partners, as happened with the Mexican MFI. While Kiva's official explanation was that the MFI no longer needed the Kiva money, through interviews with the MFI's managers we learned that they had become overwhelmed by Kiva's demand for increased borrower numbers. This was especially the case because many of the MFI's clients lived in geographically inaccessible areas, which made the cost of collecting their stories and photos for the borrower profiles very high.[10] Documentation on Kiva's website is clear that Kiva partners incur administrative – mainly labour and technical – costs in managing the partnership. Such transaction costs, which Kiva estimates to be between 2% and 4% of a loan, increase in relation to the level of detail required and weighing detail versus cost can lead to tensions between different stakeholders of an innofusion network (Bowker and Star 1999). In the end, the Mexican MFI decided that the costs were too high and left.

Overall, this is a rare occurrence in the Kiva network, where partnerships are usually terminated by Kiva because fraud has been discovered. Fellows play a role here as well; Kiva calls them its 'eyes and ears on the ground' and they carry out borrower verification and basic due diligence. Over the years Kiva has built a professional due diligence system, partnering with companies such as Ernest and Young and Moody's. This aspect of scaling work prevents the breakdown of an innofusion network due to mismanagement. At other times partnerships end because of political challenges in the partner organizations' home countries, as was the case with Kiva's South Sudan partner. This shows the critical importance of local contexts to scaling. Often,

adaptations are able to overcome the challenges posed by context, but sometimes the ability to scale is hindered by external circumstances beyond an organization's control.

4.3. Scaling with impact: catalytic growth

Alongside new partner organizations, Kiva has expanded into new countries. This can involve complex negotiations, as Kiva has to deal with different regulatory requirements and political climates. Ironically, however, it was when the organization decided to expand into home territory that it had to weather its first major controversy. In June 2009, Kiva began to make loans to borrowers in the USA, which many lenders saw as a deviation from Kiva's mission to help alleviate poverty. A group of 'pissed off' Kiva lenders argued that US loans do not go to poor people in developing countries but to small, sometimes middle-class, entrepreneurs in one of the richest countries in the world, which was furthermore home to a great number of Kiva lenders. This physical and social closeness also contributed to making US borrowers unrecognizable as sufficiently poor. Another argument was that because US loans are usually larger, they might take money away from genuinely poor borrowers in other countries. Thus, the debate was over whether Kiva was still practising inclusive innovation or whether it was moving towards a mainstream 'innovation of inequality' (Heeks, Foster, and Nugroho 2014, 175).

This controversy shows the dilemma between the need for scaling and the 'conservative forces of the economical, technical, and organizational investments in the existing information infrastructure' (Monteiro 1998, 230). Early Kiva supporters had a strong investment in its international poverty alleviation mission, and felt let down when that mission seemed to be abandoned for the sake of growing Kiva's numbers. The process was nerve-racking for Kiva's leadership. Kiva's chair remembers that

> we were under such an assault to have launched in the U.S. that I think 10% of the money in our loan funds got withdrawn. … That caused us a lot of soul searching … The decision to stay in the U.S. and take an unpopular decision in the short term because we knew it stood for something important in the long term was very difficult. (Hannah 2014)

This quote shows how Kiva's leadership is making strategic decisions to manage and direct the organization's growth, even though it can put it on a collision course with some of its lenders. To the latter, Kiva explained that as a result of the 2008 financial crisis, small businesses in the USA were experiencing a severe credit crunch. In addition, lending money to people in the USA would make the Kiva network truly inclusive, as money could now flow from lenders in the global South to borrowers in the USA as well (Kiva 2010).

A result of this debate was Kiva's focus on 'catalytic growth' (Hannah 2014). This meant that rather than growing at all cost or only focusing on easy grow areas, Kiva's expansion was also targeted at areas with significant impact but slower growth potential. In-country expansion would be targeted at particular regions. In Peru, for example: If we wanted growth at any cost, we'd have gone for low-hanging fruit. So for instance, we would've said we'll find a lot of people

in Lima. But the microfinance market in Lima was actually becoming quite saturated, so we decided we're not going to become catalytic here, so where do we provide subsidized capital? Let's go to the Peruvian jungle, which is much harder to reach, you can't grow that fast, but it's more catalytic. We just wanted to go to some of the riskiest parts of the world where capital wasn't reaching. (Hannah 2014) Kiva's (2013) Annual Report shows that catalytic growth has resulted in a new product called 'catalytic loans', defined as 'any loan, including the development of a new kind of loan product, that would not have happened without Kiva'. In 2013, these loans accounted for 36%of all loans made that year, pointing to a process of financial innovation we examine below (Kiva 2014).

While the quest for catalytic growth is in line with Kiva's early decision to fund less established MFIs (Flannery 2007), it can put a brake on Kiva's efforts to maintain its impressive expansion. In the end, Kiva used the debate around the direction of its growth to strengthen its position as an inclusive innovator, aiming to balance the breadth of scale with the depth of impact. In this process, standardization and adaptation have important roles to play and online procedures are enabled by offline interactions. In addition, techno-financial innovation has been crucial to achieving catalytic growth.

5. Kiva's techno-financial scaling

Kiva is a crowdfunding platform operating via the Kiva website, which is the visible front of the organization. The back-end information management system is where most of Kiva's financial transactions take place. Over the years, these platforms have gone through iterations to make them more user-friendly and support Kiva's expansion and growing diversity. Examining these processes allows for a more nuanced understanding of how Kiva is achieving a balance between standardization and adaptation through enabling diversification and customization. Once again, both online and offline procedures contribute towards this goal.

5.1. Scaling through diversification: loan types and amounts

In 2006, its first full year of operations, Kiva raised just under US$500,000 dollars in loans. Today, it is funding close to one million dollars a day in loans. This relentless expansion has been supported by Kiva's ever more sophisticated techno-financial infrastructure, but ultimately depends on enough loans being available on the website and enough lenders to fill them. This in turn has been achieved not only through the geographical scaling we have analysed above, but also through diversifying loan types. In addition to traditional small business loans, Kiva is now also offering green/ecological loans; water and sanitation loans; agriculture loans; fair trade loans; higher education and student loans; health loans; start-up loans; mobile technologies and unbanked/underserved population loans.

Most importantly, partners are encouraged to develop and suggest their own innovative loan products. The experimental partnership category and the focus on catalytic loans that would not exist without Kiva money show that Kiva is actively trying to foster financial innovation

among its partners, providing capital to higher risk programmes that more traditional funders would not support. To this end, Kiva received a US$3 million Google Global Impact Award to establish Kiva Labs, which 'provides crowd-sourced capital to relieve the cost constraints on new ideas'.[11] This extends Kiva's own innofusion network to its partner organizations, showing that agents in this network can be innovators themselves (Foster and Heeks 2013a).

The Indonesian MFI provides an example of such grassroots innovation, through funding loans for biogas digesters that allow borrowers to turn the waste from domestic animals into electricity for household consumption. During our field research, these loans were in their experimental stage, and the Kiva Fellow commented that the MFI leaders were 'very excited about the possibilities of these loans for social and environmental reason. But they are also aware of possible implementation challenges'. As the MFI's Kiva coordinator explained, because these loans were larger than its average loans, potential borrowers needed to have a good credit history with the MFI. They also needed 'foresight, because it would be several years before investment in the digester would be offset by energy savings'. The digester in turn fit with the MFI's own focus on environmental sustainability and with Kiva's category of green loans.

The example also shows that loan diversification has led to an increase in individual loan amounts, resulting in the scaling of Kiva's overall loan volume. While the average loan on Kiva is just over $400, in June 2012, the largest loan ever in the amount of $49,500 was filled for Barefoot Power, a Ugandan for-profit social enterprise that sells solar lighting and phone charging devices. Loans to the USA are also often larger, as are student loans. For example, a four-year loan to cover tuition fee for students to attend Strathmore University, a private, chartered university in Kenya, is $16,000.

Like Kiva's expansion to the USA, its partnership with Strathmore revealed the sometimes contentious politics of scaling. Because the university is part of Opus Dei, a conservative Catholic institution that opposes Lesbian, Gay, Bisexual and Transgendered (LGBT) rights, many Kiva lenders objected to the partnership. Flannery wrote a long letter to Kiva lenders, defending the decision by pointing to Kenya's larger anti-LGBT culture and explaining the steps Kiva took to ensure that Strathmore was indeed an appropriate Kiva partner. Ultimately, according to Flannery, it was Strathmore's commitment to admit students from low-income backgrounds that created the fit with Kiva's mission to alleviate poverty and should be supported by Kiva lenders (Flannery 2013). The debate showed once again how Kiva's expansion is locally embedded. Inclusive innovation is not only subject to economic and financial forces, but also to social and political ones. A narrow focus on growth numbers risks missing these processes that can determine whether a scaling strategy is successful in the long run.

Some lenders have also complained that because of the growth in larger loans, there have been an increasing number of loans that expire without being filled. A loan is only posted on the website for 30 days and if it does not receive 100% of the funds asked for, it expires and the partner MFI does not receive any money for it, no matter how much money Kiva lenders have

already committed. These lenders are then invited to fund another loan. The number of expired loans jumped from next to nothing to 5% at the end of 2012 (Kiva 2013). This shows that diversification can have unintended consequences, such as causing larger numbers of loans going unfilled.

5.2. Scaling through customization: improving the lending platform

In another instance of embeddedness, Kiva has drawn on its local technology innovation networks to improve its techno-financial platform. In 2011, Kiva's website was redesigned by Hot Studio, a company with offices in the same San Francisco neighbourhood where Kiva is headquartered. Similarly, an engineer told us that when Kiva moved from the software system Subversion, which it had used from the beginning, to Git, it took advantage of the closeness of GitHub, that company's headquarters, to Kiva's offices. After a Kiva engineer met Git's CEO at a local technology conference, Kiva's engineering team undertook a field visit to GitHub.

The website redesign was partly in response to concerns that Kiva's site was not sufficiently transparent about loan disbursement procedures and interest rates (Roodman 2009). Flannery admitted that the organization had grown so quickly that the website design had not kept up with important operational changes (Flannery 2009b). For start-up organizations, periods of strong user growth, which in Kiva's case were driven by mainstream media appearances, can put a strain on human, organizational and technological capacities. This can result in shortcuts and negative publicity, which in Kiva's case actually strengthened the organization as most Kiva lenders rallied around it in defence. Thus, while quickly growing innofusion networks can become fragile, they can also carry within them the capacity for repair as the entire network can be leveraged.

Expanding the website's technical features is an ongoing process. In response to the diversification of loan types, for example, a function called Featured Categories introduces new types of loans and borrower stories. This classificatory tool groups loan categories, highlights new ones and allows lenders to search for different combinations of loans, such as loans to women in agriculture or to young people in conflict zones. These categories can be changed quickly according to shifting lender preferences, thus keeping lenders engaged. Another way to deepen the latters' engagement with Kiva is through lending teams, which allow lenders to pool their loans with likeminded people. Introduced in 2008, there are now close to 37,500 teams, organized under such rubrics as religion, geography, profession and interests.[12]

The crucial importance of lenders to Kiva's growth was recognized early on by the organization. Flannery argued that Kiva was trying to 'make philanthropy addictive' through always-on functionalities that keep Kiva fans glued to the site (2007, 53). The organization continuously develops new initiatives, both on and offline, to recruit new lenders and get the current 1.263 million to lend more.[13] Sometimes, new users are offered their first $25 loan for free. At other times, existing lenders are rewarded with a free loan when they sign up a new lender. Kiva has also formed partnerships to recruit lenders from demographic groups it might not

otherwise reach: one such partnership was with the travel company TripAdvisor, which gave people who wrote a review for the website a free Kiva loan. There are also special programmes for high school and university students. These online activities are supported by offline events, often organized by lending teams, which bring together lenders in the physical world. Finally, Kiva is using social media to recruit new lenders, ranging from Facebook and Twitter to Google+.

In addition to its website, Kiva has over the years also upgraded its back-end information management system, called PA, to accommodate growth in the diversity of partners and their procedures. As a Kiva engineer explained to us, PA1 had assumed that all loan instalments were collected on a monthly basis, but this was not actually the case for many MFIs. Therefore, PA2 allows for the posting of more fine-grained financial information, such as exact loan repayment schedules, monthly loan statuses and the actual disbursement dates of loans. Reporting such accurate repayment schedules is one way in which Kiva has moved from standardization to customization. These changes also happened in the name of greater transparency, as more fine-grained data could be presented to lenders.

Conversely, integrating Google Gears, a software offered by Google that allows online files to be used offline, into the PA2 helps MFIs in many places with unreliable electricity and Internet connections. It means that drafts of documents are stored and can be accessed once connectivity is re-established and represents another adaptation to locations with much less developed technological capacities and infrastructures than California. Operating between these contexts can be challenging, as our research with the Indonesian MFI showed. At one point, several of its loans had been posted as being delinquent. A few days later, the Kiva Fellow at the time admitted in a blog post that even with her being present, errors had been made when the MFI had started reporting payment data on the PA system for the first time. The success of technological standardization thus depends on local capacities and knowledge, which can be expanded through training (Liu and Westrup 2003). This means that technology transfer is another important aspect of Kiva and its Fellows' scaling work, ensuring the successful incorporation of partners into its innofusion network.

In terms of financial management, Kiva has instituted a net billing process to manage its growing transactions. Once a month each partner MFI has to upload repayment data to PA2, working with a unique ID number assigned to each loan. In addition, within 30 days of the end of a loan, the MFI must post a borrower update on PA2, which becomes a journal entry that is published on the website and emailed to all lenders to the loan. This shows the integration of back- and front-end systems that have allowed Kiva to automate some of its processes. Regarding the collection and management of such large amounts of financial data, it is important to recognize that Kiva's growth is an expansion of network power. This power is exercised through controlling access to the flow of information to and about individuals (Munro 2000). Kiva claims to be 'the largest public database of micro-entrepreneur profiles', and the amount and detail of publicly available information, including financial, about Kiva borrowers is indeed staggering (Flannery 2009a, 44). On the one hand, such databasing was promoted as giving small MFIs and

their borrowers a personal financial history, making Kiva akin to a portable credit bureau (Shah 2008). On the other hand, it raises questions about privacy, data use and customer protection. The client confidentiality waiver presents a bureaucratic solution to some of these issues, but scaling work must also include responsibility for data protection in countries where corresponding laws might not be in place or weakly enforced.

6. Conclusion: finding the right balance

> Kiva is a tech startup that's purpose-driven, but there are also our microfinance partners, with a lot of people coming out of the NGO world. We value growth as a quantitative measure of impact, and the NGO part of the organization tends to look at that and say: 'Why this obsession with growth? We're having impact'. (Hannah 2014)

In this article, we have shown that scaling ICTD initiatives involves a balancing act among a number of practices and processes. In summarizing the work that Kiva has undertaken to scale, we are also highlighting suggestions for those looking to grow inclusive innovations.

First, a balance needs to be achieved between standardizing processes that allow for efficiency and economies of scale and adaptations that ensure that initiatives are locally appropriate, relevant and impactful. This is especially important for ICTD projects that operate across geographical boundaries, where attention needs to be paid to different political contexts, regulatory regimes and cultural values. In Kiva's case, the standardization of partner recruitment and financial management afforded by its technological platform has been complemented with flexibility around partner integration and local documentary practices such as the client waiver. It has also allowed for diversification and customization that have contributed to Kiva's growth. Partner needs, abilities and infrastructures must also be taken into account when trying to implement standardized solutions. In this regard, knowledge and technology transfer can help partners become innovators themselves, as can tapping into local innovation networks. Often, this calls for offline work.

This means that a second balance needs to be achieved between online and offline practices and processes. While crowdfunding platforms leverage the potential of the Internet to bring together loans from large amounts of people, their expansion needs on-the-ground presence that can help with successful integration, due diligence procedures and risk management. Kiva has instituted a sought-after volunteer programme that ensures that its Fellows are qualified and committed. They are supported by a small number of regional managers, so that a small but strategic offline presence can support online scaling.

Last but not least, as the quote above shows, a third balance needs to be achieved between the social and business aspects of an organization. This is especially important in today's performance-driven culture and for social enterprises like Kiva, which by definition straddle both worlds. Resolving the tensions that can arise between the breadth of growth and the depth of impact needs strategic decisions by committed leaders. They need to keep in mind that growth in

one area does not automatically lead to growth in others and that unintended consequences can thwart good intentions. Ultimately, they need to ensure that all stakeholders in an innofusion network can benefit from inclusive innovation.

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Notes

1. http://www.kiva.org/about, accessed on 16 March 2015
2. All statistics are taken from the Kiva website and were accurate as of early March 2015.
3. All financial amounts are in US dollars.
4. Microfinance refers to the design of financial services, such as loans, savings, money transfer and insurance products and services, specifically for poor people (Schwittay 2011).
5. Significantly, the two co-founders are no longer with Kiva; Jackley left in 2009 and Flannery in 2014.
6. There is an extensive literature on whether microfinance actually helps people out of poverty, which goes beyond the remit of this article. For a good summary, see Roodman (2012).
7. www.kiva.org/partners, accessed on 6 February 2014
8. Opportunity International (OI) is a Christian network of microfinance funders with offices in the USA, UK, Canada, Australia and Germany, and the Indonesian MFI had received funding from OI Australia and Germany.
9. Borrowers can decide whether to include a picture. If they do not want such public exposure, the MFI still has to provide them with a non-Kiva loan.
10. Many of the MFIs' borrowers, who were producing artisan clothes and other items for the tourist market, were also struggling in the summer of 2009 as Mexican tourism suffered from the impact of swine flu and drug-related violence.
11. http://www.kiva.org/labs, accessed on 13 March 2015
12. Kiva has also expanded into mobile money with the launch of KivaZip in 2011.
13. The average loan number per lender is currently 9.85.

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