Leveraging Local Ecosystems and Virtual Sharing Platforms for New Ventures: Learning from Crowdfunding Campaigns

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entrepreneurial ecosystems strategies, and the economic and geographic embeddedness of virtual sharing platforms.
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Key words: entrepreneurial process, funding, resource-bundling, virtual platforms, sharing economy

Introduction

In the context of innovation and new venture formation, entrepreneurial ecosystems have increasingly attracted scholarly attention (Audretsch et al., 2012; Autio et al., 2014; Isenberg, 2011). Entrepreneurial ecosystems are often understood as locally embedded unions of institutions, such as incubators, universities and venture capitalists; policies, outlooks, and communities of firms and professionals that jointly create and reproduce support environments for typically innovation-focused entrepreneurial ventures (Spigel, 2017). We are thus interested in very specific ecosystems that do not form around industries or products (see for the latter, Adner, 2017), but that constitute support infrastructures for start-ups. Such ecosystems can be valuable for both locally and globally oriented, both commercially and socially oriented ventures (Roundy, 2017; Fernhaber et al., 2008). Yet, while most scholars focus on the role of entrepreneurial ecosystems as rather coherent and geographically bounded support structures (see e.g. Spigel, 2017), in practice, entrepreneurs often navigate between either geographically distributed ecosystems (Bresnahan et al., 2001), or locally embedded and virtual environments (Botsman, 2014; Feldman, 2014; Mair and Reischauer, 2017). Despite their growing
empirical relevance, we know very little to date about how entrepreneurs navigate between distributed entrepreneurial ecosystems in search for ideas, resources and market access.

We focus here on the growing importance of virtual sharing platforms entrepreneurs tap into in addition to more conventional local entrepreneurial ecosystems (e.g. Botsman, 2014). Virtual sharing platforms are typically Internet-based infrastructures supporting the sharing of problems, ideas, resources and opportunities among users of the platform. Thanks to technological advances and the growing acceptance of ‘sharing economies’, various Internet-based practices of sharing assets (Hamari et al., 2016), ideas, resources and opportunities (Bardhi and Eckhardt, 2012), are transforming models of ownership (Lamberton and Rose, 2012), innovation, and venture development (Botsman, 2014). Entrepreneurs thus increasingly crowdsource product development and financial backing through sharing platforms, to spread risks and to reach a larger skill and support base in a shorter amount of time (see also Botsman, 2014).

One critical example is crowdfunding which allows for Internet-based financing and marketing of new projects through a large and often diverse audience – the ‘crowd’ (Belleflamme et al., 2013; Manning and Bejarano, 2017; Mollick, 2014). Crowdfunding has often been understood as a mechanism that compensates for the lack of funding opportunities in local entrepreneurial ecosystems (Younkin and Kashkooli, 2016; Botsman, 2014). In practice, however, entrepreneurs utilize both local ecosystems and crowdfunding campaigns to support their new ventures. For example, research shows that successful campaigns often originate in major urban hubs (Mollick, 2014). Yet, we know little about how exactly local ecosystems and virtual sharing platforms are interrelated. More specifically: What strategies do entrepreneurs take to jointly leverage local ecosystems and virtual sharing platforms (such as crowdfunding) in support of new ventures?

Based on rich interview, video and archival data of 44 crowdfunding campaigns on the sharing platform Kickstarter, and focusing on the critical role of resource-bundling and market-building in
venture development (e.g. Lichtenstein and Brush, 2001), we identify two major strategies of combining crowdfunding campaigns with local ecosystem support: inside-out strategies and outside-in strategies. Whereas both strategies make use of local and virtual resource access, they do so in fundamentally different ways. Inside-out strategies exploit local institutional resources and skill sets and use crowdfunding mainly to mobilize global support for projects. Outside-in strategies use crowdfunding campaigns to mainly augment and catalyze local community support. Both strategies are relevant to projects that are locally rooted, but the former seems to dominate when projects have global market potential, are tangible, high-tech and/or commercially oriented, while the latter applies when projects are more local in scale, intangible, low-tech and/or socially oriented.

Our findings have major implications for future research. First, they inform research on entrepreneurial ecosystem strategies specifically for entrepreneurs navigating between local and virtual support infrastructures. Second, we enrich the growing literature on virtual sharing platforms by specifying how they may be geographically and economically embedded and how entrepreneurs seek to integrate virtual sharing into their strategic repertoire. Third, we extend the growing debate on crowdfunding by putting crowdfunding campaigns into the context of entrepreneurial processes and environments, and by specifying what exactly constitutes ‘the crowd’ in different types of projects.

Next, we briefly review the literature on entrepreneurial ecosystems and discuss the growing role of virtual sharing platforms in entrepreneurial processes, focusing on the criticality of resource-bundling and market-building. Then we introduce the context of crowdfunding, along with our data and methodology. We then present and discuss findings and outline broader implications.

**Entrepreneurial ecosystems and virtual sharing platforms**

In recent years practitioners and policy-makers have been making significant efforts to develop environments supportive of new ventures (Audretsch et al., 2012; Autio et al., 2014; Isenberg, 2010). These environments are often called entrepreneurial ecosystems, and they are typically studied as
localized support networks of incubators, universities, venture capitalists, policies, and communities of firms and professionals (Spigel, 2017; Motoyama and Watkins, 2014). Entrepreneurial ecosystems are specific types of ecosystems, which are generally understood as multilateral sets of actors or patterns of interaction between those actors in support of creating certain products, technologies or services (Adner, 2017). In the case of entrepreneurial ecosystems, the main ‘service’ is supporting high-potential entrepreneurial endeavors (Maskell, 2001; Feldman and Zoller, 2012).

More specifically, entrepreneurial ecosystems can be conceived as locally bounded combinations of human and financial resources, social networks, policies, institutions, and culture in support of innovation and venture development (Stam, 2015; Spigel, 2017). Human resources include pools of talent and specific expertise (Feld, 2012); financial resources include banks, venture capitalists, families and friends (Saxenian, 1996); social networks include professional communities and personal networks between entrepreneurs, mentors, businesses and institutions (Lafuente et al., 2007); policies include funding and support programs (Feldman and Francis, 2004); institutions include universities, centers, incubators (Smith et al., 2014); culture relates to attitudes and norms in support of risk-taking as well as stories and legacies supporting an entrepreneurial culture (Stuetzer et al., 2014; Saxenian, 1996). Importantly, these elements are typically interconnected and mutually supportive (Spigel, 2017).

One good example of an entrepreneurial ecosystem is the Greater Boston area (Owen-Smith and Powell, 2005; Saxenian, 1996; Friar and Meyer, 2003), which we also focus on in our empirical part. According to the Kauffman Index of Growth Entrepreneurship 2016, the Boston metropolitan area has one of the highest start-up growth rates in the U.S. and is one of the top five metropolitan areas with the highest density of high-growth firms. Several large incubators, such as MassChallenge and TechStars, are located in Boston. It is also known for its academic, student, and alumni-driven entrepreneurship, as Boston is home to more than 30 universities and colleges, including MIT, Harvard,
and Boston University. The Boston ecosystem supports various types of entrepreneurial activity, including high-tech, social and immigrant entrepreneurship.

However, whereas scholarship on entrepreneurial ecosystems has focused on their utility as regionally bounded support networks (Spigel, 2017), in practice entrepreneurs often rely on resources from multiple support infrastructures that are loosely interconnected. One example are geographically dispersed support structures, which start-ups rely on that from the get-go operate across multiple geographic environments (e.g. Drori et al., 2009). A prominent example are networks of incubators and venture capitalists specializing in supporting Silicon Valley-based entrepreneurs with operations in India, Taiwan and other Asian locations (see e.g. Bresnahan et al., 2001; Saxenian, 2005). Not surprisingly, local ecosystems are increasingly expected to get interconnected to support rapid internationalization of new ventures (Fernhaber et al., 2008).

Another form of ‘interconnectedness’ relates to the emergence of virtual sharing platforms that complement local ecosystems in support of new ventures. Virtual sharing platforms combine properties of collaborative platforms with principles of the sharing economy. In general, collaborative platforms are understood as typically technology-based two- or multi-sided interaction systems aligning users and developers of complementary applications (e.g. Gawer, 2014; Adner and Kapoor, 2010). Platform providers include Windows and Macintosh connecting application developers with users, or Internet Explorer and Firefox connecting plugin developers with internet surfers. Such platforms have been studied in various contexts, such as PC and internet applications, but also video gaming (Zhu and Iansiti, 2012) and online dating (Parker and Van Alstyne, 2005).

In the context of entrepreneurial ventures and innovation, collaborative platforms increasingly become important in facilitating the development and commercialization of new product ideas. For example, based on the principle of crowdsourcing, IT-based distributed collaborative architectures invite large groups of people to contribute to co-develop software and other products (Baldwin and
von Hippel, 2011; e.g. Fjeldstad et al., 2012; Bayus, 2013; Howe, 2008). Another example is open innovation, which mobilizes new ideas and solutions for problems through a geographically dispersed pool of potential contributors (see e.g. Chesbrough, 2006; Dahlander and Gann, 2010). A final example are crowdfunding platforms that support the relatively new practice of marketing and raising financial support for projects of different kind – from technology and other design projects, to fashion, art and events – from a large group of individuals (the ‘crowd’) (Mollick, 2014; Manning and Bejarano, 2017). We focus on the latter in this study.

Importantly, whereas some collaborative platforms are proprietary and exclusive, e.g. firm-internal architectures facilitating the concurrent development of software modules as part of a larger solution, others follow principles of the ‘sharing economy’. Crowdfunding is an example of the latter. We call them ‘virtual sharing platforms’. Thanks to advanced technology, which has simplified the sharing of physical and non-physical goods and services (Hamari et al., 2016), such platforms give public (Internet) access to a potentially large number of individuals and organizations to participate in or contribute to a project in various ways – as providers, users or developers of services and solutions (see e.g. Botsman, 2014). Such platforms are used by both larger corporations (Botsman and Rogers, 2010) and smaller enterprises and start-ups. Crowdfunding has become specifically useful for the latter. According to Botsman (2014), crowdfunding can play a critical role in entrepreneurial projects by shifting control from conventional financial institutions to a sharing model, similar to shared news, shared files, and music platforms. However, unlike the latter, crowdfunding is about shared development, rather than shared consumption, which most research on sharing economies has focused on (Belk, 2014; Matzler et al., 2015; Lamberton and Rose, 2012).

As a sharing model, crowdfunding differs significantly from regular practices of raising financial capital. First, crowdfunding has been utilized for a wide range of commercial, artistic and social projects, many of which would have trouble accessing conventional funding sources. Also,
crowdfunding campaigns address a much more diverse audience, composed of domain experts and lay actors who share an interest in new projects. Related to this, the purpose of launching crowdfunding campaigns may range from raising financial capital to marketing new products and services to potential customers (see e.g. Belleflamme et al., 2013). Oftentimes, individual funders take multiple roles in giving financial support, in taking interest in using or buying a particular product or service, and/or in co-developing projects. In sum, crowdfunding campaigns mobilize diverse audiences for supporting a wide range of projects in different ways (Manning and Bejarano, 2017).

However, crowdfunding platforms do not support entrepreneurial endeavors in an isolated fashion. In fact, studies show that the success of crowdfunding campaigns may depend a lot on the ability of entrepreneurs to mobilize social networks and communities in support of their projects prior to launching campaigns (Mollick, 2014). This seems critical since especially the visibility of early backers at the beginning of campaigns may trigger self-reinforcing dynamics and make crowdfunding success more likely (Colombo et al., 2015). Also, prior research suggests that location context matters: While, to some extent, crowdfunding relaxes geographic constraints on both funders and campaign initiators (Agrawal et al., 2011), campaigns are still more or less geographically concentrated, depending on the type of project. Mollick (2014), for example, finds that especially crowdfunding projects that are high-tech tend to be highly geographically concentrated. This is because they continue to rely on highly localized support systems, such as venture capital, incubators and technology (Agrawal et al., 2011; Chen et al., 2009).

Yet, our understanding of how crowdfunding platforms are interlinked with local ecosystems is still rather limited. In the following, we approach this question from the perspective of entrepreneurs and entrepreneurial strategies. In other words, we do not focus on institutional linkages between ecosystems, e.g. multinational incubators and venture capitalists (Bresnahan et al., 2001), but on how entrepreneurial strategies cut across local ecosystems and virtual sharing platforms.
Local-virtual ecosystem strategies: resource-bundling and market-building

Entrepreneurial ecosystems typically do not ‘reach out’ to entrepreneurs to serve them, but in most cases, entrepreneurs take initiative and strategically tap into ecosystem resources. In the more general ecosystems literature, the term ‘ecosystem strategy’ has gained prominence (Adner, 2017; Williamson and De Meyer, 2012). It denotes deliberate ways of securing resources and favorable competitive positions within ecosystems (Adner, 2017). We apply this idea to the specific context of entrepreneurial ecosystems. The latter are typically relevant for entrepreneurs during the critical phase of turning ideas into viable business models. In that time period, entrepreneurs are interested in ‘positioning’ themselves within and across entrepreneurial ecosystems with a value proposition and communication strategy that allows them to effectively mobilize talent, technologies, and capital, and secure scalable market access. As noted above, entrepreneurs increasingly rely on resources and support from multiple or distributed support systems to effectively gain momentum in the entrepreneurial process. In other words, they need to develop ‘distributed ecosystem strategies’ that involve the development of value propositions and communication strategies attracting resources and support within and across these systems. We investigate such strategies in particular with respect to how entrepreneurs leverage local ecosystems and virtual sharing platforms – here: crowdfunding (see Figure I).

To investigate these strategies, we focus on two critical dimensions of the entrepreneurial process: resource-bundling and market-building. Resource-bundling refers here to the more or less firm-specific acquisition and combination of salient resources in support of progressing in the entrepreneurial process from initial idea development to commercializing products and services (Lichtenstein and Brush, 2001). Of particular interest in the context of our study are product-specific skill sets, knowledge and technologies, and financial capital. Market-building focuses on the interest of entrepreneurs in developing and communicating a value proposition that connects to an existing or
builds a new demand (Aldrich and Fiol, 1994). One key concern entrepreneurs have in this regard is how large the ‘market potential’ of a new product or service is, i.e. to what extent, for example, it will mostly appeal to local audiences or whether it is marketable across the region or globally.

As for resource-bundling, prior studies have already emphasized the importance of local ecosystems in facilitating access to critical resources. Especially at an early stage of the entrepreneurial process, entrepreneurs largely depend on resources that are outside of their control (Pfeffer and Salancik, 1978; Lichtenstein and Brush, 2001). Local ecosystems can be critical in providing access not only to skill sets and technologies, e.g. through local talent pools and universities, but also to financial capital, through banks, venture capitalists and incubators (Spigel, 2017). However, sharing models, such as crowdsourcing and crowdfunding, seem to become increasingly important in providing access to critical resources, from new ideas, to dispersed skills and pockets of funding (Felin et al., 2017). This study helps us better understand the interplay between these infrastructures.

We thereby adopt the view that resource-bundling is a key capability entrepreneurial teams develop even prior to firm formation. Prior research indicates that resource-bundling at an early stage of venture development is very much related to social capital and networks entrepreneurs develop prior to starting a firm (Elfring and Hulsink, 2007). In doing so, entrepreneurs often engage in some form of bricolage, by more or less intentionally combining their social, financial and human capital in novel ways to develop solutions for entrepreneurial problems, such as funding (see in general Senyard et al., 2014). Resource-bundling can thus be a key capability start-ups develop and nurture from the very beginning (Venkataraman and Sarasvathy, 2001; Teece, 1986). In light of this, resource-fertile external environments, such as local ecosystems, may strengthen and support the development of such capabilities (Stangler and Bell-Masterson, 2015).

Similarly, with regard to market-building, prior studies suggest that local ecosystems can be critical in particular in providing access to lead users and local audiences (Spilling, 1996, Spigel, 2017).
Testing new ideas and products in local communities often helps entrepreneurs interact more with easy-to-access customers, fine-tune their value proposition over time, and build capabilities for future expansion (Feldman, 2001). Increasingly, sharing platforms have also become important in facilitating market-building. The potential marketing and market-building effect of crowdfunding campaigns is well-known (Belleflamme et al., 2013; Manning and Bejarano, 2017).

Similar to resource-bundling, we thus consider market-building a critical capability of entrepreneurial teams. Two dimensions are important here: On the one hand, market-building concerns the building of legitimacy and acceptance among established users, consumers and incumbent market players. For example, Ansari et al. (2016) discuss how TiVo, a start-up, faced the challenge of gaining the support of incumbents in the U.S. television industry. On the other hand, it concerns the problem of scaling demand to reach a critical market size for entrepreneurial success. Thereby, entrepreneurs often face the local-global demand dilemma: Whereas staying local may protect product ideas from global competition, it may also limit the market potential of products. Entrepreneurs utilize both local and virtual support systems in part to mitigate that dilemma.

Yet, we lack a more systematic understanding of how entrepreneurs and entrepreneurial teams strategically engage in resource-building and market-building by jointly leveraging local ecosystems and crowdfunding campaigns. Do they leverage both support infrastructures opportunistically and idiosyncratically, or do they follow certain patterns? Also, how are these strategies related to their business model and key characteristics of their products or services?

As for the business model, we need to pay attention not only to the local or global market potential of a product or service, but to the model of value generation itself. For example, prior studies suggest that social entrepreneurs, whose business models combine profitability with social missions (Austin et al., 2006), utilize local ecosystems differently than regular commercially oriented entrepreneurs (Roundy, 2017). Likewise, studies have found that, depending on whether a venture
includes a social mission or not, this will shape the narrative of a crowdfunding campaign (Manning and Bejarano, 2017). In terms of product features, prior studies have pointed out that resource needs and market approaches may differ a lot depending on whether ideas involve advanced technology or low-tech solutions (see e.g. Teece, 1986). Also, the way project value is communicated may depend a lot on the degree to which products are tangible and visible, rather than based on intangible experiences (see also Manning and Bejarano, 2017).

Next, we analyze the pursuit and core elements of ‘local-virtual entrepreneurial ecosystem strategies’ as a potentially contingent undertaking. We pay special attention to how core project features influence the strategy entrepreneurs take. Also, taking an integrated view on entrepreneurial processes, we regard resource-bundling and market-building as interconnected rather than separated concerns. Similar to ecosystem strategies in other contexts (e.g. Adner, 2017, Hannah and Eisenhardt, 2017), entrepreneurial ecosystem strategies are thus expected to be effective only when resource-bundling and market-building are sufficiently aligned.

**Data and methods**

We analyze entrepreneurial strategies of resource-bundling and market-building across both local ecosystems and virtual sharing platforms through an inductive multi-case study of crowdfunding campaigns. Results from this inductive study can be used to assist theory-building as they help derive and inter-relate theoretical constructs and categories for future research (Eisenhardt, 1989; Yin, 2003; Siggelkow, 2007). The main objective is not to ‘generalize’ findings in the statistical sense, but to promote ‘analytical generalization’ (Yin, 2013). More than single case studies, our multi-case study assists a ‘generalization in small steps’ (Diesing, 1971; Yin, 2003).

Concretely, we compare and inter-relate findings across 44 crowdfunding campaigns that were launched on the Internet platform Kickstarter between 2012 and 2014. Kickstarter was launched in 2006 in order to give projects funding opportunities outside the established banking and venture
capitalist system (see also Botsman, 2014). To launch Kickstarter campaigns, initiators set a funding target and a deadline until which the target has to be met. Funding can come from any user whereby individual contributions may vary from $1 to up to $10,000, depending on the pledges and rewards set up by the campaign initiators. Kickstarter is not equity-based but limited to one-off exchanges of pledges and rewards. Only if the funding target is met then the initiators will receive the money and, in turn, commit themselves to sending out rewards to funders. Those can range from symbolic rewards (t-shirts, posters), to the actual products, or to invitations to meetings and events. Kickstarter campaigns thus combine multiple goals – from raising funds, to marketing products, to mobilizing community support (see also Manning and Bejarano, 2017). Campaigns tend to have a creative edge, yet they can range from high-tech, software, fashion, food, to social and artistic projects. Project case selection was random but guided by three criteria: the project should be recent, involve at least two people, and target funding of at least $5,000 (to exclude low-budget projects). We did not set an upper funding target limit, but our sample largely reflects the size distribution of projects on the Kickstarter platform – with most projects below and only very few above $100k (see also Kickstarter, 2016).

Data collection was done in multiple rounds to increase sample size while refining case selection criteria based on preliminary findings. The first round was explorative and done in 2012, including 14 cases. We thereby focused on projects in the Greater Boston area. This is because Greater Boston is known for being an important cluster and entrepreneurial ecosystem, especially for tech and science projects (Friar and Meyer, 2003). Focusing on Boston also facilitated case access, given that two out of three authors are located in that city. The first round of data collection mainly served to identify general similarities and differences in resource-bundling and market-building between campaigns. In the next round in 2013/14, 30 cases were added, whereby we increased case variety across almost all project categories offered by Kickstarter, including e.g. fashion, food, games, technology, design and music. We also added projects that were launched outside of Greater Boston to increase variety. This allowed us to increase robustness while further differentiating our findings.
particular, it allowed us to identify critical contingencies, including project tangibility, social vs. commercial orientation, local vs. global market orientation, low vs. high tech base.

Data collection was done through three major data sources which helped us generate findings of high validity (Yin, 2013): videos, interviews, and archival data. First, we interviewed the initiators of all projects (1 to 2 semi-structured interviews per project; 54 interviews in total), which helped us better understand project idea development; the way project entrepreneurs assembled teams, utilized local institutions and funding bodies; and how they reached out to lead users and test clients. Second, we analyzed the transcribed videos of all 44 selected Kickstarter campaigns. Videos are the primary means of communicating projects to audiences through Kickstarter and are thus regarded as a key vehicle for generating funding (Mollick, 2014). They tell entrepreneurial stories about projects in rather condensed ways, ranging from 1 to 3 minutes in length. Their content is thus a critical choice by entrepreneurs as to how diverse audiences are addressed to mobilize support. Third, we used archival data on Kickstarter and other websites to gather additional data on project characteristics, teams, and project development, as well as on performance statistics of all the campaigns we studied. For example, we collected information on locations of campaign initiators, number of backers, percentage of new backers, and geographical distribution of backers. This data helped us identify differences in effects of different crowdfunding strategies along with critical project contingencies.

Our data analysis is a combination of qualitative inquiry and quantitative descriptive analysis. We combine case-specific insights with an analysis of patterns across the population of 44 cases. All three authors independently coded all Kickstarter interviews and videos for similarities and differences in terms of how the entrepreneurs talk about how they managed to mobilize critical resources (ideas, team members, financial support, client feedback etc.) and access to markets (intended scope, project value to different audiences, etc.). Independent coding (based on the same coding guide) ensured inter-coder reliability (Yin, 2003). Specifically, we focused on aspects of resource-bundling and market-building as core elements of the entrepreneurial process. However, we did not ‘operationalize’ these
dimensions in a strict sense, but rather used them as ‘sensitizing devices’, which do not “provide prescriptions of what to see” but “suggest directions along which to look” (Blumer, 1954: 7). Specifically, we examined the extent to which crowdfunding leveraged, enhanced or extended local ecosystem strategies of resource-bundling and market-building.

We identified two core entrepreneurial strategies combining resource-bundling and market-building across local ecosystems and the crowdfunding platform. We did an explorative round of first-order coding of videos and interviews, focusing on how entrepreneurs went about mobilizing critical resources, creating and communicating project value, and reaching out to potential clients and markets. As a result of this round, we identified various recurring patterns of combining local ecosystem strategies with crowdfunding campaigns in pursuit of resources and markets (see Figure 2). We grouped these patterns into second-order codes whereby each code represents a distinct way of either mobilizing resources or reaching out to markets. To enrich our analysis, we integrated key descriptive indicators from archival sources (e.g. percentage of new vs. established backers, and percentage of local vs. global backers) as ‘codes’ into the coding tree (see Figure 2). In other words, we chose to interpret quantitative indicators as qualitative markers in support of our two main inductive strategies. We discuss these indicators in more detail in the results section.

Based on the second-order codes, we interrelated conceptual categories and codes, similar to the praxis of axial coding (Charmaz, 2006), and generated the third-order codes that demarcate the two main entrepreneurial ecosystem strategies we find in our data – the inside-out strategy and the outside-in strategy. The former exploit local institutional resources and skill sets and use crowdfunding mainly to mobilize global support for projects; the latter use crowdfunding campaigns to mainly augment and catalyze local community support. We finally made use of our case population to identify relevant project dimensions that can be associated with one or the other strategy. These dimensions include: project scope, tangibility, technological sophistication, and social orientation. Scope specifies in
particular the extent to which project entrepreneurs mainly target local audiences or whether they aim to reach a potentially global audience. *Tangibility* specifies the degree to which project outcomes are designed to generate value from tangible rather than immaterial features. *Technological sophistication* is specified here as the degree to which advanced technology is a core aspect of the promoted project value. Finally, *social orientation* is specified as the degree to which a project either directly targets or at least aims to benefit groups in need, e.g. local communities, rather than just paying customers. Based on this analysis, we will discuss theoretical propositions for future research.

**Strategies of leveraging crowdfunding campaigns in local ecosystems**

Table 1 provides an overview of all Kickstarter campaigns included in this study. Projects range in terms of their targeted funding from $5,000 to $710,000. Actual funding ranges from $10,789 to $2,945,885. Project teams are typically small and do not exceed ten people at the time campaigns are launched. All 44 projects reached or exceeded their funding target and thus were able to utilize the funding. We further categorized projects across the four dimensions introduced above: target audience (local/global), tangibility (high/low), technological sophistication (high/low), and social orientation (high/low). Table I gives an overview of all projects along all categories. Next, we describe the core elements of the two main local-virtual ecosystem strategies we identified.

`INSERT TABLE I HERE <<<<<<<<<<<`

**Inside-out strategy**

Many projects in our sample pursue what we call an inside-out strategy. In a nutshell, *inside-out strategies* use crowdfunding platforms as a catalyst for ‘disembedding’ projects from the local context (‘inside’) to share them with a global audience (‘outside’). Such projects exploit local institutional resources mainly for skill development, and use crowdfunding to mobilize global support for projects. Examples of such projects include PRINTER1 (name changed), a high-resolution 3D printer for
professional creators; ROBOT1, a system to design and build educational robots; and SECURE, a voice activated USB-devise for passwords. Overall, 30 projects fall into this category.

Our descriptive analysis across cases suggests that projects following an inside-out strategy share specific features. First, backers of such projects are typically distributed across many different locations and countries. For example, out of 2,068 backers that supported PRINTER1 only 3% are from the home local ecosystem, Greater Boston. On average, across all projects following that strategy, only 4% of backers come from the campaign’s home location. In fact, a large percentage of backers typically also come from outside the country. Also, the typical crowdfunding backer of such projects is very active on crowdfunding platforms and has backed other projects before. This is indicated by a rather low percentage of ‘new backers’ for such projects. On average, only 33% of backers of projects following an inside-out strategy are first-time backers. Finally, successful inside-out campaigns tend to go viral, as they are focused on global, rather than local demand. Average overshoot of inside-out campaigns (funding raised minus initial target) is 470% (min 1%, max 2846%). In 18 out of 30 cases in this group funding exceeded the initial target more than two times.

In sum, campaigns following an inside-out strategy seem to be very effective in attracting a large crowd that is geographically dispersed and that includes a high percentage of supporters with prior experience in backing projects. Next, we explain the core elements of this strategy in greater detail, focusing on how projects bundle resources, generate value and build market access.

Exploiting local institutional connections for skill and idea development
Projects following an inside-out strategy are typically embedded in a particular local entrepreneurial ecosystem, yet they are embedded in specific ways reflecting the strategy entrepreneurs take. Most importantly, entrepreneurs utilize local ecosystems for skill and idea development. More specifically, they rely on institutional support systems, in particular universities, in early project development.
The project PRINTER1 illustrates how several projects that were launched in metropolitan areas such as Boston exploited institutional resources. The developers of PRINTER1 – a new, more affordable 3D printer – have close connections to the university system in Boston, specifically the Massachusetts Institute of Technology (MIT). Not only did all of the core team members meet at and graduate from MIT, but MIT also provided an important test user base for the product itself. In other words, MIT served both as a resource pool and critical test market when the project started.

Within the MIT system, the MIT Media Lab is particularly critical, as it concentrates resources and support around cutting-edge high-tech projects. Both inventors and investors are affiliated with the Media Lab, to speed up commercialization of promising projects. The interview with the PRINTER1 developers illustrates that:

“We have a team of about 13 people. The large bulk of team is engineers; mechanical and software. We have industrial designers. The team is very technology focused... We have good investors. Joi Ito, director of the Media Lab at MIT, Mitch Kapor, as well as a couple small angel funds like Eric Schmidt’s Innovation Endeavors.”

Another important driver of entrepreneurial projects at MIT are cross-disciplinary start-up competitions. For example, the project FASHION2 benefited from that. FASHION2, which has by now grown into a successful business apparel brand, started with a business shirt based on NASA-tested materials that regulate temperature, prevent odor and wrinkling. The video of the campaign promotes this technology transfer as part of the value proposition of the project:

“As MIT engineers we design space suits that regulate astronauts’ body temperature, using phase change material. We use that same technology in [our new shirt].”

Interviews with the FASHION2 team reveal how important the MIT environment was in turning this idea into a feasible product. MIT regularly launches start-up competitions inviting students from across disciplines to team up and develop entrepreneurial ideas. This is how the team behind FASHION2 got together: a combination of engineers, business students and former consultants. The project evaluation committee further connected the team and their idea to venture capitalists, whose initial support was critical in getting the project started.
What is interesting about these projects is how they utilize local ecosystems in particular ways. Essentially, their main local anchor are interconnected institutional resources – university, incubators, prize competitions, venture capitalists – whereas the larger local community plays only a minor role. This becomes very clear when watching videos of these campaigns. Their embeddedness in the local ecosystem typically narrows down to the institutional affiliation of the entrepreneurs:

“As MIT engineers, we...” (FASHION2), “When we were at the Media Lab at MIT, ...” (PRINTER1)

However, the videos and website presentations of these campaigns also reveal how important those institutional affiliations are in crafting the value proposition for these projects. For example, ‘MIT’ is used as a brand, not so much to anchor a project in Boston, but to ‘certify’ its value towards a geographically dispersed crowd on the Kickstarter platform.

**Tapping into virtual communities for global market support**

Whereas local ecosystems function mainly as an institutional resource base in an inside-out strategy, crowdfunding campaigns take the role of a window to audiences outside the local ecosystem. Importantly, these audiences are not just targeted for funding purposes – and thus for accelerating the development of projects – but for testing markets and building market segments that are suitable for the project. This becomes very clear in the interview with the founders of SECURE:

“Kickstarter was a test market for us, what the general market would feel about this product. This brings me back to my role and experience which is mostly in sales/marketing I wanted to see if this was operational, I am comfortable with putting teams together and moving products forward to accomplish a goals, but was unsure of the product idea itself. Because of the high contribution of our backers and overall support of our project we decided to move forward.”

Related to this, many projects in the inside-out group, being fairly technology driven, share rather high upfront investments. Even if entrepreneurs receive early positive feedback in their immediate environment, they need the crowdfunding platform Kickstarter to lower risks and evaluate the actual feasibility of the project and the ability to break even at some point in the future.
In other cases, the project idea is so novel and ‘niche’ that local feedback is insufficient to evaluate its market potential. That was the case with the project GROW, which was about selling pencils with seeds inside. This project was aimed at writers, artists, and lovers of plants who share the idea of having pencils that cannot only be used for writing but also gardening. The founder remembers how important the Kickstarter campaign was to build the market for the product:

“We just had a bunch of prototypes. We didn't really have a market or any way to get it out there. Or enough orders to make a production run possible. Kickstarter gave us access to a really broad market and it was a really good market validator and got us a lot of media attention that we could use to attract distributors and potential customers.”

This case also illustrates how especially projects following an inside-out strategy use virtual (rather than local) communities to generate a fan base around the project, which can help not only reach the funding targets on Kickstarter but be the foundation for a lead user market. Thereby, the project initiators would also use their local institutional roots – again: MIT – to share the project idea with virtual communities and ‘share the load’ of marketing and funding right away, rather than trying to penetrate local communities first. The founder of GROW remembers:

“We reached out to the MIT community mostly via twitter and then some of that got picked up by some design blogs and then after that, there wasn't a whole lot of media coverage until the very end. Most of it was word-of-mouth and twitter, a little bit of getting friends to post it on their Facebook's and then once it started to accumulate some design blog coverage and environmental blog coverage we got a few more people.”

In sum, inside-out strategies combine the use of strong local institutional ties for idea generation and team-building, with the leveraging effect of sharing projects with virtual communities, not least via crowdfunding, to create global market support for projects.

**Outside-in strategy**

The second major category many projects in our sample fall into is that of an outside-in strategy. In a nutshell, outside-in strategies use crowdfunding platforms as a way to further increase the visibility of
projects mainly for local audiences. Such projects focus less on local institutional resources, but more on local communities for team formation and idea development. They use crowdfunding campaigns as a catalyst to harness and complement (from the ‘outside’) existing local community support (‘inside’). Examples of such projects include FOODTRUCK1, a project about providing high-quality Asian food on a food truck in urban food deserts; NEWSPAPER, a project focused on revitalizing a local newspaper; and BREWERY1, an initiative to start a pub with integrated brewery and brewing courses. Overall, 14 projects in our sample fall into this category.

Our descriptive analysis across the case sample suggests that projects following an outside-in strategy also share specific characteristics. First, backers of such projects are typically highly concentrated in particular locations, including the location where a project originates. On average, 35% of backers are from the home location of a campaign. That means that the campaigns to a significant degree help mobilize the local community to support a project they might already know through friends and local ties. However, a large percentage of backers also come from outside the local community – often from regions similar to the location of origin. Also, unlike backers of projects following an inside-out strategy, most backers supporting campaigns with an outside-in strategy come from the same country as the entrepreneur – here: mainly U.S., which indicates that cultural affiliation is important for such projects to mobilize support. Also, a high percentage of crowdfunding backers of such projects – 53% on average – are new backers, mostly from the local community itself, who never backed a project before. Finally, outside-in campaigns in our sample have on average 32% overshoot from the initial target, which is lower than inside-out campaigns. In other words, funding success here means hitting the target rather than overshooting it.

In sum, campaigns following the outside-in strategy seem to be very effective in attracting a support group, consisting of regular and first-time crowdfunders, concentrated in the location of origin of the entrepreneurs or similar, culturally affiliated areas. Next, we explain the core elements of this strategy in greater detail, by focusing again on resource-bundling and market-building elements.
Mobilizing local communities for idea development and market building

Like projects following an inside-out strategy, projects pursuing an outside-in strategy are strongly embedded in local entrepreneurial ecosystems, yet in rather different ways. Whereas for inside-out projects, the local environment is mainly used for skill and technology development, entrepreneurs pursuing an outside-in approach use the local context extensively for early feedback, market testing, and alliance-building, thereby mobilizing established ties in the local community.

One good example of such projects is BREWERY1, an initiative to launch an educational brewery in North Carolina. Unlike high-tech projects whose ideas are often driven by technological advancements and the appetite for new gadgets among tech lovers around the world, BREWERY1 is a project whose roots are very much embedded in the local community from the start. One key to early project development was a sense of a ‘local demand’ for such a project and the availability of partners:

“We wanted to open a tasting room for beer lovers. [...] a destination place for visitors, driver by’ers and locals. [...] We know that locals would want such a place. [...] We have also launched partnerships with restaurants in the area, for example to sell sandwiches in the tasting room.” (Member of the founding team of BREWERY)

Another example is FARM1, a rooftop gardening project in Boston that is aimed at providing food for the local neighborhood, while also utilizing unused roof space. As the founders explain in the interview, having local community support was key for the project to take off. This included volunteer helpers from the community, government ties and connections to restaurants and distributors:

“There is the restaurant network which is everybody that [we] have become friends with or colleagues with that have supported them and said yes, this is a good idea. [...] And then we probably had 50 maybe 60 direct volunteers that have helped us in some way so far. We’ve had offers from a couple of hundred people who want to help once the farm is ready. Then there are also people involved in the institutional government side. People in various offices that [we] will need to interact with in order to install and operate.”

This rather comprehensive approach to local embedding is also reflected in the crowdfunding videos. Whereas inside-out campaigns often refer to the local context very narrowly, e.g. by mentioning MIT
connections in Boston/Cambridge, projects following an outside-in strategy refer to the local context in various ways. For example, the FARM1 campaign video starts with the two main founders standing on the Boston design center and describing how they can see the Boston skyline. They go on to identifying themselves as ‘being farmers in a city’, giving a lot of information on the context and purpose of the project, and mentioning various connections to local farmers’ markets and restaurants.

This indicates that crowdfunding campaigns of such projects build on a very different value proposition. Rather than focusing on particular features of the product itself, they build the local context of project development into the value proposition.

*Using crowdfunding to augment and catalyze local project support*

Whereas campaigns like PRINTER1 and FASHION2 use crowdfunding campaigns mainly to take projects ‘out’ of the local context and market them globally, campaigns like BREWERY1 and FARM1 use Kickstarter to bring further support and resources ‘into’ the local context.

One major element of this strategy is to catalyze already existing local project support by using Kickstarter to bundle local financial resources from dispersed volunteers, partner organizations and friends, who collectively ‘share’ the funding load. The co-founder of FOODTRUCK1 illustrates that:

“A lot of funding came from people [another co-founder] knows from school and from the restaurants he worked at in New York. Some from our family and friends, but probably mostly from the restaurants. Some just from people online.”

Another example of this strategy is the above mentioned case of FARM1. Especially, the interviewees mention the importance of Kickstarter in channeling funding from partner organizations:

“Anyone that said yes, this is a good idea, helped. There have been a lot of folks who have been more vocal. Several of these chefs and shop owners have contributed to the Kickstarter campaign.”

However, crowdfunding also helps reach out to other locals who learn about a project ‘online’. Since more and more marketing and communication happens through social media, especially in urban
settings, using online platforms has become an essential element of local marketing as well. This becomes even clearer in the case of the project NEWSPAPER, which used social media and Kickstarter deliberately to inform people about the undertaking. The founder remembers:

“Naturally, the idea of Kickstarter came up because it is so linked to crowdfunding, and that’s something we thought would be a big strength because we were working from a pool of 60 years of people reading the website. We figured that would be a good way to have people support us and become informed that we were coming back and get involved in their own way.”

However, even more interestingly, as the backers demographics indicate, crowdfunding in the case of outside-in campaigns would not only help activate support from participants in the local ecosystem itself, but also bring in support from other ecosystems with particular cultural or institutional affiliations with the project. One very interesting example is FARM2 – a project dedicated to educating kids about dairy farming in a Caribbean country (name concealed). While the project is deeply locally embedded, with connections to local government, schools, farms etc., similar to FARM1, the ability to raise money within that particular location has been rather limited. Crowdfunding thus became a means to attract people and organizations from outside the region who sympathize with the project, even if they do not benefit from it directly.

This partly explains why in the case of FARM2 most backers come from Geneva (!), including some larger-scale donors. Geneva is a hub of government and development agencies, and also a center of financial institutions. Crowdfunding provided FARM2 the means to establish a funding channel to backers and organizations in such places. In view of that opportunity, the founders of FARM2 made sure that the project presentation on Kickstarter comes across as a legitimate development project that values impact, transparency and professionalism. One founder explains:

“We’ve been taking a grassroots approach to this by using Kickstarter as a fundraiser, and we are very transparent. There’s a lot of scams out there, especially in the non-profit world, where you don’t know where your money goes to but we’re making ours very transparent. We’re going to be posting our accounting records, we’re going to be posting videos, so people can really see that their money is going to something legitimate.”
Related to this, what is rather astounding is the high percentage of first-time backers FARM2 was able to mobilize: 75%. Whereas in the case of BREWERY1, the percentage of new backers – 83% - was similarly high, which is in fact a typical feature of outside-in campaigns, the case of FARM2 illustrates that outside-in strategies may also mobilize new backers from outside the location of the project and the surrounding local ecosystem to take an interest in deeply locally embedded projects.

In sum, outside-in strategies are typically deeply embedded in local communities combining access to resources and markets. Crowdfunding is used to mobilize, inform and bundle resources from members of such communities as well as donors taking an interest in highly localized projects.

**Local-virtual ecosystem strategies and project features**

We find that the two major ecosystem strategies – inside-out and outside-in – are interrelated with certain project features – target audience, outcome tangibility, technological sophistication, and social orientation. Projects following an inside-out strategy tend to be globally oriented, tangible, high-tech and commercial, whereas projects following an outside-in strategy tend to be locally oriented, intangible, low-tech and social. These dimensions are rather strongly inter-correlated, but they also seem to have independent effects. We now discuss each dimension in greater detail.

First, and most importantly, projects pursuing an inside-out strategy are typically global in their market orientation, whereas projects following an outside-in strategy are typically locally oriented. This can be illustrated by comparing PRINTER1 and BREWERY1. PRINTER1 from the start saw as their main audience all engineers, designers and scientists who depend on 3D printing. While the founding team got together and developed their idea at Greater Boston-based MIT, their perceived demand for cheap 3D printing at MIT itself was not seen as a locally specific demand, but rather as an indicator for a global need among academics in similar institutions around the world. By contrast, BREWERY was conceptualized as a specifically local project that ties into local partnerships and needs of the local community. As described above this is also the case for projects FARM1 and FARM2.
Accordingly, initiators of inside-out campaigns and outside-in campaigns respectively are typically very explicit in their interviews about their intention to either expand globally through Kickstarter or further penetrate the local market. The project ROBOT1 is an example of the former:

“*We decided to go international through Kickstarter because we knew that it was the only way to afford such a big marketing campaign... we found in Kickstarter an excellent way of showing the product and getting people interested in doing business. We even got some investors interested, some distributors.*”

Second, projects pursuing an inside-out strategy are typically tangible, whereas projects following an outside-in strategy are typically intangible. In other words, the value proposition of the former is mainly based on products that can be seen, touched and used in a tangible way. A typical example of this are robots, 3D printers and other devices. By contrast, rather intangible projects derive their value from user and/or customer experience. Examples include restaurants and cultural projects. Often times, intangible projects are deeply embedded in a particular local context, which is why they often target local audiences.

Third, another interesting differentiating project feature that can be associated with either strategy is the degree to which advanced technology is a core aspect of the promoted project value. High-tech projects, such as ROBOT1 and PRINTER1, are very likely to follow an inside-out strategy, whereas low-tech projects, such food trucks and restaurants, often fall into the outside-in category. While advancement of technology used correlates with local vs. global orientation, there are some notable exceptions, in which case the entrepreneurial strategy taken becomes particularly interesting. For example, the project POOL, which is about water cleaning and utilization for recreation in the Hudson River in New York, is clearly a locally embedded project with intangible elements (the experience of swimming in the Hudson River). However, compared to restaurant and food projects, it is very high-tech as well. However, its local mission dominates the entrepreneurial strategy, which explains the high percentage of regional and national backers (78%) and the relatively high percentage of first-time backers (45%) – both features of an outside-in strategy.
By contrast, the project KIDSGAME, an educational board game, is very low-tech, but it does not target local audiences. However, its value proposition is composed around the ‘educational value’ of the product, which is deeply culturally embedded in the U.S. context. Whereas high-tech projects benefit from the global appeal of new technology, low-tech projects are more likely to depend on contextual stories of value creation, which is also reflected in the direction of crowdfunding videos. Not surprisingly, therefore, 95% of all backers of KIDSGAME come from the U.S. and the high percentage of first-time backers (54%) is also noteworthy. These are, again, typical features of an outside-in strategies, whereby the ‘local context’ of value creation expands in this case to the national context of U.S. education and culture.

Fourth, projects pursuing an inside-out strategy are often commercially oriented, whereas projects following an outside-in strategy are often socially oriented. Examples of the former include robots and 3D printers; examples of the latter include food trucks and farming projects. We find that many commercially oriented projects in our study typically have access to conventional funding mechanisms, whereas socially oriented projects often lack those. This is why for the latter crowdfunding becomes an important means to channel funding, whereas for the former crowdfunding is more of a marketing tool.

As mentioned above we find in our sample projects with different combinations of features. Those that are high-tech, commercially oriented, tangible and target global audiences are particularly likely to pursue inside-out strategies. Examples include PRINTER1 and ROBOT1. Likewise, those projects that are low-tech, socially oriented, intangible and target local audiences, such as FOODTRUCK and NEWSPAPER, are very likely to pursue outside-in strategies. Among those projects with mixed characteristics, such as POOL, we find that certain features dominate the choice of strategy whereas others are of secondary importance. In particular, we find that the degree to which projects target local/regional or global audiences strongly influences the strategy taken.
Discussion: Explaining varieties of local-virtual ecosystem strategies

Next, we discuss how our empirical findings can inform future research on distributed entrepreneurial ecosystem strategies, especially with respect to the interplay of local ecosystems and virtual sharing platforms. We thereby focus on the interplay of resource-bundling and market-building.

First, we propose based on our findings that local-virtual ecosystem strategies may generate synergies between resource-bundling and market-building that neither local ecosystems nor virtual sharing platforms embody by themselves. This is because local and virtual ecosystems do not simply co-exist, nor are they substitutes of each other (Van Alstyne et al., 2016), but they are interlinked as support environments in the entrepreneurial process. In particular, we find that their combined use strengthens the integration of resource-bundling and market-building as core elements in this process. One good example is how the institutional affiliation of many high-tech projects and their founding members with MIT in our sample is not only a core element of idea development, skill and team formation, but is used as a device to certify the quality of the product and boost its value proposition not just to funders, but also to lead users, both of whom can be accessed through sharing platforms such as crowdfunding. This integration effect comes about through the multi-vocal roles of backers – as funders, users/buyers and potential beneficiaries (Belleflamme et al., 2013).

Importantly, this integration process often happens in both local and virtual ecosystems simultaneously. One good example is the project FARM1 whose initiators established important connections to local restaurants as potential buyers of their projects, who would also turn into funders through the crowdfunding campaign. Importantly, this combination of roles only happened because the local and virtual support ecosystems got interlinked through the strategy of the entrepreneur (Isenberg, 2011). Restaurants would not become funders if the entrepreneur did not connect with them in the local ecosystem. Nor would they be able to fund the project if the entrepreneur decided not to use a virtual sharing platform. Both support infrastructures are needed for this integration to happen.
Clearly, it is thinkable that even without crowdfunding, some funders might turn into buyers or the other way around, but the combination of local and virtual ecosystem ties increases the scale and extent to which such integration and related synergies can happen. We propose:

**P1: Combined local-virtual entrepreneurial ecosystem strategies have the potential to integrate resource-bundling and market-building as elements of the entrepreneurial process at a higher scale than local ecosystem or virtual sharing strategies independent from each other.**

Yet we find that these integration processes happen in fundamentally different ways depending on which strategy entrepreneurs take in utilizing local and virtual support ecosystems. We coined the major strategic options ‘inside-out’ and ‘outside-in’ strategies. The inside-out approach uses virtual sharing platforms such as Kickstarter to ‘lift’ projects *out of* their local context to access global audiences. The outside-in approach uses virtual sharing platforms to mobilize support for project implementation *within* local contexts. Accordingly, the inside-out approach appeals to geographically dispersed backers, whereas the outside-in approach more narrowly attracts backers from within the local ecosystem the project originates from or from similar/related ecosystems.

>>>>>> INSERT FIGURE III HERE <<<<<<<<<

In terms of how these approaches combine resource-bundling and market-building, we find that they apply two different, yet similarly effective logics. These logics are displayed in Figure III. In the inside-out approach, a lot of resource-bundling happens in the local ecosystem in conventional ways prior to going on virtual sharing platforms (Eisenmann et al., 2011). Typical projects grow out of local university projects, supported by incubators and venture capitalists. The outcome of this effort becomes part of the value proposition with which entrepreneurs post the project on a virtual sharing platform in order to build a viable test market in a shared fashion, i.e. by tapping into an existing virtual community of enthusiasts. In a nutshell, local resource-bundling precedes and is complemented by shared virtual market-building. Of course, test markets are also built locally, and virtual sharing platforms are also used for funding, but these aspects are secondary to the main direction of the inside-out strategy.
In contrast, the logic of the outside-in approach is to some extent the reverse of the inside-out approach. In the outside-in approach, a lot of market-building and demand testing happens locally prior to using virtual sharing platforms. The latter then serve to channel and bundle resources from inside and outside the local community within which the project is embedded. Thereby, the project value proposition, which is reflected by content posted on the sharing platform, builds very strongly on the estimated value and impact of the project in the local community. Whereas in inside-out strategies, local resource-bundling efforts culminate in value propositions to promote shared virtual market-building, in outside-in strategies, local market-building efforts are framed as a value proposition to promote ‘shared resource-bundling’ as community members not only turn into backers but animate others to join the effort. Both strategies are in themselves coherent and effective, but our findings suggest that they do not ‘mix’. Projects lend to either one or the other strategy. We propose:

**P2: The integration of resource-bundling and market-building through local-virtual ecosystem strategies can happen in two fundamentally different ways. In the context of crowdfunding, the inside-out-strategy makes ‘local’ resource-bundling part of a value proposition to promote virtual and shared market-building. The outside-in-strategy makes local market-building part of a value proposition for virtual and shared resource-bundling.**

We further find that the main driving force behind the difference in entrepreneurial strategy is the degree to which projects are aimed at local or global audiences. Whereas, in principle, both local and virtual ecosystem strategies may assist projects that are locally or globally oriented, we find that in practice, globally oriented projects are more likely promoted by an inside-out strategy, whereas locally oriented projects are more likely promoted by an outside-in strategy.

With this finding, we add nuance to the notion that ‘location matters’ in crowdfunding campaigns (Mollick, 2014). The study by Mollick (2014), for example, suggests that high-tech projects typically originate from certain urban hubs. While this may be true, our study suggests that such projects are likely to be ‘globally oriented’. While being ‘rooted’ in certain local environments, crowdfunding campaigns in fact help ‘lift them’ out of their local contexts. By comparison, ‘locally
oriented’ projects are not just rooted in local environments but also target users and consumers in those contexts. Both their crowdfunding strategy and the criteria of success are very different. Whereas globally oriented projects use virtual platforms to expand and scale up demand globally, which is why campaigns often exceed formal funding targets manifold, locally oriented projects use such campaigns mainly to mobilize support for project success within local markets. Whereas their actual funding may often be lower, it may be sufficient for their purpose. We propose:

P3: In the context of crowdfunding, globally oriented projects are likely to use virtual sharing platforms primarily for market-building rather than resource-bundling, whereas locally oriented projects are likely to use virtual sharing platforms primarily for resource-bundling rather than market-building.

Aside from the importance of local vs. global orientation of projects, we also found strong correlations between the strategy taken and project tangibility, sophistication of technology and social vs commercial orientation of projects. Whereas these characteristics are correlated with the local vs. global orientation of projects, they also unfold their own impact. We discuss some effects next.

First, we find that the choice of ecosystem strategy is affected by the tangibility of project outcomes. Projects whose value is significantly based on material features, such as clothing, printers and gadgets, are typically promoted through inside-out strategies, whereas projects whose user or customer value is based more on experience, such as restaurants and art projects, are often promoted through outside-in strategies. Our findings correspond with the basic insight that material elements of projects can become important ‘boundary objects’ for the understanding of what projects are about (Alderman et al., 2005) and where the potential value of projects lies (see in general Teece, 2010). Tangible boundary objects can literally be ‘presented’ whereas projects that lack those objects are more ambiguous in terms of value (see in general, Weick, 1995). Their ‘utility’ is often highly subjective and based on the experience customers have, which is why intangible goods are often described as ‘experience goods’ (Hirsch, 1972; Lampel et al., 2000). Such experiences are often contextually
embedded and affected by norms and cultures in certain places. Highly tangible projects and visible products, by comparison, are more easily presented and marketed to dispersed audiences. Also, they can typically be exported and shipped around the world. This is why we predict that tangible projects are likely to leverage local-virtual ecosystems by means of inside-out strategies.

Second, we find that sophistication of technology matters. More specifically, we find that projects based on sophisticated technology, such as 3D printers and software, are typically promoted through inside-out strategies, whereas projects relying on more basic technology, such as food, are often promoted through outside-in strategies. Projects based on new technology are often dependent on considerable upfront investments, into technology development and testing. Also, their initial development is often very technology-driven. This is why local resource-bundling typically precedes market-building. Crowdfunding campaigns are then used to scale up market efforts. By comparison, in order to promote projects based on more basic technology stronger marketing efforts are needed from the start to generate value and legitimize projects. Differentiation here happens less through project features, and more through contextualization. Also, conventional funding is easier to access if projects are high-tech than low-tech (MacMillan et al., 1987). This is why crowdfunding becomes crucial as a financial resource to get lower-tech projects going. In turn, mobilizing funders may require more elaborate efforts into showing that ‘markets’ and ‘demands’ exist prior to posting projects.

Third, we find that the degree of social vs. commercial orientation of projects may affect entrepreneurial ecosystem strategies. Social orientation refers to the extent to which projects serve social causes, rather than just generating revenue (see e.g. Porter and Kramer, 2011; Haigh and Hoffman, 2014; Battilana and Lee, 2014). We find that projects with a strong social orientation, such as food trucks or community projects, are often strongly embedded in local communities and thus lend themselves to outside-in strategies. Similar to low-tech projects, social projects often lack access to conventional funding, which is why crowdfunding becomes an important alternative resource. By
contrast, commercial projects are more easily fundable and are thus more likely to use crowdfunding in addition to existing financial support and in preparation for going to market with a project or service.

Overall, we propose:

P4a: The more tangible entrepreneurial projects are the more likely will entrepreneurs primarily use local ecosystems for resource-bundling and virtual sharing platforms for market-building (rather than the other way around).

P4b: The more high-tech entrepreneurial projects are the more likely will entrepreneurs primarily use local ecosystems for resource-bundling and virtual sharing platforms for market-building (rather than the other way around).

P4c: The more commercial entrepreneurial projects are the more likely will entrepreneurs primarily use local ecosystems for resource-bundling and virtual sharing platforms for market-building (rather than the other way around).

Implications for future research

Our findings have major implications for future research, in particular for research on entrepreneurial ecosystems and ecosystem strategies; the geographic and economic embeddedness of virtual sharing platforms; and crowdfunding and sharing economy research at large.

First, they inform research on ecosystem strategies specifically for entrepreneurs navigating between local ecosystems and virtual sharing platforms in support of their new ventures. More than prior studies, this study suggests that local ecosystems and virtual sharing platforms are interlinked in complex ways supporting the entrepreneurial process. Prior studies, in particular in entrepreneurship, either abstract away from the role of various ecosystems when studying resource-bundling and market-building strategies (see e.g. Lichtenstein and Brush, 2001), or they focus on the role of local ecosystems (see e.g. Spigel, 2017), and virtual sharing platforms (see e.g. Botsman, 2014) separately. This separation led to an underspecified treatment of resource-bundling and market-building strategies. As virtual sharing platforms increasingly complement local ecosystems, resource-bundling and market-building happen in a distributed, yet also integrated fashion.
Another important finding is that local entrepreneurial ecosystems and virtual sharing platforms are not interlinked ‘by design’, but that only the strategies of entrepreneurs navigating those systems create the linkages between them. We captured this by applying the notion of ‘ecosystem strategies’ (Adner, 2017; Williamson and De Meyer, 2012) to the context of entrepreneurial processes. Our data suggests that the entrepreneurs applying those strategies are typically very much aware of their components, even if they often do not think in terms of ecosystems. Future research needs to investigate in more detail to what extent entrepreneurs vary in their abilities to effectively develop and apply those entrepreneurial ecosystem strategies.

Second, we enrich the growing literature on collaborative and virtual sharing platforms by specifying how participants on such platforms are geographically and economically embedded. Prior research has focused on how to enter and shape platforms (e.g. Adner, 2013; Ansari et al., 2016; Dattee et al., 2017), while treating such platforms as more or less bounded systems. In the context of virtual sharing platforms, such as Airbnb and Uber, but also crowdfunding, this would trigger an under-specification or oversimplification of user roles, e.g. as ‘promoters’ and ‘backers’ of projects in the case of crowdfunding. In a similarly oversimplified way, studies would claim that the practice of ‘sharing’ by itself has transformative power, e.g. in “shifting control toward a collaborative model” (Botsman, 2014, p. 24). Our findings may challenge such claims.

For example, in the outside-in model of using crowdfunding, “backers” are not at all random project enthusiasts but to a great extent very specific project stakeholders who take the role of buyer, corporate client or supplier towards the finalization of projects. The case of FARM1 made this very clear: some of the most important backers were actual local restaurants that took a concrete interest in the successful funding of the project in order to secure FARM1 as a potentially exclusive or preferred supplier. In other words, users of the sharing platform may play dual roles as “anonymous backers” and potentially powerful stakeholders in local production systems. That is, while to some extent, the
sharing platform itself does ‘mobilize’ various individuals and organizations as ‘backers’, thus empowering these actors in roles conventionally taken by banks and financial institutions (Botsman, 2014), it is key to understand the actual – geographic and economic – project context and stakeholder setting to comprehend who participates as backer and why.

Our findings thus help further specify the importance of interfaces between collaborative sharing platforms and (other) ecosystems, and help appreciate the potentially multiple roles ‘users’ of such multi-sided platforms such as Kickstarter take. This adds specificity to research on dynamics contributing to the adoption of and participation in sharing economy technologies (Hamari et al., 2016) and also helps better contextualize participant structure and interaction patterns on well-known sharing platforms such as Airbnb and Uber. More specifically it encourages future research to better incorporate how “conventional incumbents” of local and global production systems not only respond to (e.g. Botsman, 2014; Sundararajan, 2014) but how they represent their interests by participating in sharing economies in particular ways. In other words, we regard notions such as “sharing” and “peer-to-peer” system as highly underspecified since it they cloud the actual interests of and relationships between “peers” both on and outside of the sharing platform.

In this regard, we may also extend the growing debate on crowdfunding by putting crowdfunding campaigns into the context of entrepreneurial processes and environments, as an important example of sharing economies (Botsman, 2014). In the last few years, crowdfunding has taken off as its own debate, putting emphasis on success factors, network effects, video narratives etc. (Colombo et al., 2015; Mollick, 2014; Manning and Bejarano, 2017). While recognizing the growth of crowdfunding is important, there is also a risk of decontextualizing it. Our study clearly shows that crowdfunding campaigns do not operate in an isolated fashion, but they are linked to larger processes of resource-bundling and market-building in innovation and new venture development. As part of it, the local embeddedness of projects, campaigns and funders cannot be overemphasized. Having said that, the conceptual usefulness of the notion of ‘crowd’ can be questioned. Clearly, in empirical reality,
the ‘crowd’ is a combination of backers many of whom are interlinked with projects in various ways. Their appearance as a ‘crowd’ is more a product of the user interface of crowdfunding platforms than their actual social, economic and geographic embeddedness.

This study also has some notable limitations which may serve as a valuable starting point for future research. First, our findings may be affected by the selection of campaigns to be included within the scope of this study. Although the selection criteria, and in particular, the importance of “entrepreneurial hubs” such as Boston are insightful and suitable in light of the research question, future research needs to expand beyond these contexts. Second, and related to this, future research may benefit from scrutinizing negative cases, i.e. projects that did not receive funding. While our study provided insights on which strategies entrepreneurs may use, future research needs to elaborate on unsuccessful projects to further examine the effectiveness of various strategies. Third, although this study draws upon a diverse and rich set of data sources including both primary and secondary data, this study lacks longitudinal data. Future research could examine the actual process of reaching out to different ecosystems, to better capture how resource-bundling and market-building happens over time and what role various platforms and ecosystems play in this process.

In conclusion, this study has contributed to a more integrated understanding of resource-bundling and market-building in the entrepreneurial process across fragmented entrepreneurial ecosystems, specifically local ecosystems and virtual sharing platforms. Findings are of relevance not just for entrepreneurship research, but for firm strategies and policy-making, specifically regarding the utility of local ecosystems with increasing use of crowdfunding and other virtual infrastructures by shedding more light on the important but often neglected notion of “sharing economy”.
REFERENCES


### Table I: Overview of all Kickstarter Projects

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<th>#</th>
<th>Title</th>
<th>Home location</th>
<th>$ raised</th>
<th>Over- shoot target</th>
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<tr>
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<td>24%</td>
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FIGURES

Figure I: Tapping into Local Ecosystems and Virtual Sharing Platforms

![Diagram of Local Ecosystem and Virtual Sharing Platform]

Figure II: Coding Tree

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<thead>
<tr>
<th>First-order codes (videos, interviews, stats)</th>
<th>Second-order codes</th>
<th>Third-order codes</th>
</tr>
</thead>
<tbody>
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<td>As MIT engineers we ... We met at MIT media lab ...</td>
<td>Exploiting local institutions</td>
<td>Inside-out strategy</td>
</tr>
<tr>
<td>Our professor connected us with VC firms ...</td>
<td>Virtual resource-bundling</td>
<td></td>
</tr>
<tr>
<td>We figured that [crowdfunding] would be a great way for people to support us</td>
<td>Local resource-bundling</td>
<td></td>
</tr>
<tr>
<td>We have good [local] investors as well as angel funds ...</td>
<td>Mobilizing local communities</td>
<td>Outside-in strategy</td>
</tr>
<tr>
<td>High % New / Local Backers</td>
<td>Virtual market-building</td>
<td></td>
</tr>
<tr>
<td>We know that locals would want such a place ...</td>
<td>Local market-building</td>
<td></td>
</tr>
<tr>
<td>We didn’t really have a market or any way to get it out there</td>
<td>Kickstarter was a test market for us ...</td>
<td></td>
</tr>
<tr>
<td>We have launched partnerships with restaurants in the area</td>
<td>High % Global Backers</td>
<td></td>
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Figure III: Elements and contingencies of inside-out and outside-in strategies