Crowdfunding as a tool for innovation marketing: technology entrepreneurship commercialization strategies

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Crowdfunding as a tool for innovation marketing: technology entrepreneurship commercialization strategies

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1. Introduction
The use of reward (or pre-sales) crowdfunding platforms by technology entrepreneurs has become a usual practice to bring new concepts and product ideas to life (Dern 2015). It has been argued that these platforms help to leverage the power of the crowd to create innovative solutions that otherwise might never have become a reality (Howe 2008; Younkin & Kashkooli 2016). But the perception that a crowdfunding platform could be an alternative for established approaches to market new products poses questions with research and practical implications.

A good example for such a practice is Pebble. In early 2015, the company decided to offer the third generation of their smart watch in exclusive to the users of the Kickstarter crowdfunding platform (Hern 2015). This was a surprise to many, as Pebble products had already started to be available in retail stores, and the startup had gone a long way since its first product was successfully launched. Back in 2012, Pebble managed to rise, also in Kickstarter, $10 million worth of orders for a new smart watch concept. When asked about the reason why they had made this decision, its founder, Eric Migicovsky, explained that it made a lot of sense to use the crowdfunding platform as it was where they had built their reputation and where they had built a community (Hern 2015). Hence, apparently Pebble uses crowdfunding not only to raise money, but also for customer retention as well as marketing and sales activities.

In this chapter, we first introduce the concept of crowdfunding and the emergence of reward-based crowdfunding, describing the impact it is having on technology entrepreneurship; we then review market theory literature to identify the characteristics of a market and use the case of the Kickstarter crowdfunding platform to assess its function as a market. Finally, we discuss the implications for entrepreneurship and market theory research as well as practical implications for entrepreneurs.
2. The emergence of crowdfunding

The definitions of crowdfunding in the literature have been somewhat elusive (Mollick 2014), nevertheless there is a common agreement that the origins of the term are related to the idea of “crowdsourcing”. Coined by Wired magazine writer Jeff Howe in a blog entry (Howe 2006), crowdsourcing described the possibility of involving the users or “crowd” in tasks such as the generation of new ideas or products (Poetz & Schreier 2012). In the case of crowdfunding the specific task is the funding of a project, typically via a web-based platform (Tomczak & Brem 2013).

Compared to traditional financing structures for entrepreneurs, with specialized agents that provide substantial investment commitments to the venture, crowdfunding opens the funding of the project to a wider audience, and offers the opportunity to take much smaller investment commitments with the new venture or project (Belleflamme et al. 2013; Tomczak & Brem 2013). The popularity of crowdfunding has also resulted in the development of many different types and forms; the differences between them are significant despite being under a similar conceptual or technological platform umbrella: projects that offer equity participations or aim to capture loans from the participants, are different from those that expected to attract donations, or those that offer products and services in the crowdfunding campaign (Mollick 2014; Belleflamme et al. 2013).

Academic researchers have started looking with interest at the phenomenon, in particular at the most popular form of reward-based crowdfunding (Kraus et al. 2016) and the promising equity-based crowdfunding (Mollick 2014). While equity crowdfunding has received most of the attention from academic research, see for example Ahlers et al. (2015), Colombo et al. (2015) or Angerer et al. (2017); the impact of reward-based crowdfunding has been less studied (Cholakova & Clarysse 2015).

The surprising success of crowdfunding projects to launch new technological projects in the market has attracted further attention from entrepreneurs and researchers to this specific type of the phenomenon. The specific form of reward-based crowdfunding offers access to a new product or service not yet available in the market, usually with a high innovative component built around a novel technology application (Mollick 2014). The dominant crowdfunding platform that has concentrated most of this specific form of reward-based crowdfunding is Kickstarter (Mollick 2014). Entrepreneurs using this platform offer a pre-sale of their products conditional to reaching a minimum number of sales that should make viable the production and delivery.
The Kickstarter\(^1\) platform offers a landing page to technology-based entrepreneurs where they can describe their product, and describe the type of product and service rewards they will offer for each different type of monetary contribution to the project. Organized by campaigns that have a funding objective and a limited time duration, the crowdfunding campaigns do not always reach the minimum funding to go ahead (Mollick & Kuppuswamy 2014). But in other cases, they can also be incredibly successful. For example, the previously mentioned launch of a new concept of smart watch by Pebble raised over $10 million\(^2\), and more recently a campaign for a small format 3D printer\(^3\) sold over 1.000 units raising over $2.9 millions of funding.

Therefore, crowdfunding has become a great tool for technology entrepreneurs in search for an application for their new product (Gregoire & Shepherd 2012; Giones & Brem 2017). More surprising is the observation, derived from the Pebble’s case (Hern 2015), that it could be perceived as a functional market. If so, we could argue that the artifact of the crowdfunding platforms has been repurposed as it has gained acceptance by different types of actors and users (Orlikowski 2010).

To assess the fit between technology entrepreneurs and reward-based crowdfunding platforms, we first introduce the technology entrepreneur’s perspective and then the market theory review to establish the theoretical background.

3. Technology entrepreneurs and markets
Technology entrepreneurs build upon advances in science and engineering to enact new business opportunities (Brem & Borchardt 2014; Baletti 2012; Beckman et al. 2012); compared to other profiles of entrepreneurs, they are expected to endure higher levels of uncertainty (York & Venkataraman 2010) but also deliver further innovation and high economic growth (Brown 2013).

Building business opportunities from technological advances often poses additional challenges to the entrepreneur; scholars have observed that in addition to the usual challenges of any entrepreneurship process, we have to account for the new product or service technological development difficulties (Hsu 2008). Besides the managerial implications of dealing with technology development issues, technology entrepreneurs are particularly impacted by the often undefined or inexisten market for their products (Teece 2010).

\(^1\) https://www.kickstarter.com/
\(^3\) https://www.kickstarter.com/projects/formlabs/form-1-an-affordable-professional-3d-printer
A recent crowdfunding run by BSX Athletics provides an illustration of this type of situations. BSX Athletics is a startup founded in 2012 that is now launching the first hydration monitor band, integrating a new technology in a wearable band and aiming to reach the global fitness market. As the entrepreneurs describe in their Kickstarter campaign page⁴, this is a high-risk project as they are introducing a new technology still under development, but they expect to be able to generate accurate measurements that provide a hydration guidance to active lifestyle users. Traditionally, as a response to the uncertainty perception, entrepreneurs in this context often use symbolic devices such as business plans to explain and describe their projects (Karlsson & Honig 2009); or business model representations to generate evidence on how they will perform and attract the attention of investors (Doganova & Eyquem-Renault 2009). The value of using these tools is often not that much its limited prescriptive value but the positive effects it can have to help avoid committing to “bad business ideas” (Chwolka & Raith 2011, p.391).

Thus, the market success of a new technology-based venture is not only dependent on the ability of the entrepreneur to organize the resources to manufacture a product or deliver a service, but in actually identifying a valuable application for the product or service (Gans & Stern 2003), and being able to make that a market reality (Godley 2013; Sarasvathy & Dew 2005). Against this context, a reward-based crowdfunding platform serves the purpose of potentially generating a pre-sales community, where future users can express their interest for products under development, and even commit to their purchase.

Compared to other artifacts such as business plans or business models, where the entrepreneurs describe their plans, ambitions or expected performance of the new venture (Doganova & Eyquem-Renault 2009), the crowdfunding platforms run “campaigns” to test the consumers response to a potential new product (Mollick 2014). Thus, they generate empirical evidence on the demand-side for the prospective new products of the technology entrepreneur. Even if there is not enough interest from “the crowd”, individual feedback and suggestions for improvement may already offer very helpful insights for future product development.

To get a better understanding of the structure and characteristics of crowdfunding platforms and whether they would share market-like characteristics, we describe them in further detail in the next section.

4. The structure and characteristics of a crowdfunding platform

There is a high diversity of forms and objectives of crowdfunding platforms (Kraus et al. 2016), but Kickstarter quickly took a leading role as a reward-based crowdfunding platform (Mollick

2014). It has helped to introduce a reference and advance towards a de facto-standardization of how a crowdfunding website and project or campaign pages should look like, favoring the diffusion of crowdfunding as a technology for leveraging the power of the crowd (Brem et al. 2016). We briefly describe the components of the landing page for a crowdfunding project to establish a reference point for the further analysis of the case:

- **Project description and FAQ**: it includes the titles of the project, the description of the project with details, combining images, text and usually at least a presentation video, this content covers most of the landing page.

- **Project status**: often as a column header, there is up to date information about the number of backers or funders of the project, the funding goal of the project and the current amount achieved.

- **Project founder**: it presents a brief description of the company or individual founder, as well as the list of previous, if any, crowdfunding campaigns by the same author.

- **Reward structure**: usually in a column of the landing page of the project, it details, by ascending order, the required pledge (contribution) and the reward offered in the campaign. It often goes from appreciation rewards for very low contributions ($5-20), to the product pre-sales rewards (depending on the “price” of the product), to special rewards. In addition to the reward description, there is also information on the number of backers for each option as well as the units available for each type of reward (as assigned by the crowdfunding campaign founder).

From the description of Kickstarter's website, the crowdfunding platform aims to be "a community of people working together to bring new things to live" (Kickstarter 2015), and further on it highlights the additional benefits besides getting some project funding: "A Kickstarter project does more than raise money. It builds a community around your work" (Kickstarter 2015). The steps that are suggested for a successful crowdfunding campaign are as follows: (1) "Build your project" - landing page in their website, (2) "Get feedback" - inviting peers to share their thoughts from your trusted network, (3) "Launch it to the world" - make it public, (4) "Track funding progress" - offering options to adjust and correct content in the website, (5) "Funded!" - if achieved goal in the established time frame, (6) "Keep backers in the loop" - update your first customers on the product development, (7) "Send rewards" - ship your products or provide your service, (8) "You did it" - the campaign is now completed (Kickstarter 2015).

*Figure 1. Crowdfunding Process (adapted from Meyskens & Bird (2015, p.157))*
Thus, the structure and goals of a crowdfunding campaign offer to creative technology entrepreneurs the option to bring new products and services to life, it offers a platform to create a community, combining a space to present the product with a promise of a community of interested buyers. In addition, this can be a one-time crowdfunding process, or become a repetitive process (see Figure 1). But does this fit with our current theoretical understanding on how a market works? We review different market theory perspectives to extract the key dimensions that a market should have, to then asses crowdfunding platforms market-like properties.

5. Market theory perspective on crowdfunding platforms

The definition of what constitutes a market is at the core of the discussion on whether a simple exchange of a good or service between different actors (buyer and seller) are sufficient to define market, or whether there is a need for a physical space where actors repeatedly engage in exchanges to establish the existence of a market (Fligstein & Dauter 2007).

Markets have been defined as "collective devices that allow compromises to be reached, not only on the nature of the goods to produce and distribute but also on the value to be given to them" (Callon & Muniesa 2005, p. 1229), but there is an open discussion between the economic and sociological perspective (see Table 1) of what constitutes a market. This discussion helps to understand the different possible understandings of what is a market for a technology entrepreneur.

On one hand, there is the idea that markets are embedded in social structures, this would explain why platforms such as crowdfunding could generate specific market performance drivers. As described by marketing scholars pure transaction-based electronic commerce platforms do not have the market dynamics observed in social commerce spaces or crowdfunding platforms (Yadav et al. 2013).

On the other hand, a transaction-based electronic commerce platform would fit with the neoclassical theory on markets, on how a market is defined, on how it works, and on its nature (see Table 1). Social commerce spaces, however, could find a better fit with the ideas behind the sociology of markets theories (see Table 1). The key contribution from the sociology of markets view is that it assumes that “actors will develop social structures to mediate the
problems they encounter in exchange, competition, and production” (Fligstein & Dauter 2007, p.113).

Table 1. Neoclassical versus Sociology views of markets

<table>
<thead>
<tr>
<th>Neoclassical theory on markets</th>
<th>Sociology of markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is a market defined?</td>
<td>Exchanges between actors for goods or services (one-shot or repeated)</td>
</tr>
<tr>
<td>How does the market work?</td>
<td>Supply and demand of the “good” establishes a price for the exchanges</td>
</tr>
<tr>
<td>What is the nature of a market?</td>
<td>Markets as autonomous elements</td>
</tr>
</tbody>
</table>

Source: adapted from Fligstein & Dauter (2007, pp. 112–113)

The broader sociological view of markets requires absorbing theoretical views from different perspectives on what makes a market work. Fligstein & Dauter (2007) argue that the sociology of markets is explained by the contribution of three theories: institutional theory, network theory and resource-dependence theory to identify the propositions that would depict a market. The institutional theory perspective (North 1990) provides an understanding on why there is a need for a rule setting and sanction enforcement mechanisms. This internal structure and logics help to provide an understanding on what is expected to happen in the market. The crowdfunding campaigns that after being successfully funded have failed to deliver their products (Markowitz 2013), generate a weakness in the full adoption of crowdfunding platforms as markets.

The network perspective puts in value the social network of the buyers and sellers in the exchange (Fligstein & Dauter 2007). Part of the value assigned to the products in the market is generated through exchange relationships that assign a cultural meaning behind the product being bought or sold. In the context of crowdfunding platforms, the connection with the participants’ social networks helps to bring legitimacy and trust in a highly uncertain transaction. Finally, from the resource-dependence theory (Drees & Heugens 2013) we observe the impact that having a balance between the actors in the supply and demand side has for the market. In the crowdfunding platforms, this issue is more complex to analyze. As each project or campaign runs in front of its audience there are often shifts in the power between project founders and backers. When a project becomes successful it might run out of rewards, creating a power unbalance, and offering the possibility to the founders to capture backers with a less-attractive
reward structure (as the most attractive rewards have been sold out). Thus, there is a design mechanism that shifts the resource-dependency between the parts involved if, and only if, the project is running successfully during its campaign time.

6. Assessing crowdfunding platforms as markets

The social structure of crowdfunding platforms is a result of a historical evolution. In their account of this development Younkin & Kashkooli (2016) identify key historical events. The first crowdfunding sites appeared after the year 2000, their focus was on making visible projects that required for a crowd support to move ahead (for example sponsoring artists). It took a few years, until 2008, to see the launch of the two-dominant reward-based crowdfunding platforms (Indiegogo and Kickstarter). Since then, the reward-based leading platforms have consolidated their position capturing most of the crowdfunding activity.

Observing the structure of crowdfunding platforms (see Figure 2) we can observe the different elements that can influence its function as a market. While the project description, the product characteristics, and its team contribute to the overall product attractiveness, it is the reward structure that sets the exchange price. Interestingly, the varied range of rewards of the project introduces a price discrimination tool.

Figure 2. Structure of a Reward-based Crowdfunding Platform

The reward structure offered in the project contains several elements that shape the structure of the market as they include: different products offering, price, availability, discounts and other promotional aspects (see Table 2). A surprising aspect of the reward structure is to see how it also includes acknowledgement rewards, showing how an aspect that was more related to the initial donor-based crowdfunding platforms has stayed in the reward structure. The product rewards are structured in a consistent manner across most of the Kickstarter’s projects: a first product release very limited reward, full product with an attractive discount, and premium bundles of the product with special treats for the backer (see Table 2). This reward structure has become like a rule-to-follow across crowdfunding projects, probably inspired by the success of the campaigns that caught the attention of the media (Schroter 2014).
The reward structure connects the project to the potential backers, in the case of the reward-based campaigns these backers are the future buyers of the product. The different versions of the product presented in the reward structure generate a menu of options that facilitates to engage diverse and heterogeneous demand profiles. This social-driven structure of the reward structure is supportive for the generation of what has been defined as crowdfunding dynamics (Mollick 2014). These dynamics describe a socially-embedded market (Fligstein & Dauter 2007) much more complex but also promising for technology entrepreneurs than the traditional market exchanges (see Table 1). It is the combination of social aspects with the market structure that helps to understand the success of crowdfunding platforms as markets for new products.

<table>
<thead>
<tr>
<th>Reward type and availability</th>
<th>Pledge</th>
<th>Example</th>
</tr>
</thead>
</table>
| Acknowledgment, unlimited number. | Minimal amount: $5 to $20 | - Have your name as a backer on the website.  
- Receive thanks via twitter.  
- Get regular updates from the project and the new products of the company. |
| First Product Release, very limited units (i.e. less than 200). | Heavily Discounted (20 to 50%) retail price of the product, early bird pricing. Amount range depends on product price, for instance, from $50 to $2,000. | - Receive 1 unit of the product and the basic accessories. |
| Full product version, limited units (i.e. less than 500). | Discounted item (10-30%), promotion only available in the Crowdfunding platform. Amount range depends on product price, from $50 to $2,000. | - Receive units of the product and accessories, often includes additional elements or options. |
| Premium reward, includes product and a special treat as a VIP, very limited units (i.e. less than 20). | Discounted product bulk, multiple items. Amount is several times the basic product reward pledge. | - Receive multiple units of the product, accessories, and additional elements or options.  
- Unique treat, for instance a visit to the team behind the project, unique demo of the product, special event with the founders. |

7. Crowdfunding platforms as social markets for technology entrepreneurs

Reconnecting with our introduction question on why the entrepreneurs behind Pebble would turn to a crowdfunding platform to commercialize the new version of their products (Hern 2015), we propose four elements that explain why this type of platforms do work as social markets for technology entrepreneurs.
Leverage the institutionalization of crowdfunding to commercialize new tech products

With over a decade of existence, reward-based crowdfunding platforms have institutionalized sets of routines and rules. In line with the institutional theory perspective, it is not only a diffuse practice, but it has become a regular option for more and more entrepreneurs. Not surprisingly, researchers have started to identify specific campaign designs that make a better use of the rules and mechanisms available on crowdfunding platforms, suggesting that there are strategies that can increase the likelihood of running a successful campaign (Kraus et al. 2016).

Additional evidence on the institutionalization of these platforms as a market for new tech products comes from the list of tech-product campaigns in Indiegogo (alternative platform to Kickstarter). As it can be seen in Table 3, the number, type and amount funded show the significance of these platforms. We use an example from Indiegogo to show that the function of these platforms as a market is not specific from the case of Kickstarter.

Table 3. Selected Tech-Entrepreneurs Crowdfunding campaigns

<table>
<thead>
<tr>
<th>Project name</th>
<th>Product description (from the crowdfunding campaign) and website</th>
<th>Amount funded and % of initial goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fingbox - Network Security &amp; Wi-Fi Troubleshooting</td>
<td>“A simple device to secure and troubleshoot your home network. Fingbox is packed with the tools you need to keep your home network safe and your Wi-Fi working.” <a href="https://www.indiegogo.com/projects/fingbox-network-security-wi-fi-troubleshooting#/">https://www.indiegogo.com/projects/fingbox-network-security-wi-fi-troubleshooting#/</a></td>
<td>$1,184,815 USD total funds raised 1744% funded on December 24, 2016</td>
</tr>
<tr>
<td>X-Connect: World’s 1st Cross-device Magnetic Cable</td>
<td>“X-Connect: the world’s 1st magnetic USB cable that’s compatible with all phones including Apple (Lightning) and Android (micro USB &amp; USB-C).” <a href="https://www.indiegogo.com/projects/x-connect-world-s-1st-cross-device-magnetic-cable-iphone#/">https://www.indiegogo.com/projects/x-connect-world-s-1st-cross-device-magnetic-cable-iphone#/</a></td>
<td>$508,371 USD total funds raised 651% funded on November 6, 2016</td>
</tr>
<tr>
<td>Smartwatch Powered by You - MATRIX PowerWatch</td>
<td>“The MATRIX PowerWatch is the world’s first smartwatch that you never have to charge. Powered by your body heat, it measures calories burned, activity level, and sleep using our advanced thermolectric technology.” <a href="https://www.indiegogo.com/projects/smartwatch-powered-by-you-matrix-powerwatch-watch-fitness#/">https://www.indiegogo.com/projects/smartwatch-powered-by-you-matrix-powerwatch-watch-fitness#/</a></td>
<td>$1,515,170 USD total funds raised 939% funded on January 14, 2017</td>
</tr>
<tr>
<td>Keezel:Online Security for Every Device Everywhere</td>
<td>“Keezel protects your online privacy &amp; security. With Keezel, your data and all other confidential &amp; sensitive information is protected from hackers, online snoppers, your ISP, network admins, and/or government surveillance.” <a href="https://www.indiegogo.com/projects/keezel-online-security-for-every-device-everywhere-wifi-technology#/">https://www.indiegogo.com/projects/keezel-online-security-for-every-device-everywhere-wifi-technology#/</a></td>
<td>$1,162,713 USD total funds raised 539% funded on August 23, 2016</td>
</tr>
<tr>
<td>iKON- The Best Tracking Device with a SMART BUTTON</td>
<td>“iKON is the smartest and most versatile tracking device that helps people find their most valuable items no matter how big or small. iKON also serves as a remote button for taking smartphone selfies from a distance; what’s more, iKON is water and shock resistant.” <a href="https://www.indiegogo.com/projects/ikon-the-best-tracking-device-with-a-smart-button#/">https://www.indiegogo.com/projects/ikon-the-best-tracking-device-with-a-smart-button#/</a></td>
<td>$67,005 USD total funds raised 423% funded on October 3, 2016</td>
</tr>
</tbody>
</table>
Tiny1: The World's Smallest Astronomy Camera

Tiny1 is the world’s smallest, smartest and most social astronomy camera. It helps you plan, capture and share your star filled sky experience - all from the palm of your hands. Here’s a gallery of what we have captured, over 2 years of development.

https://www.indiegogo.com/projects/tiny1-the-world-s-smallest-astronomy-camera-photography#

$472,824 USD total funds raised
365% funded on July 10, 2016

The World’s First Wireless Parking Sensor And App

Meet the World’s first wireless, hands-free and license plate frame based parking sensor with a mobile app.


$249,983 USD total funds raised
162% funded on September 14, 2016

Source: Indiegogo selection of technology enthusiast campaigns (Indiegogo 2017)

Most of the products described in table 3 could have been commercialized via traditional sales channels for new technological products. Nevertheless, technology entrepreneurs made use of a reward-based crowdfunding platform to promote and activate a first market for their product (Brown et al. 2017).

**Exploit the social capital to drive market performance**

A differential aspect from electronic markets is that prices are visible, transparent to those involved in the exchange. Crowdfunding platforms use reward structures where prices are visible and cannot be changed. Therefore, there are reduced options to respond to the unexpected responses of the demand. As a result, instead of trying to maximize price for each transaction, entrepreneurs shift their attention to maximizing the number of possible transactions in the crowdfunding platform. This is consistent with the idea of generating viral marketing strategies that attract a larger crowd (Kaplan & Haenlein 2011).

Researchers have found two potential leverage mechanisms to activate the viral social mechanisms in crowdfunding platforms: accelerated early contributions and entrepreneur’s social capital (Colombo et al. 2015). The early contributions in a crowdfunding campaign have multiple effects on the further development of the project, they reduce the perceived uncertainty, generate a herd-behavior (Banerjee 1992), and make visible a demand that did not exist before (Younkin & Kashkooli 2016). But, these early contributions are strongly influenced by the social capital of the entrepreneurs (Colombo et al. 2015). In line with the networking theory expectations on the dynamics of social markets, the social capital of the entrepreneur (and its team) can help to generate the early contributions, in other words launch hard or go home (Etter et al. 2013).

**Generate scarcity to create imbalances in the offer-demand market structure**

Referring to table 3, a common denominator across successful campaigns in crowdfunding platforms is that they overcome their initial funding goals. The design of the reward structure
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determines the availability of each of the possible rewards, as mentioned in Table 2. Given that the reward price is fixed, the entrepreneur maximizes revenues through an escalated structure of rewards to discriminate the different demand profiles. While entrepreneurs give away the possibility to adjust prices, they have an alternative tool to generate scarcity and increase market attention (Brown et al. 2017). The limited number of available rewards with the most advantageous conditions (see Table 2) plus the limited duration of the overall campaign (determined by the platform, not the entrepreneur) help to unbalance the offer-demand market structure in favor of the technology entrepreneur.

As it can be observed in the selection of projects in Table 3, successful campaigns can end up surpassing several times the initial funding expectations. It is the evolution of the campaign that generates power shifts between the founders and the funders; while the entrepreneur founder eagerly needs the early-contributions to get traction and visibility, it is the backer that has the risk to miss the opportunity to purchase at a reduced price if the campaign becomes successful.

Therefore, although there are limited options to influence on the pricing of the product being marketed, the entrepreneur has the possibility to design a-priori a reward structure that is conducive to benefit him if the campaign gains traction in the market.

8. Conclusions

The promise of crowdfunding as a game-changer for entrepreneurship and innovation has already started to deliver. The early success of projects and platforms alike has started to receive attention from both policymakers and academic scholars. Despite the limited literature on the phenomenon (Mollick 2014), it is expected that this new phenomenon can modify our understanding on how technology-based entrepreneurs cope with their funding needs (Tomczak & Brem 2013) and shape their commercialization strategies (Etter et al. 2013).

In this research we have assessed the function of reward-based crowdfunding platforms (using the case of Kickstarter platform (2014)) as a market device for technology-based entrepreneurs. The results of the analysis of crowdfunding platforms through the lenses of Callon & Muniesas’ (2005) definition of markets provide support for further discussing the impact of crowdfunding on technology-based entrepreneurship.

Using the market as a collective device’s perspective (Callon & Muniesa 2005) we have observed that crowdfunding platforms could actually provide an alternative to the duality between market identification and technology development to entrepreneurs (Brem & Borchardt 2014; Hsu 2008). The observed function of crowdfunding platforms as ad-hoc markets for the products of the technology-based entrepreneur would actually provide the value calculation output
The collective value calculation of the new product is in addition subject to an initial production and delivery commitment from the entrepreneur. Thus, in addition of being able to establish a market value for its product, it is also a consumer-based funding source for the startup.

Therefore, we provide support for further studies by entrepreneurship and innovation researchers. From the market perspective, crowdfunding platforms can accelerate the commercialization of new products and services, offering a unique environment to experiment with market validation strategies, information content analysis, and technology marketing constructs. Nevertheless, further research is needed to establish the competitive consequences of adopting an open and transparent approach to new products commercialization; the information displayed in the crowdfunding campaign (often prototypes and initial designs) is open also to existing competitors or new entrants. Moreover, specific factors like gender differences should be also taken into consideration (Brem & Wassong 2014).

This research also has implications for entrepreneurs and reward-based crowdfunding platform managers. The assessment of crowdfunding platforms as markets shed some light on the potential areas of improvement of existing platforms (such as comparability and classification of projects), as well as the often-limited reliability of founders’ commitments on the crowdfunding campaign page. As platforms are able to gain further legal structure, monitoring and governance mechanisms (Wareham et al. 2014), it is expected that founders receive additional pressure to contribute to the reputational value of the platform as a market. Moreover, it is shown how crowdfunding is changing other traditional transaction-based marketplaces: like the institutional entrepreneurship approach, explaining how a different approach becomes an interesting practice that transform a classic institution like an electronic marketplace. Platforms can also develop their product portfolio from providing entrepreneurs access to private funding further. E.g., by offering marketing and sales support with specific websites to showcase projects without funding options included yet. Main players in the international retail market already go in this direction, for instance Amazon with its “Launchpad” program⁵ Amazon uses its market power to offer startups a full marketing program: building brands, increasing awareness, and international visibility. So, if leading crowdfunding platforms like Kickstarter are not catching up fast, they might lose the first-mover advantage they have on the market.

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⁵ https://www.amazon.com/Amazon-Launchpad/b?node=12034488011
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