

**WHEN MORE IS LESS: EXPLAINING THE CURSE OF TOO MUCH CAPITAL FOR
EARLY-STAGE VENTURES**

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ABSTRACT

This study examines how the mechanisms that entrepreneurs use to successfully mobilize financial resources influence the long-term viability of their ventures. Through an inductive analysis of crowdfunded consumer drone ventures, we empirically illustrate and theoretically conceptualize the link between the claims entrepreneurs use to mobilize resources and the actions entrepreneurs must then take to develop successful ventures. We induct a theoretical framework to suggest *unbounded claims* drive up the financial resources that ventures mobilize but reduce the likelihood of their long-term viability due to unmanageable technological complexity and uncontrolled organizational scaling, while *bounded claims* limit the financial resources that ventures mobilize but increase the likelihood of their long-term viability due to manageable technological complexity and controlled organizational scaling. We contribute to the resource mobilization literature by expounding on how the mechanisms that entrepreneurs use to mobilize financial resources are critical for ventures' long-term viability over and above the amount of resources they mobilize. We contribute to the cultural entrepreneurship literature by linking research on claim-making to the actions entrepreneurs must then take to deliver on their claims. Finally, we contribute to the literature on crowdfunding by connecting entrepreneurs' campaign actions to the post-campaign outcome of on-time and on-scope product delivery.

INTRODUCTION

In 2015, the ZANO mini-drone became the most successful European project ever on crowdfunding website Kickstarter, when it raised £2.3 million from more than 12,000 backers. But in November 2015, Torquing Group, the company behind ZANO, collapsed having shipped under 700 of the devices to customers. While crowdfunding has transformed designers' ability to make products independently, the ZANO has become a cautionary tale about the risks of these campaigns.

- Exhibit at London's Victoria & Albert Museum¹

Organizational scholars recognize resource mobilization as a fundamental challenge facing early-stage entrepreneurial ventures seeking to develop ideas into market-ready offerings amidst inherent uncertainty (e.g., Clough et al. 2019, Hallen et al. 2020, Huang 2018). Several studies have identified mechanisms that entrepreneurs can use to mobilize financial resources in exchange for equity by persuading venture capitalists (VCs) and angel investors of their ventures' plausibility and credibility (e.g., Chen et al. 2009, Hallen and Eisenhardt 2012, Huang and Pearce 2015, Martens et al. 2007, Zott and Huy 2007). More recently, scholars have begun to identify mechanisms through which entrepreneurs can mobilize financial resources for their ventures via crowdfunding campaigns—public efforts to mobilize relatively small financial contributions from several resource providers in exchange for (future) offerings and/or small amounts of equity (e.g., Belleflamme et al. 2014, Greenberg and Mollick 2017, Li et al. 2017, Mollick 2014, Murray et al. 2020, Peterson and Wu 2021, Täuscher et al. 2021).

However, mobilizing financial resources does not necessarily lead to early-stage venture success. Several studies in the entrepreneurial financing domain hint at the possible pitfalls associated with raising too much financial capital too soon. McDonald and Eisenhardt (2020), in their study of five entrants in the U.S. social-investing market, found that Icarus (an alias) burned through millions of dollars without realizing an actual business model despite raising \$11 million in venture funding (more than any venture in the authors' sample). Ott and Eisenhardt (2020), in their study of six entrants in two-sided marketplaces, reported that LastRequest (an alias) wasted substantial resources on grandiose actions and ultimately failed despite raising \$1 million in seed funding and \$15 million in its Series A funding round (more than any venture in the authors' sample). Zuzul and Tripsas

¹ Part of the Victoria & Albert Museum's "Rapid Response Collecting" exhibit in 2018.

When more is less

(2020), in their study of four entrants in the air taxi industry, highlighted that DayJet failed just one year after its first flight despite raising \$50 million in venture funding (more than any venture in the authors' sample). In the crowdfunding setting, examples also abound of early-stage ventures that mobilized substantial amounts of financial capital but then failed in their subsequent efforts to manufacture and deliver their products (Vanacker et al. 2019). After raising \$1.1 million from 3,203 backers to develop an aerial photography drone, the Robot Dragonfly team encountered complications while iterating on the drone's prototype, ultimately failing to deliver its promised drone to backers (Indiegogo 2015). Similarly, as highlighted in the opening example, Torquing Group was unable to produce its ZANO drone at scale after raising \$3.5 million from 12,075 backers (Harris 2016).

Despite evidence from prior studies and industry anecdotes to suggest early-stage ventures that mobilize significant amounts of financial resources can, and often do, fail, it is unclear *whether* the mechanisms used by entrepreneurs to mobilize financial resources also impact their ventures' long-term viability—either success or failure—and if they do, *how* they do so. Studies on the crowd-based phenomenon of peer-to-peer lending have begun to shed light on this puzzle, finding that certain mechanisms used by borrowers, including unverifiable information (Herzenstein et al. 2011), types of personal accounts (Sonenshein et al. 2011), and extroverted language (Netzer et al. 2019), lead to successful resource mobilization outcomes but also unsuccessful loan payback performance. Yet why these relationships exist remains less clear, particularly for entrepreneurs who mobilize financial resources that they must then use to deliver on their early-stage ventures' commitments. We thus address the following research question: *How do the mechanisms utilized by entrepreneurs to mobilize financial resources influence the long-term viability of their early-stage ventures?*

To address this question, we examined the mechanisms used by entrepreneurs who funded their consumer drone ventures on Kickstarter between 2009 and 2015 ($n = 22$) and their subsequent product delivery processes through March 2020. We used inductive theory building from these 22 cases, contrasting the mechanisms evident in the seven that succeeded in delivering their products with the 15 that failed in delivering their products on time and/or on scope. We inducted a theoretical framework reflecting how the types of *claims* that entrepreneurs use to describe their products impact not only the amount of resources they attain but also the actions they must then take to deliver their

When more is less

products. Ventures that use *unbounded claims*—forward-looking assertions that are untethered to current reality—are more likely to garner attention from expansive infomediaries (e.g., media outlets that reach audiences beyond a venture’s focused domain) and generate inflated audience expectations. In turn, unbounded claims swell resource mobilization outcomes but also increase difficulties arising from unmanageable technological complexity and uncontrolled organizational scaling, thereby resulting in failure to deliver a product on time and on scope. In contrast, ventures that use *bounded claims*—present-focused assertions that are tethered to current reality—are less likely to garner attention from expansive infomediaries and more likely to generate realistic audience expectations. In turn, bounded claims lead to less inflated resource mobilization outcomes but also manageable technological complexity and controlled organizational scaling, thereby resulting in successful product delivery.

Our study makes several theoretical and practical contributions. To the literature on resource mobilization, we suggest *how* entrepreneurs mobilize financial resources is critical for ventures’ long-term viability and success (Fisher et al. 2016, Garud et al. 2014, Lounsbury and Glynn 2001, Navis and Glynn 2011). Specifically, the use of *unbounded claims* to mobilize resources creates gaps between a venture’s present reality and its intended future state, leading to challenges that are difficult to surmount and ultimately failure to deliver a product on time and on scope. In contrast, the use of *bounded claims* to mobilize resources allows entrepreneurs to engage in a process of controlled and staged venture scaling wherein they work to deliver initially intended products at scale and then leverage this achievement to gradually expand the scope of their ventures (Hallen and Eisenhardt 2012, McDonald and Eisenhardt 2020). We also contribute to the cultural entrepreneurship literature, which examines how entrepreneurs use stories and other cultural tools to legitimate their ventures (Lounsbury and Glynn 2019). Specifically, we connect entrepreneurs’ claims not only to the judgments of infomediaries and external audiences but also to the actions entrepreneurs must take to deliver on their claims, and thereby maintain legitimacy, using the resources they mobilize (Feldman 2004, Howard-Grenville 2007). We contribute to the crowdfunding literature by linking actions taken during a campaign to the post-campaign outcome of on-time and on-scope delivery (Herzenstein et al.

When more is less

2011, Netzer et al. 2019, Sonenshein et al. 2011). We conclude by offering practical implications for entrepreneurs, resource providers, and crowdfunding platforms.

MOBILIZING FINANCIAL RESOURCES

Early-stage ventures developing their ideas and concepts into market-ready offerings must often mobilize financial resources from external resource providers. Scholarly research on early-stage venture resource mobilization has addressed the mechanisms through which entrepreneurs generate investments from VCs and angels in exchange for equity in their ventures (e.g., Chen et al. 2009, Clough et al. 2019, Hallen et al. 2020, Huang 2018, Huang and Pearce 2015, Martens et al. 2007, Zott and Huy 2007). More recently, studies have begun to address the mechanisms that entrepreneurs can use to mobilize financial resources from many geographically distributed resource providers using crowdfunding campaigns (e.g., Belleflamme et al. 2013, 2014, Greenberg and Mollick 2017, Kim et al. 2020, Murray et al. 2020, Nielsen and Binder, 2021, Soublière and Gehman 2019, Täuscher et al. 2021). Across these settings, resource mobilization mechanisms have been theorized to be most effective when they concisely articulate “who we are” and “what we intend to do” to potential resource providers (Fisher et al. 2016, Garud et al. 2014, Lounsbury and Glynn 2001, Navis and Glynn 2011).

Mobilizing financial resources via crowdfunding

Crowdfunding allows entrepreneurs to solicit financial resources from many geographically distributed backers in exchange for yet-to-be-developed offerings (e.g., products and/or services) and, in some cases, small amounts of equity (Agrawal et al. 2016, Ahlers et al. 2015, Cholakova and Clarysse 2015, Cumming and Johan 2013, Cumming et al. 2021b, Lehner et al. 2015, Mollick 2014, Mollick and Robb 2016, Schwienbacher and Larralde 2012, Tomczak and Brem 2013). In crowdfunding campaigns, entrepreneurs use broadly advertised requests to highlight the attractiveness of their future offerings and indicate their ventures’ plausibility and credibility (Belleflamme et al. 2015, Jiang et al. 2021, Josefy et al. 2017, Mollick and Nanda 2016). During campaigns, interactions between entrepreneurs and backers occur in public forums that are then observable to prospective backers (Burtch et al. 2013, 2015, 2016). Throughout this dynamic process, backers often provide feedback that can then be integrated into a venture’s emergent product offering (Cornelius and

When more is less

Gokpinar 2020, Murray et al. 2020, Sahaym et al. 2021). Upon a campaign's conclusion, total contributions are measured against a campaign's funding goal. In many crowdfunding models (e.g., Kickstarter), if a campaign meets its goal, the entrepreneur receives the total amount of pledged contributions and is then expected to deliver on the campaign's commitments (e.g., deliver a working product to backers) by a self-selected future date (Cumming et al. 2020). Since most entrepreneurs who pursue crowdfunding campaigns seek not only to mobilize financial resources but also to develop sustainable and lasting enterprises (Lehner 2013, Lehner and Nicholls 2014, Thies et al. 2019), it is important for entrepreneurs to deliver on the commitments emanating from their campaigns. In some cases, individuals may run crowdfunding campaigns to fraudulently extract financial contributions from backers with no intention of delivering on their campaign promises (e.g., Cumming et al. 2021a), but such campaigns are beyond the scope of our study.

The process of mobilizing financial resources via crowdfunding occurs in three phases: (1) ideation to campaign launch (i.e., pre-campaign), (2) the campaign, and (3) post-campaign to product delivery (or delivery failure). Scholars have examined the first phase, with a focus on entrepreneurs' actions that catalyze a campaign's funding success (e.g., Buttice et al. 2017, Colombo et al. 2015, Courtney et al. 2017, Sewaid et al. 2021, Skirnevskiy et al. 2017), and the second phase, with an emphasis on the in-campaign mechanisms that entrepreneurs use to mobilize resources by convincing prospective backers of a venture's plausibility and credibility (e.g., Davis et al. 2017, Greenberg and Mollick 2017, Jiang et al. 2021, Kim et al. 2020, Korzynski et al. 2021). Yet relatively few studies have examined the third phase in which ventures work to deliver on the commitments made during their campaigns (Stanko and Henard 2017, Vanacker et al. 2019). As such, we understand little about *how* the mechanisms used by entrepreneurs during the first two phases impact longer-term outcomes in the third phase (see Herzenstein et al. 2011, Netzer et al. 2019, and Sonenshein et al. 2011 for notable exceptions in the context of peer-to-peer lending) and *why* differences in the use of such mechanisms arise in the first place. Each of these phases is further highlighted in Table 1.

-----Insert Table 1 here-----

Resource mobilization mechanisms and long-term venture viability

When more is less

Though several mechanisms have been shown to be effective in mobilizing resources for early-stage ventures, whether and how these mechanisms impact ventures' long-term viability remains less clear. Studies in the context of crowd-based peer-to-peer lending, wherein borrowers solicit financial contributions (i.e., mobilize resources) from several lenders, have shown certain mechanisms positively impact resource mobilization but negatively predict longer-term loan performance. Herzenstein and colleagues (2011) found that borrowers' use of unverifiable information in their loan requests positively impacted funding outcomes over and above the use of objective information but also adversely predicted borrowers' loan payback rates. Sonenshein and colleagues (2011) found that acknowledging and/or refuting past mistakes in loan requests positively impacted loan procurement but negatively affected loan payback rates. Finally, Netzer and colleagues (2019) found that loan requests using extroverted writing styles (e.g., short-term-focused words) are effective in generating financial contributions but are also associated with loan default rates.

These studies suggest the mechanisms used to mobilize financial resources are not always positively associated with desirable long-term outcomes, yet these studies do not directly relate to the long-term viability and sustainability of entrepreneurs' crowdfunded ventures. As such, we seek to understand how the mechanisms used to mobilize financial resources, via crowdfunding campaigns, may later impact the ways in which entrepreneurs use the resources they mobilize to successfully (or unsuccessfully) deliver their new product offerings.

METHODS

To assess how the mechanisms that entrepreneurs use to mobilize financial resources impact the long-term viability of their early-stage ventures, we examined the population of consumer drone ventures that mobilized financial resources on Kickstarter between 2009 and 2015 ($n = 22$) and their post-campaign delivery efforts through March 2020.² We used procedures of inductive theory building (Denzin and Lincoln 1998, Locke 2007, Miles and Huberman 1994) and the process theorizing strategies of temporal bracketing and visual mapping (Langley 1999) to work recursively between our cases and our emergent theory. This allowed us to deepen emergent insights, elaborate

² We stopped data collection in March 2020 as outstanding complications, at this point, could stem from COVID-19 supply chain hold-ups.

When more is less

theoretical links, and refine and redirect theory (Yin 1994). Once we identified distinct mechanisms that entrepreneurs use to mobilize financial resources and their impact on long-term venture viability, we further examined our data to direct future research on *why* these differences arise in the first place.

Research setting and sample

We first selected a context in which our focal phenomenon (i.e., long-term venture viability following successful resource mobilization) was observable. Our sample consisted of the *complete* population of early-stage consumer drone ventures that successfully raised financial capital using Kickstarter between 2009 and the end of 2015 ($n = 22$). We collected our data in two waves. The first wave consisted of data on the ventures, their campaigns, and their founders' interactions with backers. The second wave consisted of data on the ventures' post-campaign efforts to manufacture and deliver their drones (extending until March 2020). We selected 2009 as our starting point because it marked the year of Kickstarter's founding and 2015 as our cutoff to ensure each of the ventures in our sample had adequate time—at least five years—to manufacture and deliver their products. The five-year window from 2015 to 2020 ensured that each venture's stated lead time for delivery, plus at least an additional three years for delays, could be assessed in our analyses.

We selected early-stage consumer drone ventures as our research context because they face the challenge of developing complex products consisting of hardware and software components and often require external funding to bring them to market. Moreover, the consumer drone industry during this period was composed of several early-stage ventures that each: (1) pursued financial capital to fund product development via crowdfunding, (2) successfully generated financial resources to develop their products via crowdfunding, and (3) did so during a concurrent and concentrated period. This research context allowed us to analyze a contemporaneous sample of ventures' similar attempts to mobilize financial resources and subsequently develop their products, thereby mitigating extraneous variation from sources such as demand-side market uncertainty since each venture competed in the same industry under comparable market conditions. Limiting our sample to ventures that solicited financial resources via Kickstarter also provided clear criteria to delineate successful and unsuccessful attempts to mobilize resources and ensured somewhat similar audiences had access to the ventures' campaigns. Finally, unlike equity crowdfunding, non-equity crowdfunding via

When more is less

Kickstarter mitigates resource hoarding since ventures must deploy the financial resources they attain to deliver on their campaign promises.

We determined our sample first by conducting a search for the term “drone” on Kickstarter. We then assessed each output of the search, retaining only ventures developing aerial flying and/or nautical swimming machines. Each venture in our sample had a functional prototype at the time of its campaign. Since our theorizing focuses on for-profit ventures rather than hobbyist projects, we applied a minimum funding goal of \$5,000 for inclusion in our sample. This is consistent with prior studies that differentiate between entrepreneurial and hobbyist projects on Kickstarter (e.g., Calic and Mosakowski 2016, Mollick 2014). To ensure the anonymity of the ventures and their founders, we assigned aliases based on the following criteria: ventures that realized long-term viability were named after birds of flight while ventures that failed to realize long-term viability were named after flightless birds (both living and extinct). Table 2 provides further details on the ventures in our sample.

-----Insert Table 2 here-----

Data sources

We collected archival data from several sources in multiple stages. Our data sources included the ventures’ Kickstarter pages; the ventures’ external websites; founders’ blogs; media articles pertaining to the ventures’ campaigns; ventures’ social media accounts on Facebook, Instagram, Twitter, and LinkedIn; and founders’ contemporaneous third-party interviews. We conducted textual analyses of the ventures’ Kickstarter campaign updates (ranging from 7 to 95 updates per venture) and assessed comments provided by founders and backers on the Kickstarter pages (ranging from 0 to 10,519 comments with an average of 968 comments per venture). We also collected and analyzed quantitative data from Kicktraq, a website that aggregates daily campaign metrics (e.g., number of backers, amount raised, etc.). Additionally, we collected and analyzed the transcripts of 47 third-party interviews conducted by external interviewers (e.g., media outlets) with the ventures’ founders that occurred before, during, and after their respective campaigns to triangulate our emergent insights (e.g., Anthony et al. 2016). These data sources are summarized in Table 3.

-----Insert Table 3 here-----

Data analysis

When more is less

We assessed the data for each case in our sample through the lens of our research question (e.g., Graebner 2009) and adhered to standard procedures of inductive theory building research (Eisenhardt 1989, Eisenhardt and Graebner 2007, Glaser 1978, Miles and Huberman 1994). Our data analyses involved four main steps: (1) identifying variation in ventures' long-term viability, (2) ensuring systematic pre-campaign differences did not exist between the two groups in our sample, (3) identifying variation in longitudinal campaign elements, and (4) developing a theoretical model to explain variation in long-term venture viability. While we present the detailed steps of our analyses separately below, it is important to note that our data analysis process was highly iterative as we returned to primary data, revisited existing theory, and revised our emergent theory to induct the theoretical framework reported in this paper (see Figure 1).

Identifying variation in ventures' long-term viability. For purposes of our theorizing, we conceptualize long-term venture viability as a composite of two components: (1) *timing*—success or failure to deliver a product by the pre-specified date (i.e., on-time delivery) and (2) *scope*—success or failure to deliver a product with the pre-specified attributes (i.e., on-scope delivery).

We assessed *on-time delivery* based on: (1) whether a venture delivered its promised product to backers and (2) the relative time to deliver its product compared to its initially stated shipping date.³ As shown in Table 2, six ventures did not deliver their products to backers at all, and four ventures did not deliver their products within a year of their promised shipping dates. We coded each of these 10 cases as an “unsuccessful on-time delivery.”⁴ Two ventures delivered their products by their promised shipping dates, and the 10 remaining ventures delivered their products within a year of their promised shipping dates. We coded each of these 12 cases as a “successful on-time delivery” because *reasonable* delays in production and manufacturing are expected, as was revealed by our supplemental interviews with crowdfunding backers⁵ as well as popular press articles and books.

³ At the time of a campaign's launch, founders provide an estimated date of product delivery. This becomes a key metric upon which backers and media outlets evaluate the success of a venture after a campaign concludes.

⁴ Ventures delayed by a year or more in delivering their products faced substantial negative sentiment from backers and media outlets as revealed in our analyses of backer comments and media publications. This negative sentiment proved to be difficult for the early-stage ventures in our sample to overcome and was detrimental for their long-term viability and success.

⁵ Between 2014 to 2017, the authors conducted 38 semi-structured interviews with crowdfunding founders and backers to enhance our understanding of resource mobilization in this setting.

When more is less

We assessed *on-scope delivery* based on backers' sentiment, as conveyed in their comments after a product's delivery (if applicable). We coded each comment based on the following criteria: (1) whether it pertained to the quality of the delivered product and (2) whether it reflected positive, negative, or neutral sentiment. We then evaluated the comments that pertained to a product's quality (average of 83 comments per venture). We conservatively assessed a venture as having "on-scope delivery" if a majority of these comments reflected positive or neutral sentiment and "unsuccessful on-scope delivery" if a majority of these comments reflected negative sentiment. Five of the ventures previously coded as "successful on-time delivery" were coded as "unsuccessful on-scope delivery."

In sum, 15 campaigns were coded as "unsuccessful on-time and/or on-scope," and seven campaigns were coded as "successful on-time and on-scope." To distinguish between these two groups, we appended a "/U" to the aliases of the ventures that unsuccessfully delivered their products and an "/S" to the aliases of the ventures that successfully delivered their products. Differences across these two groups are depicted in Table 2 and detailed in Appendix A. Once we coded the ventures based on on-time and on-scope delivery, an interesting pattern emerged in our data: the ventures that *successfully* delivered their products both on time and on scope raised 2.5 times their funding goal on average (\$43,150 on average), while the ventures that *unsuccessfully* delivered their products on time and/or on scope raised 8.7 times their funding goal on average (\$726,290 on average).⁶ We were initially unaware of this pattern when we selected consumer drones as our research context, yet it intrigued us and deepened our interest in understanding how early-stage ventures succeed or fail after mobilizing financial resources for product development and delivery.

Ensuring pre-campaign systematic differences did not exist between groups. We collected and coded the detailed qualitative data on each case in our sample to identify campaign attributes (i.e., founder and product characteristics) that prior studies have found to influence funding success in a crowdfunding setting (e.g., Chan and Parhankangas 2017, Davis et al. 2017, Greenberg and Mollick 2017). We did this to ascertain if systematic pre-campaign differences existed between the ventures that successfully delivered their products and those that did not. Our analysis suggested no significant

⁶ This difference in funding ratios is particularly meaningful since prior research has found that a campaign's funding goal is a predictor of funding outcomes in crowdfunding campaigns (e.g., Frydrych et al. 2014, Kuppuswamy and Bayus 2017).

When more is less

pre-campaign differences existed (see Table 2). We then coded each venture's initial technological complexity at the time of its campaign's launch to ensure systematic differences did not exist on this dimension (see Table 2).⁷ To code initial technological complexity, three independent drone industry experts rated each drone's initially promised features on a scale of one to five, with one being the least and five being the most complex to develop and manufacture at scale (see Appendix B). The author team then discussed discrepancies amongst themselves to arrive at a single complexity coding of *low*, *medium*, or *high* for each venture. Our analysis suggested no significant pre-campaign technological complexity differences existed.

Identifying variation in longitudinal campaign elements. Based on prior crowdfunding research and our understanding of the context, we subdivided each campaign in our sample into the following temporal brackets: (1) pre-campaign, (2) campaign, and (3) post-campaign (Kuppuswamy and Bayus 2017, Murray et al. 2020). We then conducted within-case analyses to identify emergent relationships and patterns. We created visual maps for each campaign (Langley 1999) and used a series of matrices to compare the products' initial attributes as well as the founders' in-campaign actions, in-campaign interactions with backers, in-campaign promises and their origins (e.g., who provided the idea), and post-campaign accomplishments and challenges in delivering their products.

Once temporal patterns and possible causal relationships began to emerge, we conducted in-depth cross-case analyses to compare frequency, consistency, and temporal sequencing more deliberately across the cases (Eisenhardt et al. 2016, Eisenhardt 2021). We grouped the cases based on *on-time delivery* and *on-scope delivery* to look for similar and dissimilar patterns, allowing us to formulate possible theoretical linkages and examine the relationships across and within cases (Eisenhardt and Graebner 2007). We triangulated and expounded the emergent relationships with data from third-party interviews, media publications, and bloggers' accounts. Each of these data sources

⁷ We cannot fully rule out the impact of initial technological complexity on long-term venture viability (i.e., on-time and on-scope product delivery). However, to further explicate the impact of resources mobilized on long-term venture viability, over and above initial technological complexity, we compared the funding ratios of the ventures with moderate technological complexity that successfully delivered their products (N = 4) versus those that did not (N=6). On average, the successful ventures with moderate initial technological complexity raised 2.6 times their funding goals while the unsuccessful ventures with moderate initial technological complexity raised 11.5 times their funding goals. This suggests that initial technological complexity alone does not explain on-time and on-scope product delivery.

When more is less

was originally produced before, during, or soon after the ventures' campaigns and thereby enabled us to validate and update our emergent insights from distinct and contemporaneous vantage points.

To understand the mechanisms used to mobilize resources, we coded initial claims *and* subsequent interactions between the founders and backers to capture a longitudinal perspective for each campaign. Each founder update and backer comment was coded based on its purpose and whether it had a tangible impact on a product's promised features. We then coded whether and when founders unveiled *stretch objectives*—add-on promises made once increased funding thresholds are reached—as well as *new reward categories*—supplemental features unveiled during a campaign that backers then expect to receive. Through this process, we identified two higher-order mechanisms—*unbounded claims* and *bounded claims*—that seemed to influence resource mobilization but also appeared to be associated with long-term venture viability. The relationships between our first-order concepts, second-order themes, and aggregate dimensions (i.e., higher-order mechanisms) are illustrated in Appendix C (Gioia et al. 2013). To understand how the inducted mechanisms impacted resource mobilization and long-term venture viability, we next coded backers' expectations as communicated in their comments and media coverage for each venture based on when it occurred, its content, and its scope (i.e., breadth of readership). We also coded post-campaign technological and organizational challenges based on campaign updates, third-party interviews, blog posts, and media articles. This process allowed us to formulate likely theoretical linkages and examine the relationships across and within cases in adherence with replication logic (Eisenhardt and Graebner 2007).

Finally, to shed light on *why* distinctions emerged in the use of unbounded versus bounded claims across our sample, our inductive analyses led us to conduct supplemental analyses of venture-level early-stage disorganization (Katz and Gartner 1988) and founder-level narcissism (Anglin et al. 2018, Bollaert et al. 2020). We assessed early-stage disorganization by comparing differences across the following variables provided on the ventures' campaign homepages: grammatical errors, detailed delivery timelines, detailed budgets, in-depth risks and challenges, inconsistent information, and video professionalism. We assessed founder narcissism using computer-aided content analysis (CATA) wherein content produced by founders is coded to assess its meaning (McKenny et al. 2012, 2016, Short et al. 2010). We used the CAT Scanner CATA tool developed by McKenny and

When more is less

colleagues (2012) and the narcissism rhetoric dictionaries developed by Anglin and colleagues (2018) composed of the seven dimensions of narcissism: authority, superiority, exhibitionism, vanity, self-sufficiency, exploitativeness, and entitlement (Raskin and Terry 1988).

Developing a theoretical model. The final step in our data analysis process focused on developing a theoretical model to address our research question of *how the mechanisms used by entrepreneurs to mobilize financial resources influence the long-term viability of their early-stage ventures*. During this phase, we iterated between our cases and existing theory to develop theoretical explanations linking entrepreneurs' claims with on-time and on-scope product delivery. Here, we interpreted the relationships we observed with respect to existing theory to develop a theoretical framework depicting how certain mechanisms used by entrepreneurs to attain financial resources can either enable or derail their subsequent efforts to deliver a product offering. To present our emergent theory, we use several illustrative examples and in-depth data tables in the ensuing section.

LINKING RESOURCE MOBILIZATION TO LONG-TERM VENTURE VIABILITY

As we cycled from our analyses to the literature and back to our data, we identified a key difference between the ventures that managed to deliver their products to backers on time and on scope versus those that did not: the *claims* made by the entrepreneurs before and during their resource mobilization campaigns and their impact on subsequent aspects of the entrepreneurial process. Prior research highlights how entrepreneurs use *claims* to convey critical information to resource providers about “the founder, new venture, and market opportunity” (Navis and Glynn 2011, p. 479) and the critical role of such claims “in setting expectations and the dynamics that ensue” as a venture evolves (Garud et al. 2014, p. 1479). A claim is an assertion or statement about a founder, venture, product, and/or market that is used by entrepreneurs to convey “who we are” and “what we intend to do” to help mobilize resources from resource providers (Fisher et al. 2016, Navis and Glynn 2011).

While claims were clearly central to the resource mobilization efforts of *all* the ventures in our sample, a key distinction emerged between the nature of the claims used by ventures that raised modest amounts of financial resources and successfully delivered their product offerings versus those that raised more significant amounts of financial resources and did not manage to deliver their product offerings on time and on scope. At a high level, and foreshadowing the more detailed findings

When more is less

reported below, we found the ventures that failed to deliver their products largely used *unbounded claims*—forward-looking assertions that are untethered to current reality—to mobilize resources, whereas the ventures that successfully delivered their products primarily used *bounded claims*—present-focused assertions that are tethered to current reality—to mobilize resources.

Ventures that used *unbounded claims* were more likely to garner attention from *expansive infomediaries*—entities (e.g., publications, media outlets, etc.) that share information with audiences beyond the venture’s focused domain and/or its proximal geographic location. They were also more likely to generate *inflated audience expectations*—wherein audiences come to believe that a venture’s offering will achieve something very significant. These inflated expectations, in turn, *drove up resource mobilization outcomes* and also made it more challenging for entrepreneurs to succeed in meeting such inflated expectations following their campaigns. In contrast, ventures that used *bounded claims* were less likely to garner attention from expansive infomediaries but more likely to generate *realistic audience expectations*—wherein audiences have measured beliefs about an offering’s functionality and impact. These realistic expectations, in turn, resulted in *less inflated resource mobilization outcomes* but also facilitated product delivery in accordance with audience expectations after a campaign. These findings are depicted in Figure 1 and expanded in greater detail below.

-----Insert Figure 1 here-----

Before and during the campaign: Unbounded versus bounded claims

Our analyses suggest that the initiating point for different paths of resource mobilization and eventual product delivery (or non-delivery) was the *nature of the claims* made by entrepreneurs before and during their resource mobilization efforts. Our data suggest that some entrepreneurs mainly use unbounded claims while others mainly use bounded claims before and during their campaigns. Unbounded claims are assertions that are forward-looking and untethered from current reality. From our data, we determined that unbounded claims entail: (1) using superlative product descriptions to capture the merits of a future product offering, (2) making reactive assurances to integrate product features in response to backers’ diverse feedback, and (3) making escalating commitments for yet-to-be-developed product features and enhancements (see Table 4A and Appendix C). In contrast, bounded claims are assertions that are present-focused and tethered to current reality that entail: (1)

When more is less

using direct product descriptions, (2) making calculated assurances in response to backers' feedback, and (3) making reiterative commitments (see Table 4B and Appendix C). Next, we describe the elements of unbounded versus bounded claims in more detail, report on the prevalence of these types of claims across our sample, and illustrate the nature of these claims using case examples.

Elements of unbounded versus bounded claims. As described above, we identified three elements of unbounded claims and three elements of bounded claims. The first of these is *superlative* versus *direct product descriptions*. This reflects entrepreneurs' initial portrayals of their intended offerings. *Superlative product descriptions* use exaggerated and hyperbolic language to describe future products in relation to other products in the market, while *direct product descriptions* involve the use of moderate, specific, and detailed language to describe products in absolute rather than relative terms. Our qualitative data revealed substantial variation in the extent to which entrepreneurs used superlative versus direct product descriptions. Prior research has found entrepreneurs are often tempted to exaggerate claims in pitches to traditional investors (e.g., angels and VCs) and that such exaggeration often works (Parhankangas and Ehrlich 2014). As Cottle and Anderson (2020, p. 1-2) state, "when it comes to startup funding and investors, sometimes exaggeration works. The desire to invest in companies that yield 100x returns creates incentives in which even the most seasoned investors are eager to hear projections that they know have little possibility of becoming reality (Clark 2008, Downey 2018, Jeffrey et al. 2016)." The impact of superlative product descriptions in our study suggests exaggeration also seems to impact the decisions of resource providers seeking to attain groundbreaking new products in the crowdfunding setting.

The second element of unbounded versus bounded claims is *making reactive* versus *calculated assurances*. *Reactive assurances* involve public promises to expend resources on researching and integrating new features in response to feedback from backers who often have diverse product uses and ideas. While entrepreneurs' *reactive assurances* provide backers with a voice in a product's ongoing development, they also create public expectations on which backers' contributions are then premised. In turn, these expectations may be difficult for entrepreneurs to meet with the resources they attain since the promised features often fall outside a product's initial specifications and core development paths. In contrast, making *calculated assurances* entails acknowledging the

When more is less

merits of backers' ideas without promising to integrate them and also soliciting feedback on specific product components from domain experts rather than general audiences. Here, crowdsourced feedback is often advantageous because domain experts can provide focused insights to address specific issues facing a venture (Afuah and Tucci 2012, Piezunka and Dahlander 2015).

The third element of unbounded versus bounded claims is *making escalating* versus *reiterative commitments*. *Escalating commitments* encapsulate entrepreneurs' formal guarantees to include new product features and enhancements during a campaign. *Escalating commitments* often take the form of stretch funding objectives, which are promises to develop novel product features and enhancements once ever-greater funding thresholds are reached, and new reward categories, which are guarantees that backers will receive enhanced products in exchange for certain contribution amounts. While escalating commitments generate excitement amongst backers, they are often made before the enhancements have been fully researched and developed. Moreover, stretch objectives and new reward categories typically expand the absolute amount of financial resources attained, but they do not increase the per unit amount of resources attained to develop newly-envisaged products (Sitkin et al. 2011). In contrast, *reiterative commitments* reflect ongoing promises to develop and deliver products, as initially specified, using the financial resources attained. Such commitments do not introduce additional post-campaign complexity or considerations.

Prevalence of unbounded versus bounded claims across cases. Tables 4A and 4B depict differences in the use of unbounded versus bounded claims across our sample, distinguishing between those that *unsuccessfully* delivered their products (first 15 rows) and those that *successfully* delivered their products (last seven rows). The tables provide examples (if applicable) for each venture's *superlative* versus *direct product descriptions*, *reactive* versus *calculated assurances*, and *escalating* versus *reiterative commitments*. The ventures that mobilized more resources (and unsuccessfully delivered their products) used *superlative product descriptions*, *reactive assurances*, and *escalating commitments* to a greater degree than those that successfully delivered their products, while those that mobilized fewer resources (and successfully delivered their products) used *direct product descriptions*, *calculated assurances*, and *reiterative commitments* to a greater degree than those that unsuccessfully delivered their products. We illustrate these differences through case examples below.

When more is less

-----Insert Tables 4A and 4B here-----

Case examples of unbounded versus bounded claims. Titanis/U is an example of a venture that used *unbounded claims*. Titanis/U used *superlative product descriptions* to describe its future product as “a drone that lets absolutely anyone capture footage like never before” (Titanis/U, Video). Titanis/U also made *reactive assurances* in response to backers’ suggestions as illustrated by the following: “By popular demand, here's what we will push for in these final two days...Create geofences from your PC, so you can build virtual enclosures of any size or complexity” (Titanis/U, Update 13). After reaching its initial goal of \$250,000, Titanis/U made *escalating commitments* by putting forth stretch objectives at the following funding thresholds: \$500,000, \$750,000, and \$850,000. For instance, two weeks into its campaign, Titanis/U revealed a stretch objective for a “Camera Control Pack,” including features such as burst mode, time-lapse photography, time delay, and manual camera control. When announcing this stretch objective, Titanis/U stated, “We heard you. You've never had pro-level control of the camera on a drone. So here it is for the first time for consumers, a variety of stunning picture modes” (Titanis/U, Update 7). Its next stretch objective for a “Drone Behavior Pack” promised “even greater autonomy and advanced drone behaviors” (Titanis/U, Update 9).

Takahe/U is another example of a venture that used *unbounded claims* to mobilize financial resources. At the start of its campaign, Takahe/U used *superlative product descriptions* on its homepage and in its video to describe Takahe/U as “the world’s first autonomous drone system that will follow you and film you” (Takahe/U, Video). Takahe/U made *escalating commitments* throughout its campaign, announcing (and reaching) stretch goals of \$500,000 to integrate live streaming video capabilities and \$750,000 to develop software for complex camera movements (Takahe/U, Updates 2 and 3). Throughout its campaign, Takahe/U also made *reactive assurances*. For instance, when Takahe/U received several unsolicited suggestions to integrate obstacle avoidance technology into its final product, its founders initially expressed apprehension as follows:

[W]e know that everybody wants it and that there are solutions out there, but trust us this is no piece of cake. We've had it on the horizon for a while and the one thing we can tell you with certainty is that it will not happen before the actual [Takahe/U] (Takahe/U, Update 9).

When more is less

Yet when Takahe/U later gave its backers the opportunity to select a “*user-based design upgrade*” (Takahe/U, Homepage) for its \$1 million stretch objective, 32 backers requested obstacle avoidance. Despite prior apprehensions, this high degree of interest led Takahe/U’s founders to solicit additional information on how backers would use obstacle avoidance, stating, “[W]e do have ideas to develop specific tracking modes that would let you film yourself in environments with obstacles. We need some input from you: have a say, what kind of obstacles would you like to avoid while doing what?” (Takahe/U, Update 19). In response, 29 backers described their intended uses for obstacle avoidance, and Takahe/U’s founders assured backers that they would continue researching this functionality. In addition to requests for obstacle avoidance, a total of 76 backers suggested an array of features they wanted to see integrated into the drone, including retractable arms, remote landing gear, increased battery life, and a waterproof exterior. For instance, one backer stated: “any possibility you can add a kind of noise filter tuned to the specific frequency of the propellers?” (Takahe/U, Backer comment). Takahe/U made many *reactive assurances* to investigate these disparate features.

In contrast, Cardinal/S described its product using *direct product descriptions*, stating, “[Cardinal/S] is an open source robotic submarine designed to make underwater exploration possible” (Cardinal/S, Homepage). During its campaign, a group of backers with technical knowledge of Cardinal/S’s product provided focused feedback as indicated by the following: “Could you clarify the type of board used. I have seen both BeagleBone and Arduino. One uses Linux with a cape and one uses Arduino with no additional shield mentioned. Your github site appears to have files for both” (Cardinal/S, Backer comment). In response to the technical conversation around the cape feature, Cardinal/S ultimately made a *calculated assurance* for a cape that it had already been developing behind the scenes but had yet to guarantee in its initially promised offering (Cardinal/S, Update 6).

Similarly, Hawk/S used *direct product descriptions* at the launch of its campaign, stating, “[Hawk/S] is an intelligent, interactive and programmable drone” (Hawk/S, Homepage). During its campaign, Hawk/S made the *calculated assurance* to upload digital files for its components so backers could download and print spare parts. This assurance appeased a backer’s request without requiring additional resource expenditures since the files already existed. Moreover, Hawk/S made

When more is less

reiterative commitments to deliver its initially envisaged product before considering how to integrate backer-provided feedback into subsequent product offerings.

Impact of claims on resource mobilization via infomediaries and audience expectations

Our data further suggest that entrepreneurs' use of *unbounded* versus *bounded claims* impacted their resource mobilization outcomes via two distinct, yet interrelated, channels: (1) *expansive infomediaries* and (2) *audience expectations*. We first describe each of these channels as they relate to *bounded* versus *unbounded claims* as well as resource mobilization and next detail their recursive effect on one another. We then offer evidence of how each of these channels was reflected across the cases in our sample and provide qualitative examples to illustrate each channel.

Expansive infomediaries and audience expectations. Our data suggest *unbounded claims* generate attention from *expansive infomediaries*, which are entities (e.g., publications, media outlets, etc.) that reach audiences beyond a venture's focused domain or geographic location.⁸ Generating attention from *expansive infomediaries* causes more people (beyond a core group of enthusiasts) to become aware of a venture. Once a campaign is featured by an *expansive infomediary*, it is apt to be seen as credible by the outlet's broad audience since *expansive infomediaries* typically have legitimization effects for early-stage ventures (Pollock and Rindova 2003, Rindova et al. 2006). In turn, attention from *expansive infomediaries* assuages potential backers' concerns and increases the likelihood they will commit resources to the venture (Fisher et al. 2017).

The use of *unbounded claims* also generates *inflated audience expectations*, wherein backers make financial contributions premised on *superlative claims* about a product, *reactive assurances* for components yet to be researched and developed, and *escalating commitments* for features outside the product's initial descriptions. Generating inflated audience expectations increases the likelihood of receiving financial capital from backers due to heightened interest in the product. Yet generating inflated audience expectations also increases the likelihood that a product, once developed, will fail to meet audience expectations. This supports Garud and colleagues' proposal that "entrepreneurs must

⁸ *Bounded* and *unbounded claims* both seemed to generate attention from *focused infomediaries*—entities (e.g., publications, media outlets, etc.) that reach an audience within the venture's focused domain (e.g., drone blogs) or its geographic location (e.g., regional periodicals).

When more is less

create future expectations to capture the interest and support of stakeholders, [but] these expectations can also serve as a source of subsequent disappointments” (2014, p. 1488).

Attention from *expansive infomediaries* and *inflated audience expectations* seem to have a recursive effect on one another to drive up the amount of resources a campaign mobilizes. The more “buzz” that a campaign gets from broader media exposure, the more audiences come to expect the venture to produce a “blockbuster” product (Oliver and Winer 1987). Moreover, backers who learn about a campaign and its product from wider-reaching mainstream media outlets are less likely to be early adopters and lead-user enthusiasts of that product (von Hippel 1986). Instead, they are more likely to possess consumer orientations toward the product, maintaining the perspective of “a market-taker looking for a certain type of product” (Pontikes 2012, p. 85). This appears to further drive up audience expectations for a product. As audience expectations increase, more wide-reaching media outlets are apt to feature the product and its campaign. Journalists want to write about topics that excite people, and as they sense excitement and increased anticipation for a crowdfunded product, they are more likely to write about that product and its campaign, thereby generating even more attention from expansive infomediaries (Murray et al. 2020). This attention further results in heightened audience expectations. In contrast, *bounded claims* are likely to result in little attention from expansive infomediaries and more realistic audience expectations. While this also leads to successful resource mobilization, it is often to a much lesser degree.

Evidence of infomediary attention and audience expectations across cases. Table 5 depicts distinctions between *expansive infomediary attention* and *audience expectations* across our sample, distinguishing between cases that *unsuccessfully* delivered their products (first 15 rows) and cases that *successfully* delivered their products (next seven rows). We further depict the impact of *expansive infomediary attention* and *audience expectations* on resource mobilization using case examples below.

-----Insert Table 5 here-----

Case examples of infomediaries and audience expectations. Talpanas/U is an example of a venture that received attention from *expansive infomediaries* and generated *inflated audience expectations*. Talpanas/U received attention from 24 expansive infomediaries, beginning with a *TechCrunch* article on the campaign’s first day and a *Vice* article on its second day. Many of these

When more is less

articles indicated that Talpanas/U's yet-to-be-developed features were already complete, as evidenced by the following: "The drones can carry objects as heavy as a GoPro camera and folds up to fit inside a (big) cargo pocket or backpack. You can control it with your own RF controller or, with the right module, your tablet" (*TechCrunch*). This media attention amplified Talpanas/U's *unbounded claims* with broader audiences and led many international supporters to take interest in its campaign, as evidenced by the following backer who requested compliance with European regulations and international shipping: "European support (regulations compliance and shipping) and a gimbal would be good but get on that European support" (Talpanas/U, Backer comment). Once Talpanas/U reached \$500,000 in funding, it responded to its international backers by introducing international shipping and promising to design product versions that complied with international regulations, announcing, "we will be offering two different frequencies, 433mhz or 900mhz, for the telemetry radios so you will be able to get a unit that complies with local laws and requirements" (Talpanas/U, Update 4). Since many contributors learned about Talpanas/U from *expansive infomediaries*, they also seemed to possess more consumer-oriented expectations for the product. These expectations were highlighted when Talpanas/U publicly revealed a design complication and, in response, several backers expressed their agitation and pressured Talpanas/U to rush the product's delivery, as indicated by the following: "Really? 2 months to retool one part?... I have 2 projects that were counting on this thing showing up by July 1. Now I have to go find replacement gear" (Talpanas/U, Backer comment).

Another example of a venture that received attention from *expansive infomediaries* and generated *inflated audience expectations* is Canadaga/U. Canadaga/U received attention from *expansive infomediaries* such as *The Verge*, *Wired*, and *Paste*. These outlets amplified Canadaga/U's *unbounded claims* by presenting the drone's intended features and capabilities as if they were already developed, writing, "Because it flies ten miles per hour, and can do so autonomously...[Canadaga/U] can follow you around, its camera keeping you in frame all the while" (*Huffington Post*). Canadaga/U highlighted articles published in global outlets (Canadaga/U, Update 2) and attributed its campaign's funding success to this far-reaching visibility, stating, "All this visibility is giving an impressive kick to the campaign" (Canadaga/U, Update 7). As more backers contributed to Canadaga/U's campaign, their *expectations* for the product seemed to increase as well, as evidenced by the following backer:

When more is less

“now that the project is funded, how do you plan to use the extra \$ received?” (Canadaga/U, Backer comment). Ultimately, Canadaga/U received attention from 37 *expansive infomediaries* to broaden its exposure with increasingly international audiences and mobilized \$344,442 from 717 backers.

In contrast, Eagle/S received attention from one *expansive infomediary* and five focused drone publications. The expansive infomediary, *Resource Magazine*, described Eagle/S’s product as a drone designed with photographers and videographers in mind, stating, “the [Eagle/S] is standard equipment designed for photographers and videographers who like to shoot aerial videos” (*Resource Magazine*). Rather than holding *inflated expectations*, backers expressed positive but realistic sentiment toward Eagle/S as indicated by a backer who openly wondered why Eagle/S’s campaign had not received more attention given its high-quality features: “I hope everyone gets the word out so this can make it! I wonder why it is not popular...This drone has everything in an awesome package” (Eagle/S, Backer comment). Another backer expressed a similar sentiment, stating, “I’m excited to be a backer, this is one of the most complete and well thought out drones on the market” (Eagle/S, Backer comment). Eagle/S ultimately received contributions that totaled \$45,627 from 109 backers.

Similarly, Osprey/S received attention from one *expansive infomediary*, *Geeky Gadgets*, that emphasized the product’s appeal for the niche audience of drone gamers, stating, “The first person view racing drone uses a display or virtual reality goggles to display the view from the on-board camera transmitting real-time footage, providing an immersive experience as though you are actually sitting inside the quad copter” (*Geeky Gadgets*). During its campaign, Osprey/S maintained its focus on manufacturing its drone for “gamers” as initially prototyped (Osprey/S, Homepage). As a result, Osprey/S’s backers seemed to harbor *realistic expectations*, as indicated by the following backer: “I’m really looking forward to get my hands on one of these. I’ll be visiting fpv racing hobbyists websites to spread the word around” (Osprey/S, Backer comment). Osprey/S raised \$13,166 from 29 backers.

After the campaign: Effects of claims on long-term venture viability

Our data further suggest that *unbounded* versus *bounded claims* also impact a venture’s long-term viability. Specifically, our data suggest that entrepreneurs who utilize *unbounded claims* before and during their campaigns are likely to struggle with post-campaign product delivery, whereas those who utilize *bounded claims* are less likely to have post-campaign delivery struggles. From our data,

When more is less

we identified two distinct mechanisms that appear to inhibit product delivery following the use of *unbounded claims* before and during a campaign: (1) *unmanageable technological complexity* and (2) *uncontrolled organizational scaling*. We first describe these different mechanisms, detail their recursive effect on one another, and then offer case examples of these mechanisms from our data.

Technological complexity and organizational scaling. *Unmanageable technological complexity* seems to arise when entrepreneurs make promises that imbue their products with design and manufacturing considerations that were not envisaged when their campaigns launched. *Unbounded claims*, and the resources attained because of such claims, invariably increase the *technological complexity* of the product(s) that entrepreneurs are obligated to deliver. Each additional feature must be designed, developed, and integrated into the initially proposed product. In the drone ventures we studied, many entrepreneurs appeared to promise new features without fully considering whether or how such features would be integrated. Even when they did consider how a new feature or dimension would integrate with a working prototype, such features still increased the manufacturing time required to create a product and the likelihood of failed delivery.

Uncontrolled organizational scaling seems to arise when entrepreneurs must produce and deliver their products at a much greater scale than they originally foresaw, thereby complicating the post-campaign process because it requires increased tooling and manufacturing capabilities, extra human capital, and organizational efficiencies that many entrepreneurs are not in a position to provide (DeSantola and Gulati 2017). *Unbounded claims*, and the resources attained as a result of such claims, necessitate substantial increases in production scale to meet large order quantities for backers. While attaining substantial resources might be perceived as a “nice problem to have,” meeting large order quantities is not necessarily easy to do, especially when entrepreneurs are working toward publicly stated deadlines. Having to produce a greater quantity of products than originally envisaged requires that entrepreneurs find or invest in additional tooling and manufacturing capabilities, such as setting up new manufacturing relationships or building out additional manufacturing lines. These options take time and can lead to difficult negotiations or “hold up” situations. Producing a greater quantity of products often means a venture requires more people as well. Hiring adds time and complexity to the product development process and also necessitates detailed processes to manage employees. This

When more is less

level of *organizational scaling*, and the difficulties associated with it, can be at the core of a venture's failure to deliver its product to backers.

Taken together, *unmanageable technological complexity* and *uncontrolled organizational scaling* seem to have a recursive effect on one another that hinders a venture's ability to deliver its product offering. Using *unbounded claims* before fully researching and developing promised features seems to increase a product's technological complexity without increasing the resource base (on a per unit basis) from which entrepreneurs can draw. Such circumstances necessitate expenditures on scaling a venture to meet the commitments made in its unbounded claims and, in turn, can lead to even more post-campaign complications. This parallels prior studies that suggest the creative and effective use of resources depends not on the amount of financial capital an organization has on hand, but instead on the actions of embedded managers and employees to use this capital (Sonenshein 2014). Yet, in this setting, given the nascency of their ventures, an entrepreneur's ability to effectively use financial capital does not depend on the amount of financial capital available or embedded organizational actions, but instead on the *claims* they use to mobilize the capital in the first place. We further illustrate the impact of *unmanageable technological complexity* and *uncontrolled organizational scaling* below.

Evidence of technological complexity and organizational scaling across cases. Table 6 depicts distinctions between *increased technological complexity* and *organizational scaling* across the cases in our sample, distinguishing between those that *unsuccessfully* delivered their products (first 15 rows) and those that *successfully* did so (next seven rows). We illustrate the impact of *technological complexity* and *organizational scaling* on long-term venture viability via the case examples below.

-----Insert Table 6 here-----

Case examples of technological complexity and organizational scaling. Dodo/U's use of *unbounded claims*, despite generating financial contributions, made its product more difficult to design and manufacture. Dodo/U underwent *uncontrolled organizational scaling*, rapidly hiring 16 employees to test and deliver thousands of drones within the promised six-month timeframe. Despite the additional personnel, Dodo/U's founder described how the campaign's financial success resulted in post-campaign complications due to the large number of drones it needed to produce: "If we'd

When more is less

doubled our goal, we would have had 1,500 drones. We could have tested every single drone, literally have had somebody flying each drone before they got sent out. Going from potentially building 1,500 to 10 times that number was a monstrous headache” (Harris 2016). Even after securing \$1.5 million in debt financing, Dodo/U was still unable to deliver its product, describing several challenges due to *unmanageable technological complexity* in an update to backers: “During the Kickstarter campaign certain upgrades were suggested, agreed and then implemented to the design. These upgrades represented technical challenges which added to an already complicated project. Ultimately these upgrades coupled with delays caused by the creation of a bespoke and automatic testing rig had significant financial and timeline impacts upon the project” (Dodo/U, Update 51). Dodo/U liquidated in November 2015 and left backers with no guarantee of retribution (Baraniuk 2015).

Similarly, Kakapo/U made several product changes in its post-campaign efforts to deliver on its *unbounded claims*. These changes included narrowing the distance between motors, redesigning the injection molding, improving the camera, fine-tuning the drone’s center of gravity, enhancing the propeller thrust properties, and designing a new multi-battery charger (Kakapo/U, Updates 8 and 13). These adjustments increased the *technological complexity* of the drone without increasing the cost to backers, as stated in the following post-campaign update to backers: “We’re continuously adding new and very useful features at no additional cost for you” (Kakapo/U, Update 15). In turn, several backers received subpar and faulty products as indicated by the following backer: “The latency? It’s terrible. It causes me to crash...The camera, it can’t handle bright to dark very well, and causes me to crash...Where is my replacement battery for the faulty one I received?...Does anyone want to buy mine off me?” (Kakapo/U, Backer comment). Overall, many backers expressed frustration with the product’s final features and its missing components, as illustrated by the following: “Still waiting on batteries for my [Kakapo/U], at the moment, it’s sitting on my desk as the first battery you sent is faulty... I will say that the [Kakapo/U] is faulty too” (Kakapo/U, Backer comment).

Talpanas/U was able to ship some finished products to backers, but several backers recounted never receiving it and, among those who did, many were dissatisfied with its capabilities as indicated by the following backer: “What a colossal piece of garbage” (Talpanas/U, Backer comment). After its campaign, Talpanas/U failed to receive a “large volume discount” on component orders from its

When more is less

manufacturer in China, stating, “our Shenzhen suppliers did not consider orders for 2000 units to be sizable enough to give us a large volume discount. We were forced, therefore, to estimate our market demand and our ‘part failure’ rates” (Talpanas/U, Letter to backers). Talpanas/U also incurred significant costs attempting to minimize delays by moving its assembly line to the United States, stating, “since the redesign caused delays in the production schedule, we decided to minimize further delays by making our molds and doing assembly in the United States...this decision significantly increased our mold and tooling costs” (Talpanas/U, Letter to backers). As the repercussions of these decisions compounded, Talpanas/U ceased operations in May 2015, attributing this decision and its inability to deliver the product at scale to complications arising from the campaign’s funding success in an open letter to its backers: “We are writing to let you know that [Talpanas/U] is ceasing operations...Our company ran out of money a few months ago” (Talpanas/U, Letter to backers).

In contrast, Cardinal/S successfully delivered its product after committing to only one new feature during its campaign, a cape that had already been in development behind the scenes. While this was the only additional feature Cardinal/S integrated during its campaign, Cardinal/S still attributed post-campaign manufacturing bottlenecks to its efforts to manufacture this feature:

The best part about being an open source project is that we’re getting such great feedback...This has also caused the process to take a few weeks longer than we originally planned for. We received the new Beaglebone cape prototypes last week and have been rigorously testing them...As soon as they’re good to go, the full production run will take a few weeks (Cardinal/S, Update 10).

Once the promised product was shipped to backers, Cardinal/S’s founders then focused on gradually receiving and integrating user feedback for subsequent versions of the product: “We’ve now shipped several batches...and each version - based on many improvements that come from people building [Cardinal/S drones] - is better than the last. We sent out an update in May with all of the feature updates” (Cardinal/S, Update 24). In this way, Cardinal/S moderated expectations during its campaign and then proceeded to gradually enhance its product based on feedback after delivering the initially promised version to its backers.

Similarly, Falcon/S did not commit to any additional features during its campaign, prioritized fulfilling its initial commitments after its campaign, and refrained from soliciting product ideas until it had delivered its initially promised product. Once its product was delivered, Falcon/S developed a

When more is less

virtual forum for backers to provide product feedback and ideas that would then be considered in subsequent product versions, as indicated by the following: “As we ship out our last few [Falcon/S] units today and tomorrow...Please join our forum for all support and questions...let us know what are you using your [Falcon/S drones] for” (Falcon/S, Update 15). Ultimately, Falcon/S gradually scaled the venture by channeling its resources to first deliver on its initial campaign promises and then returning to product design and tooling for subsequent production runs.

Summary of findings and propositions

The factors identified in this study come together to create conceptually distinct paths for ventures mobilizing financial resources to develop innovative products (see Figure 1). These paths are initiated by the *claims* entrepreneurs make before and during their campaigns—claims that can be *unbounded* or *bounded*—which then influence the extent to which a campaign is covered by *expansive infomediaries* and the extent to which audiences generate *realistic* versus *inflated expectations* for the product. Together, these factors translate into varying levels of *resource mobilization* for new ventures, with *unbounded claims* greatly driving up *resource mobilization* outcomes. Following the mobilization of resources, and depending on the claims used during their campaigns, entrepreneurs face varying levels of difficulty in meeting product delivery expectations due to *technological complexity* and *organizational scaling*. The explicit relationships that we identified in this research are summarized as follows:

Proposition 1: *Entrepreneurs who make unbounded (versus bounded) claims in efforts to mobilize resources are more likely to garner high (versus low) attention from expansive infomediaries and generate inflated (versus realistic) audience expectations, leading to a greater (versus lesser) amount of resources being mobilized.*

Proposition 2: *Entrepreneurs who mobilize resources using unbounded (versus bounded) claims are more likely to confront unmanageable (versus manageable) technological complexity and uncontrolled (versus controlled) organizational scaling, leading to late and defective (versus on-time and on-scope) product delivery.*

Why unbounded versus bounded claims arise

Once we inducted a theoretical framework depicting *how unbounded* and *bounded* claims impact *resource mobilization* and long-term *venture viability*, we returned to our data to illuminate *why* differences in the use of claims occur in the first place, examining venture- and founder-level variables that were suggested by our inductive analyses. At the venture level, our data led us to

When more is less

investigate whether unbounded claims are associated with early-stage disorganization due to underdeveloped capabilities (Rindova and Kotha 2001), unsubstantiated business models (McDonald and Eisenhardt 2020), and ambiguous organizational boundaries (Santos and Eisenhardt 2009), which could lead ventures to make unfocused and nonlinear claims as they seek to solidify their identities and external projections (Garud et al. 2014, Navis and Glynn 2011). At the founder level, our data led us to investigate whether unbounded claims reflect founder narcissism, wherein entrepreneurs possess an exaggerated sense of self-importance and preoccupy themselves with thoughts of success and grandiosity, thereby resulting in far-reaching and expansive claims that are untethered from reality (Anglin et al. 2018, Chatterjee and Hambrick 2007). Our supplemental analyses of the ventures in our sample are summarized in Table 7 and further discussed below.

-----Insert Table 7 here-----

We assessed six elements indicating early-stage disorganization: number of grammatical errors on a campaign homepage, whether a detailed delivery timeline was provided, whether a detailed budget was provided, level of detail provided for potential risks and challenges, the presence of inconsistent information, and pitch video professionalism. Interestingly, meaningful differences emerged only with respect to video professionalism. The majority of ventures that used *unbounded claims* also used professional videos (with two exceptions) as indicated by high-quality video production, and all of the ventures that used *bounded claims* used amateur videos as indicated by low-quality video production. While we expected amateur videos to reflect early-stage disorganization, wherein ventures that lack internal processes, resources, and capabilities may develop less polished pitch videos, they may, in fact, indicate a founder's willingness to gradually stage a venture's development using available resources rather than attempt to present a venture as complete and refined using excessive resources given its stage of development. In contrast, ventures that used *unbounded claims* seemed to skip over meaningful achievements in the process of venture creation to instead present mature and polished products to external audiences (McDonald and Eisenhardt 2020).

We also used computer-aided content analysis (CATA) to assess founders' use of narcissistic rhetoric in the text on their campaign homepages (Anglin et al. 2018, McKenny et al. 2012, 2016). Specifically, we assessed the seven dimensions of narcissism: authority, superiority, exhibitionism,

When more is less

vanity, self-sufficiency, exploitativeness, and entitlement (Raskin and Terry 1988). Interestingly, between the ventures that used *unbounded* versus *bounded claims*, significant differences existed only on the dimension of self-sufficiency rhetoric, which reflects “language indicating autonomy and individualistic action without external constraints” (Anglin et al. 2018, p. 786). This suggests founders who make *unbounded claims* are more apt to believe in their own abilities, focus on accomplishing tasks on their own, and refuse to seek assistance from others (Almond 2004).

Taken together, our supplemental analyses point to a founder-level explanation, rather than a venture-level explanation, as to why some entrepreneurs use *unbounded claims* to depict their ventures while others use *bounded claims*. Specifically, ventures that use *unbounded claims* seem to be more likely to have founders that believe in their own abilities and depict their ventures as polished and complete using *superlative product descriptions*. In turn, these founders seem more apt to engage in efforts to reduce uncertainty by portraying competence at the launch of their campaigns and making *reactive assurances* and *escalating commitments* during their campaigns, given their inflated belief in their own abilities. This potential explanation is further discussed below.

DISCUSSION

Our primary contribution is a holistic theoretical framework depicting how the mechanisms entrepreneurs use to mobilize financial resources—specifically *unbounded* versus *bounded claims*—also have an impact on their ventures’ long-term viability. This distinction adds critical nuance to our understanding of claim-making as something that can have both positive and negative effects on new ventures, persisting long after claims are initially made and thus affecting the entrepreneurial process over time. Our study contributes to the literatures on entrepreneurial resource mobilization, cultural entrepreneurship, and crowdfunding.

Expounding the link between resource mobilization and long-term venture viability

We contribute to the entrepreneurial resource mobilization literature by connecting the mechanisms entrepreneurs use to mobilize resources with their longer-term efforts to develop their ideas into viable ventures. Prior research has shown how entrepreneurs mitigate inherent uncertainty by persuading resource providers of their ventures’ plausibility and credibility through the use of claims that depict “who they are” and “what they intend to do in the future” (Fisher et al. 2016, Garud

When more is less

et al. 2014, Navis and Glynn 2011). Such claims offer a means for entrepreneurs to establish and convey their ventures' identities before they possess established track records (Garud et al. 2014, Navis and Glynn 2011). Several empirical studies have linked entrepreneurial claims with short-term resource mobilization outcomes (e.g., Martens et al. 2007, Zott and Huy 2007), and recent conceptual research has alluded to the idea that claims can "serve as the source of future disappointments" when expectations are not met (Garud et al. 2014, p. 1479). Our study suggests that entrepreneurs can mobilize financial resources using *unbounded* or *bounded claims* and that this decision has significant implications for a venture's long-term viability and success. In particular, each element of *unbounded* and *bounded claims* contributes to a venture's long-term viability in distinct ways.

Superlative product descriptions are an element of unbounded claims that involve using exaggerated and hyperbolic language to portray yet-to-be-developed offerings in comparison to existing products on the market. Prior research has discussed the temptation that entrepreneurs face to use such rhetoric in their claims to entice potential investors with notions of exorbitant financial windfalls (Cottle and Anderson 2020, Parhankangas and Ehrlich 2014). Our study suggests this type of rhetoric entices not only experienced investors in traditional settings seeking equity stakes and future financial returns but also non-professional resource providers who may suspend their disbelief in hope of attaining a groundbreaking product. Moreover, when resource providers premise the provision of financial capital on exaggerated and hyperbolic rhetoric, venture failure is more likely to ensue as entrepreneurs hastily attempt to expend resources on developing a product that meets resource providers' grandiose expectations.

Reactive assurances are another element of unbounded claims that entail making promises to expend resources on researching and integrating new features in response to feedback from resource providers. Prior research suggests soliciting external feedback via crowdsourcing is advantageous for organizations because it allows domain experts outside an organization's formal boundaries to provide novel insights and ideas on key challenges facing an organization (e.g., Afuah and Tucci 2012, Piezunka and Dahlander 2015). Similarly, Murray and colleagues (2020) suggest entrepreneurs can generate financial resources by soliciting and integrating resource providers' feedback into their yet-to-be-developed products. Yet, our study suggests that overusing this practice may inhibit a

When more is less

venture from fulfilling its objectives if too many assurances are made based on feedback attained from too broad an audience. As such, crowdsourcing feedback, while effective for organizations with established business models and capabilities, can contribute to failure among nascent ventures if they must spread themselves thin to fulfill their far-reaching assurances. This also empirically reveals the risks of linking crowdsourced feedback to extrinsic assurances (e.g., future product offerings) rather than intrinsic rewards (e.g., positive affect) or one-time financial prizes (Afuah 2017).

Escalating commitments are the final element of unbounded claims. They involve making guarantees to develop novel product enhancements once ever-greater funding thresholds are reached to incentivize further financial contributions. Escalating commitments constitute a form of stretch goal, defined as “an organizational goal with an objective probability of attainment that may be unknown but is seemingly impossible given current capabilities (i.e., current practices, skills, and knowledge)” (Sitkin et al. 2011, p. 547). While stretch goals promote novel and creative ways of thinking, prior theory suggests such goals are pursued most often by organizations with inferior recent performance and few slack resources even though they are unlikely to be equipped to benefit from such objectives (Sitkin et al. 2011). Interestingly, all of the ventures in our sample were characterized by a lack of slack resources since the resources they mobilized were meant for product development and delivery at scale, yet differences still arose. As such, our study builds on prior theory to suggest founders’ perceptions of and plans for the resources they attain can result in stretch goals that cannot be achieved with their current capabilities and resources.

Taken together, *superlative product descriptions*, *reactive assurances*, and *escalating commitments*, as the bases for *unbounded claims*, create gaps between a product’s current stage of development and external expectations for the product, as well as between a venture’s current capabilities and those needed to meet external expectations. These gaps between a venture’s present reality and its intended future state result in complications from *unmanageable technological complexity* and *uncontrolled organizational scaling* as entrepreneurs work to reduce these gaps. In contrast, *bounded claims*, through *direct product descriptions*, *calculated assurances*, and *reiterative commitments*, allow entrepreneurs to engage in *controlled and staged venture scaling* wherein they first develop their initially intended products and leverage this achievement to continue building their

When more is less

ventures (Hallen and Eisenhardt 2012). In this way, our theoretical framework suggests entrepreneurs benefit from gradually staging commitments to resource providers, starting with a focused group and systematically expanding after fulfilling this group's initial expectations. Staging commitments minimizes distractions, negates inflated audience expectations, and “improves [entrepreneurial] learning by focusing attention and resources” (McDonald and Eisenhardt 2020, p. 513).

While this study focuses on *how* the mechanisms used by entrepreneurs to mobilize resources influence the long-term viability of their early-stage ventures, future research can examine *why* differences in the use of *unbounded* versus *bounded claims* arise in the first place. We take a step in this direction by examining the impact of venture-level early-stage disorganization (Katz and Gartner 1988) and founder-level narcissism (Anglin et al. 2018, Bollaert et al. 2020) on the use of *bounded* versus *unbounded claims*. Our supplemental analyses suggest a founder-level explanation for why entrepreneurs use *unbounded* versus *bounded claims*. Our analyses suggest entrepreneurs who reflect a high degree of self-sufficiency are more apt to use *superlative product descriptions*, make *reactive assurances*, and make *escalating commitments*. This high degree of self-sufficiency could prompt entrepreneurs to depict their ventures as more advanced than they are in reality and communicate future states for their products and ventures that extend beyond what their current capabilities would allow. We encourage future studies to use large datasets to deductively examine the impact of founder-level variables such as self-sufficiency on the claims used by entrepreneurs. Researchers could also draw on construal-level theory to understand the degree to which entrepreneurs' perceptions of their psychological distance from post-campaign efforts to deliver a product are associated with the claims they use in the present (Liberman et al. 2007, Trope and Liberman 2010, 2011). Studies could examine whether founders' use of abstract reasoning is associated with unbounded claims and their use of concrete reasoning is associated with bounded claims.

Cultural entrepreneurship and resourcing

We contribute to the cultural entrepreneurship literature by linking the claims used by entrepreneurs to subsequent actions and outcomes in the entrepreneurial process. Extant research on cultural entrepreneurship attends to the content of entrepreneurial claims and whether they are effective in establishing legitimacy and ultimately attracting resources from key stakeholders.

When more is less

Consistent with prior literature, we find entrepreneurs' claims impact the attention garnered from legitimating infomediaries (Pollock and Rindova 2003, Rindova et al. 2006) and the impressions formed by external audiences (Garud et al. 2014, Fisher et al. 2016). We also extend prior research on cultural entrepreneurship to suggest the *types of claims* used by entrepreneurs impact not only resource mobilization outcomes but also the actions entrepreneurs must then take to deliver on their claims using the financial capital they mobilize. As such, we link the cultural entrepreneurship literature, which largely takes financial capital to be objectively valuable, to the literature on resourcing, which does not assume financial capital has objective value but instead focuses on the ways in which individuals act to deploy financial capital (and other resources) in varying useful and effective ways (Feldman 2004, Howard-Grenville 2007, Sonenshein 2014).

The literature on resourcing theorizes that resources are malleable objects that do not fulfill their potential as resources until they have been utilized (Feldman 2004, Howard-Grenville 2007). As such, resources are not fixed entities with single deterministic purposes but instead are realized once individuals act to use objects (such as financial capital) in novel, creative, and useful ways (Feldman and Worline 2012). Prior research suggests the effective use of resources is impacted by the actions of managers and employees that are embedded in organizations over time (Sonenshein 2014). Yet, in the case of nascent ventures, where embedded organizational actions are less prominent (and often nonexistent), the claims entrepreneurs make to acquire financial capital appear to influence how such resources are utilized. Making claims that are *unbounded* from a venture's current reality can result in entrepreneurs having to act in ways that generate *unmanageable technological complexity* coupled with the necessary pursuit of *uncontrolled organizational scaling*. In this way, *unbounded claims* seem to constrain entrepreneurs and force their hand on how the capital they attain is utilized. In contrast, when claims are *bounded* by the venture's current reality, entrepreneurs are more likely to explore various ways to deploy the capital they attain to realize a venture's stated objectives. This suggests that the mechanisms used to mobilize financial capital do not influence long-term venture viability through the objective amount of financial resources, whether too much (Cohen and Levinthal 1990, Nohria and Gulati 1996) or too little (Baker and Nelson 2005, Ohly and Fritz 2010), but instead through their impact on entrepreneurs' subsequent actions to utilize this capital.

When more is less

Longitudinal crowdfunding dynamics

We contribute to the crowdfunding literature by linking the mechanisms used before and during a campaign to longer-term post-campaign entrepreneurial processes. Prior studies have largely focused on identifying the mechanisms through which entrepreneurs can mobilize resources from several geographically distributed backers using this medium (e.g., Li et al. 2017, Manning and Bejarano 2017, Murray et al. 2020). These studies emphasize funding outcomes including whether a campaign reaches its funding goal and/or the total amount of resources a campaign raises (e.g., Dai and Zhang 2019, Greenberg and Mollick 2017), rather than long-term post-campaign outcomes such as product delivery (see Herzenstein et al. 2011, Netzer et al. 2019, and Sonenshein et al. 2011 for notable exceptions in the context of peer-to-peer lending). We take a step toward examining longer-term post-campaign outcomes by explaining the processes that lead to on-time and on-scope product delivery following successful crowdfunding campaigns. Future studies can further investigate the links between crowdfunding campaigns and other longer-term outcomes, as discussed below, including strategy making (Martins et al. 2015, Rindova and Martins 2018, 2021), pivoting (Kirtley and O'Mahony 2020, McDonald and Gao 2019), and resource mobilization from traditional sources such as angels and VCs (Bessière et al. 2020, Drover et al. 2017a, 2017b, Thies et al. 2019).

Recent research has attended to the processes used by entrepreneurs to develop superior strategies, suggesting novel strategies emerge when entrepreneurs explore opportunities without final goals in mind and engage with stakeholders to validate and extend value to external audiences (Ma et al. 2020, Rindova and Martins 2018, 2021). In the context of crowdfunding, these processes are useful before a campaign when entrepreneurs are developing their prototypes (Murray et al. 2020). Yet once a campaign begins and a venture's goals are publicly stated, entrepreneurs may be more likely to realize long-term success if they focus on actions that will allow them to deliver their products (as envisioned and prototyped before a campaign) rather than exploring product iterations and development without final goals in mind. Future research can thus examine how funding goals are determined (Hu et al. 2015). Moreover, Rindova and Martins (2018) also emphasize the importance of entrepreneurs' values, which they describe as attentional structures to direct attention to specific issues facing an organization, as a means through which entrepreneurs evaluate resources, prioritize

When more is less

activities, and facilitate audience engagement. In this vein, future crowdfunding studies can connect individual-level values and micro-processes (e.g., Hmieleski and Baron 2009) to the claims entrepreneurs use before and during their campaigns to better understand the role of the entrepreneur in the longitudinal crowdfunding process. Herein lies an opportunity to assess entrepreneurs' use of *unbounded* versus *bounded claims* across a large sample of campaigns using natural language processing (NLP) algorithms (e.g., Kaminski and Hopp 2020).

Studies can also examine entrepreneurs' pivoting efforts following ventures' successful crowdfunding campaigns. As ventures grow and expand, entrepreneurs often garner and internalize new information, thereby causing them to reassess their current strategies and *pivot*—"a change in a firm's strategy that reorients the firm's strategic direction through a reallocation or restructuring of activities, resources, and attention" (Kirtley and O'Mahony 2020, p. 2). Scholars have focused on how entrepreneurs manage these strategic redirections (Grimes 2018) and how entrepreneurs navigate fallout among key stakeholders following a pivot (Hampel et al. 2020). For instance, McDonald and Gao (2019) suggest entrepreneurs can mitigate the fallout from a pivot with key stakeholders by anticipating, justifying, and staging changes with audience members. Yet, whether and how entrepreneurs can effectively manage pivots once they attain financial resources from a crowdfunding campaign but have yet to deliver on their public commitments is less well understood. Future studies can examine how entrepreneurs effectively communicate pivots with backers following successful crowdfunding campaigns where funds are provided by the crowd based on clear expectations.

Finally, studies can examine how crowdfunding fits into the broader entrepreneurial resource mobilization landscape as a venture grows and scales following a campaign (Clough et al. 2019, Hallen et al. 2020). Prior research has suggested the important role of crowdfunding in dispersing VC investments (Sorenson et al. 2016), yet whether and how a venture's crowdfunding success generates legitimacy with established investors such as angels and VCs is an area open for further exploration. For instance, the number of campaign backers does not seem to impact VC investment decisions, indicating VCs may attend to goal attainment rather than the size of a startup's customer base in their funding decisions (Drover et al. 2017b). As such, the selection of a campaign goal may be an important consideration not only for a campaign's immediate funding prospects but also for its ability

When more is less

to generate interest from future investors. Studies can further examine entrepreneurs' efforts to pursue financial capital from more traditional sources following their crowdfunding campaigns.

Boundary conditions

The generalizability of our framework is also a key consideration. We expect the impact of *unbounded* versus *bounded claims* on resource mobilization and long-term venture viability to be most germane for early-stage ventures seeking financial capital via crowdfunding to develop resource-intensive technology products where uncertainty around the costs associated with development and manufacturing is likely to be quite high. It follows that we also expect the impact of *bounded* and *unbounded claims* to be less applicable for non-technology products (e.g., wallets, boardgames) where additional promised features are less likely to be resource intensive, as well as for creative projects (e.g., music, film) where outputs can be scaled relatively easily and distributed with minimal unit-level testing. We also anticipate our theoretical framework will hold in traditional resource mobilization settings where entrepreneurs pursue funding from VCs and angels in exchange for equity. Here, investors often provide entrepreneurs with feedback and suggestions on which their investments are contingent (Hallen and Eisenhardt 2012, Huang and Knight 2017). In response, entrepreneurs must often decide whether to adjust their business models and/or core offerings to attain needed financial resources. More research is required on the matching process between early-stage ventures and investors to understand whether and when ventures benefit from adjusting their projections in response to potential investors (Hallen and Pahnke 2016).

Practical implications

For entrepreneurs who need to raise financial capital to bring nascent ideas to life, our study presents a paradox: while their ventures will assuredly fail if they cannot attain necessary financial resources, they may also fail if financial resources are mobilized using *unbounded claims* reflecting *superlative product descriptions*, *reactive assurances*, and *escalating commitments*. Although entrepreneurs may be tempted to utilize such claims, particularly if they get carried away by the prospect of maximizing the amount of resources they attain, they are more likely to realize success over the long haul if they use *bounded claims* reflecting *direct product descriptions*, *calculated assurances*, and *reiterative commitments*.

When more is less

For resource providers seeking to contribute financial capital to innovative and creative ventures, our study illuminates that there are limited checks and balances on real-time entrepreneurial claim-making, especially in a crowdfunding setting where claims are made directly to the public. As such, resource providers in the crowdfunding setting, as well as in other entrepreneurial financing scenarios, should carefully scrutinize, monitor, and evaluate claims that contain superlative product descriptions, reactive assurances, and escalating commitments. The use of these elements results in situations of “backer beware” due to the increased risk that entrepreneurs will not be able to deliver their products as promised despite raising significant amounts of financial capital to do so.

Finally, for crowdfunding platforms wishing to guard against fallout from campaigns that fail to deliver their products to backers after meeting their funding goals, our study suggests benefits may be realized from putting processes in place to mitigate the use of entrepreneurs’ *unbounded claims*. Platforms could monitor and evaluate campaign text, speech, and video and then conduct deeper due diligence on the campaigns with many *unbounded claims* (e.g., Cumming et al. 2019). Alternatively, they could use neural networks to automatically assess campaign text, speech, and video metadata and flag campaigns that excessively use elements of *unbounded claims* to then allow platform moderators to rectify issues (e.g., Belavina et al. 2020; Murray et al. 2021).

CONCLUSION

The purpose of this study was to uncover *how* the mechanisms utilized by entrepreneurs to mobilize financial resources also influence the long-term viability of their ventures. Employing a multiple-case, inductive research design, we examined the mechanisms used by entrepreneurs who successfully crowdfunded their consumer drone ventures and the subsequent product delivery processes they employed. We induct a theoretical framework reflecting how the types of claims—*unbounded* versus *bounded*—entrepreneurs use to describe their products impact not only the amount of resources they attain but also the actions they then take to deliver their products. Theoretically, we contribute to the literatures on entrepreneurial resource mobilization, cultural entrepreneurship, and crowdfunding. Practically, we identify pathways that entrepreneurs can use to avoid the well-documented “curse of too much capital” often experienced by early-stage ventures.

Table 1: Phases of Crowdfunding Process

	Phase 1: Ideation to campaign launch	Phase 2: The campaign	Phase 3: Post-campaign to product delivery
Description	Preparatory activities for a crowdfunding campaign.	Generating interest and commitment while the campaign is open; managing the campaign during this time.	Delivery of products (or services) promised to campaign backers; this phase ends when the product is delivered.
Actions	<ul style="list-style-type: none"> • Developing a prototype (e.g., Cornelius and Gokpinar 2020) • Writing webpage content (e.g., Cappa et al. 2021, Short and Anglin 2019), • Establishing campaign rewards (Herzenstein et al. 2020, Sewaid et al. 2021, Thürridl and Kamleitner 2016, Zhang and Chen 2019) • Creating a pitch video (e.g., Korzynski et al. 2021) • Setting a funding goal (Hu et al. 2015) • Fostering commitment amongst future backers (Murray et al. 2020) 	<ul style="list-style-type: none"> • Sharing the campaigns with others (Kaminski et al. 2018) • Responding to inquiries from backers (Cornelius and Gokpinar 2020) • Catalyzing media coverage and social media shares (Sahaym et al. 2021, Simon et al. 2019). 	<ul style="list-style-type: none"> • Product development, manufacturing, and tooling to deliver a product to backers at scale (Vanacker et al. 2019). • Shipping and logistics, inventory control, supplier management, and hiring (Mollick 2015).
Implications	These actions increase the likelihood that an entrepreneur will generate financial contributions during a campaign's initial days, and thus catalyze its funding success. These actions have impacts over and above founders' gender (Bapna and Ganco 2021, Greenberg and Mollick, Johnson et al. 2018) and race (Younkin and Kuppuswamy 2018, 2019).	These actions are intended to increase the social sharing and virality of the campaign, thereby resulting in many people learning about and desiring its offering (Frydrych et al. 2014, Kindler et al. 2019, Vismara 2018). If this happens, the amount of funds a venture can mobilize has the potential to vastly exceed its stated funding goal (Cumming et al. 2020).	This phase shifts an entrepreneur's role from developing and selling a product concept to addressing the managerial aspects of transitioning a product proposal into a full-fledged business (Signori and Vismara 2018, Vanacker et al. 2019)

Table 2: Case Descriptions

Founder Information					Campaign Variables									Post-Campaign Outcomes	
Drone (Alias)	Founders (#)	Prior Start-Up Experience	Prior Kickstarter Experience	Prior Engineering Experience	Campaign Launch	Campaign Length (Days)	Funding Goal (USD)	Amount Raised (USD)	Funding Ratio	Backers	Updates	Comments	Product Complexity	On-Time Delivery	On-Scope Delivery
<i>Unsuccessful delivery (on-time and/or on-scope)</i>															
Moa/U	3	No	No	Yes	6/24/2013	30	\$125,000	\$127,199	1.02	472	39	151	Moderate	Not delivered	–
Talpanas/U	3	Yes	Yes	Yes	1/8/2014	60	\$35,000	\$929,212	26.55	1,946	29	1,744	Moderate	Not delivered	–
Kiwi/U	3	Yes	No	Yes	6/16/2014	40	\$200,000	\$1,368,177	6.84	1,357	66	1,708	High	>1 year late	No
Dodo/U	1	Yes	No	Yes	11/24/2014	45	\$196,276	\$3,529,282	17.98	12,075	53	10,519	High	Not delivered	–
Adzebill/U	2	Yes	Yes	Yes	4/22/2015	30	\$125,000	\$125,021	1.00	157	20	412	High	Not delivered	–
Titanis/U	2	Yes	No	Yes	5/4/2015	45	\$250,000	\$882,478	3.53	1,514	24	933	High	Not delivered	–
Rail/U	3	No	No	Yes	5/15/2015	30	\$200,000	\$406,061	2.03	532	95	149	High	>1 year late	Yes
Takahe/U	3	Yes	No	No	6/15/2014	30	\$50,000	\$1,306,920	26.14	2,336	53	2,805	High	<1 year late	No
Penguin/U	2	Yes	No	Yes	12/15/2014	30	\$50,000	\$143,400	2.87	263	39	227	Moderate	<1 year late	No
Crake/U	3	Yes	No	No	3/4/2015	35	\$17,500	\$303,429	17.34	315	33	632	Moderate	<1 year late	No
Emu/U	1	Yes	No	No	5/25/2015	59	\$6,400	\$6,864	1.07	76	11	27	Low	<1 year late	No
Cassowary/U	4	No	No	Yes	6/30/2015	60	\$111,527	\$114,065	1.02	587	38	449	High	>1 year late	Yes
Ostrich/U	4	Yes	Yes	Yes	9/14/2015	46	\$50,000	\$815,601	16.31	1,324	33	503	Moderate	>1 year late	Yes
Kakapo/U	1	Yes	Yes	Yes	11/10/2015	60	\$100,000	\$492,204	4.92	2,537	25	526	Moderate	<1 year late	No
Canadaga/U	2	Yes	No	Yes	12/3/2015	43	\$190,809	\$344,442	1.81	717	23	234	High	Not delivered	–
<i>Successful delivery (on-time and on-scope)</i>															
Cardinal/S	4	No	No	Yes	6/29/2012	32	\$20,000	\$111,622	5.58	484	19	46	Moderate	<1 year late	Yes
Heron/S	3	Yes	No	No	10/24/2012	30	\$30,000	\$32,770	1.09	173	12	26	Moderate	On time	Yes
Eagle/S	1	Yes	Yes	No	5/12/2014	60	\$20,000	\$45,627	2.28	109	39	76	Moderate	<1 year late	Yes
Hawk/S	2	No	No	Yes	5/12/2014	30	\$5,000	\$23,294	4.66	86	12	10	High	On time	Yes
Raven/S	4	Yes	No	No	9/14/2015	30	\$35,419	\$37,070	1.05	11	23	0	High	<1 year late	Yes
Falcon/S	4	Yes	Yes	Yes	9/26/2015	60	\$30,000	\$38,500	1.28	37	20	55	Moderate	<1 year late	Yes
Osprey/S	1	Yes	No	Yes	11/20/2015	30	\$10,000	\$13,166	1.32	29	13	83	Low	<1 year late	Yes

Table 3: Description of Data Sources

Drone	Campaign Data	Media Data	Interview Data
<i>Unsuccessful delivery (on-time and/or on-scope)</i>			
Moa/U	<ul style="list-style-type: none"> • 1 homepage & video • 39 updates & 151 comments 	<ul style="list-style-type: none"> • 11 articles • 3 videos 	<ul style="list-style-type: none"> • 1 (founder)
Talpanas/U	<ul style="list-style-type: none"> • 1 homepage & video • 29 updates & 1,744 comments 	<ul style="list-style-type: none"> • 40 articles • 4 videos 	<ul style="list-style-type: none"> • 1 (founder) • 1 podcast (founder)
Kiwi/U	<ul style="list-style-type: none"> • 1 homepage & video • 66 updates & 1,708 comments 	<ul style="list-style-type: none"> • 118 articles • 3 videos 	<ul style="list-style-type: none"> • 1 (founder)
Dodo/U	<ul style="list-style-type: none"> • 1 homepage & video • 53 updates & 10,519 comments 	<ul style="list-style-type: none"> • 101 articles • 2 videos 	<ul style="list-style-type: none"> • 5 (founder)
Adzebill/U	<ul style="list-style-type: none"> • 1 homepage & video • 20 updates & 412 comments 	<ul style="list-style-type: none"> • 18 articles • 2 videos 	<ul style="list-style-type: none"> None
Titans/U	<ul style="list-style-type: none"> • 1 homepage & video • 24 updates & 933 comments 	<ul style="list-style-type: none"> • 35 articles • 3 videos 	<ul style="list-style-type: none"> • 1 (founder)
Rail/U	<ul style="list-style-type: none"> • 1 homepage & video • 95 updates & 149 comments 	<ul style="list-style-type: none"> • 34 articles • 2 videos 	<ul style="list-style-type: none"> • 1 (founder)
Takahe/U	<ul style="list-style-type: none"> • 1 homepage & video • 53 updates & 2,805 comments 	<ul style="list-style-type: none"> • 53 articles • 5 videos 	<ul style="list-style-type: none"> • 2 (founder)
Penguin/U	<ul style="list-style-type: none"> • 1 homepage & video • 39 updates & 227 comments 	<ul style="list-style-type: none"> • 43 articles • 2 videos 	<ul style="list-style-type: none"> • 3 (founder)
Crake/U	<ul style="list-style-type: none"> • 1 homepage & video • 33 updates & 632 comments 	<ul style="list-style-type: none"> • 45 articles • 3 videos 	<ul style="list-style-type: none"> • 2 (founder)
Emu/U	<ul style="list-style-type: none"> • 1 homepage & video • 11 updates & 27 comments 	<ul style="list-style-type: none"> • 11 articles • 1 video 	<ul style="list-style-type: none"> None
Cassowary/U	<ul style="list-style-type: none"> • 1 homepage & video • 38 updates & 449 comments 	<ul style="list-style-type: none"> • 4 articles • 1 video 	<ul style="list-style-type: none"> • 4 (founder)
Ostrich/U	<ul style="list-style-type: none"> • 1 homepage & video • 33 updates & 503 comments 	<ul style="list-style-type: none"> • 69 articles • 1 video 	<ul style="list-style-type: none"> • 5 (founder) • 1 podcast (founder)
Kakapo/U	<ul style="list-style-type: none"> • 1 homepage & video • 25 updates & 526 comments 	<ul style="list-style-type: none"> • 66 articles • 1 video 	<ul style="list-style-type: none"> • 6 (founder)
Canadaga/U	<ul style="list-style-type: none"> • 1 homepage & video • 23 updates & 234 comments 	<ul style="list-style-type: none"> • 50 articles • 14 videos 	<ul style="list-style-type: none"> • 1 (founder)
<i>Successful delivery (on-time and on-scope)</i>			
Cardinal/S	<ul style="list-style-type: none"> • 1 homepage & video • 19 updates & 46 comments 	<ul style="list-style-type: none"> • 8 articles • 1 video 	<ul style="list-style-type: none"> • 5 (founder)
Heron/S	<ul style="list-style-type: none"> • 1 homepage & video • 12 updates & 26 comments 	<ul style="list-style-type: none"> • 8 articles • 1 video 	<ul style="list-style-type: none"> • 1 (founder)
Eagle/S	<ul style="list-style-type: none"> • 1 homepage & video • 39 updates & 76 comments 	<ul style="list-style-type: none"> • 7 articles 	<ul style="list-style-type: none"> • 2 (founder)
Hawk/S	<ul style="list-style-type: none"> • 1 homepage & video • 12 updates & 10 comments 	<ul style="list-style-type: none"> • 4 articles • 1 video 	<ul style="list-style-type: none"> • 1 (founder)
Raven/S	<ul style="list-style-type: none"> • 1 homepage & video • 23 updates & 0 comments 	<ul style="list-style-type: none"> • 3 articles • 1 video 	<ul style="list-style-type: none"> None
Falcon/S	<ul style="list-style-type: none"> • 1 homepage & video • 20 updates & 55 comments 	<ul style="list-style-type: none"> • 10 articles 	<ul style="list-style-type: none"> • 1 (founder)
Osprey/S	<ul style="list-style-type: none"> • 1 homepage & video • 13 updates & 83 comments 	<ul style="list-style-type: none"> • 1 article • 2 videos 	<ul style="list-style-type: none"> • 1 (founder)

Table 4A: Ventures' Use of Unbounded Claims (Actions and Qualitative Examples)

Drone & Rating*	Using Superlative Product Descriptions	Making Reactive Assurances	Making Escalating Commitments
<i>Unsuccessful delivery (on-time and/or on-scope)</i>			
Moa/U ✓✓✓	Used superlative product descriptions. "The first app-controlled aquatic drone that plays augmented reality games" (Homepage)	Ensured features including SD capacity, camera mounts, DIY version, extra propellers, and customized units. "Some of you folks would like to have more memory available to be able to record more time of interrupted fun. So to celebrate all your support we've decided to double the SD capacity" (Update 4)	Added 3 new rewards for double SD card capacity, lighter product version, and special edition product color. "A new and lighter version of Ziphius is also being offered for a pledge of \$199 or more. The light Ziphius edition will come with a black outfit, a 4Gb SD card, and no LED Lights. Hope you like it!" (Update 22)
Talpanas/U ✓✓✓	Used superlative product descriptions. "The world's first multicopter that's powerful enough to carry a high quality action camera" (Homepage)	Solicited open feedback; Ensured new features including LED lights, vibration isolation, drone frame, and camera functionalities. "Many of you have been asking about adding lights, so we have adjusted the wiring harness to include a 5v plug for those of you who are interested in adding LEDs for night flight or other accessories" (Update 3)	Added 1 new reward to accommodate international shipping. "We have created new reward levels to correspond to all three [international] packages" (Update 4)
Kiwi/U ✓✓✓	Used superlative product descriptions. "the world's first auto-follow action sports drone" (Video)	Ensured floater accessory for surfers and wakeboarders for the drone to land and take off from the water surface. "Surfers and wakeboarders will dig this: we are going to make a floater accessory, so your [Kiwi/U] will be able to land and take off from water surface! [Kiwi/U] goes amphibious! Sounds crazy right?" (Update 1)	Introduced 3 stretch objectives for enhanced camera capabilities, battery enhancements, and obstacle avoidance. "You will be able to switch camera with push of a button on your AirLeash! It is like making high-budget movie with real aerial footage but without really paying for it!" (Update 1)
Dodo/U ✓✓✓	Used superlative product descriptions. "the world's most sophisticated nano drone - aerial photo and HD video capture platform" (Homepage)	Solicited feedback; Promised to integrate several suggestions pertaining to 15 distinct hardware and software components; Described reconfiguring product to integrate feedback. "MicroSD, Batteries, Carry Cases - You asked, we listened!" (Update 2)	Introduced 4 stretch objectives for enhanced camera, image processing, image editing software, and swarming capabilities; Added 3 new rewards for updated case and colors. "In regards to the stretch goals. It's not a matter of if we will build the functionality referenced in each of the stretch goals, it's a matter of when. By achieving each of the stretch goals, this will allow us to release the functionalities a lot quicker" (Update 2)
Adzebill/U ✓✓✓	Used superlative product descriptions. "The First All-in-One Camera Drone by Rocket Scientists" (Homepage)	Promised to research camera upgrades and waterproofing in response to backers' suggestions. "We value your opinion regarding water proof...Our engineers are working hard to make this feasible based on current design" (Response to backer)	Introduced, but did not reach, 4 stretch objectives for propeller design, GPS, 3D technology, and camera functions. "We have 13 more days and plenty of time to now try and push for our stretch goals! Please help us meet another benchmark in the development of [Adzebill/U]!" (Update 6)
Titanis/U ✓✓✓	Used superlative product descriptions. "It's truly a next-level drone for everyone!" (Homepage)	Solicited open feedback; Created Consumer Advisory Group to generate ideas; Promised to research backers' suggestions related to camera, batteries, and propellers. "folks have asked if spares like props and batteries will be available...we are also investigating the potential to ask sponsors if they want additional item[s] before we ship" (Update 8)	Introduced 3 stretch objectives for enhanced camera functionalities, autonomous drone behaviors, and geofence technology enhancements. "We heard you. You've never had pro-level control of the camera on a drone. So here it is for the first time for consumers" (Update 7)
Rail/U ✓✓✓	Used superlative product descriptions. "The world's most portable and rugged unmanned aerial vehicle" (Video)	Promised to integrate universal mount and advanced camera module based on backers' suggestions. "we really appreciate all the comments and suggestions we've gotten! We read and carefully consider each one... We're going to replace [Rail/U's] standard Camera Module with a more advanced version that features a 2-axis, stabilized gimbal!" (Update 1)	Added 3 new rewards for digital files to customize bulkhead and first-person view. "This package will include all of the digital files you'll need to design and print a custom bulkhead...Want to make a grappling hook? Do it. A cellular network relay? Knock yourself out. An emergency locator transmitter? Do it" (Update 3)
Takahe/U ✓✓✓	Used superlative product descriptions. "the world's first autonomous drone system that will follow you and film you"	Solicited open feedback; Received several suggestions; Promised to research many different hardware and software suggestions. "Having reached \$1M, we will work on a design upgrade of the existing [Takahe/U] system, based on your feedback... You want to see additional features and improvements to an already awesome package? Let us know in the comments below" (Update 11)	Introduced 3 stretch objectives for live video feed, complex camera movements, and open-ended backer-sourced feature; Added 3 new rewards for multi-camera compatibility. "We clearly heard you: the requests for [Takahe/U] to come with a 3D gimbal have been coming in for days... You now have the possibility to upgrade from the standard 2D gimbal, included in your reward packages, to a GoPro-compatible 3D gimbal" (Update 10)
Penguin/U ✓✓✓	Used superlative product descriptions. "Introducing the next generation in drone design"	Partnered with 3D Robotics to offer autonomous AI-based functionalities based on backers' feedback. "Through a recent collaboration with 3D Robotics, we are able to offer the Autonomous Option earlier than anticipated -NOW!" (Update 8)	Introduced 2 stretch objectives for autonomous drone capabilities and live video streaming; Added 1 new reward. "There has been a lot of interest around autonomous flight...Because of this early interest from the community we are accelerating the announcement of our first Stretch Goal - The Autonomous Option!" (Update 2)

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Crake/U ✓✓	Did not use superlative product descriptions.	Ensured several hardware features including first-person view camera, travel case, and flight controller. “Many of you have asked for an FPV camera that can be used with the Payload release...Many have also asked for a better travel case to replace the aluminum case, that's also coming in the next couple of weeks. This case will also be waterproof” (Update 22)	Introduced 2 stretch objectives for customized units and newly-designed drone skins. “if we reach the \$280,000 mark, every [Crake/U] sold on kickstarter will come with one of these skins. We're making the template available to everyone, this way you can get creative” (Update 9)
Emu/U ✓	Did not use superlative product descriptions.	Did not make reactive assurances.	Added 1 new reward for stereolithography file to print the product's frame. “We've also introduced a new pledge, a customized STL file cut of the [Emu/U] 'Frame'” (Update 2)
Cassowary/U ✓✓✓	Used superlative product descriptions. “The world's first app controlled stunt & racing drone with first-person-view” (Homepage)	Promised to enhance multi-player gaming experience and alter the hardware design to simplify battery-changing by users. “We have now made it possible for you to change the battery yourself via a small opening on our drones giving you the flexibility you needed” (Update 9)	Added 1 new reward for gaming joystick. “We heard you! Grab the ultra-cool gaming joysticks” (Update 6)
Ostrich/U ✓✓✓	Used superlative product descriptions. “The future of ocean exploration is here” (Homepage)	Promised several features based on feedback including integrated GPS, ruggedness, computational capabilities, and sophisticated communication with external payloads. “One more thing about the buoy! We've decided it would be worth it to throw in a little bonus: the Radio Buoy will now come with a built in GPS receiver” (Update 12)	Added 1 new reward for access to software to beta-test remote control feature. “you can be added to the pool of beta-test pilots of this remote control feature...every time we're testing the feature...we'll send out an email and invite you to log in and participate” (Update 4)
Kakapo/U ✓✓✓	Used superlative product descriptions. “The first ever paper airplane drone with a live streaming camera” (Video)	Promised to enhance the product's mechanical design, increase its range, and research Bluetooth controller. “After numerous backer requests...we changed the color of [Kakapo/U]'s hood to red” (Update 11)	Added 2 new rewards for stripped down product version. “Some backers asked recently for an option to order the Basic package without the Google cardboard. We took this a step further, and created a new reward” (Update 4)
Canadaga/U ✓✓	Used superlative product descriptions. “World Safest Drone... [Canadaga/U] has gone back to the drawing board to imagine the future of autonomous flying robots” (Homepage)	Promised to increase flight time from initial baseline of 10 minutes. “We are constantly working on improving flight time, which depends on overall weight, trust drag, efficiency and battery capacity. Ten minutes is good average for machine of similar weight” (Response to backer)	Did not make broad escalating commitments.
Successful delivery (on-time and on-scope)			
Cardinal/S	Did not use superlative product descriptions.	Did not make reactive assurances.	Did not make escalating commitments.
Heron/S	Did not use superlative product descriptions.	Did not make reactive assurances.	Did not make escalating commitments.
Eagle/S ✓✓✓	Used superlative product descriptions “the first modular plug-and-fly aerial solution” (Homepage)	New features including enhanced motors, larger propellers, and “Follow Me” mode. “[Eagle/S] also has the “Follow me” mode...built in and we will be announcing either our own “master” unit (the one being followed) or an integration with and existing technology soon” (Update 9)	Introduced 2 stretch objectives for autopilot and backpack carrying case. “At the next milestone at \$30,000 we are going to give everyone our latest and best autopilot...including flying in groups and communicating with other drones and devices” (Update 5)
Hawk/S	Did not use superlative product descriptions.	Did not make reactive assurances.	Did not make escalating commitments.
Raven/S	Did not use superlative product descriptions.	Did not make reactive assurances.	Did not make escalating commitments.
Falcon/S ✓	Used superlative product descriptions. “longest flying quadcopter on the market” (Homepage)	Did not make reactive assurances.	Did not make escalating commitments.
Osprey/S ✓	Used superlative product descriptions “the best and most easy-to-fly racer out there” (Video)	Did not make reactive assurances.	Did not make escalating commitments.

Each venture received a “✓” for its use of each dimension of unbounded claims.

Table 4B: Ventures' Use of Bounded Claims (Actions and Qualitative Examples)

Drone & Rating*	Using Direct Product Descriptions	Making Calculated Assurances	Making Reiterative Commitments
<i>Unsuccessful delivery (on-time and/or on-scope)</i>			
Moa/U ✓	Used direct product descriptions. <i>"an app controlled drone that responds to your smartphone or tablet commands in real-time"</i> (Homepage)	Did not make calculated assurances.	Did not make reiterative commitments.
Talpanas/U ✓	Did not use direct product descriptions.	Assured backers they would research first person view and iOS compatibility post-delivery. <i>"Thanks for the additional feature suggestions. First person view is something we'd like to offer in the future, although it probably won't be ready in time for the finish of our Kickstarter campaign"</i> (Response to backer)	Did not make reiterative commitments.
Kiwi/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Dodo/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Adzebill/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Titanis/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Rail/U ✓	Did not use direct product descriptions.	Assured backed they would research obstacle avoidance technology post-delivery. <i>"we have not included obstacle avoidance in this launch campaign. In our opinion, it's just not ready to meet the expectations most people have for it...it is a high priority in our early accessory development pipeline"</i> (Response to backer)	Did not make reiterative commitments.
Takahe/U	Did not use direct product descriptions.	Initially assured backers they would not research obstacle avoidance technology due to its complexity; ultimately attempted to integrate this feature due to backer interest. <i>"Needless to say, we're also continuing our efforts to enhance the quality and safety of [Takahe/U], exploring new technologies like obstacle avoidance"</i> (Update 44)	Did not make reiterative commitments.
Penguin/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Crake/U ✓ ✓	Used direct product descriptions. <i>"a waterproof drone with live video feed, payload release mechanism, and follow me"</i> (Homepage)	Assured backed they would research prop guards and remote GoPro control post-delivery. <i>"Prop Guards are not available as of yet, but a few people have asked about it so we'll start looking into it. First we have to work on delivering the kickstarter pledges. I do not want to do anything that is going to delay the delivery deadline"</i> (Response to backer).	Did not make reiterative commitments.
Emu/U ✓	Used direct product descriptions. <i>"an intelligent (and affordable!) complete robotics kit"</i> (Homepage)	Did not make calculated assurances.	Did not make reiterative commitments.
Cassowary/U	Did not use direct product descriptions.	Did not make calculated assurances.	Did not make reiterative commitments.
Ostrich/U ✓	Did not use direct product descriptions.	Assured backers they would research features including lasers, gripper, and additional cameras post-delivery. <i>"there aren't options for a hook or gripper add-on offered right now, but that sort of thing is very likely to show up later on after we ship"</i> (Response to backer)	Did not make reiterative commitments.
Kakapo/U ✓	Did not use direct product descriptions.	Assured backers they would research Periscope and Meerkat post-delivery. <i>"we are looking into additional features which we think could be useful to add in the future for example Periscope or Meerkat"</i> (Response to backer)	Did not make reiterative commitments.

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Canadaga/U ✓✓	Did not use direct product descriptions.	Assured backers they would research docking stations, cameras, and industrial applications post-delivery. “We haven't explored much industrial applications yet as we focus on the product. If you have ideas around this, don't hesitate to drop us a note” (Response to backer)	Reiterated commitment to delivering initially promised product. “We have no plans to add stretch goals or last minute new features...Our R&D is being finalized, and the reward for our backers will be receiving the world first flying camera ball :-)” (Response to backer)
Successful delivery (on-time and on-scope)			
Cardinal/S ✓✓✓	Used direct product descriptions. “an open source robotic submarine designed to make underwater exploration possible for everyone” (Homepage)	Promised tether feature already in development and requested by domain experts. “We've received a lot of feedback from developers that they'd love to see a reward level for the [Cardinal/S] Cape we've been developing (see the latest on Github). Well, here you have it!” (Update 6)	Committed to initially promised product; developed additional features following successful delivery. “We'll compile another list for the Version 2.5 updates that are coming with the September batch. This model of open development continues to work because of all of your feedback and input - keep it coming!” (Update 16)
Heron/S ✓✓✓	Used direct product descriptions “a flying drone which is directly controlled by your iDevice via Bluetooth” (Video)	Promised iOS capability already in development, assured future development of Android capability. “Android is in the works, however our initial launch is for iOS only.” (Homepage)	Committed to initially promised product; developed add-on camera functionality following successful delivery. “we are already working on this however it will be wifi rather than bluetooth so it can do video streaming at the moment its Bluetooth so its not possible. This version will not be available for at least 10 more months.” (Update 3)
Eagle/S ✓✓	Used direct product descriptions. “EasyDrone is an advanced, modular quadcopter designed for videographers that need quick, easy and affordable aerial shots.” (Homepage)	Promised Pixhawk autopilot feature already in development and requested by domain experts. “We have some very exciting news -- first flight tests with new Pixhawk autopilot have been very successful. Early backers will receive an option to opt in to receive their existing [Eagle/S]s with this great new autopilot at no additional cost. Everyone else starting tomorrow will be able to choose this option as a new, slightly more expensive reward” (Update 4)	Did not make reiterative commitments.
Hawk/S ✓✓✓	Used direct product descriptions. “[Hawk/S] is a compact, interactive, and intelligent drone” (Homepage)	Promised to upload existing digital files so backers can 3D print spare parts. “We are going to upload Phenox's frame and legs (stl format) in our wiki page so that users can make spare parts by 3D printer” (Response to backer).	Committed to initially promised product; developed additional features following successful delivery. “Next version of [Hawk/S] will definitely be much improved and strengthened than ever, so please wait for a while to get yours” (Update 20)
Raven/S ✓✓	Used direct product descriptions. “[Raven/S] is an underwater quadradiver robot that can search, grapple, and retrieve objects from up to 300 feet below the surface” (Video)	Did not make calculated assurances.	Committed to initially promised product; developed additional features following successful delivery. “Thanks to all our backers for their patience and support during the long process of design and development. We are now currently designing accessories for [Raven/S] that will enhance its capabilities further” (Update 7)
Falcon/S ✓✓	Used direct product descriptions. “The newest modular drone from Easy Aerial deploys in one minute and flies for 45” (Homepage)	Assured backers the motor technology was tested and sufficient; not developing more expensive option. “these are higher-end RC-Timer motors. They are great and have passed very rigorous tests we put them through. T-motors are great too, but a set would cost 5x as much and we would not be able to keep the costs so low” (Response to backer)	Did not make reiterative commitments.
Osprey/S ✓	Did not use direct product descriptions.	Assured backers they could attain GPS module from third parties; not developed in-house. “We won't have the GPS module available but we can point you in the right direction where it can be found its about \$90” (Response to backer)	Did not make reiterative commitments.

* Each venture received a “✓” for its use of each dimension of bounded claims.

Table 5: Expansive Infomediary Attention and Audience Expectations (Case Examples)

Drone & Rating*	Expansive Infomediary Attention**	Audience Expectations***
<i>Unsuccessful delivery (on-time and/or on-scope)</i>		
Moa/U ✓	Received attention from 8 expansive infomediaries beginning on campaign's 4 th day. "The Zephyus has two brushless DC motors that let it zip up to 6mph, and can be controlled wirelessly up to about 300ft. away" (technabob)	Backers expressed inflated expectations. "You made it! ...what are you gonna do with all that extra money? ;-) can you fit a LED on these \$199+ LEDless Zephyus?" (Backer comment)
Talpanas/U ✓✓	Received attention from 24 expansive infomediaries beginning on campaign's 1 st day. "the [Talpanas/U] impressed the judges at TechCrunch's inaugural Hardware Battlefield held at CES 2014 where they demonstrated the device for the first time" (TechCrunch)	Backers expressed inflated expectations. "Today it's approaching 4x. Did I mention there's 57 days to go? I don't want to jinx it but we're looking at a potential million dollar run-away. :-) Um, what were those stretch goals again...?" (Backer comment)
Kiwi/U ✓✓	Received attention from 33 expansive infomediaries beginning pre-campaign. "The first 'pet' drone that can automatically follow its owner has been revealed - and could change the way sports are filmed" (Daily Mail)	Backers expressed inflated expectations. "Anyone that dumps this before funding is crazy, this is just looking better and better the more vids you show us...!!!" (Backer comment)
Dodo/U ✓✓	Received attention from 22 expansive infomediaries beginning on campaign's 2 nd day. "A new nano drone in the form of the [Dodo/U] has been unveiled this week, that has been designed to be an ultra-portable, personal aerial photography and video capture platform" (Geeky Gadgets)	Backers expressed inflated expectations. "Color me truly impressed. I had not expected such a plethora of profuse and promising prelations. (I have the awkward impression that I should owe you more money.)" (Backer comment)
Adzebill/U ✓✓	Received attention from 11 expansive infomediaries beginning pre-campaign. "A Pasadena startup wants to extend 'selfies' into the sky with a camera-carrying drone that's capable of tracking and filming autonomously" (San Gabriel Valley Tribune)	Backers expressed slightly inflated expectations. "Proudly backed as an early bird. You guys convinced me to ditch my DJI Phantom ;) I wish you all the best with this great and amazing project!" (Backer comment)
Titanis/U ✓✓	Received attention from 17 expansive infomediaries beginning pre-campaign. "Helen Greiner, who co-designed the world's most popular robotic vacuum, thinks the world of aerial robots could be better, and the [Titanis/U] is her team's effort at leapfrogging the competition" (NBC News)	Backers expressed inflated expectations. "Great to hear of your stretch goals; I'll do my part in getting the word around." (Backer comment)
Rail/U ✓✓	Received attention from 15 expansive infomediaries beginning pre-campaign. "[Rail/U] isn't out yet, but it will soon become available to backers of a Kickstarter campaign set to go live in the coming days" (Popular Mechanics)	Backers expressed inflated expectations. "Congratulations. You reach your goal. Think about some more goals and make the numbers of [Rail/Us] rise up into the sky" (Backer comment)
Takahe/U ✓✓	Received attention from 24 expansive infomediaries beginning on campaign's 1 st day. "One downside: It can only operate for 15 minutes at a time. But with money coming to the Palo Alto, Calif., startup at this rate, that little hiccup could soon be history" (VentureBeat)	Backers expressed inflated expectations. "By pledging to this project I truly believe I'm involved with something ground breaking and game changing. This is history in the making!" (Backer comment)
Penguin/U ✓✓	Received attention from 13 expansive infomediaries beginning on campaign's 2 nd day. "Designed by aerospace engineer JD Claridge and freshly launched on Kickstarter, this drone blurs the line between winged and multi-rotor aircraft" (Digital Trends)	Backers expressed inflated expectations. "Sweet! I just up'd my pledge for the Datalink AI option. Now we just need to add a paintball cannon to this puppy. :-)" (Backer comment)
Crake/U ✓	Received attention from 8 expansive infomediaries beginning on campaign's 1 st day. "There are plenty of fancy drones around but not all of them are waterproof or capable of floating on water. The [Crake/U] is different. It is a waterproof drone with a whole host of autonomous features" (Gadgetify)	Backers expressed inflated expectations. "if we pass \$300k maybe you guys can include a extra battery :) can't wait to fly my new [Crake/U]!!! YewwW" (Backer comment)
Emu/U	Received attention from 5 expansive infomediaries beginning pre-campaign. "Almost everything you need comes in the kit, there is no soldering required and there are full easy to follow detailed instructions" (TechMash)	Backers expressed realistic expectations. "I'm glad to see funding is achieved. A worthy project should always get support." (Backer comment)
Cassowary/U ✓	Received attention from 1 expansive infomediaries beginning pre-campaign. "Built from expanded polypropylene (EPP), the aircraft itself is durable and lightweight" (New Atlas)	Backers expressed inflated expectations. "I really hope you get enough backers to unlock the guru. that is what i would really like to get :)" (Backer comment)

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Ostrich/U ✓✓	Received attention from 18 expansive infomediaries beginning pre-campaign. “ <i>[Ostrich/U’s new drone] is a powerful, speedy vehicle that can remotely navigate underwater locations never before accessible</i> ” (Make Magazine)	Backers expressed inflated expectations. “ <i>I love that you guys continue to refine and push the design without impacting the anticipated delivery date and I agree the new enhancements are worthy of more cash....but so excited that I get it for the price I paid!!!</i> ” (Backer comment)
Kakapo/U ✓	Received attention from 23 expansive infomediaries beginning pre-campaign. “ <i>[Kakapo/U] has teamed with Parrot to create a paper airplane drone, fully equipped with its own motor and camera</i> ” (Wired)	Backers expressed realistic expectations. “ <i>Congratulations on getting this great project funded. Looking forward to my delivery</i> ” (Backer comment)
Canadaga/U ✓✓	Received attention from 37 expansive infomediaries beginning pre-campaign. “ <i>Because it flies ten miles per hour, and can do so autonomously... [Canadaga/U] can follow you around, its camera keeping you in frame all the while</i> ” (Huffington Post)	Backers expressed inflated expectations. “ <i>I hope hope you’ll reach 250K. This can mean better [Canadaga/U], no compromise on quality and perhaps better camera and added features in the app</i> ” (Backer comment)
Successful delivery (on-time and on-scope)		
Cardinal/S	Received attention from 2 expansive infomediaries beginning on campaign’s 5 th day. “ <i>The team wants to distribute an explorer that anyone can build and use for scientific research</i> ” (Mashable)	Backers expressed realistic expectations. “ <i>I’m so proud of you guys! This is amazing!</i> ” (Backer comment)
Heron/S	Received attention from 7 expansive infomediaries beginning pre-campaign. “ <i>The [Heron/S] helicopter balances in the air using contra-rotating coaxial main rotors — the latest in gyroscope technology and can take five-minute flights from a 60-minute charge</i> ” (Mashable)	Backers expressed realistic expectations. “ <i>So excited to check out the [Heron/S].</i> ” (Backer comment)
Eagle/S	Received attention from 1 expansive infomediary on campaign’s 58 th day. “ <i>[Eagle/S] is the latest resource for videographers which captures aerial shots in a quick, easy and affordable manner</i> ” (Resource Magazine).	Backers expressed realistic expectations. “ <i>This is exactly what I was looking for! Thank you so much!</i> ” (Backer comment)
Hawk/S	Received attention from 2 expansive infomediaries beginning on campaign’s 1 st day. “ <i>This month the creators of the [Hawk/S] have launched a new Kickstarter campaign looking to raise \$5000 to help progress their concept from design into manufacture</i> ” (Geeky Gadgets)	Backers expressed realistic expectations. “ <i>Very interesting project. I remember your first post on DIYdrones back in January and I was very excited about your project</i> ” (Backer comment)
Raven/S	Received attention from 2 expansive infomediaries beginning on campaign’s 2 nd day. “ <i>Although targeted at the recreational market [Raven/S] could change the way some commercial operations on the surface of the water are accomplished</i> ” (The Maritime Executive)	Backers did not express expectations.
Falcon/S	Received attention from 3 expansive infomediaries beginning on campaign’s 3 rd day. “ <i>Watch the video below to learn more about the Easy Aerial drone that is looking to raise \$30,000 over the next 60 days via the Kickstarter website</i> ” (Geeky Gadgets)	Backers expressed realistic expectations. “ <i>Congratulations Ivan and all the new [Falson/S] owners</i> ” (Backer comment)
Osprey/S	Received attention from 1 expansive infomediary on campaign’s 4 th day. “ <i>If you are in the market for a ready to fly FPV Racer drone you may be interested in a new project that is launched over on the Kickstarter crowdfunding website this week</i> ” (Geeky Gadgets)	Backers expressed realistic expectations. “ <i>Congrats Droneproz!!!!!!!!!!!!!!!</i> ” (Backer comment)

* Each venture received a “✓” if it received attention from 10+ expansive infomediaries and a “✓✓” if backers reflected inflated expectations.

** Quote provided from each venture’s first expansive infomediary article; ***Quote provided from representative backer comment.

Table 6: Technological Complexity and Organizational Scaling (Case Examples)

Drone & Rating*	Technological Complexity	Organizational Scaling
<i>Unsuccessful delivery (on-time and/or on-scope)</i>		
Moa/U ✓✓	Experienced challenges integrating features promised during campaign. <i>"Ziphilus production has faced many problems...At this point there are significant uncertainties about the project planning and we rather not fail the deadlines once more." (Response to backer)</i>	Experienced challenges having resources to develop product; expended significant time attempting to raise additional funds. <i>"We have been fighting to get the final investment to be able deliver the product. We are sure we will get it sooner or later. At this moment we are closing an operation to list the company." (Response to backer)</i>
Talpanas/U ✓✓	Experienced challenges integrating drone frame features promised during campaign. <i>"Previously we had designed the arm to be molded as a single piece... Weak spots were created where the plastic met from two flows. We considered a number of different options to fix this problem and finally decided on a design to make the arms two pieces" (Update 14)</i>	Experienced challenges hiring engineers, redesigning the manufacturing system, and moving the assembly line to the United States. <i>"the unprecedented success of our Kickstarter campaign meant that we manufactured about 20 times more orders than we originally anticipated...we engaged contract engineers...The cost of their services cut significantly into our budget" (Letter to backers)</i>
Kiwi/U ✓✓	Experienced challenges integrating features promised during campaign. <i>"It took us a year longer to get here, we had to do a lot more engineering, to add lots of very expensive components (lidar as an example is the most expensive single component in [Kiwi/U])... we had to cover costs of almost an extra year" (Update 34)</i>	Experienced challenges developing complex product at scale; raised two equity rounds to enable rapid scaling. <i>"Just recently we raised 2M USD of equity funding to support [Kiwi/U's] strive to become the go-to drone for capturing content in action sports. It was crucial for us as a team...The money raised will help to build a better product and company." (Update 25)</i>
Dodo/U ✓✓	Experienced challenges integrating features promised during campaign. <i>"During the Kickstarter campaign certain upgrades were suggested, agreed and then implemented to the design. These upgrades represented technical challenges...Ultimately these upgrades coupled with delays caused by the creation of a bespoke and automatic testing rig had significant financial and timeline impacts" (Update 51)</i>	Experienced significant challenges assembling the product at scale. <i>"Thomas has spent some time redesigning the plastics to allow for a more simple assembly...We have timed the new process and we hope for one of our team members to assemble 12 - 15 [Dodo/Us] per hour. We will have 2 members of the team on this for 1 x 8 hour shift 5 days per week. Averaging out at 1,000 [Dodo/Us] assembled per week." (Update 48)</i>
Adzebill/U ✓✓	Experienced challenges integrating camera technology promised during campaign. <i>"The body is largely set with some caveats, largely dictated by the final balancing of the camera system...Not sure we are happy with the stabilization and will try flying tomorrow with a second pitch brushless reactive motor." (Update 19)</i>	Ran out of financial capital in efforts to scale the venture. <i>"Ashima Devices has no cash or other assets and is no longer in operation. With the company unable to perform, my wife and I have personally pledged stock we own in another private company in an effort to repay all of the Ci-mi donations." (Response to backer)</i>
Titaniis/U ✓✓	Experienced challenges integrating camera technology promised during campaign. <i>"all is not roses in the development process. We still have not selected our video processor which is critical to delivering the great imagery we expect and that you need. None of our current options are a slam dunk in all categories of performance, cost, and time to market." (Update 17)</i>	Experienced challenges developing product at scale; expended resources to hire personnel to deliver on promised features. <i>"We want to welcome aboard our three new members of the LVL 1 team, Rick, Jorge and Isaac! This adds a pair of mechanical engineers (MEs) and a user interface/user experience (UI/UX) developer to our talented group of engineers." (Update 17)</i>
Rail/U ✓	Experienced challenges integrating camera module promised during campaign. <i>"We have moved to 'K' shape and have tuned flight characteristics. The body is largely set with some caveats, largely dictated by the final balancing of the camera system...Not sure we are happy with the stabilization and will try flying tomorrow with a second pitch brushless reactive motor." (Update 19)</i>	No indication of post-campaign challenges from organizational scaling. <i>"We have stayed very, very (very) lean, and maintained laser focus on the Primary Objective: delivering on our Kickstarter commitment. There are a lot of distractions, including trade shows, distribution partnerships, promises of "big orders" just to name a few...It requires discipline." (Response to backer)</i>
Takahe/U ✓✓	Experienced challenges integrating 3D gimbal promised during campaign; upset backers by dropping development of 2D gimbal. <i>"we are currently optimizing the position and location of the gimbal to ensure propeller and feet-free footage, while still being able to shoot from a very wide variety of angles. This kind of decision is having an incidence on the shape of the body, which is still tbd... You should also know we made the call to only use a 3D gimbal" (Update 27)</i>	Experienced challenges developing product at scale; expended resources to hire personnel to deliver on promised features. <i>"we underwent a massive recruitment process from september onwards staff up with the level of expertise we needed. Six people have now joined our technical team to help us with system performance, electronics, mechanical design and more." (Update 27)</i>
Penguin/U ✓✓	Experienced challenges manufacturing large number of component parts. <i>"the plastic molder made a change to the tooling to increase yield (without our consent) which resulted in parts that do not meet specifications. They are working to reverse the change but this will have a detrimental effect on the delivery schedule" (Update 21)</i>	Experienced challenges developing product at scale; expended resources to hire personnel to deliver on promised features. <i>"As a startup we have had many challenges and take your concerns into consideration as learning opportunities to grow as a company. We have taken on new staff and continue to improve lead time on a daily basis." (Response to backer)</i>
Crake/U ✓✓	Experienced challenges integrating several components promised during campaign. <i>"The Pixhawk did not allow enough space for all the components to fit inside now that we are using a larger battery. We also encountered issues with interference and maintaining a GPS lock. The bad news is that all these improvements caused another delay." (Update 20)</i>	Experienced challenges assembling and testing product at scale; expended resources to hire personnel to assist with operations. <i>"We're going to fix this issue. We're hiring a couple of people to help with operations. Right now we're a bit overwhelmed with all the emails. We're answering as fast as we can." (Response to backer)</i>

When more is less

Emu/U	No indication of post-campaign challenges from technological complexity. “We are now working hard to complete manufacturing and integration on time so that we will be able to ship out our [Emu/U] to you as scheduled.” (Update 3)	No indication of post-campaign challenges from organizational scaling. “We hope you are all enjoying these autumn months! We are very proud and excited to announce that 99% of the [Emu/U]s and pledges have now been shipped out!” (Update 10)
Cassowary/U ✓	Experienced challenges integrating features promised during campaign; dropped promised GPS functionality post-campaign. “The reason why things got delayed is mostly due to the fact that we keep on iterating the prototype until we can truly say, these planes keep up to the goals we set.” (Response to backer)	No indication of post-campaign challenges from organizational scaling. “Setting up a production for a new product is always challenging. In the beginning you produce only small quantities and slowly ramp it up to full capacity as the process get smoother and workers faster.” (Response to backer)
Ostrich/U ✓✓	Experienced challenges with injection molding process post-campaign. “we found numerous issues with the initial iterations of our injection molded parts...After the fourth (T4) iteration still came back with unacceptable flaws, we decided to move our injection molding tool to a different factory.” (Update 25)	Experienced challenges assembling the product at scale. “We appreciate so many people being patient with us as we’ve gone through the paces of building a robust assembly process, and we hope people will be very happy with the result.” (Update 26)
Kakapo/U ✓	Experienced challenges integrating changes associated with product’s mechanical design promised during campaign. “We rebuilt Android bottom up and had to remove this feature and redesign it again...this is taking us longer than anticipated but we are on it. Please expect a delay in delivery.” (Response to backer)	No indication of post-campaign challenges from organizational scaling. “All goods have arrived safely to our warehouses. Monday next week, we’re starting to ship to ALL of our backers from our International warehouses.” (Update 17)
Canadaga/U ✓✓	Experienced challenges integrating camera module promised during campaign. “Another challenge on the electronics side is the camera module. We have now sourced a new module together with a lens, which is fully assembled by the supplier, providing us with a much better focus and quality. We still have to test it out and integrate it with our board to be able to do some in-flight tests.” (Update 11)	Stopped product development due to costs of organizational scaling. “We are not in a position to deliver the product as initially promised and we have decided to cancel the project...we haven’t been able to secure additional funding that was required to sustain and grow our company. Although the Kickstarter was covering our initial production costs (tooling & first batch), we also needed additional capital to cover the team salaries, the growth of the team (sales, support) and future R&D.” (Update 19)
Successful delivery (on-time and on-scope)		
Cardinal/S ✓	Experienced challenges integrating cape promised during campaign. “The best part about being an open source project is that we're getting such great feedback and input... This has also caused the process to take a few weeks longer than we originally planned for.” (Update 10)	No indication of post-campaign challenges from organizational scaling. “It’s been an incredible few months of rapid iteration and development, largely based on the incredible feedback and contributions from everyone who got their Kickstarter kits.” (Update 16)
Heron/S	No indication of post-campaign challenges from technological complexity. “We have purchased 200 pre-production samples so we can facilitate our requests from the press and they have just arrived on our doorstep. We will also be using these for in-house testing and promotional purposes.” (Update 7)	No indication of post-campaign challenges from organizational scaling. “Our Team has spent well over 18 months designing, developing and executing the [Heron/S]... We have taken the plunge, already placing the order and put a deposit down for critical components and we have completed the initial stages of the patent application.” (Homepage)
Eagle/S ✓	Experienced challenges integrating autopilot promised during campaign. “I have no excuse other than it took a lot longer to make a supreme flying robot than we initially thought. To our defense the [Eagle/S]s that are finally shipping are better than any other on the market as the time was spent on building in all the latest features like autonomous flight etc.” (Response to backer)	Controlled organizational scaling by joining accelerator post-campaign. “To get professional help with this endeavor we joined the Founder Institute...the largest entrepreneur training and startup launch program in the world... Our mentors in the program are seasoned entrepreneurs that are providing incredibly valuable feedback and helping us think through every detail of the business.” (Update 34)
Hawk/S	No indication of post-campaign challenges from technological complexity. “Owing to recent miracles and warm help from supporters, we have shipped the rewards to all the backers who have answered to the survey. We are now refining the tutorial documents and movies.” (Update 6)	No indication of post-campaign challenges from organizational scaling. “We are seeking the way to produce next lot of [Hawk/S], so please wait for a while to get your own [Hawk/S].” (Homepage)
Raven/S	No indication of post-campaign challenges from technological complexity. “The development of [Raven/S] is now complete. It has come full circle from its beginnings as a Kickstarter project, to a fully functioning product now available for sale.” (Update 23)	No indication of post-campaign challenges from organizational scaling. “Thanks to all our backers for their patience and support during the long process of design and development. We are now currently designing accessories for [Raven/S].” (Update 23)
Falcon/S	No indication of post-campaign challenges from technological complexity; minor manufacturer issues with batteries and carbon fiber. “We had one small setback was with the batteries as the brand we were planning on using is on backorder. However the manufacturer claims they should be available within few weeks.” (Update 9)	No indication of post-campaign challenges from organizational scaling. “We are really excited to invite you to check out our new online platform for drone management and deployment... We have been working on this for almost a year now and it is finally ready.” (Update 17)
Osprey/S	No indication of post-campaign challenges from technological complexity. “Started receiving stock on the two batteries that will be in each combo :) every thing is looking to be on track for the delivery times we had listed.” (Update 5)	No indication of post-campaign challenges from organizational scaling. “We will use your generous pledges to place our first order with our suppliers as well as spend some of the money to purchase CNC routers to one day be able to cut our own frames here in USA and the rest to expand our R&D department” (Homepage).

*Each venture received a “✓” if it experienced post-campaign delivery challenges and a “✓” if it experienced post-campaign organizational scaling challenges.

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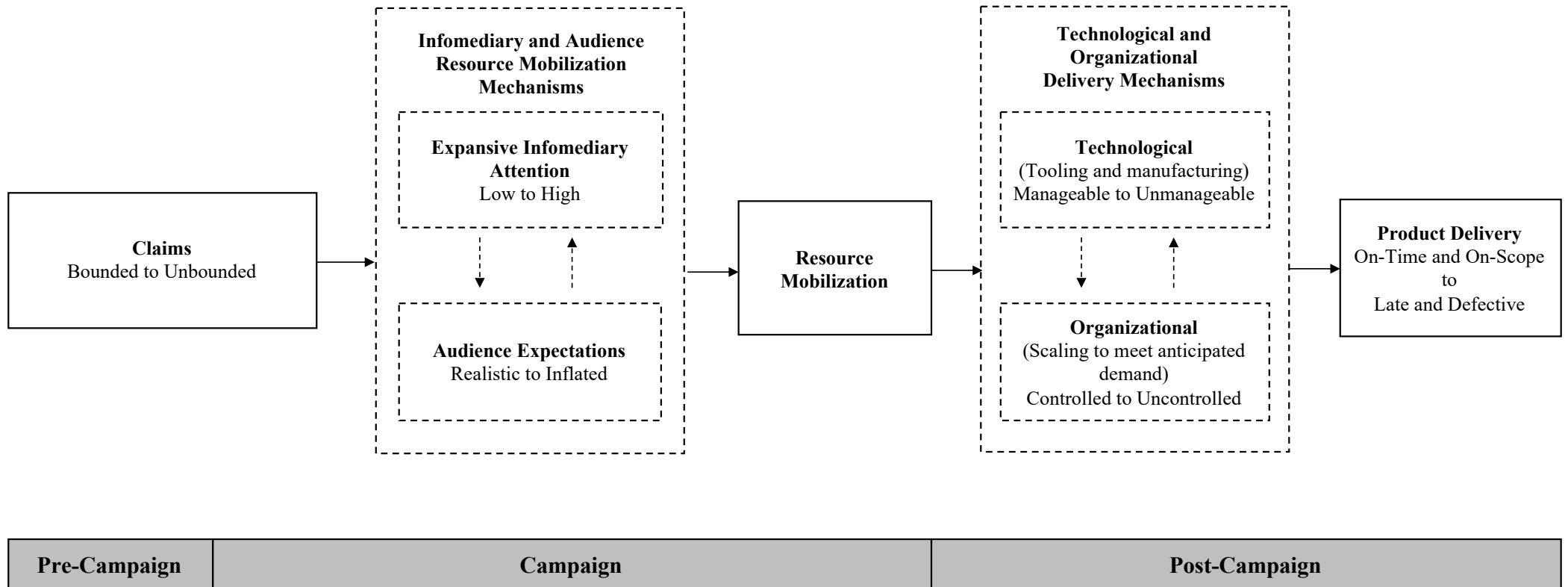
Table 7: Supplemental Analyses of Why Unbounded vs. Bounded Claims Arise

Drone	Venture-Level Early-Stage Disorganization						Founder-Level Narcissism							
	Grammatical Errors (#)	Delivery Timeline (Y/N)	Budget (Y/N)	Risks and Challenges Detail (High/Low)	Inconsistent Information (Y/N)	Video (Professional/Amateur)	Authority Rhetoric	Entitlement Rhetoric	Exhibitionism Rhetoric	Exploitativeness Rhetoric	Self-Sufficiency Rhetoric*	Superiority Rhetoric	Vanity Rhetoric	Narcissistic Rhetoric (Total)**
<i>Unsuccessful delivery (on-time and/or on-scope)</i>														
Moa/U	13	Yes	No	High	No	Professional	0.175	0.000	1.367	0.000	0.785	0.233	3.229	5.788
Talpanas/U	11	No	No	High	Yes	Professional	0.442	0.000	1.699	0.000	0.721	0.396	2.932	6.190
Kiwi/U	6	Yes	No	High	No	Professional	0.800	0.027	1.813	0.027	0.640	0.213	3.173	6.693
Dodo/U	8	No	No	High	No	Professional	0.289	0.000	2.362	0.017	1.325	0.051	2.787	6.831
Adzebill/U	3	Yes	No	High	No	Professional	0.833	0.028	1.443	0.000	0.416	0.527	2.914	6.162
Titanis/U	1	Yes	No	High	No	Professional	0.501	0.000	1.628	0.000	0.501	0.292	3.758	6.681
Rail/U	1	Yes	No	High	No	Professional	0.311	0.000	0.817	0.000	0.856	0.156	3.113	5.253
Takahe/U	3	Yes	Yes	High	No	Professional	0.399	0.000	1.481	0.000	0.513	0.171	3.874	6.437
Penguin/U	2	Yes	No	High	No	Amateur	0.664	0.000	1.139	0.000	0.403	0.047	2.705	4.958
Crake/U	2	Yes	No	Low	Yes	Amateur	0.600	0.000	1.450	0.000	0.950	0.100	3.600	6.700
Emu/U	5	No	No	Low	No	Professional	0.437	0.000	1.675	0.000	0.146	0.510	4.516	7.283
Cassowary/U	1	No	No	Low	No	Professional	1.155	0.000	1.649	0.000	0.495	0.165	2.639	6.103
Ostrich/U	4	Yes	No	Low	No	Professional	0.238	0.000	1.463	0.000	0.612	0.578	3.435	6.327
Kakapo/U	7	Yes	No	Low	No	Professional	0.508	0.000	1.652	0.064	0.953	0.635	4.193	8.005
Canadaga/U	35	Yes	No	High	No	Professional	0.795	0.000	1.418	0.000	0.726	0.173	3.112	6.224
<i>Successful delivery (on-time and on-scope)</i>														
Cardinal/S	3	No	No	Low	No	Amateur	0.258	0.000	1.395	0.000	0.207	0.517	3.618	5.995
Heron/S	9	No	No	Low	No	Amateur	0.175	0.000	1.050	0.000	0.175	0.350	4.243	5.993
Eagle/S	5	Yes	No	Low	No	Amateur	0.821	0.000	1.107	0.000	0.357	0.179	2.429	4.893
Hawk/S	16	Yes	No	High	No	Amateur	0.692	0.000	1.671	0.000	0.346	0.173	2.939	5.821
Raven/S	22	No	No	High	No	Amateur	0.158	0.000	1.026	0.000	0.237	0.079	1.026	2.526
Falcon/S	12	Yes	No	High	Yes	Amateur	1.065	0.000	1.158	0.000	0.185	0.278	4.724	7.411
Osprey/S	186	No	No	Low	No	Amateur	0.584	0.000	1.459	0.027	0.557	0.478	2.521	5.625

* t-value = 3.2706 (p = 0.0038), based on unpaired t-test of unequal variance

** t-value = 1.9275 (p = 0.0682), based on unpaired t-test of unequal variance; t-value = 1.1197 (p = 0.2761) when self-sufficiency is dropped from the aggregate narcissism rhetoric measure, suggesting self-sufficiency is driving a majority of the difference in means.

Figure 1: Linking Resource Mobilization to Long-Term Venture Viability



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Appendix A: Detailed Post-Campaign Outcomes

Drone	On-Time Delivery				On-Scope Delivery		
	Campaign Conclusion	Promised Delivery	Actual Delivery	Delay	Positive Reviews	Negative Reviews	Neutral Reviews
<i>Unsuccessful delivery (on-time and/or on-scope)</i>							
Moa/U	July 24, 2013	March 2014	–	–	–	–	–
Talpanas/U	March 9, 2014	June 2014	–	–	–	–	–
Kiwi/U	July 26, 2014	November 2014	February 2017	27 months	0	7	8
Dodo/U	January 8, 2015	June 2015	–	–	–	–	–
Adzebill/U	May 22, 2015	December 2015	–	–	–	–	–
Titanis/U	June 18, 2015	February 2016	–	–	–	–	–
Rail/U	June 14, 2015	December 2015	July 2017	19 months	3	1	21
Takahe/U	July 15, 2014	May 2015	December 2015	7 months	21	50	416
Penguin/U	January 14, 2015	July 2015	May 2016	10 months	0	4	15
Crake/U	April 8, 2015	June 2015	January 2016	7 months	13	55	262
Emu/U	July 23, 2015	September 2015	October 2015	1 month	0	12	5
Cassowary/U	August 29, 2015	March 2016	June 2017	15 months	14	5	95
Ostrich/U	October 31, 2015	November 2016	July 2018	20 months	6	0	30
Kakapo/U	January 9, 2016	June 2016	November 2016	5 months	16	31	202
Canadaga/U	December 3, 2015	September 2016	–	–	–	–	–
<i>Successful delivery (on-time and on-scope)</i>							
Cardinal/S	August 1, 2012	September 2012	December 2012	3 months	0	0	7
Heron/S	November 23, 2012	December 2012	December 2012	On time	7	1	5
Eagle/S	July 11, 2014	August 2014	May 2015	9 months	0	0	2
Hawk/S	June 11, 2014	August 2014	July 2014	On time	0	0	1
Raven/S	October 14, 2015	April 2016	March 2017	11 months	0	0	0
Falcon/S	November 25, 2015	November 2015	March 2016	4 months	0	0	2
Osprey/S	December 20, 2015	December 2015	February 2016	3 months	1	0	13

Appendix B: Detailed Initial Complexity Ratings

Drone	Complexity Rating	Rationale	Expert Rater 1	Expert Rater 2	Expert Rater 3
<i>Unsuccessful delivery (on-time and/or on-scope)</i>					
Moa/U	Moderate	<ul style="list-style-type: none"> Hydrodynamic body with anti-flipping design New communication software for actuators 	3	3	2
Talpanas/U	Moderate	<ul style="list-style-type: none"> Autonomous capabilities including follow-me mode and return home mode Fully foldable frame and propellers 	3	2	4
Kiwi/U	High	<ul style="list-style-type: none"> Follow-me mode with custom tracking system for dynamic filming Obstacle avoidance software to designate "no fly" areas 	4	3	5
Dodo/U	High	<ul style="list-style-type: none"> Autonomous operation and failsafe software Compact light-weight design with several sensors 	5	3	4
Adzebill/U	High	<ul style="list-style-type: none"> Trackable camera and gimbal that go inside the frame Follow-me technology 	4	2	5
Titanis/U	High	<ul style="list-style-type: none"> Novel Level-Up technology to prevent tilting Autopilot, follow-me, and geo-fence technologies 	4	3	5
Rail/U	High	<ul style="list-style-type: none"> Fully autonomous flight system Long-range mission capability of up to four miles 	5	3	5
Takahe/U	High	<ul style="list-style-type: none"> Autonomous capabilities including follow-me mode and return home mode Light-weight, portable frame 	4	4	4
Penguin/U	Moderate	<ul style="list-style-type: none"> Ability to hover and fly horizontally Novel body design combining VTOL and fast forward movement 	3	1	3
Crake/U	Moderate	<ul style="list-style-type: none"> Return to home functionality Waterproof frame 	4	3	3
Emu/U	Low	<ul style="list-style-type: none"> Basic flight system with fly-by-pilot option Controlled using radio control remote 	1	1	1
Cassowary/U	High	<ul style="list-style-type: none"> Hover mode Smartphone gaming application 	4	3	4
Ostrich/U	Moderate	<ul style="list-style-type: none"> Versatile thruster to move under water / hydrodynamic body Linked to buoy that wirelessly communicates with control station 	3	4	3
Kakapo/U	Moderate	<ul style="list-style-type: none"> Custom FPV software for Wi-Fi streaming with telemetry details Autopilot system / autopilot assist mode 	3	2	3
Canadaga/U	High	<ul style="list-style-type: none"> Protective frame with in-body propellers and control system OpenCV coupled with GPU processor for computer vision abilities 	3	4	5
<i>Successful delivery (on-time and on-scope)</i>					
Cardinal/S	Moderate	<ul style="list-style-type: none"> Versatile thruster to move under water Linked to buoy that wirelessly communicates with control station 	2	3	3
Heron/S	Moderate	<ul style="list-style-type: none"> Novel flying algorithms and control system Compact body design 	3	1	3
Eagle/S	Moderate	<ul style="list-style-type: none"> Open-source autopilot capabilities Modular design 	2	2	3
Hawk/S	High	<ul style="list-style-type: none"> Fully autonomous / intelligent self-control system (ISCS) Interacts and responds to voice and movement 	5	5	5
Raven/S	High	<ul style="list-style-type: none"> Ability to grapple and retrieve objects 300 feet underwater Linked to buoy that wirelessly communicates with control station 	1	4	4
Falcon/S	Moderate	<ul style="list-style-type: none"> Modular components Long flight time capability of 45 minutes 	2	2	3
Osprey/S	Low	<ul style="list-style-type: none"> Redundancies and vibration rejectance algorithms to reach speed of 50 mph Standard, easy-to-implement components 	2	1	1

Appendix C: Unbounded vs. Bounded Claims Data Structure

