MEASURE TWICE, CUT ONCE: SCALING NOVEL BUSINESS MODELS IN THE NASCENT ONLINE FASHION INDUSTRY

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Abstract: This paper explores how promising ventures build novel business models that enable profitable growth (i.e., scale). By studying 3 venture-pairs with different business model templates in the nascent online fashion industry, we contribute a theoretical framework describes a phased process: successful entrepreneurs first 1) slowly design a simple, profitable core transaction by purposefully delaying growth, and then 2) sequentially build a core capability followed by an activity system that creates advantage and accelerates scaling. In contrast, less successful entrepreneurs focus on growth, learn quickly but narrowly, and end up with an often complex and unprofitable core transaction that cannot scale. While these ventures may grow quickly at first, they soon fade. Overall, our framework is reminiscent of Aesop's classic fable about the race between the tortoise v. hare. We also add insights about the role of data science, optimal distinctiveness and extreme scalability, and about the process of how firms grow and more significantly, scale. Overall, we indicate how promising ventures become successful adolescent firms.

Keywords: business models, activity systems, capability-building, multi-case theory building, strategy.

INTRODUCTION

In 2019, WeWork filed for an IPO at a stunning $47 billion valuation. Offering plush co-working spaces that boasted mid-century style furniture and free cucumber water, WeWork grew rapidly in nine years. Its attractive offering earned 80% occupancy and $1.8 billion in 2018 revenues. Yet, the transition from promising venture to adolescent firm was difficult. WeWork's IPO filing revealed that in pursuing high growth, costs vastly outstripped revenue. Overnight, WeWork's valuation plummeted, the CEO was replaced, and the IPO was indefinitely postponed.

As this vignette suggests, a scalable (i.e., high-growth yet profitable) business model is ultimately essential for many promising ventures to become successful adolescent firms. Consistent with others, we define a business model as the system of interconnected activities performed by a focal firm (and perhaps by users and partners) to create value, with part of that value captured by the firm (Zott et al., 2011; McDonald and Eisenhardt, 2020). This definition broadly includes business models at both an abstract level as cognitive schemas (e.g., "razor and blade") and at a granular level as linked elements: 1) value proposition – i.e., value that a product provides over substitutes, 2) profit logic – i.e., how firm captures value, and 3) activity system – i.e., organizational processes and related resources that create value (Amit and Zott, 2015; Johnson et al., 2008). By scalable, we mean a business model that achieves profitable growth, and often requires linking external growth (e.g., revenue, customers) and profitability with internal growth (e.g., headcount) (see also Chandler, 1990; DeSantola and Gulati, 2017).

WeWork, for example, offered small businesses a flexible and comfortable shared work spaces (better value than stodgy alternatives). It created this service through a combination of activities like interior design, office management, and prime location (activity system creating value) and charged renters (capturing some value, but clearly not enough to profit).

With dropping computing and communication costs and rising Internet ubiquity, business models are becoming increasingly diverse, theoretically relevant, and managerially significant. They are central to long-term survival and growth (Massa et al., 2017). While some ventures may persist with rapid but unprofitable growth (e.g., LinkedIn, WeWork), those without a profitable business model will ultimately fail as standalone firms (McDonald and Eisenhardt, 2020). Beyond their influence on performance (Casadesus-Masanell and Zhu, 2010), new business models often open nascent markets (Gilbert, 2005) and are major sources of innovation (Casadesus-Masanell and Zhu, 2013; Snihur and Zott, 2020). Examples like Airbnb, UpWork, and Uber, created new markets and changed how people live, travel, and work (Demil et al., 2015).

Prior research makes headway in understanding how entrepreneurs design high-performing business models. One stream identifies characteristics of high-performing business models (Zott and Amit, 2008). Broadly, this work suggests that novel business models reach higher stock valuations (Zott and Amit, 2007). Other work points to specific firms like Xerox (Chesbrough and Rosenbloom, 2002) and Walmart (Brea-Solís et al., 2015) with novel business models that performed new activities in unique ways. Other work studies optimal distinctiveness – i.e., balancing being similar yet different from others – as a key characteristic (Hargadon and Douglas, 2001; Wry, Lounsbury, and Jennings, 2014; Navis and Glynn, 2010). For example, in a study of the video game market, Zhao and colleagues (2018) find that conforming is useful early on while being novel later is effective. Still other work suggests that fit among elements of a business model is useful (Tidhar and Eisenhardt, 2020). Collectively, this stream emphasizes novel, optimally distinct business models that fit as characteristics of high-performing business models.

A second stream emphasizes the process of how entrepreneurs design business models. This and other work emphasizes processes in contexts with ambiguity, uncertainty, and rapid change (Rindova and Kotha, 2001; Bingham and Davis, 2012; Raffaelli, 2018). These processes

include experimentation (e.g., Tripsas and Murray, 2004; Ozcan and Eisenhardt, 2009; Andries et al., 2013), bricolage (Baker and Nelson, 2005), and trial-and-error (Rindova and Kotha, 2001; Zuzul and Tripsas, 2020; Katila et al., 2008). Recent research suggests that effective entrepreneurs use a broad repertoire of learning processes, and astutely pace their action in order to design effective business models. For example, McDonald and Eisenhardt (2020) study five early-stage ventures in a nascent fintech market. The effective teams engaged in trial-and-error and experimentation, but also vicarious learning by imitating others and passive learning by pausing to observe. Further, Ott and Eisenhardt (2020) point to the role of problem solving to organize learning. Collectively, this research suggests that learning, bricolage and problem solving processes are central to designing high-performing business models.

Overall, the first stream indicates that high-performing business models are novel and optimally distinct with elements that fit together (Zott and Amit, 2007; Navis and Glynn, 2010; Tidhar and Eisenhardt, 2020). Yet, this work leaves open how entrepreneurs actually build such business models. The second stream highlights how organizational processes like learning help entrepreneurs to design the template of a promising business model (e.g., Andries et al., 2013; McDonald and Eisenhardt, 2020). Yet, since this work looks at early survival and growth, it stops short of what entrepreneurs do as their ventures transition into adolescent firms, and so attempt to both profit and grow. Broadly, entrepreneurial research rarely considers profitability, and examines growth primarily by studying its antecedents and outcomes (Burton and Beckman, 2007; Eisenhardt and Schoonhoven, 1990), not the process itself. Thus, this work leaves open *how* firms grow and more significantly, scale – i.e., achieve profitable growth. To address this gap, we ask: *How do entrepreneurs build scalable business models in nascent markets?*

Given limited theory and empirical evidence, we adopt a multiple-case theory-building approach (Eisenhardt, 1989). The setting is the nascent online fashion industry that emerged

around 2010 with several novel business models. Using in-depth interview data and archival sources, we closely track three venture-pairs with distinct business models from founding until they reached profitability or exited. A unique feature is our spotlight on adolescent ventures – a critical stage where promising ventures like WeWork often stumble. A second unique feature is highlighting the compelling role of data science for high-performing business models. We also take advantage of a turnaround to sharpen causality. Finally, while all of the ventures were initially promising, only one in each pair achieved high growth and profitability (i.e., scaled).

We contribute at the intersection of strategy, organization theory, and entrepreneurship. Our primary contribution is an emergent theoretical framework for how entrepreneurs build high-growth, profitable (i.e., scalable) business models. Our theoretical framework indicates that successful entrepreneurs first 1) slowly design a simple, profitable core transaction by purposefully delaying growth, and then 2) sequentially build a core capability followed by an activity system that creates advantage and accelerates scaling. In contrast, less successful entrepreneurs focus on growth (not profit), learn quickly but narrowly, and end up with an often complex and unprofitable core transaction that cannot scale. While these ventures grow quickly at first, they often fade. Overall, our framework is reminiscent of Aesop's classic fable about the race between the tortoise v. hare.

We make several contributions. First, we contribute to the learning literature by indicating how conceptualization and problem solving shape when and what is learned. Thus, while prior research emphasizes learning per se (e.g., Andries et al., 2013; Bingham and Davis, 2012; Ott and Eisenhardt, 2020), we indicate what is actually learned, when, and how that learning is organized. Second, we add to the literature on optimal distinctiveness (e.g., Navis and Glynn, 2010; Zhao et al., 2018). Specifically, we sketch how data science amplifies optimal distinctiveness, enables extreme scaling, and underlies capabilities that become "cheaper" and "smarter" with growth.

Broadly, we contribute to organization theory by introducing activity systems as a core feature of internal organization. Prior work focuses on attributes like team composition (Burton and Beckman, 2007; Snihur and Zott, 2020), organizational design (Gilbert, 2005) and culture (DeSantola and Gulati, 2017). In contrast, activity systems describe the linked processes, skills, and assets by which work gets done. We also contribute insights into adolescent firms by noting that they grow on the scaffolding of a simple, profitable core transaction. In contrast, without that scaffolding, adolescent firms may grow but not for long, fail to become profitable, and fade.

METHODS

Given the limited theory and empirical evidence, we use multi-case theory-building (Eisenhardt, 1989). We use multiple cases because they typically yield emergent theory that is more robust and generalizable than single cases (Eisenhardt and Graebner, 2007). This approach also fits with process questions such as ours (Langley, 1999).

We began with an interest in how entrepreneurs build business models in nascent markets. We considered several nascent markets like music streaming and online real estate before we chose online fashion. Online fashion fits our research question well. First, several novel business models emerged, making it a particularly rich setting for studying business models. Second, while online fashion relies on sophisticated computing technologies, it also involves physical products that introduce operational complexity like inventory that make scalable business models more difficult to achieve. Third, since online fashion emerged recently (around 2010), we can study its pioneering ventures more easily with first-hand data while avoiding left-censoring issues.

We began by collecting data on several prominent ventures with novel business models. By novel business models, we mean those that add new ways to create value beyond just a new sales channel (Zott and Amit, 2007). As we learned more, we saw other ventures with similar business model templates and a third template. Thus, our sample became six online fashion ventures (i.e.,

three pairs) (Table 1). The templates were: (1) retail with personal styling (i.e., buy clothing, select and send items to online customers who then choose to buy or not), (2) rental (i.e., acquire clothes and rent to online customers), (3) second-hand marketplace (i.e., match second-hand clothing of online sellers with online buyers). While each template broadly addresses the same nascent market (online fashion), they face varied challenges: clothing recommendations (high for personal styling, low for rental), logistics (high for rental, low for marketplaces), community engagement (high for marketplaces, low for personal styling), and time sensitivity (high for rental, low for personal styling). This theoretical (not random) sampling of ventures and business models allows for replication within and across business models, and so improves reliability and generalizability.

Although we did not sample on founder attributes, the pairs have similar founding teams – i.e., size (about 2), age (about 30), education (mostly elite MBA), and entrepreneurship experience (little or none). The exception is MarketMagic that has an older (about 37) and larger founding team (4) with a prior venture success. Consistent with our focal interest in the scaling process, these ventures were all promising and secured seed and Series A funding. As our study progressed, we realized that while all these ventures achieved some success, one member of each pair out-performed the other, grew more, and became profitable.

Data collection

We draw on multiple data sources: 1) archival materials such as news media, company documents, and teaching cases, 2) interviews with internal informants such as founders and executives, 3) interviews with external informants such as board members, customers, and analysts, 4) shopping experiences by research team members, and 5) informal emails and phone calls to clarify details. These multiple sources enable triangulation among data sources and improve accuracy (DeBenigno and Kellogg, 2014; Eisenhardt, 1989; Glaser & Strauss, 1967) (Table 2).

We began collecting data in 2017. For archival data, we used Google, Crunchbase, LexisNexis, and Factiva to search for all media articles that mentioned each venture since inception. The first author read all media accounts for each venture. While many articles mention the ventures, we concentrated on focal articles that are substantial (i.e., at least 750 words) and foreground one or perhaps a few firms in detail. These focal articles appeared in major newspapers (e.g., New York Times, Wall Street Journal), business outlets (e.g., Forbes), and technology-oriented press (e.g., TechCrunch). Focal articles typically cover recent events like product launches, and discuss the venture's actions, strategy, rivals, business model, and history. We continued this data collection during the study. We also added data from company websites (including archival web-scrapes of early websites using Archive.org), company blogs and venture-related social media during the study. While these latter sources were often not relevant to our research, a few instances were useful to triangulate event dates and observe attempts to boost sales like marketing promotions. We also draw on five teaching cases. These were valuable sources that usually covered industry history, founding events, rivals and substitutes, and changing strategy, structure, and business model of the focal venture and sometimes of other ventures.

We collected 103 interviews with internal and external informants. We conducted 40 semi-structured interviews in two waves with internal informants – i.e., founders, executive team members, and managers across functions (e.g., product, community, merchandising, data science). These interviews provided rich insights such as about key events, actions, and their rationale. We also conducted six interviews with external informants including board members, customers, and analysts. We supplemented these interviews with 57 online interviews with internal informants. These began within the first two years of founding for all ventures and continued until the study end. The interviews are a rich source of real-time early information. These triangulated data from

multiple relevant perspectives and times provide a richer and more reliable understanding of building business models than any single source could provide (Miller et al., 1997).

We conducted our interviews with a semi-structured guide. First, we asked informants to describe their role briefly. Second, we asked them to provide a chronological account of the focal venture's history (since founding or the prior interview). For external informants, we adjusted the guide to fit their knowledge like industry (analysts) and products (customers). The interviews were 30-90 minutes in length, and were recorded and transcribed. We took several steps to improve data validity. First, we gave anonymity to informants to encourage candor. Second, we also used interview techniques such as nondirective questioning to gather open-ended narratives and minimize response bias (Eisenhardt and Graebner, 2007). Third, we triangulated events and actions described in interviews where possible with our archival data such as media articles, teaching cases, company communications, and with other interviews. Fourth, within each venture, we gathered interviews at several levels (e.g., CEO, executives, board) and across functional areas (e.g., product, merchandising, logistics, data science). Overall, our rich and varied interview and archival data sources offer a more complete view than any one source or informant. Collectively, they provide a holistic view of venture history and detailed data from multiple perspectives.

Data analysis

Consistent with multi-case theory building (Eisenhardt and Graebner, 2007), we began analysis by writing detailed case histories for each firm. Per above, we triangulated data from multiple sources. The archival data (including focal articles) were particularly useful for building an initial timeline, as well as triangulating key events and activities described by informants. The interview data were particularly useful for fleshing out timelines and rich process details that were unavailable in the archival data (e.g., decision making, alternatives considered but not pursued). The five teaching cases were primarily useful for industry history, timelines, founding narratives,

and details about evolving organizational structures, hiring, strategies, and business models. One author wrote initial case drafts, while the other reviewed the data independently. The few inconsistencies were resolved by returning to the data or following up with informants if necessary. The resulting cases were each 60-100 single-spaced pages in length.

We next conducted within-case analysis. We analyzed each case independently with respect to our research question, and developed initial constructs and themes. During this analysis, we realized that Series A funding provided a natural breakpoint to structure our analysis into two eras. It signals that the venture has a business model template, and professional investors believe that the venture is positioned to grow – i.e., ready to scale (Hallen and Eisenhardt, 2012). As one venture capitalist investor commented, Series A is to "*Prove you're a business, not an experiment… prove you can grow fast*". Another said, *"Series A is all about scaling."* We ended our analysis when the venture reached profitability or exited.

After analyzing each case independently, we turned to cross-case analysis using constant comparison between theory and data (Glaser and Strauss, 1967) and replication logic (Yin, 1984). We compared cases within pairs, across pairs, and across varied combinations of ventures. We facilitated this analysis with diagrams, tables, and charts (Miles & Huberman, 1994). As we refined our analysis, we further iterated among the emerging theory, data, and prior research. Once we had strong correspondence among the data, constructs, and theoretical relationships, we finalized our emergent theoretical framework.

Measures

Our research question asks: *How do entrepreneurs build scalable business models in nascent markets?* As noted earlier, we define scaling as achieving profitable growth. Similar to DeSantola and Gulati (2017), scaling thus synchronizes external growth and profitability with internal growth like headcount. We assessed whether a venture achieved scaling using several objective and

subjective measures (Table 3). First, we assessed external growth directly with annual revenue measures including revenue at the end of the study and post-study, and growth rate in Era 2. We also indirectly assessed external growth with indicators available only to high-growth firms with profitable or expected-to-be profitable business models – i.e., whether the venture a) received Series D funding, b) reached a $1 billion "unicorn" valuation and c) had an IPO.

Second, we measured profitability. We combined informant disclosures, internal company financials, and archival sources to assess when (if at all) the venture reached full-year profitability. Third, we measured internal growth using business model-specific indicators assessed at the end of the study. For the retail business model, we used number of employees. For the rental business model, we tracked inventory (i.e., number of items). For the marketplace business model, we used community size (i.e., number of users). Finally, we also assessed scaling with subjective assessments of performance from internal and external informants, and the media.

Overall, there is substantial variation across the ventures. StyleStar built a successful business model that reached profitability with $300M in revenue, and supported an IPO and international expansion. It was hailed by the media as "*reinventing retail*". RentRoyale also built a successful business model that reached profitability with $100M in revenue and became a "unicorn" post study. An analyst touted, "*RentRoyale is at the leading edge of driving change in the fashion industry*". MarketMagic is a fortuitous turnaround that bolsters causal inference. It built a successful business model that reached profitability with $80M in revenue and became a "unicorn". In contrast, StyleStuck, RentWreck, and MarketMiss grew but not as much, never reached profitability, and exited.

EMERGENT THEORETICAL FRAMEWORK

As we noted at the outset, entrepreneurs ultimately need a business model that scales (i.e., profitable growth). While we saw several approaches, successful entrepreneurs used a phased

process that 1) began slowly by designing a simple, likely profitable core transaction and then 2) accelerated by sequentially building a core capability and then a complete activity system. In contrast, less effective entrepreneurs started quickly, aimed for growth, and then faded without reaching profitability. We turn now to explain this phased, exponential-growth process.

Era 1. Measure Twice… Designing a simple and profitable core transaction

Effective entrepreneurs (StyleStar, RentRoyale, MarketMagic) first followed a process of designing their core transaction by: 1) focusing on unit economics, 2) learning and conceptualizing broadly about the core transaction, and 3) actively delaying growth (Table 4). By unit economics, we mean profitability – i.e., direct revenues and costs of the focal transaction, on a per unit basis. As one entrepreneur noted, "*It's really all about unit economics*". The resulting core transaction was simpler (i.e., fewer elements) and more profitable (i.e., better unit economics) than their counterparts achieved, but was also slower to design and earned less revenue.

An illustration is StyleStar. The two founders were first-time entrepreneurs who saw an opportunity to upend retailing. They started with a rough retail business model template: online retail with personal styling. In existing offline services, personal stylists meet with retail customers and – for a fee – offer in-store advice about what clothing to buy. Yet, these styling services are expensive and time-consuming. So, the founders spotted an opportunity to sell clothes by providing online yet personalized styling. The vision was to use data science to predict what customers would buy and do so in a scalable way. A co-founder said,

> *So the idea was, how can you deliver a really – actually - a personal experience in apparel, and use data and technology to make that scalable and to make that better*. (StyleStar co-founder)

The initial idea was that customers would complete a survey about their size, preferred look, and favored brands. StyleStar would predict relevant items, and mail ten of them to the

customers who would buy what they liked, and return the rest. As StyleStar began in Q4 2010, the founders focused their attention on the unit economics of this core transaction. A co-founder said,

> *The first year was just above proving this works… Are women OK with things showing up at their door that they don't pick out? Do the economics work? Will we make money? We were very focused on collecting the right data and feedback.* (StyleStar co-founder)

The founders began by experimenting. They designed a short style survey, and then invited twenty friends to answer the survey and try the service. Using the responses, they bought clothes at local boutiques and shipped a box of hand-picked items to each customer. A co-founder explained,

> *So the way it worked was, basically, I would have friends of friends fill out a survey, and you would let me know what size and style, what things you liked, what brands you like, all that kind of stuff… I was buying inventory at retail from boutiques… I would then put together a box of things that were relevant based on what they shared in their profile. And then they would try things on. And then if they wanted to buy things, they would write me a personal check, and I would sell it to them.* (StyleStar co-founder)

StyleStar also asked customers to provide detailed feedback. The CEO said,

> *We were collecting, physically with pen and paper, your feedback about what you liked and what you didn't like and what you thought of the price and how it fit. And so the data element was always super important.* (StyleStar CEO)

From this experiment, StyleStar learned a critical lesson: This seemingly crude survey was surprisingly effective at predicting style preferences. So shopping for relevant items from an inexpensive survey worked. This also meant that the founders could avoid costly styling approaches like in-person consultations. A co-founder explained,

> *I discovered that you actually could learn a lot from somebody. I think there is just this thesis around, do I have to be with you in person to understand your style and who you are, or can I do that through a survey? And I felt pretty confident you could do it through a survey.* (StyleStar co-founder)

With maxed-out credit cards, the founders turned to cost cutting. One realization was that many boutiques gave full refunds on 14-day returns. So, StyleStar shifted to a five-day return policy to ensure full refunds for unsold clothes. The CEO said, "*I was buying inventory at retail from boutiques… And if I ultimately didn't sell something within my 14-day return window, I'd go*

and return it to the boutique." As StyleStar gathered more feedback from customers, they recognized a common complaint: Trying on ten items was too much. As the CEO noted, "*I started out with 10 items. And the reality was people weren't going to try on 10 items. It's a lot of work.*" To improve, StyleStar cut the number of items per box to five. Surprisingly, fewer items actually increased sales. Customers were more likely to try on five items (10 was too daunting), and so were more likely to buy. This change also simplified their boutique shopping because they could buy fewer items per customer (also cutting inventory costs).

In Q1 2011, StyleStar secured $500,000 in seed funding which the founders used to buy more clothes and create a basic website. Website visitors could fill out the survey and request a box of styled items. Yet, as new online customers signed up, the founders worried about theft by Internet "trolls". As the CEO described, "*I was worried that you could be a bot or somebody who's going to steal money or steal my clothes.*" To deter trolls, StyleStar implemented a $20 up-front "styling fee". The fee, however, would be credited to any purchases. The CEO explained,

> *I felt like if you were willing to PayPal me $20 before I've even sent you anything, you are probably a legitimate human being who wasn't going to steal my clothes.* (StyleStar CEO)

As hoped, the $20 fee effectively curbed theft (reducing pilferage costs). Unexpectedly, they also learned that people who paid $20 were more likely to buy – i.e., they were better customers. Thus, this simple change improved the unit economics – both costs and revenue. An executive explained,

> *We ask clients to commit to a $20 styling fee when they sign up to the service.. But that fee is applied to anything a client purchases. Initially, the purpose of the fee was to ensure the client was a real person and not spam or a scammer. We experimented with removing it, but we learned that it also acts as a filter, encouraging prospective clients that are a good fit for our offering to make it through at a higher rate.* (StyleStar executive)

As the service snowballed to 300 customers in late 2011, the team conceptualized broadly about improving other elements of the unit economics. For example, the team observed that shipping costs were substantial, and so tried a 25% discount for buying all five items in a box. The buy-all

discount encouraged customers to make the fifth purchase and so avoided return shipping costs. It worked – both raising revenue and cutting costs per transaction. An executive explained,

> *Another nuance of our service is the "buy-all discount". If a customer purchases all the items in a shipment we extend a 25% discount across all five items. We recognized that if the client buys all the items then we don't have a return shipping expense and so we can pass savings on to the client.* (StyleStar executive)

Importantly, StyleStar actively delayed growth. For example, they gated their website. New visitors had to create an online account, and then join a waitlist. The founders only admitted customers when they had enough relevant inventory. As a co-founder described,

> *So you would go to StyleStar.com. And it said 'Coming soon – Do you want to be part of the beta?'… Then you fill out all your information, and you say you're interested. And we actually had a waitlist for a long time because we didn't have clothes to send to you that were relevant.* (StyleStar co-founder)

By mid-2012, StyleStar had spent almost two years simplifying the core transaction and making it more profitable. They added simplifications like reducing the items per box to five, and confirmed the effectiveness of others like the style survey. Some features lowered costs. For example, a survey was cheaper than in-person styling. Some features added revenue per transaction. For example, customers willing to pay a $20 fee were more likely to buy and StyleStar was assured $20. Some changes improved both costs and revenue (e.g., buy-all discount). In short, StyleStar designed a relatively simple and likely profitable core transaction. As an early executive proclaimed, "*We realized that our service not only provides value and convenience to our clients, but also generates great unit economics for us*".

Simultaneously, StyleStar delayed growth. By gating their website, the team was able to refine the core transaction. The CEO added, "*We really waited until we had the concept that we wanted*." Yet after almost two years, they had only $500K in revenue, 16 employees, and 500 customers. StyleStar struggled to raise funds. As the CEO said, "*Raising money was really hard.*"

Another example is RentRoyale. Its co-founders were first-time entrepreneurs with backgrounds in hospitality and banking. Sartorially aware, they realized that many women (including a co-founder's sister) often bought expensive designer clothes that they wore just once (e.g., to a special event), to avoid repeating outfits. The founders spotted an opportunity to rent designer clothing to these fashion-conscious customers. A co-founder said,

> *I realized I was having a conversation with my sister about the experience of wearing an amazing dress… She didn't care about the actual ownership of the items in her closet.* (RentRoyale co-founder)

When RentRoyale launched in Q1 2009, the initial idea was to service rentals for fashion designers using their existing websites. For a fraction of the price, customers could rent clothes from their favorite designers, and then return the garments once worn. RentRoyale would manage the operations, and share the revenue with the designers. A co-founder described,

> *The initial idea was what if we could rent the dresses that the designer is selling on her website? So what if we powered rental for her?* (RentRoyale co-founder)

The founders began by learning about supply. Over a couple months, they met with prominent fashion designers and retail executives. They soon learned that designers were not interested in renting clothes on their own websites. Rather, they worried about "cannibalizing" their revenue by replacing would-be sales with rentals. A co-founder described a typical encounter,

> *When we went to chat with [prominent designer], she was not too thrilled about the idea of renting clothes in general, and thought that it would cannibalize her retail sales… She was ready to end the meeting with us after a few minutes.* (RentRoyale co-founder)

So, the founders concluded that their initial idea would not work. Instead, they would have to buy and manage inventory, and offer the rentals on their own website. A co-founder said,

> *It became clear we'd have to buy dresses directly from designers and develop our own rental site. Designers would not be willing to bear the costs and risks of building a rental business themselves.* (RentRoyale co-founder)

The founders also learned that designers could be enticed to supply garments at wholesale prices if the venture attracted younger customers (i.e., late teens to thirties). Such customers could be introduced to the designers' clothing, and might later become buying customers. In turn, wholesale prices were essential for RentRoyale's unit economics. A co-founder explained,

> *We knew that if we didn't have wholesale relationships with designers, and if designers were not benefiting from this customer acquisition channel that we're building with RentalRoyale, that the business was not going to succeed.* (RentalRoyale co-founder)

Early on, the founders also learned about demand including its implications for unit economics. Particularly uncertain was whether young customers would look after expensive rental dresses. A co-founder asked, "*Once [young women] rent dresses will they destroy them? How many times can you rent them?*" Over six months (Q2-3 2009), the founders conducted three experiments. In the first, the founders hosted a pop-up at a college campus to learn whether women would rent dresses, at what price, and whether they would return the items by mail with no damage. They bought 100 dresses with varied styles and rental prices. A co-founder elaborated,

> *The idea behind this was to learn - A, will women rent dresses? - B, what do they rent? How much will they pay? What brands do they want? And most importantly, if they do rent, what happens to these garments after they rent?* (RentalRoyale co-founder)

They learned several lessons. First, over 30% of attendees rented an item, confirming that women will rent. As a co-founder said, "*We saw that women will in fact rent dresses*". Second, customers were willing to rent at about 10% of retail. Third, the founders were surprised and pleased that 96% of the dresses were returned on time and in perfect condition. A co-founder said, "*I figured out from this experiment that people actually really take care of things when they have an appreciation for the aspiration of that brand.*"

Later in Q3 2009, RentRoyale raised $1.75M of seed funding to acquire more inventory, hire five employees, and build a basic website. The CEO described,

> *We had to raise money because we needed to invest hundreds of thousands of dollars in inventory to even launch a business, or to assess whether it was a viable idea…. We could hire some people. We could launch a website.* (RentRoyale CEO)

Now with the more rentals, RentRoyale put the spotlight on logistics. Conceptualizing broadly about the unit economics, the team realized, for example, that storing garments at a dry cleaner saves transport costs to/from storage. So they added a dry cleaning partner. The CEO said,

> *We partnered with a dry cleaner… We decided to store all of our items inside the dry cleaner because we ultimately knew that's where we'd have to ship them back to at the end of the cycle anyway.* (RentRoyale CEO)

Like StyleStar, RentRoyale actively delayed growth such as by requiring new customers to create an online account and then join a waitlist. In addition to providing time to hone the core transaction, too little inventory would be discouraging for customers. A co-founder said, "*We do have a wait list to join the site… We don't want customers browsing the site and seeing that there's hardly anything left.*"

By mid-2010, RentRoyale had spent about two years refining their core transaction. They adopted a simple pricing rule ("*10% of retail*"), and kept marketing simple and cheap by relying on word-of-mouth. They simplified operations with a dry cleaning partner. Some actions cut costs (e.g., storage at the dry cleaner, buying at wholesale prices). Some also increased revenue. For example, storage at the dry cleaner cut transit time, making more dresses available for rent. In short, RentRoyale designed a simple and potentially profitable core transaction.

At the same time, RentRoyale delayed growth by gating their website. As a cofounder explained, "*Our whole approach is to test things out, see what works*". Yet, they had only $1M in revenue, 8 employees, and about 1,000 items in inventory. An industry observer critiqued their stunted growth, "*RentRoyale has only 1,000 dresses in its warehouse, and 750 of them were out on rental on New Year's Eve.*"

In contrast, the paired entrepreneurs (StyleStuck, RentWreck, MarketMiss) aimed for growth, and neglected simplifying the core transaction and improving its profitability. Instead, they quickly settled on a core transaction and grew. Yet, they ended up with a more complicated (i.e., more elements) core transaction with weaker unit economics (i.e., profitability).

StyleStuck illustrates. Its two founders (one a successful retail entrepreneur) saw a retail opportunity with online styling similar to StarStyle. The initial idea was for remote stylists to conduct video consults with customers. The stylists would then buy relevant clothes and mail them to the customers who would buy what they liked, and return the rest. A co-founder said,

> *Well, the initial idea for StyleStuck was… we're going to get on Skype with customers, and we're going to look at them, and we're going to have a pretty lengthy interview with that person to understand how they like to dress. And then we would send items of clothing and let them keep the clothes for like a month or longer.* (StyleStuck co-founder)

As the founders began Q1 2010, they focused on recruiting stylists, finding customers, and selling. They eschewed thinking through or broadly about the core transaction or experimenting. Instead, they jumped in with trial-and-error learning about sales. As a cofounder noted,

> *It was largely, "Let's just start selling clothes and see how it goes." It was not, "Let's get in a room and whiteboard and do focus groups" and all that. It was, "Why don't we send as many boxes out with clothes in them, and listen to our customers?"* (StyleStuck co-founder)

Consistent with hands-on learning, the team (2 co-founders plus CFO) spent their first several months meeting with customers, styling outfits, and selling. As the CEO described,

> *The first six months were really tough – every single member of the team took on a sales goal… My CFO and [co-founder] are not sales people. They're highly analytical. They're super talented. They forced themselves to go out and sell to develop empathy and compassion for the sales team we've ultimately hired.* (StyleStuck CEO)

The team learned several sales lessons. For example, it is effective to use the phone and email (not Skype), and put ten items (not more) in a box. They also focused on the personal relationship between the stylist and customer. A co-founder described,

> *The big thing we were trying to do was establish a personal relationship… just the way you might have a personal trainer for working out or you might have a travel agent for booking trips.* (StyleStuck co-founder)

The team quickly came to see excellent stylists as essential. An early employee noted,

> *What made StyleStuck successful for the customer was the experience and you have to have a human in it… That human experience is what makes it fun, happy, forcing you to try on and giving you feedback.* (StyleStuck early employee)

They also realized that their stylists needed to be in-house (not remote and commission-only) in order to build the right corporate culture and customer value. As a co-founder explained, "*Folks working around the country doesn't really make sense because they're not really bought into the kind of company and culture we want to build.*

With online ads, direct mail, and viral marketing, StyleStuck rapidly added customers and sales. In less than a year, StyleStuck's revenue was growing ($70,000 in 5 months). The CEO saw this as confirmation that "*This is actually going to work*". He expanded,

> *I just said, "Well, we've got to start selling clothes, so I'm going to start doing it myself. I sold $10,000 in our fourth month, our company sold a total of $39,000. And in our next month, I sold $35,000 of clothes myself, and the company sold just over $70,000… And in our fifth month, I was like, 'This is actually going to work!'"* (CEO StyleStuck)

The team hired a sales manager and replaced remote stylists with on-site ones. In Q1 2011, they invited customers to their office where they had added a "*shopping bar*" for in-person styling. This attracted better customers (i.e., more likely to buy) and fueled more sales. A co-founder explained,

> *Why not have people come into our headquarters?… Ultimately that went to our in-person store experience. In-person became really important for relationship building. Those customers were always better customers.* (StyleStuck co-founder)

The team knew that an in-person sales channel added complexity and real-estate costs, but prioritized product-market fit and growth. So, unlike StyleStar, they looked narrowly at revenue and ignored costs like shipping and expensive styling without a survey. The CEO noted,

> *We didn't know if we could ever get our cost of goods low enough and commission costs low enough, in-person sales and real estate costs low enough to make it all work. But we knew we could convince a lot of guys that this was a better way to shop.* (StyleStuclk CEO)

Later in Q1 2011, StyleStuck had spent about a year emphasizing growth. They were off to a quick start with $5.5M in revenue, about 60 employees, and over 3,000 customers. Yet, StyleStuck's core transaction had costly unit economics.

RentWreck also quickly locked into a complicated core transaction that combined reverse logistics (like RentRoyale) with prediction and subscription pricing. The team emphasized brand and rapid growth using online ads and social influencers to gain customers. Unlike RentRoyale, they mostly ignored unit economics by neglecting costs (e.g., bought at retail, not wholesale). Likewise, MarketMiss quickly settled on a complicated core transaction that combined a marketplace with prediction and inventory. They focused on growth while their counterpart (MarketMagic) simplified and cut costs with a marketplace-only business model.

Summary. All six ventures established a core transaction, a signal that they were poised for Series A which (as noted in Methods) denotes that the venture is a business that is ready to scale. Effective ventures (StyleStar, RentRoyal, and MarketMagic) spent almost two years to get to this milestone. They focused on designing a simple and profitable core transaction by conceptualizing broadly and learning about more elements and by actively slowing growth. In contrast, others (StyleStuck, RentWreck, and MarketMiss) aimed for growth. They sprinted ahead to Series A in less time, and grew faster in revenue, customers, and employees. Yet, they ended up with a more complex and likely less profitable core transaction (Table 4).

Era 2. Cut once… Accelerating by building a complete activity system

In Era 2, the entrepreneurs fleshed out the core transaction from Era 1 by building activities. By activities, we mean repeatable organizational processes (Ott and Eisenhardt, 2020; Porter and Siggelkow, 2008). Underlying activities are often valuable skills (e.g. data science, sales) and

assets (e.g. warehouse, brand, algorithms). Effective entrepreneurs (StyleStar, RentRoyal, MarketMagic) followed a process of: 1) focusing on profit and growth (i.e., scaling), 2) building a core capability that was central to their business model, 3) adding superior data science skills, and 4) completing the activity system (Table 5).

RentRoyale illustrates. In Era 1, the founders designed a simple and likely profitable core transaction for a rental business model: buy clothes from fashion designers at wholesale, and rent at 10% of retail. After Series A (Q2 2010), they turned their attention to scaling – i.e. profit and growth. As an executive noted, "*If you scale properly, it's sustainable growth… You have good economics*". To do so, the team tried to outsource operations like supply chain logistics and dry cleaning. As the CEO said, "*I tried really hard initially to outsource*". Yet, the team came to believe that reverse logistics – i.e., activities to receive a garment, clean, and turn it around for rental – was actually a core capability that was key to scaling the business. As the CEO explained,

> *When I launched RentRoyale, I thought I was launching a marketing company, or a brand…I realized, no, the experience of rental, is actually - most importantly, the logistics. If the logistics aren't perfect behind the order, I'm not able to sell you anything. There's no product. So I realized early on that we couldn't outsource technology or operations, and that we would have to build everything from scratch.* (RentRoyale CEO)

The team also now saw reverse logistics as an inimitable advantage. A co-founder noted,

> *We have 100% reverse logistics, which means that 100% of our items are returned… We decided to build it ourselves, which is also a great competitive advantage - It's harder for any competitor to do what we're doing or to ramp up in a short period of time.* (RentalRoyale co-founder)

As a first step in mid-2010, the team replaced their dry cleaning partner. While friendly and helpful, this small dry cleaner was costly and unreliable. As a manager noted, "*Outsourcing was extremely expensive, unreliable.*" An executive elaborated, *"We could not control the timing after drop off or the quality…. And we were missing weekends - obviously where the demand was."* Instead, the team hired a dry cleaning star from a high-end chain. As one executive noted,

"*We were very fortunate to find someone who had experience….But at the same time, he was not family - like "mom and pop" dry cleaning".* Another executive elaborated,

> *He was running a dry cleaning chain actually in Philadelphia. And then he also was involved with a high-end dry cleaning operation in New York…. And we said we'd love for you to come and set this up. So that set up a journey where we figured out what we knew, what we need…what kind of machines and find a location.* (RentalRoyale executive)

RentRoyale also hired spotters (e.g., identify and remove stains) who were surprisingly hard to find. An executive called them the "*holy grail*". The CEO echoed, "*The hardest position to recruit has not been engineers, it's been spotters*!" The team also purchased cleaning equipment and set up a facility. An early employee noted the significance of beginning with cleaning, summarizing, "*The biggest lift obviously is going to be cleaning."*

RentRoyale also hired a leading data scientist PhD from a firm using cutting-edge data science. This Chief Algorithms Officer began to intertwine physical operations with optimization and AI algorithms to improve the reverse logistics activities. An executive described,

> *There were two journeys….a journey of building out the physical operations and then there was this journey of the software and those two are intertwined…The whole thesis was that we don't want people to be making a lot of choices that are slowing down the process. So, we wanted the system to get smarter and smarter.* (RentRoyale executive)

In 2011, RentRoyale built a new, expansive warehouse near a transport hub. As the CEO noted, "*We, out of this warehouse, run the largest dry cleaner in the world.*" The team also added mini-distribution centers around the US as hubs to provide cheaper and faster shipping, and better availability of clothes. The CEO described their value, *"An operational hub is incredibly important to solve problems. It also allows us to have a last minute business in those cities.*"

In sum, RentRoyale spent about two years building reverse logistics as a core capability that combined efficient physical operations with ever-smarter algorithms. This created faster turnaround of garments, and so increased revenue (i.e., more items available for rent) for the same inventory. Similarly, better cleaning increased the # of wears per garment (i.e., revenue per item)

that was critical for profitability. In short, better reverse logistics activities led to more inventory turns, more quickly, and so fueled more profitable growth. The CEO described,

> *We make money by turning this dress multiple times. If I don't know what chemicals I should use to clean this dress and how I should repair it and how I should store it in order to make sure that it looks brand new over a very long period of time – The warehouse is not effective. It's not helping the company financially.* (RentRoyale CEO)

In mid-2012, RentRoyale switched to merchandising activities – i.e., buying and pricing rental clothes. In Era 1, they cobbled together crude ones like ad hoc purchases and simple pricing (*10% of retail)*. While these basics worked, they were insufficient for RentRoyale to scale. So, the founders added a data science team to work with the merchandising group to develop new metrics (e.g., garment lifetime) and better predict what inventory to buy. As a co-founder noted,

> *We have an analytics team here that is very helpful in determining our initial purchases of what we should buy in terms of designers, fabrics, long vs. short, what style of dresses we should be purchasing in the first place.* (RentRoyale co-founder)

RentRoyale also shared these valuable, yet rare data with their designers. As one designer enthused, "*You learn a lot from that and from reading the comments the clients make online. It's great market research!*" These data became a valuable, rare resource that deepened ties with designers and lowered inventory costs via better deals with designers. The CEO noted,

> *Data is a precious asset…Fashion designers are bereft from receiving data from any of their partners. It becomes a competitive asset for us…helping to inform them on what these five million young women are doing related to their brands.* (RentalRoyale CEO)

The data science team also tackled pricing. The simple heuristic (*10% of retail*) worked early on, but impaired profitable growth by underpricing some garments and overpricing others. The data scientists made a significant move by drawing on an analogy to the dynamic pricing AI algorithms of airlines that become smarter with more transactions. An executive explained,

> *It's not that dissimilar from when you look at pricing of an airline ticket... We had a general heuristic. And then it became more of a smarter system that we were optimizing a lot more complex variables rather than just a heuristic.* (RentRoyale executive)

As more customers could find a garment at the right price, growth surged. An executive extolled, "*This sophisticated pricing engine… altered the trajectory of user growth*". Simultaneously, the algorithms became smarter and their unit costs decreased (for this scale-free resource).

In sum, RentRoyale built a core capability (i.e., reverse logistics) as well as merchandising and other capabilities. Underlying these activity bundles were valuable, often rare and inimitable skills (e.g., cleaning, data science) and assets (e.g., warehouse, rental data). They distinguished this activity system for scaling (i.e., profitable growth) from short-term actions to boost growth temporarily (i.e., "growth hacks") like paid marketing. An executive explained,

> *When you think about profitability and growth, there's a difference between back-end and front-end…On the consumer end, if the entire growth is driven by paid marketing then that actually doesn't scale… So, you have to think about what are you really building?* (RentRoyale executive)

Another executive echoed the value of RentRoyal's activity system,

> *The magic of what we had built was the back end… We knew how to buy inventory. We knew how to think about customers. We knew how to match demand and supply. We knew how to rent it, clean it, process it. We knew how to work with all of these shipping vendors. We knew all of this stuff.* (RentRoyale executive)

In 2016, RentRoyale became profitable with over $100M in revenue and a complete activity system around a core capability: reverse logistics. The CEO summarized, "*RentRoyale is a proprietary reverse logistics platform. It's an operations company.*"

StyleStar also illustrates. In Era 1, the team established a simple and likely profitable core transaction for a retail business model: Customers complete a style survey and pay $20. In-house stylists use the survey to select and send five relevant clothing items that customers could buy or return. Yet, StyleStar struggled to raise funds. The CEO noted growth concerns, "*Probably the number one question we get from VCs is, Why aren't you growing faster?*" A skeptical VC added, "*Starting a department store is expensive and logistically complicated. They're under-*

appreciating how good you have to be at sales." The CEO lamented, *"Venture investors want to buy software engineers or they want to buy apps. They don't want to buy clothes."*

After its series A, StyleStar shifted to profit and growth. An executive noted,

> *While certainly we characterize ourselves as a growth company, we also agreed that one of our principles for our managing the business was that profitability was a very clear goal. So, we were always… carefully walking the line between growth and profitability*. (StyleStar executive)

Like RentRoyale, StyleStar first turned to building a core capability. The team saw using data for prediction as its core capability and lured a world-class data scientist from a premier firm using cutting-edge data science to join in mid-2012. The CEO noted,

> *From day zero, we were always a data company. Like those return surveys that I described - like even when we were physically shipping the boxes out of our office and we didn't even have a website, we were collecting the data about the product, the attributes of the product. And we were collecting, physically with pen and paper, your feedback about what you liked and what you didn't like and what you thought of the price and how it fit. And so the data element was always super important.*

The CEO elaborated, *"I don't think we were employing true data science, I would say, until Jon joined us in 2012.*

Jon began with prediction for styling. In the Era 1 manual process, stylists would read the customer survey, and then trawl through the inventory using heuristics to find five items that the stylist thought the customer would buy – a slow and inaccurate process. As he explained,

> *The first algorithmic problem we worked on was the recommendation engine. Given our business model it was clear that we had to be really good at recommending relevant clothes to our clients. Rather than merely recommending items via images rendered on a website or through a mobile app, we ship the items we are recommending directly to the client so that they can try them on. Since physical delivery is much more expensive than digital delivery our recommendations need to be extremely relevant. We knew that this would require both machine learning algorithms as well as expert human judgment – stylists. Each adds its own value and their combination would be needed to boost the relevance of the recommendations to a level that justifies the cost of physical delivery.* (StyleStar data science executive)

A key insight was blending human stylists with recommendation algorithms to create a better prediction: The algorithm simplified prediction choices, and made stylists more accurate (i.e.,

increasing sales) and efficient (i.e., less time to style each customer), thus cutting costs. In turn, stylists' advantages like relationships and curation remained. An executive described the synergy,

> *The human stylist provides the benefit of curation and is far more capable of fostering a relationship with the customer… Algorithms and human judgment each play a role… They are complementary to one another. In fact, they're reinforcing.* (StyleStar executive)

Another noted additional scaling benefits of algorithms,

> *Stylists have excellent judgment, but what they do not do well is sift through mountains of data. And they don't have to. The algorithm does that for them. The algorithm scales these human stylists by narrowing the results down to them*. (StyleStar executive)

StyleStar built a recommendation algorithm for styling in shortly under a year. The CEO said, "*It actually took us 8-12 months to refine the model to be able to be consistently styling well.*"

StyleStar then accelerated stylist hiring, from 40 to about 200 stylists in five months (mid-2013).

A key point is that, like RentRoyale, StyleStar used analogies from outside the industry to trigger algorithmic insights. For example, StyeStar populated purchase suggestions for stylists like Amazon's prediction algorithms, and framed a possible purchase as a 0-1 probability like Netflix's recommendation engine. A data scientist described,

> *You're on Amazon's site, you're getting targeted by a product that we think is relevant….But then similar to Netflix, it'll also show a likelihood that a customer will purchase each product. So let's say it's gonna show like a pair of jeans, it's gonna say, "This customer has a 60% chance of purchasing these jeans." "This person has a 30% chance of purchasing this dress."* (StyleStar data scientist)

Another key point is that, also like RentRoyale, StyleStar hired superior talent and placed them at high levels. For example, the Chief Algorithm Officer reported to the CEO at both firms. This talent attracted more talent. An executive described, *"Jeff [second data science hire] was a PhD in statistics from MIT, so very credible and knew his stuff… And then he helped with recruiting the next-level team that would take things higher."*

StyleStar next focused on building merchandising activities – e.g., what inventory to buy. The team's activities from Era 1 were rough and scrappy: buyers attended tradeshows and made ad hoc purchases with their own credit cards. An executive said,

> *It was very scrappy. We had a buying team and they'd go out to these markets they'd go to where all the vendors put out their stuff… and make some decisions about what to buy. And it was done very scrappily on credit cards.* (StyleStar executive)

To upgrade merchandising activities (Q3 2013), StyleStar again formed a data science team as they had for styling. The team coded algorithms to help merchandise buyers to predict which clothing inventory to buy. An executive said,

> *So we started to invest energy in how do we improve the set of inventory from which to pick. And that became what we call "merchandising algorithms" to go and figure out what to buy, and hold in inventory, what to re-buy… We started building a team around that.* (StyleStar executive)

At the same time, StyleStar hired a highly experienced executive from a top consumer firm to lead the "human" merchandising group. Again, StyleStar hired top talent, and blended algorithms with people. People could better anticipate unexpected trends (e.g., next season's colors, popularity of jeans) and negotiate favorable supplier deals while algorithms make aspects of merchandising predictions simpler (e.g., reducing the choices that buyers consider) and smarter.

A key point is StyleStar's valuable, rare customer data. Since StyleStar understood customer preferences (including waitlist customers) from their style surveys, StyleStar had data that created an advantage in prediction of both styling and merchandising. An executive noted,

> *We had so much data that no other retailer has… We have the ability to use that information to inform what we would rebuy for the next timeframe… It was a bottoms up process that was informed by the data that came from our clients. That is 180 degrees different from traditional retail which is top down.* (StyleStar executive)

Thus, StyleStar synergistically blended humans and algorithms, and created valuable, often rare resources (e.g., customer data, algorithms) that improved as the venture grew. StyleStar continued its activity system such as adding warehouses (mid-2013-2014). In late 2014, StyleStar

linked some algorithms to provide holistic insights across strategic domains. An executive summarized, *"Not being just myopic dealing with the decision in front of you, but looking across the set of clients… What we do now is probabilistically push things around so it's the best outcome for all.* In 2015, StyleStar became profitable with over $300M in revenue, 2,000 employees and a complete activity system anchored by a core capability: prediction. An executive summarized,

> *All these things kind of organically came about…..Now it's this huge collection of algorithmic capabilities that are in some ways operating as a system in itself now.* (StyleStar executive)

In contrast to the effective entrepreneurs (StyleStar, RentRoyale, MarketMagic), StyleStuck, RentWreck, and MarketMiss continued to focus only on growth, and made various mistakes. StyleStuck built a core capability (sales), but tightly integrated activities with unprofitable unit economics around a small customer segment. RentWreck had a complex and unprofitable core transaction, built unnecessary capabilities, and prioritized marketing like short-term "growth hacks". MarketMiss also had a complex and unprofitable core transaction, built few (if any) capabilities, and kept trying different customers to find growth. While these ventures grew quickly at first (Era 1), they faded and were never profitable (Era 2).

StyleStuck illustrates. Like StyleStar, StyleStuck adopted a retail business model template with online styling. The core transaction: Stylists engage customers on the phone, email, or in-person to assess preferences. They then predict ten relevant items and send them to customers who could buy or return. StyleStuck catered to a specific customer. As a founder noted,

> *Our customers are like 45-year-old investment bankers, living in the suburbs of Omaha, you know who have three kids and no time and plenty of income and just want to look good and look professional.* (StyleStuck co-founder)

The team focused on revenue, found product-market fit, and were off to a quick start in Era 1. Yet, compared to StyleStar, StyleStuck's transaction was complex (e.g., more sales channels, more items) and probably less profitable (e.g., costly styling and real estate).

Following Series A (Q2 2011), StyleStuck continued to focus on growing revenue. Social media advertising was very effective for identifying the wealthy middle-aged men who were the target customer. A co-founder said,

> *So how do we scale it?... Facebook! Where instead of people having to search, we could advertise to people by gender, by occupation, by zip code.* (StyleStuck co-founder)

To support adding customers, StyleStuck hired stylists whom they saw as critical to growth. They preferred seasoned salespeople who had sold products like software, and prized those who could bring their own clients. The CEO said, "*Really good sales team members…they don't take leads anymore. They just bring in their own guys because they've got such a nice book of business.*" Another executive echoed that their styling hires were charismatic salespeople,

> *We found people who had previously been in enterprise sales roles, selling software or insurance or yellow pages ads or whatever. People who were selling stuff… Our sales team was absolutely critical. They will be charismatic, helpful people who, you know, we're solving problems that people didn't know they had.* (StyleStuck executive)

By the end of 2011, StyleStuck had grown to 60 employees, most of whom were stylists.

In early 2012, StyleStuck started improving other activities that fit their target customer. They deepened relationships with boutique suppliers by offering more volume than single stores yet better prices than large department stores. StyleStuck also gave these boutique suppliers a valuable, rare channel for reaching very desirable customers who, in turn, appreciated the more unique boutique clothing. The CEO noted,

> *Boutique suppliers have seen us grow really rapidly and they've begun to see that we introduce their brands to a very hard to find yet very sought-after consumer, which is an affluent urban guy who has a lot of money and not a lot of time and wants to learn more about fashion, but doesn't really know how to do that.* (StyleStuck CEO)

The team was convinced that choosing the high-end customer was wise. As a co-founder said,

> *So, we're really targeting the high end of the market, where all of the profit is in the retail industry. Not dissimilar from many industries. The airlines or financial services industries. All of the profit is in that top. Top spenders, affluent customers, not the kind of super hip*

> *and cool unemployed people you see cruising around Brooklyn and Manhattan.* (StyleStuck co-founder)

Another executive echoed their high-end strategy with an analogy to Starbucks,

> *We're "Starbucksing" the men's apparel market, which in my mind is a way of saying, "30 years ago, my dad didn't use to drink $5 lattes. Today, he does all the time." A lot of guys used to spend $500 a year on clothes and be really unsatisfied with their wardrobe. And now with StyleStuck, they're spending $2,000 to $5,000 a year on clothes. And they love it.* (StyleStuck CEO)

In 2013, StyleStuck began building software to support their core capability: sales. Yet, unlike StyleStar, StyleStuck did not use data science. The CEO admitted, "*I don't know much about algorithms. It was the skunkworks to me.*" Instead, StyleStuck used well-known software (e.g., Salesforce CRM) and in-house tools to support sales activities. The COO said,

> *One of the core capabilities that we have… is managing these relationships that we have with our customer… CRM is important to us. Salesforce has been a phenomenal partner… We also have built a lot of tools on behalf of our stylists, we have mobile applications that help our stylists manage their profiles with customers.* (StyleStuck COO)

StyleStuck's use of familiar software tools to improve styling contrasts with StyleStar's data science algorithms to enhance styling predictions. StyleStuck compensated for weak data science with a narrow, easy-to-predict customer with traditional tastes. An executive elaborated,

> *We focus on things that were not the crazy stuff you would see on billboards. But stuff that season in and season out would be a real staple… For a pretty conservative audience, not a super fashion-forward audience. Trends don't change as quickly.* (StyleStuck executive)

Yet with weak prediction capability, StarStruck struggled to add customers beyond its initial set. The CEO reflected on StyleStar's superior data science and its implications for scaling,

> *We didn't do a lot of data science. StyleStar did so much more data science… StyleStar had about 40 data scientists and we had 4. They've scaled really well.* (StyleStuck CEO)

In sum, StyleStuck developed a modestly valuable core capability (sales) and activity system: effective but expensive sales channels (e.g., online stylists, in-person shopping bars), costly professional sales-stylists, and familiar sales software (e.g., Salesforce CRM). They added

activities like boutique supplier relationships to an integrated activity system that provided product-market fit for a small market. A co-founder contrasted StyleStar and StyleStuck,

> *StyleStar went after a much bigger market, and I think they did a really, really good job of capturing it. And I don't think they were as obsessed about the personal relationship between you and your stylist.* (StyleStuck co-founder)

In 2014, StyleStuck had $100M in revenue, but growth was flattening. The venture was acquired by a large, "brick-and-mortar" retailer that wrote down the investment about a year later. StyleStuck never became profitable. Instead, they were closed. An executive lamented, "*We didn't figure out how to take down the bigger opportunities, the StyleStar opportunity.*"

Another example is RentWreck. Like RentRoyale, RentWreck's two founders adopted a rental business model template. Yet, they complicated the core transaction: Customers complete a style survey and pay a monthly subscription (~$50). RentWreck would predict 5 items that the customer might like and mail them to the customer who could return items any time with free shipping, and get different rental items. This complex, unprofitable transaction combined reverse logistics (RentRoyale) with predictive styling (StyleStar) and subscriptions.

As RentWreck began Era 2 with Series A funding (Q3 2013), they continued to focus on growth. An executive said, "*The goal was just growth. All we were focused on was growth*." Consistent with growth, they emphasized marketing with familiar actions like engaging social media influencers and Facebook ads. A VC described, "*They were doing grassroots marketing… nothing that I would say is total rocket science*". They also invested in brand which they saw as a valuable asset: a strong brand makes adding customers easier. An executive said,

> *Another thing that just drives scale for any direct-to-consumer business is brand…So the bigger your brand is, the more known it is, you get that halo effect where marketing gets a lot easier.* (RentWreck executive)

Simultaneously, RentWreck improved styling activities. They hired several data scientists. Yet unlike StyleStar, they did not hire top talent or blend algorithms with humans. Instead, since

their data scientists built an algorithm that served 80% of customers without humans, the team fired most of the stylists. Yet, while the algorithm modestly improved styling (e.g., faster), the team had assumed (but not tested) whether renters wanted styling. Yet after building the algorithm, the team realized that renters actually prefer to pick their own clothes. As a co-founder noted, "*If we really wanted to be a long-term part of someone's life, we had to give them more control.*" After wasting 9 months of time and investment, the team eliminated styling.

In mid-2014, RentWreck began upgrading their reverse logistics like warehousing and cleaning. Yet unlike RentRoyale that hired top talent (e.g., dry cleaning experts, top data scientists) and spent two years honing reverse logistics, RentWreck lost focus in under a year. With incomplete activities (e.g., one warehouse), they switched back to marketing. For example, they formed partnerships to rent celebrities' clothing lines. An investor said, "*They figured out something [for reverse logistics] that kind of worked. Then, it was really about growth, growth, growth, growth, growth!*" Yet, they lost money on each new customer. A VC lamented,

> *They could never get to unit economics that made sense… When you added up all of the costs, including the customer acquisition and then including the shipment costs, the business wasn't really a repeatable business.* (RentWreck board member)

In sum, RentWreck built a modestly valuable brand, but neither a complete activity system nor a simple, profitable core transaction. A co-founder regretted, "*Just try to do fewer things better*". In 2017, RentWreck had $75M in revenue, but was far from profitable. The founders were replaced. As a board member said, "*The founders were in over their heads*." RentWreck merged with an offline retailer, was never profitable, and the merged firm ultimately failed. An investor summarized, noting the incomplete activity system,

> *I just think RentWreck completely underestimated the complexity and the cost…. If they had $10… they weren't willing to take five of those dollars and go invest in infrastructure because they wanted to show the top-line growth.* (RentWreck investor)

Summary. How did the effective entrepreneurs so clearly pass their counterparts? One reason is their simple core transaction from Era 1. It is easier to build a complete activity system on a simple transaction. Complexity often adds costs and more ways to fail. Second, they anchored their activity systems on a core capability that was valuable, rare, and difficult to imitate. This core capability was central to the business model, and was a source of competitive advantage. Third, they emphasized data science (e.g., hiring top data scientists, placing them in c-suite roles, and synergistically blending algorithms and humans) to improve revenue and/or cut costs. A key point is that AI algorithms support scaling – i.e., become more profitable with growth because they become more accurate (i.e., learn) and are scale-free (i.e., per unit cost declines).

In contrast, less effective entrepreneurs focused on growth and often pursuing product-market fit and/or growth hacks. While some (StyleStuck, RentWreck) built core capabilities, these capabilities offered modest value and little competitive advantage. Strikingly, these entrepreneurs failed to recognize the advantages of data science, a particularly stark difference between StyleStuck v. StyleStar, and relevant core capabilities like RentRoyale v. RentWreck (Table 5).

A turnaround case: MarketMagic

An insightful venture is MarketMagic that began well in Era 1, faltered in Era 2, and then recovered. These 4 experienced entrepreneurs adopted a marketplace business model to connect second-hand clothing sellers to online buyers. Like the other successful ventures (StyleStar, RentRoyale), MarketMagic slowly designed a simple and likely profitable core transaction. As the CEO said, "*I love the power of simplicity - how simplifying and progressively simplifying leads to scale!*" Drawing on an analogy to StubHub, MarketMagic charged sellers a simple 20% fee for any sale on the platform. They also simplified shipping by enabling sellers to mail items directly to buyers at a flat fee. Finally, the team delayed growth through their invite-only approach.

After MarketMagic raised Series A funding (Q4 2012), they began by building a core capability: community engagement. The team believed that a highly engaged community was central to its marketplace business model. A co-founder said, "*Ultimately having the largest seller community allows you to have the largest buyer community, which allows you to have the largest platform over time.*"

The team hypothesized that hosting offline events could engage existing customers and entice new ones. As an experiment, the team hosted a small event in Las Vegas, and invited several potential customers and local fashion bloggers. While only 15 people attended the event, it unexpectedly generated significant media coverage. The CEO said,

> *So we threw our first physical party in Vegas, and they were all of about 15 people. But it was a smash hit. We were able to do some local PR. We got some coverage with ABC. We got like 1,000, 2,000 new customers.* (MarketMagic CEO)

With the surprising effectiveness of this event, MarketMagic assembled a dedicated team that regularly hosted events both offline and online. Engaging the community improved both growth (more users) and profitability (more and larger transactions per user).

Yet, before improving other activities (e.g., shipping, website, sales tax collection), MarketMagic declared the activity system as complete, and turned to "growth hacks". The CEO declared, "*We're just focused on growing now because the basics are solved. And now it's just growing. July was an exponential month!*" MarketMagic spent the next year pursuing growth. They engaged in online ads, PR campaigns, and marketing promotions. As social media became very effective for mobile marketing, growth exploded. As the CEO summarized,

> *About the first few hundred thousand users, it was however you could "hack" it. So we used different advertising platforms, physical parties, PR, advertising, different things. Then Facebook just made it so easy with mobile installs, so 2013 was all Facebook!* (MarketMagic CEO)

MarketMagic added 3 million users in less than a year. An executive noted, "*It was real 10X!*"

Yet, while MarketMagic had a valuable core capability in community engagement, they lacked a complete activity system (e.g., robust platform, secure payments, reliable shipping). As profitability tanked, the CEO noted, "*The unit economics were deteriorating… The engagement of the users was really high, but just the whole system was not yet there.*" The platform began failing with too many parties in late 2013. While these parties engaged the community, their high activity caused frequent crashes. The CEO lamented, "*I'm fighting the infrastructure. And parties - the concurrency levels are insanely high… It's real time buying and selling… And so the system is under incredible stress."* Another noted, *"Payments was breaking".* A third echoed, "*The infrastructure pieces… We should have really invested much sooner.*"

At the end of 2013, MarketMagic reversed course and slashed marketing. The CEO said,

> *It was not going to work… It was not the right thing to do for our community either because we were not servicing them correctly. So we cut down our marketing spend by 90%.* (MarketMagic CEO)

MarketMagic spent 2014 completing the activity system: Re-architecting the platform, signing up payment providers, and forming a postage partnership. In 2015, these activities unexpectedly triggered dramatic growth by making the marketplace better (e.g. more frictionless), not by "growth hacking". A VC explained,

> *This idea of fundamental growth instead of growth hacking. You look at something like reducing the friction on the shipping, right? The amount of growth that this released… It was dramatic. No one would ever have thought of that as a growth hack. But reducing that friction and making it so easy, made a huge impact.* (MarketMagic investor)

In sum, MarketMagic's activity system coalesced around a core capability: community engagement. As the CEO said, "*MarketMagic is very much powered around the community*". In 2016, MarketMagic became profitable with $80M in revenue, over 20M community members, and almost $1B in transactions. A VC proclaimed, "*It was incredible. I haven't seen a marketplace platform like that ever.*"

Like MarketMagic, MarketMiss began with a marketplace business model to connect second-hand clothing sellers to buyers. Yet, MarketMiss focused on growth in Era 1, and designed a complex core transaction: A seller receives a box with pre-paid postage to fill with unwanted clothes and provides details like sizes and styles. Once MarketMiss finds a matching buyer, the seller mails the box to the buyer who pays a $13 fee and supplies a new box. So it blended community engagement (MarketMagic), logistics (RentRoyale) and prediction matching (StyleStar). It was complex like multiple revenue models, multiple steps for buyers and sellers, and many different items per box. Nonetheless, MarketMiss initially grew quickly.

Following Series A (Q2 2010) less than a year after launch, MarketMiss continued to focus on growth by adding products like toys (Q4 2010) and books (Q2 2011), and partnering with charities (Q3 2010). They added a daily blog (Q1 2011) that the CEO justified, "*We think about high-quality content in the same way that we think about customer acquisition in other channels*". They tried a summer book swap (Q3 2011) and Halloween swap (Q4 2011).

Yet, MarketMiss did not improve its activities. For example, instead of using data science like StyleStar, MarketMiss did manual matching. This left many buyers dissatisfied with sellers and users "firing" each other. As an executive described, "*We found out that, if a customer had a different quality standard, then we were essentially having customers firing other customers.*" Similarly, while MarketMagic made listing items easy (i.e., post a smartphone photo on the website), MarketMiss lacked simplicity for sellers and so the marketplace stalled with too little supply. The CEO complained, "*We couldn't get enough velocity. If you were a seller putting the stuff on the platform, there was just enough friction. They were like, this isn't really worth it."*

In sum, MarketMiss never built a core capability or other activities, or used data science. Instead, they pursued growth by growth hacks and searching for product-market fit with a complex core transaction. They peaked at several hundred thousand users and were never profitable. As an

executive admitted, "*The first thing we need to do is kind of own up to the fact that we have to sunset our peer-to-peer marketplace*". In 2012, the team shut down MarketMiss. The CEO summarized, "*Peer-to-peer wasn't the right business*".

DISCUSSION

We began by observing that while promising ventures like WeWork may initially grow, without a scalable business model they may ultimately struggle in the transition to a profitable, growing adolescent firm. By studying six promising ventures across three business models in online fashion, we develop a theoretical framework for how entrepreneurs build scalable (i.e., profitable growth) business models (Table 6). We contribute to the learning literature by indicating when and what is actually learned. To the business model literature, we add insights into how entrepreneurs achieve high-performing business models, including how data science can create optimal distinctiveness and extreme scalability. More broadly, we contribute to organization theory by introducing activity systems as a key feature of the internal organization through which work gets done, and by clarifying the relationship between internal and external growth. Overall, we unpack the transition from a promising venture to a successful adolescent firm.

Emergent theoretical framework

Our primary contribution is an emergent theoretical framework for building scalable business models (Table 6). Our theoretical framework indicates that successful entrepreneurs first 1) slowly design a simple and profitable core transaction by actively delaying growth, and then 2) accelerate by sequentially building a core capability followed by a complete activity system. Thus, they follow a phased and exponential-growth process.

First, successful entrepreneurs begin by designing a simple and profitable core transaction. These entrepreneurs use a variety of learning approaches consistent with prior literature, such as experimentation, trial and error, and analogical reasoning (e.g., Murray and Tripsas, 2004; Gavetti

et al., 2005; Ott et al., 2017). Yet, their common outcome is a simple and profitable core transaction. A simple transaction (i.e., fewer elements) clarifies the unit economics, and contains fewer parts that must work together well. Such a simple "semi-structure" is also robust in highly uncertain markets like nascent ones (Davis et al., 2009). Further, while growth may solve many problems, it does not solve unprofitable unit economics. Thus, establishing a simple, profitable core transaction provides the scaffolding for scaling. The cost of this deliberate and broad learning, however, is slow pace and low growth. Indeed, successful entrepreneurs actively delayed growth to provide time to conceptualize and learn broadly how to be "smartly simple". In contrast, less successful entrepreneurs race to add revenue. Yet, by learning and conceptualizing narrowly, they resolve few uncertainties and often end up with a complex and likely unprofitable core transaction.

Second, successful entrepreneurs then flesh out the core transaction by sequentially building an activity system. These activities are a key feature of internal organization. Specifically, these entrepreneurs begin by a core capability that is central to their business model. This capability is critical because it is valuable, often rare, and difficult to imitate in at least the short run – thus, providing competitive advantage. They then complement the core capability with other activities to complete the activity system. By anchoring with a core capability and elaborating from there, the activity system remains loosely coupled longer, leaving room for serendipitous adaptation. In contrast, less successful entrepreneurs proceed with "growth hacks" like ads and price-cutting promotions that may spur revenue that may not last. While these entrepreneurs may build a core capability, they often do not complete their activity systems and integrate their activities too soon or not at all.

Learning literature: Equifinality, simplicity and profitability

We also contribute to the learning literature by highlighting what is learned. Prior research indicates relevant processes like experimentation (Murray and Tripsas, 2004; Camuffo et al., 2019;

Bremner and Eisenhardt, 2020), trial-and-error (Rindova and Kotha, 2001), bricolage (Baker and Nelson, 2005), and analogical reasoning (Gavetti et al., 2005). Extending this work, we find that successful entrepreneurs use a variety of processes. For example, RentRoyale emphasized the experimentation approach of lean startup while StarStyle engaged in more conceptualization and trial-and-error as well as experimentation. MarketMagic often relied on analogical reasoning to similar firms like StubHub and to their own prior venture. Yet they all reached the same outcome of a simple and profitable core transaction. Thus, while many processes can be useful, the common practice is a) learning deliberately and broadly to identify a simple and profitable core transaction, and b) organizing problem solving to focus on a core capability and then activities.

Business models: Core transaction and data science

We also contribute to the business model literature that centers on the attributes of high-performing business models like novelty, optimal distinctiveness and fit. First, we add by highlighting the early importance of the core transaction for a later high-performing business model. While prior work suggests that novelty (Zott and Amit, 2007, Chesborough and Rosenbloom, 2002), fit (Tidhar and Eisenhardt, 2020) and optimal distinctiveness are relevant (Navis and Glynn, 2010; Zhao et al., 2018), we point to the simplicity and profitability of the core transaction, particularly its unit economics. Without profitable unit economics, firms lose more money on every transaction even as they grow. Without simplicity, transactions are prone to difficulties in making the transaction actually work, high costs due to more elements, less clarity about unit economics, and unresolved uncertainties.

Second, we contribute insights into the role of data science for high-performing business models. By using data science, firms can amplify optimal distinctiveness. That is, they take familiar offline capabilities like merchandising and personal styling, and transform them by synergistically integrating algorithms with human action. The resulting activities are familiar in

terms of their functionality but also different (and often cheaper and more effective) from what they were. Data science also enables extreme scaling. With the scale free economics of algorithms (Levinthal and Wu, 2010), they become cheaper per unit with growth. Thus, when algorithms take advantage of what humans do well and blend those strengths with the computational power (and scale-free economics) of algorithms, the resulting activities are highly scalable. Finally, algorithms built on machine learning and other forms of AI become smarter with growth, further enhancing scaling. Indeed, StyleStar's machine learning widened the gap as the venture grew relative to StyleStuck that used traditional software that may scale, but does not become smarter.

Organization theory: Activity systems, growth, and scaling

More broadly, we contribute to organization theory writ large by introducing activity system as a key feature of internal organization. While activity systems are recognized in strategy (Porter and Siggelkow, 2008; Ott and Eisenhardt, 2020), organization theory emphasizes features like team composition, organization design, and culture (DeSantola and Gulati, 2017). Yet activity systems (i.e., organizational processes as well as underlying skills and assets) add by emphasizing how work actually gets done. Moreover, we add to the related strategy research (notably the resource-based view) by unpacking how executives build activity systems. Strategy research emphasizes antecedents of capabilities like experience (e.g., Benner and Tripsas, 2012) and their outcomes (e.g., Eggers, 2012), but overlooks the activities that support them. By emphasizing core capabilities (i.e., VRIN resources), this work underplays the activity system as a whole. We contribute by unpacking how activity systems are built and their relationship to core capabilities.

Second, we contribute by unpacking *how* firms grow and more importantly, scale. Prior work emphasizes antecedents of growth like team features (e.g., Burton and Beckman, 2007; Eisenhardt and Schoonhoven, 1990) and outcomes like routinizing (DeSantola and Gulati, 2017), but leaves open the process of growth. Recent work on scaling adds by offering that internal

growth like headcount is linked with external growth like revenue (DeSantola and Gulati, 2017). We contribute by noting that the internal organization likely lays the foundation for profitable external growth. In particular, our data suggest that a complete activity system that supports a simple, profitable core transaction distinguishes promising ventures that become successful adolescent firms – i.e. ones that scale - from those that do not.

Finally, it is useful to consider alternative explanations. A key one is that the successful entrepreneurs were simply smarter or more astute. While possible, the less successful ones had similarly elite backgrounds and top-tier VC backing. Moreover, even if they were more talented, this still leaves open what they did. In contrast, our work offers insights into the behaviors for designing high-performing business models. Moreover, the launch point for these behaviors likely is appreciation of profitable unit economics rather than belief in mantras like "get big fast", product-market fit, or "growth solves all problems". While these mantras may be true in some businesses like software, they are less useful when unit economics are highly relevant.

CONCLUSION

We began by noting that many high-growth ventures like WeWork stumble to become profitably growing adolescent firms. With a deep-dive into three matched venture-pairs in the nascent online fashion industry, we develop a theoretical framework that indicates how firms scale – i.e., phased, exponential-growth process in which slow early growth that enables learning about the core transaction is followed by accelerating growth driven by completing an activity system. Overall, we emphasize how promising ventures become successful adolescent firms.

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TABLES AND FIGURES

TABLE 1. Overview of ventures.

Business model template (offline substitute)	**Retail (Retail w/personal styling)**		**Rental (Buying retail)**		**Marketplace (Thrift stores)**	
Business model challenges	*Clothing recommendations:* High *Logistics:* Moderate *Engaged community:* Low *Time sensitivity:* Low		*Clothing recommendations:* Low *Logistics:* High *Engaged community:* Low *Time sensitivity:* High		*Clothing recommendations:* Low *Logistics:* Low *Engaging community:* High *Time sensitivity:* Moderate	
Firm	*StyleStar*	*StyleStuck*	*RentRoyale*	*RentWreck*	*MarketMagic*	*MarketMiss*
Founding	2010	2010	2009	2012	2011	2010
Location	U.S.	U.S.	U.S.	U.S.	U.S.	U.S.
Series A	$5M (2013)	$11M (2011)	$15M (2011)	$4M (2013)	$12M (2012)	$7M (2011)
# of founders (average age)	2 (28)	2 (32)	2 (27)	2 (29)	4 (37)	3 (29)
Education (highest degree)	Elite MBA	Elite MBA	Elite MBA	BA Economics	Elite MBA, MS CS	Elite MBA, BA CS
Entrepreneurial experience	None	Successful founder (retail)	None	None	Successful founding team (ecommerce)	Successful founder (education)
Industry experience	Consulting, retail, venture capital	Finance, retail, internet	Hospitality, banking	Finance, banking	Internet, retail	Internet, education

TABLE 2. Overview of data sources.

Business model template	**Retail**		**Rental**		**Marketplace**	
Firm	*StyleStar*	*StyleStuck*	*RentRoyale*	*RentWreck*	*MarketMagic*	*MarketMiss*
Internal interviews	23	12	19	10	17	12
Key informants	CEO CTO Chief Merchandise Officer Product Manager	CEO COO Co-founder Manager Board member	CEO Co-founder CTO Senior Data Scientist Data Engineer	CEO Co-founder VP Strategy Board member	CEO Director Product Senior Community Manager Board member	CEO CTO CPO Product Manager
News articles (focal articles) Examples	466 (14) *Fast Company, Forbes, TechCrunch*	380 (13) *BizJournal, TechCrunch, Entrepreneur*	441 (21) *New York Times, Wall Street Journal*	116 (22) *TechCrunch, Bloomberg, Fast Company*	291 (16) *New York Times, Forbes, VentureBeat*	118 (25) *Chicago Tribune, Mercury News, Business Insider*
Corporate press releases	143	100	96	43	41	12
Teaching cases	2	1	1	-	-	1
Consumer trials by research team	2	-	3	1	3	-

TABLE 3. Performance (end of study).

Business model	**Retail**		**Rental**		**Marketplace**	
Firm	*StyleStar*	*StyleStuck*	*RentRoyale*	*RentWreck*	*MarketMagic*	*MarketMiss*
Founding year	2010	2010	2009	2012	2011	2010
End of study year (Event)	2015 (Profitable)	2014 (Exit)	2016 (Profitable)	2017 (Exit)	2017 (Profitable)	2012 (Exit)
External growth *Annual revenue (end of study)*	$300M	$100M	$100M	$75M	$80M	$1.5M
Annual revenue (post study 2018)	>$1B	NA	>$250M	NA	>$150M	NA
Era 2 revenue growth [1]	6x	2x	3x	2x	2x	1.5x
Series D (Valuation.)	Yes ($1.5B)	NA	Yes ($600M)	NA	Yes ($300M)	NA
$1B Unicorn valuation (Year) *IPO*	Yes (2015) Yes	No No	Yes (2019)	No	Yes (2019)	No
Internal growth (Business-model specific metric)	Employees: 2,000	Employees: 425	Inventory: 100,000 items	Inventory: 80,000 items	Community: 20M	Community: 300K
Survival	Yes	No Acquired by offline incumbent (2014). Team replaced. Business failed.	Yes .	No Merged w/offline incumbent (2017). Team replaced. Merged firm failed.	Yes.	No Failed (2012).
Representative quote	*StyleStar reinvented retail.* Media	*We didn't figure out how to take down the bigger opportunities, the StyleStar opportunity.* Founder	*At the leading edge of driving change in fashion.* Analyst	*Founders were in over their heads*. Board member	*It was incredible. I haven't seen a marketplace platform like that ever.* VC investor	*We have to sunset our peer-to-peer marketplace*. Founder

Era 2 revenue growth = Revenue at Era 2 end/revenue at Era 2 start.

TABLE 4. Design the core transaction (Era 1).

Firm (Business model)	**Focus**	**Core transaction Simplicity**	**Core transaction Revenue**	**Core transaction Costs**	**Scope of Learning**	**Growth Hacks**	**Speed Series A**	**Size Revenue Employees Customers**	**Representative Quote(s)**
StyleStar (Retail)	Profitability (Unit economics)	**Simple** Clothing prediction w/one styling channel & 5 items	**Increase** Buy-all discount (more sales) $20 fee (better customers)	**Decrease** Style survey (styling) Buy-all discount (shipping) $20 fee (theft) 5-day returns (inventory)	**Broad** 6/6 elements Trial & error Some experiments Reasoning	**No - Delay** Customer waitlist	**Slow** 7 qtrs $5M	**Small** $500K 16 employees 500 customers	*The first year was about proving this works…Are women OK with things showing up at their door? Do the economics work? Will we make money?* CEO *It was almost like anti-growth. We were first validating things and making sure everything would work well.* CMO
StyleStuck (Retail)	Growth (Product market fit)	**Moderate** Clothing prediction w/three styling channels & 10 items	**Increase** In-person shopping (more sales)	**Increase** In-store sales (real-estate) Stylists w/o survey (styling) 10-day returns (inventory)	**Moderately broad** 5/6 elements Trial & error Some experiments	**Accelerate** Direct mail Social media ads In-store sales	**Fast** 5 qtrs $11M	**Large** $5.5M 60 employees 3500 customers	*To be honest, it was largely, "Let's just start selling clothes and see how it goes."* CEO *We didn't know if we could ever get our cost of goods low enough...But we knew that we could convince a lot of guys that this was a better way to shop.* CEO
RentRoyale (Rental)	Profitability (Unit economics)	**Simple** Reverse logistics, 10% of retail price	**Increase** 2-day returns (more turns per garment)	**Decrease** Buy at wholesale (inventory) On-site dry cleaner (transit)	**Broad** 6/6 Many experiments Trial & error Reasoning	**Accelerate** Early minor PR **No - Delay** Customer waitlist	**Slow** 7 qtrs $15M	**Small** $1M 8 employees 2,000 customers 1,000 items	*It's really all about unit economics.* Co-founder *Our whole approach is to test things out to see what works.* CEO
RentWreck (Rental)	Growth	**Complex** Reverse logistics, clothing prediction, subscription	**Increase:** Unlimited shipping (more sales) Free styling (more sales) Low price (more sales)	**Increase:** Stylists (styling) Buy at retail (inventory) Unlimited shipping (shipping)	**Narrow** 3/8 Trial & error	**Accelerate** Major PR Social media ads Google ads Customer referrals program	**Fast** 5 qtrs $4M	**Large** $2M 13 employees 2,000 customers 5,000 items	*We didn't dwell on the concept for too long. We just started buying clothes and sending them out to friends, relatives, really anyone who would take a box.* Co-founder *We just started buying Google Ad Words to drive people to our landing page.* Co-founder

MarketMagic (Marketplace)	Profitability (Unit economics)	**Simple** Marketplace w/ 20% fee	**Increase** Low seller friction (more supply) Parties (more transactions and users)	**Decrease** No inventory (inventory) No matching (platform)	**Broad** 3/3 Analogy Experience Reasoning Trial & error	**No - Delay** Invite-only events	**Slow** 7 qtrs $12M	**Small** $1M 15 employees 2,000 customers	*We were one of those companies that was almost anti-growth.* CEO *Simplicity. We love it.* CEO		
MarketMiss (Marketplace)	Growth (Get big fast)	**Complex** Marketplace w/ buyer & transaction fees, buyer-seller matching, subscription.	**Increase:** New customer segments (more sales)	**Increase:** Handle inventory (logistics) Buyer-seller matching (platform)	**Narrow** 1/5 Trial & error Some experiments	**Accelerate** Major PR Charity drives Promotions	**Fast** 3 qtrs $7M	**Large** $1M 8 employees 12,000 customers	*For businesses with 2-sided markets…you need enormous scale. Figuring out easy ways to sell your stuff.* CEO *We partnered with a couple brands to create this Willy Wonka golden ticket experience.* CTO		

TABLE 5: Building the activity system (Era 2).

Firm (Business model)	**Focus (1st year w/profit)**	**Representative Quote**	**Core capability (value)**	**Representative Quote**	**Activity system # (activities)**	**Data Science Capability (strength)**	**Representative Quote**	**Analogies (Depth)**			
StyleStar (Retail)	Profitable growth 2015	*Always… carefully walking the line between growth and profitability*. CMO	Prediction (High)	*Now it's this huge collection of algorithmic capabilities that are operating as a system now* Executive	4 (styling, merchandising, warehousing, global optimization)	C-suite - Yes Hired leading data scientist, 40 data scientists Multiple data science teams AI in styling, merch etc. (High)	*From Day 0, we were always a data company.* CEO	Amazon, Netflix (Deep)			
StyleStuck (Retail)	Growth (Product-market fit) NA	*I believe in sales and design. So build a great product… and if it's good enough, then you need sales people to take it to market* CEO	Sales (Moderate)	*We're a sales company that happens to use a lot of awesome technology.* CEO *Our biggest team is sales.* CEO	3 (branding to target wealthy customers, merchandising, CRM)	C-Suite – No 4 data scientists Sales support software (Weak)	*We didn't do a lot of data science. StyleStar did so much more data science than we ever did.* CEO	Starbucks, financial services (Surface)			
RentRoyale (Rental)	Profitable growth 2016	*Profitability has always been something that we've been focused on*. CEO *If the entire growth is driven by paid marketing, that doesn't scale.* CEO	Reverse logistics (High)	*The magic of what we built was the back-end. We knew how to rent it, clean it, process it. We knew how work with all these shipping vendors.* Executive *It's an operations company.* CEO	5 (cleaning, repairs, warehousing, shipping, merchndsng)	C-suite – Yes Hired leading data scientist, Multiple data science teams, AI logistics & dynamic pricing (High)	*This sophisticated pricing engine… altered the trajectory of user growth.* Executive *Data is a precious asset…it becomes a competitive asset for us.* CEO	Airlines, Car rental (Deep)			

RentWreck (Rental)	Growth NA	*Growth, growth, growth, growth.* VC *They could never get to unit economics that made sense.* Board member	Brand (Moderate)	*Brand drives scale for any direct to consumer business.* Executive	2 (brand, ~~styling~~, warehousing)	C-suite – No A few data scientists. Styling, but canceled Some logistics (Weak)	*Nothing that I would say was 'rocket science'.* VC*T* *They weren't willing to invest in infrastructure because they wanted to show top-line growth.* VC	Netflix (Surface)			
MarketMagic (Marketplace)	Growth, turnaround profitable growth 2017	*And now it's just growing.* CEO *'13 to '14 was stabilizing* CEO *Fundamental growth instead of growth hacking.* VC	Community Engagment (High)	*MarketMagic is very much powered around community.* CEO *I honestly believe that the MarketMagic success and growth is from the push on community.* Senior manager	4 (community events, platform, payments, shipping)	C-suite –Yes 2 co-founders CS experts Multiple softwre teams Platform & concurrency (Moderately high)	*If you look at eBay and Amazon, the foundation of these giants is search. We believe there's an opportunity to build a scalable business model around discovery.* CEO	StubHub, Prior venture (Deep)			
MarketMiss (Marketplace)	Growth (Get big fast) NA	*We were just doing things that we thought would unlock engagement and growth.* CPO	NA	NA	None.	C-suite – Yes 1 co-founder BA CS No data science Manual order processing	*In engineering, half our code is obsolete. It was like the DNA of the company needed to shift.* CTO	Library (Surface)			

TABLE 6. Emergent theoretical framework: Scaling business models.

Era 1: Designing a simple and profitable core transaction			
	Successful	**Less successful**	**Rationale**
Focus	Profitability (unit economics)	Growth (revenue)	Unit economics determine profitability of business model. Difficult to change unit economics once established. Growth does not solve unit economics problems.
Conceptualization and Learning	Broad Mixed approaches	Narrow (sales)	Broad conceptualization and learning advances understanding of entire unit economics. Helps clarify improvements and simplifications.
Perspectives	Simplicity, profitability	Product-market fit Get big fast Grow users, transactions, revenue	Simple transaction has fewer elements and so is more robust. Simplicity clarifies underlying unit economics. Profitability of core transaction does not change with growth. Profitability central to business' long-term survival.
Pace	Actively delay growth Slow	Fast	Broad learning and simplifying takes time.
Outcome	Simple, likely profitable core transaction	Complex, unlikely profitable core transaction	Establishes scaffolding upon which to scale (i.e., profitably grow).
Era 2: Accelerating by building a complete activity system			
	Successful	**Less successful**	**Rationale**
Focus	Profitable growth	Growth	Growth without profit does not scale.
Actions	Build core capability Complete activity system	Sometimes build a modest core capability Growth hacks	Create potential competitive advantage and repeatable (not temporary) activities.
Data science	High investment in superior and many data scientists	Limited investment	Enhances optimal distinctiveness with familiar yet uniquely high-performing capabilities, and provides extreme scalability – i.e., smarter and cheaper with growth.
Integration of activities	Later integration	Emphasis on only marketing and sales activities Or early integration	Later integration creates a loosely coupled activity system that can adapt. Leaves room for serendipitous insights.
Building sequence	Core capability, then other activities	Successive growth hacks	Begin with most critical capability. Add complementary activities.
Outcome	Core capability plus complete activity system	Mis-fitting, tightly integrated, and/or incomplete activity system.	Creates a foundation scaling (i.e., profitable growth). Core capability is often valuable, rare and inimitable and so creates competitive advantage.