Disrupting a Regulated Market: Fintech Ventures' Trade-Offs in Resource Management and Consequences for Firm Growth

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ABSTRACT

Effective resource management is a crucial strategic issue for new ventures, not least because they start with few resources. Yet, although prior literature has pointed to the diversity of resource types and resource configurations open to new ventures, few studies have examined how entrepreneurs prioritize between different resources when they structure an initial resource portfolio. Based on a multiple-case, longitudinal, qualitative study of ten new ventures (i.e. fintechs) in the banking sector, we show the trade-off choices implicated in resource management strategies and the impacts of these choices on venture growth over time. Our findings advance theory on the resource-based view in strategic management by introducing the importance of sequencing in resource accumulation for new ventures, highlighting the trade-off decisions facing new ventures, the consequences of interdependence between different types of resources for venture growth and more broadly, advancing our understanding of entrepreneurship in regulated markets.

INTRODUCTION

Variance in firms' resource positions is known to be a source of performance difference across firms (Barney, 1991; Peteraf, 1993; Ahuja and Katila, 2004), which makes access to resources (Barney et al, 2011; Maritan and Peteraf, 2011) and effective resource management (Sirmon & Hitt, 2003; Zott, 2003; Sirmon, Hitt, & Ireland, 2007) critical for all firms, but particularly for new ventures (Eisenhardt and Schoonhoven, 1996; Clarysse, Wright, and Van de Velde, 2011).

Given their limited financial resources and legitimacy (Stinchcombe, 1965), new ventures typically struggle with early resource accumulation and may be inclined to take whatever they can get (Baker & Nelson, 2005; Ambos & Birkinshaw, 2010). Yet effective resource management is a particularly salient issue for new ventures as these early choices and restrictions have the potential to shape the future strategy trajectory of the venture in ways that go well beyond its early stages (Sirmon et al., 2007; Clarysse, Nelson, and Decuyper, 2020).

Examining resource-related dynamics in new ventures, scholars have identified that obtaining financing (Heirman and Clarysse, 2004; Lee, Lee, and Pennings, 2001; Jawahar & McLaughlin, 2001) and hiring / training employees for critical functions like marketing, operations and technology development (Feeser and Willard, 1990; Delapierre, Madeuf, and Savoy, 1998; Ensley, Pearson, and Amason, 2002; Rutherford, Buller, & McMullen, 2003; Hindle and Yencken, 2004, Clarysse et al, 2011) have been related to venture growth.

Beyond examining the types of resources that are critical for new ventures to manage, scholars have also found that resource management is highly dependent on *internal factors*, such as firms' existing resource base and capabilities (Coen & Maritan, 2011; Helfat & Lieberman, 2002; Kor, Mahoney, & Michael, 2007; Mosakowski, 1998), and *external factors* such as its market position (Katila and Shane, 2005; Mishina, Pollock, and Porac, 2004; Schmidt and Keil, 2013) and the stability in the environment (Clarysse et al; 2011; Brinckmann, Villanueva, Grichnik, and Singh, 2019). In

addition to the context-specific value of resources, an important finding has been the notion that *certain configurations of resources* help new venture firms grow more than others (Mangematin et al., 2003; Heirman and Clarysse, 2004; Druilhe and Garnsey, 2004; Clarysse et al, 2011).

While entrepreneurship and strategy scholars have uncovered many dimensions of resource management in new ventures, we know relatively little about the *trade-offs* that entrepreneurs need to make in structuring an initial portfolio of resources and what these trade-offs mean for venture growth. As new ventures are challenged with limited financial resources and liability of newness (Stinchcombe, 1965; Ozcan and Eisenhardt, 2009; Santos and Eisenhardt, 2009; Ambos and Birkinshaw, 2010) founders are likely to face stark choices about which resources to invest into upfront, and which ones to leave for later or forsake completely, and live with the consequences of these initial choices for their venture's growth. Discovering these trade-offs and their consequences requires a *qualitative* and *longitudinal* approach to study resource management in new ventures.

Our study explores the topic of *resource trade-offs in new ventures and their consequences for strategic growth* by tracing the market entry and growth of ten technology (fintech) ventures in the Australian banking sector. Our findings show that in a regulated environment, fintech ventures face a trade-off in terms of which of the two expensive resource bases (regulatory or technology) they prioritized upon market entry as they perceived both to be critical important for venture growth. We lay out and discuss the four initial choices we observed for structuring their resource portfolioregulatory-focused, technology-focused, both or neither – as well as the implications of these initial choices on the fintechs' further strategy development. We also observed how some of our sample firms tried to restructure their resource portfolio later on and what difficulties they faced in this attempt due to the interdependence between resources. Overall, our findings advance theory on the resource-based view in strategic management and provide a realistic picture of entrepreneurship in regulated markets. Before discussing our findings, we provide the theoretical background on the topic and our methodological approach.

THEORETICAL BACKGROUND

The resource-based theory, which attributes superior performance to organisational resources and capabilities, has emerged as one of the most influential frameworks in strategic management research (Barney et al., 2001). Resources are defined as "assets, capabilities, organizational processes, firm attributes, information, knowledge, etc." (Barney, 1991; p. 101) that a firm possesses and strategically utilizes to be more efficient and effective. Scholars in this line of research have suggested that variance in firms' resource positions is a source of performance differences across firms (Barney, 1991; Peteraf, 1993; Ahuja and Katila, 2004).

Starting with the foundational idea that resources affect firm performance, scholars have then developed a stream of research that suggests that possessing resources alone does not guarantee competitive advantage and that resources must be *managed*, i.e. structured in a portfolio (acquired, accumulated, divested), bundled into capabilities, and leveraged in the marketplace effectively to create competitive advantage (Sirmon & Hitt, 2003; Zott, 2003; Sirmon, Hitt, & Ireland, 2007). This newer stream of the resource management literature also addresses the role of managers within RBV more effectively, making them more than 'human capital' and recognizing the agency involved in turning resources into superior firm performance (Hansen, Perry, and Reess, 2004; Crook, Ketchen, Combs and Todd, 2008; Kraaijenbrink, Spender and Groen, 2010; Sirmon, Hitt, Ireland and Gilbert, 2011). In their study of professional sports organizations, for instance, Holcomb, Holmes and Connely (2009) found that managers' varying resource management abilities led to variance in firm performance, and that this agency effect was contingent upon the quality of the firms' focal resources.

While the accumulation and management of resources is critical for all firms (Penrose, 1959; Sirmon et al, 2003, 2007), extant work identifies that these processes and their effect on performance are highly dependent on firm life cycle (Sirmon et al, 2003) and that resource management is particularly critical for new ventures (Eisenhardt and Schoonhoven, 1996; Sirmon et al, 2007) and that many new ventures fail to grow, largely because of limited resources (Khaire, 2010).

Scholars have suggested that in the start-up stage of a firm, entrepreneurs must first identify, accumulate, and acquire resources to give their firm legitimacy, which in turn empowers them to exchange resources with key stakeholders more effectively (Miller & Friesen, 1984; Sirmon et al, 2007). To gain legitimacy, a firm must conform to both formal institutional rules and regulations in the environment as well as the informal institutional norms and values of its target customers (Webb, Tihanyi, Ireland, & Sirmon, 2009). Once legitimacy is established, the entrepreneur can shift the focus to managing resources for scaling up instead (Lumpkin & Dess, 2001).

Since new ventures typically start with very few resources (Ambos and Birkinshaw, 2010), a key question has been which resources are most important for new ventures to manage. Scholars have identified that obtaining financing (Heirman and Clarysse, 2004; Lee, Lee, and Pennings, 2001; Jawahar & McLaughlin, 2001) and hiring and training employees to implement marketing, sales, and operations (Feeser and Willard, 1990; Ensley, Pearson, and Amason, 2002; Rutherford, Buller, & McMullen, 2003) are typically among top priorities for founders. In addition, technological resources (Hindle and Yencken, 2004, Delapierre, Madeuf, and Savoy, 1998; Clarysse, Wright, and Van de Velde, 2011) have been related to venture growth. Lichtenstein and Brush (2001) reviewed the literature on small business growth and found that financial resources (capital), management knowhow and leadership, owner's expertise and reputation, human resources (employees), technology and organizational systems, physical resources, organizational structure and culture / informal systems were the most relevant for new ventures.

Beyond examining the types of resources that are critical to manage for new ventures, a stream of work has given emphasis to the *relationship between resources and firm-level contexts*. Distinguishing between internal and external contextual factors, scholars have suggested that resource

management decisions depend on *internal factors*, such as firms' existing resource base and the capabilities and characteristics of its managers (Coen & Maritan, 2011; Helfat & Lieberman, 2002; Kor, Mahoney, & Michael, 2007; Mosakowski, 1998), and *external factors* such as firms' market position and its access to information (Schmidt and Keil, 2013). Katila and Shane (2005) argued, for instance, that a B2B start-up would require different types of resources to a B2C start-up in the same market because of its external operating conditions. For external factors, Mishina, Pollock, and Porac (2004) suggested that in different environmental circumstances, the level of financial and human resources has a differential impact on sales growth.

More recently, scholars have offered a more nuanced way of characterizing contextual attributes. Clarysse et al (2011), for example, examined resource accumulation choices in relation to environmental contingencies and found that new ventures that had invested in human and social resource bundles were better able to benefit from *unstable environments* than firms that had developed strong technology resource bundles, which were better for *stable environments*. This perspective was then furthered by Brinckmann et al (2019) who gave emphasis to fungibility of resources in terms of their ability to afford a new venture strategic flexibility (see also, Nadkarni and Narayanan, 2007; Zhou and Wu, 2009). Brinckmann et al (2019) found that avoiding external funding and renting (rather than buying) certain physical assets were especially effective for increasing strategic flexibility in unstable environments. This is in line with earlier findings that investing in partnerships as a resource base early in a new venture's history helps firms access resources later on which would otherwise be beyond their reach or too time-consuming to accumulate given the velocity of the environmental change (Zhao and Aram, 1995; Ozcan and Eisenhardt, 2009; Bruneel et al, 2010).

In addition to the context specific value of resources, another important development in the literature has been the rise of the *configurational perspective* that examines the interactions between resource types over time (Mangematin et al., 2003; Heirman and Clarysse, 2004; Wernerfelt, 2011). Based on the logic of resource interdependence, the work of Clarysee and others have proposed that

certain configurations of resources help firms grow more than others (Heirman and Clarysse, 2004; Druilhe and Garnsey, 2004; Clarysse et al, 2011). Youndt, Subramaniam, and Snell (2004), for instance, found that while human resource management, information technology, and R&D investments are all very high in top performing firms, human resource management and information technology investments influence intellectual capital development at a firm more than R&D investments. In studying resource configurations in new ventures, Mangematin et al. (2003) found two different business models among biotech start-ups, seen as configurations of financial, human, and social capital resources, based on whether the start-up follows a research- or product-intensive track. Looking at how different resource configurations shaped future strategy trajectory in new ventures, Heirman and Clarysse (2004) identified four new venture archetypes, based on the amount of financial resources at founding (level of venture-backing) and development of innovative, proprietary technology. Similarly, Ambos and Birkinshaw (2010) identified three venture archetypes in sciencebased ventures, which differed based on their market (product) orientation, technology development, and partnerships. Similarly, Gruber, Heinemann, Brettel and Hungeling (2010) confirmed this configuration view in a study of how resource clusters are linked to capabilities and performance in sales and distribution in new ventures. Finally, Clarysse et al (2011) developed a typology of how, depending on the stability and complexity of the environment, new ventures can structure a portfolio of financial, human, social (partnership) and technology resources differently.

Gaps in Understanding Resource Management in New Ventures

As apparent above, questions of what types of resources are critical for new ventures to manage, in which configurations and environmental contexts, have received increasing attention from scholars. On the other hand, we know relatively little about the *trade-offs* that entrepreneurs need to make in resource management and what these mean for venture growth.

Entrepreneurs face resource-related challenges early on not only because financial resources are scarce, but also because the initial choices in capability building are likely a sunk cost that cannot easily be recouped through the sale of firm-specific, non-tradable resources later on (Dierickx & Cool, 1989; Maritan & Lee, 2017). For this reason, new ventures are likely to face stark choices about which resources to invest into upfront, and which ones to leave for later or forsake completely. Discovering these trade-offs and responses requires a *qualitative* approach to study entrepreneurs and document not only decisions about those resources that were managed at a given time, but more importantly, about resources that were postponed or given up entirely.

One of the critical consequences of these early decisions in a new venture's life is that focusing on particular types of resources early on and therefore leaving others to later on may constrain a firm's strategic choices and growth path in the future. For instance, scholars have suggested that not hiring talent to make certain products or components in-house will create external dependencies for the venture (Helfat & Peteraf, 2003). Similarly, not obtaining certain patents and licenses due to their price may prevent the venture from operating in certain markets and selling certain products (Shane & Stuart, 2002). We therefore posit that examining responses to resource trade-offs of a venture needs to be *longitudinal*, looking at the effects of these trade-offs on the growth path of the firm over time.

This paper explores these two critical issues: a) how venture founders manage trade-offs they face while structuring an initial resource portfolio and b) how their choices affect the venture's growth path - by *tracing the growth of ten technology (fintech) ventures in the banking sector*. The setting of banking and the focus on technology ventures are particularly appropriate for exploring these research questions because banking is a highly regulated sector where high entry and compliance costs may constrain new ventures while they have to accumulate resources to build innovative technology products to gain competitive advantage over incumbents. To uncover founders' response to these critical resource dynamics, we ask: *how do founders of technology ventures manage trade-offs in*

structuring an initial resource portfolio in a highly regulated market, and how do these early decisions affect subsequent venture growth?

METHODS

To examine our research question, we conducted a qualitative, cross-case comparison of ten fintechs commencing in the Australian banking sector. Qualitative data collection and analysis supports inductive theory building (Eisenhardt & Graebner, 2007), and is useful in contexts where there is little established empirical research. By composing a multi-form cross-case study, we sought to understand commonalities and differences between different resource management strategies pursued by fintech founders, and then followed these firms over time to determine the implications of these choices on venture growth.

Research Context: Fintechs in the Australian banking sector were an appropriate context for examining resource management strategies in new ventures for two reasons. First, changes in the Australian banking industry made it susceptible to a large number of new venture entrants in a relatively short period of time. Following trends in the EU and the UK, Australian regulators announced their intentions in the mid-2010s to introduce an 'open banking' framework to transform how financial services were delivered in the Australian market. Specifically, it required the country's four major banks (a regulated oligopoly) to hand data generated on financial transactions back to customers for the first time, thereby allowing new entrants to use the data to offer alternative services. The Australian government announced a phased implementation for open banking, with the four major banks obligated to comply with the regulation from 2019 for Phase 1, and additional regional banks included in later implementations for Phase 2 in 2020. These changes were designed to promote competition and allow new entrants to enter all parts of the financial services supply chain, from deposit holding activities, through the lending, and payment services. These changes had their intended effect, with over a hundred new entrants entering the Australian banking sector in the period after 2015. It is amongst this cohort of new fintechs that we sampled firms for this study. Secondly, financial services served as an appropriate context to examine the broader question of resource management and the trade-off choices facing new ventures because the digitization of the financial services sector created an immediate context of resource abundance in which new ventures had to choose resource management strategies. One innovation that open banking regulations has brought to financial services is to enable third party institutions to access the digital data contained in consumer bank accounts (Cortet et al., 2016) upon customer consent. This data is largely held by incumbent banks. For this, the law requires all banks to create a standard interface through which third parties can automatically connect to the bank's systems to access customers' transaction data as well as initiate payments, upon showing proof of customer consent. Practically, this means that customers' financial data can no longer be treated as if it belongs to banks, but rather needs to be treated as belonging to customers. This also means it can be transferred to other parties chosen by customers and, in turn, analyzed to generate better, more tailored services.

The effect of this data-led innovation is that it expands the nature of the resource base accessible within the market (in this case, the financial services market). Specifically, it gives new ventures the choice about potentially delivering a variety of financial services, from improving access to financial advice, credit, debt management, and banking services in general through easy to use apps, platforms, and online tools. However, in order to develop any of these services, fintech ventures are subject to regulatory licenses, which in the words of a fintech informant, "makes the exercise a lot more expensive than anywhere else". This unique constraint that these fintech ventures face makes them particularly appropriate for this study.

Sampling and Data collection: We started our study with a pilot stage in 2018, as pilot studies are considered a significant part of a good research design (Van Teijlingen & Hundley, 2001). For this pilot stage, we explored the broader question of *how technology entrepreneurs in a regulated industry strategize to grow their ventures*. We interviewed seven founders and executives from different fintech ventures in order to understand their strategy and early decision-making processes. We also used the

pilot study to identify who the different key players in the Australian fintech sector were, and how they were developing their strategies in the context of the emerging open banking landscape.

Our pilot interviews showed that most fintechs entering the industry in this period were startups that faced constraints (in terms of finite financial resources, time, personnel, skills etc) and therefore had to make trade-off choices in the resources they chose to structure in a portfolio. We have discovered that these ventures all struggled with having to get expensive regulatory licenses and that this created a trade-off with accumulating technology resources (e.g. machine learning algorithms) that they hoped would constitute their competitive advantage over incumbent competitors in financial services. We consequently refined our research question to focus on the trade-offs faced by technology ventures in regulated industries and made necessary adjustments regarding the investigation methods to better address this real-life problem (Creswell & Poth, 2017).

Our pilot interviews also revealed that the choice of which financial products to offer was an important determinant of the type of regulatory resource the ventures needed. This discovery led us to do a purposive sampling of three types of fintech firms in terms of the different financial services offered among fintechs: personal financial management services (hereafter, PFM) (four fintechs), lending services (two fintechs), and full-service digital banking (hereafter, neo-banking) (four fintechs). These distinct services required different regulatory licenses, as explained in detail in the Findings section. Table 1 below shows an overview of our sample firms and data collection.

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Once we chose our sample firms, we began the data collection process, which lasted 20 months between mid 2018 and early 2020. We used various sources for data collection. The main source was in-depth semi-structured interviews with founders and senior executives in our sampled firms. Access to data was facilitated in part through Stone & Chalk, a fintech industry association, who served as a research partner on the study. We reached out to interviewees through Stone & Chalk and also at industry events (such as the SIBOS global banking event held in Sydney), Stone & Chalk networking breakfasts, and fintech workshops in major cities across Australia. These events also constituted valuable occasions to collect data through observations at keynote and break-out sessions where various industry players and regulators discussed the changes they were experiencing in relation to the open banking changes and their strategies in relation to these changes. Finally, we triangulated and supported our findings through archival data, which included business publications, company reports and Internet sources to strengthen the robustness of our findings (Eisenhardt, 1989).

Based on the information we gathered during pilots, we conducted a total of 59 interviews with informants in the ten selected fintechs, as well as with industry participants enhancing our understanding of the Australian banking context. The interviews lasted 40-90 minutes and followed a semi-structured format. The questions were structured around the founding of the fintech, the strategies, and the experiences and challenges they faced in structuring a portfolio of resources to achieve these strategies. Given our focus on venture growth over time, we spoke with several individuals at our chosen firms and triangulated the interviews with archival analysis and conversations with industry experts and regulators observing how the market was developing over time. To strengthen the longitudinal aspect of the study, we traced the developments in the venture in real-time through follow-up interviews with key informants in each venture, with an average of 3-4 additional interviews over the data collection period, depending on their availability.

We addressed potential informant bias in several ways. First, we collected interview data in several waves over 20 months, which enabled collection of both real-time and retrospective data. This combination is ideal, with the retrospective data enabling efficient collection of more observations (thus enabling better grounding) and real-time data mitigating retrospective bias (Leonard-Barton, 1990). Second, we used interview techniques (e.g., "courtroom questioning," "event tracking," and "nondirective questioning") that yield accurate information from informants (Huber & Power, 1985). For event tracking, we put the informants back in the time frame of the events and then guided them forward through time to produce a step-by-step chronology of events (Eisenhardt, 1989). For

courtroom questioning, we emphasized facts (e.g., dates, participants, meetings) and open-ended narrative (e.g., intended strategy) and avoided questions that can lead to broad speculations (e.g. how do you think the industry will change in the future?). We also pressed informants to be specific when they were vague. For the nondirective questioning, we avoided questions about specific constructs until the end of the interview. Third, we relied on informants who were particularly knowledgeable about the strategies of the focal firm. We also used two industry experts (e.g., analysts, investors, trade journalists) as an independent source to triangulate the findings. Fourth, we promised anonymity to companies and informants to encourage candor. Finally, we complemented interview data with publications (e.g. analyst reports and business journals; internet sources; internal documents) and observational data from industry conferences. These strategies help reduce informant bias and lead to more accurate and generalizable data (Eisenhardt and Graebner, 2007).

Data analysis: Most interviews were recorded and transcribed verbatim within 24 hours. In the few cases where recording was not permitted, interviewer(s) transcribed their notes within two hours after the interview so as to obtain a complete record. We started by analyzing the qualitative data on the basis of the terms and themes used by our informants in the interviews (Eisenhardt, 1989; Yin, 1994). As a first stage of data analysis, we constructed a detailed description of each fintech's strategic vision, market gap, business model, and perceived constraints. We then analyzed the differences across our theoretical sample to spot the common issues that these fintechs experienced. For instance, we observed that all fintechs provided recurring statements about their resource portfolio decisions, including the trade-offs that they considered in acquiring / accumulating resources. Further analysis of data from across this group also showed that fintechs made different choices about the kinds of resources they decided to structure into a portfolio, and the implications of this over time. As we reflected on these statements in relation to the extant literature, we realized that there was literature on resource configurations and portfolios, but relatively little on the trade-off decisions these entailed and how they affected venture growth strategies over time.

In the second stage, we then characterized our data based on how decisions on structuring an initial resource portfolio shaped the constraints experienced in their strategizing over time. This led us to focus on two resource-related priorities in fintech decision-making: acquiring regulatory resources versus accumulating technology resources. As we reviewed the data through this lens, we realized that there were commonalities between resource management decisions, trade-off choices, and strategy sequencing. To sharpen these distinctions we used tables [e.g. Appendix 1] and other cell designs to compare several possible constructs at once during this process (Miles & Huberman, 1994).

Finally to enhance the trustworthiness of our findings, we shared our emerging analysis with informants to sound-check our emerging findings, which led us to re-organize some of our categories, and enhance our theorizing. Following the process of comparison and iteration, we built a mid-range theory on the resource trade-offs and growth constraints of new technology ventures in regulated markets. We report our findings below.

FINDINGS

Before describing the variance we observed in the founders' response to trade-offs they faced while structuring an initial resource portfolio and how these different responses affected founders' decisions for further strategic development, we describe the two resources that were the source of the primary trade-off that was common across the ventures: choosing between *acquiring regulatory resources* and *accumulating technology resources*. The second section then details the four mutually exclusive decisions we observed focal venture founders make as a response to this trade-off and how their decision affected their subsequent strategy development. In the final section, we report on the challenges that these new ventures faced in subsequently revising their resource portfolio.

1. Choosing Between Critical and Expensive Resources

In addition to financial and human resources, which are commonly needed by new ventures across sectors (Hellmann and Puri, 2002; Davila, Foster, and Gupta, 2003; Welbourne and Andrews,

1996; Mosakowski, 1998), we observed that our focal firms operating in the banking industry were particularly focused on two types of resources as a basis for securing competitive advantage against incumbents: *regulatory resources*, and *technology resources*.

First, we define *regulatory resources* as permissions granted by government entities to a firm to conduct commercial activity in an industry, which in our setting is offering financial services to customers. We found that the regulatory resources needed by a fintech differed greatly depended on the type of financial services the venture offered, which ranged from full-service as a new bank to lending, or a personal finance management (hereafter, PFM) in our sample. Being a full-service bank requires a banking license, which is a regulatory permission that allows an entity to accept customer bank deposits. Gaining this license requires a bank to show that it can meet various prudential requirements to accept deposits. Once granted, the banking license affords a firm the opportunity to hold capital against the most profitable type of banking activity – lending – without the need for third parties. The amount of capital that needs to be held in reserve to guarantee the deposits is set by the regulator. As a founder that chose this path noted, "You need a lot of deposits ...to start doing mortgages at scale. But also the way the capital management regulation works, you need deposits for the regulatory capital on your balance sheet...for security against those loans" (Venus).

While bank licenses were both the most highly sought-after and the most expensive type of regulatory resource for a fintech, there were other types of regulatory resources that were relatively easier to acquire. For example, a new venture that only wanted to facilitate lending (i.e. not hold deposits) needed to comply with the 'responsible lending' regulations in Australia. This allows a firm to act as an intermediary to offer lending by making sure that the offered loan is 'suitable' for the customer as it is illegal to sell a loan to a customer that then places the customer in undue financial hardship. Finally, firms offering personal finance management (PFM) tools could operate with minimal regulatory requirements, so long as they explicitly avoided lending and deposit holding activities. These PFMs only needed to fulfil general obligations around data privacy that applied to all fintechs

operating in an open banking regime, but were prohibited from giving formal financial advice. Overall, the founders faced a range of options when it came to the type of financial service they wanted to offer and consequently the appropriate regulatory resource that was needed, as reflected in Table 2.

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Besides regulatory resources, our sample fintech founders also sought to accumulate *technology resources*, which in their case involved the development of proprietary machine learning algorithms to analyse financial datasets. For these ventures, data was a crucial resource to acquire, as data was a complementary resource that enabled them to turn the algorithm (via training) into machine learning capability. One founder described this as follows:

"[We use algorithms to] categorise the data, and enrich the data, and make sure that the data is consistent. We aggregate that data across multiple financial institutions. And then once there's a reasonable level of data quality, and we've built up enough connections [in the database], then we can also sell that data platform [made up of machine learning algorithms] to other companies that want to improve their applications" (Mors).

Just like for regulatory resources, fintechs could vary their size of investment in technology. Since offering financial services to a customer is a multi-step process, fintechs could outsource some steps of the data analysis process to third parties, thereby bypassing the need to develop a particular algorithm in-house. One illustration of this is when a sample fintech venture relied on a provider (i.e. outsourced) analysis on the "credit scores" of a prospective customer to whom they lend money. This meant the fintech fully depended on the third party to assess the credit worthiness of a customer, which is a crucial predictor of whether a customer will be able to repay a loan. Building the algorithm in-house would have given the fintech more finetuned and profitable ways to do credit assessments. In contrast, if they relied on third party credit scores, this no longer could become a source of competitive advantage.

Given that our sample fintech ventures did not have infinite resources, they had to make tradeoff choices in the resources they prioritized upon market entry. One fintech (Wasi) founder explained: "Unless you have raised a ridiculous amount of money already, you have to make a choice". Based on our findings, we lay out the four initial and mutually exclusive choices founders of these ventures made for structuring their resource portfolio- regulatory-focused, technology-focused, both or neither – as well as the implications of these initial choices on the fintechs' further strategy development.

1a. Prioritizing Regulatory Resources: Mythos, Tyros, Xena

We observed that founders at our sample fintechs chose different resource paths in structuring an initial resource portfolio, as reflected in Table 3 providing illustrative supplementary evidence.

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Among them, some sought to secure their competitive advantage by acquiring a regulatory resource base at inception. These resources, which were mainly different regulatory licenses, incurred large expense upfront and took a long time to approve. They involved hiring large staff able to do quality assurance and securing large capital reserves as insurance in the event of financial challenges.

An example of a new venture pursuing this strategy is Xena. The founders of Xena decided to focus on getting an unrestricted banking license (i.e. the most expensive banking license) as quickly as possible in order to operate as a full-service bank. As one of the co-founders noted: "For me the priority from the beginning was all around licencing. In order to get an Australia credit licence, or an Australian Financial Services licence, you need chunks of infrastructure already set up."

While making this high initial investment into a full banking license, these new ventures were typically forced to <u>minimize their technology focus</u>. The Chief Risk Officer at Xena executive explained: "It cost me 25 million [Australian dollars] to get the license. So there wasn't much money left for other stuff." This meant that these fintechs had to postpone technology investments into the future. In the meantime, they had to borrow technology from established players in the market instead while building their brand. For instance, Xena worked with a card provider to brand a credit card with the Xena logo on it, and with a third-party lender to offer personal loans to customers through its website. Their priority was therefore to use other company's technology to build up a technology infrastructure quickly in order to get approved for a banking license.

Constraints caused by prioritizing regulatory resources: To prioritize acquisition of regulatory resources, we found that a fintech faced disproportionately <u>high upfront investment costs</u> as hiring staff and building systems to comply with regulatory requirements was expensive and needed to be incurred upfront rather than incrementally (as is the case with technology investment). Xena, for example, realized that to meet the requirements of an unrestricted banking license it needed to hire additional staff to its team to trouble-shoot problems in advance of having customers. This was part of the resilience testing requirements established by the regulators. As the co-founder noted,

"We had the regulators in recently, who said we needed to put on an extra ten people into our customer service team to comply...and that is how it becomes very expensive...You pay these people to sit there and wait for problems to arise".

For another fintech in this category, Tyros, regulatory costs made up almost 50% of the firm's cost base in its early years, and it was obligated to maintain this cost base even as it waited for approvals because regulators were not able to process later change requests. This was challenging given the firm was not generating revenue whilst it waited for approvals. Founders of the final venture in this category, Mythos, also commented on the extraordinarily high upfront investment cost imposed by the long wait process with the regulators, made up largely of the cost of personnel. As the Founder / CEO noted,

"We are a start-up and we thought we had a lot of cash but it gets more limited every month that goes by. You've got a burn rate of a couple of million bucks a month, and you can't afford to wait forever. I think [the regulator] also had its own issues of. [They said,] "We didn't used to have a licensing team because nobody applied for a licence and suddenly [with the fintech emergence] we've got lots of licence applications and nobody to process any of them...". So it is very, very frustrating."

This need to bear a high upfront investment led these ventures to *heavy reliance on investors*,

rather than management having the freedom to invest revenue receipts generated from the business

over many years of operation. As a Xena executive reflected:

"We're raising the first bit of capital. We requested five million dollars from just high-net-worth individuals and from our network. That basically funded us for probably three to six months. At the same time, we were getting licences. We literally can't make money without licences. But investors like customers- need to be a told a compelling story [to accept this risk]. So it quite literally feels like you're pitching for your life [to keep investors on side].". Tyros shared the same experience: "we depend entirely on having a patient investor who is willing to

go on the journey with us". At Mythos, the regulator delays also reflected a strong dependence on

investors who were willing to wait for the resources to be realized:

"it was fortunate we had some banks as investors who were familiar with working with [the regulator], and so were able to support us through the pain".

Another consequence of the focus on getting the regulatory-license first was that fintech

ventures in this category also had a *heavy reliance on technology partners* to ensure that the

infrastructure worked reliably. As the CRO at Xena conceded:

"There is no problem in renting the technology. But I guess you're relying on external infrastructure which can be of strategic significance for a platform whose value added is to have a strong core and reliable integration. Recently, <a competitor> ceased operations when a third-party infrastructure crashed and couldn't process payments anymore. This had a serious impact on customers' trust whose payments couldn't go through for a few hours."

Interestingly, while borrowing technology rather than building it in-house was largely a cost-related

decision, the cost of this decision increased over time, as customer volumes grew and the fintech

required higher quality data access, as technology partners typically charged for data access per user.

As the same executive noted:

"The first year is generally cheaper [when they try to make you a customer]. The second and third year, the volume base will increase and the costs go up...and then in the fourth and fifth year, we try to re-negotiate. We've actually become quite reliant on vendors coming to the party and being open to renegotiate a deal in a different way".

Overall, we found that focusing on regulatory resources incurred upfront costs for setting up

the appropriate infrastructure and working closely with regulators at a relatively slow pace. Founders in this category felt that during this expensive and cumbersome process, not accumulating technology resources was financially sensible. In addition, they thought that this strategy eased the regulatory licensing process by not making a newly developed, proprietary technology subject to approval as regulators were seen to be "risk-averse" in their choice of technology. The founder of Mythos explained this as "de-risking the decision from the regulators". However, relying on third party vendor technology meant increasing costs over time, as vendors charged per user. This made developing proprietary

technology necessary down the road. In Section 3 of Findings we discuss the issues these ventures faced for developing proprietary technology ex-post.

Implications on strategic growth decisions: We found that new ventures that initially prioritized regulatory resource acquisition were forced into a certain growth pathway as a result of the high upfront investment costs. Their heavy reliance on investors shifted the power in strategy making from managers to investors, forcing the managers to make certain decisions to please the investors. We observed that these ventures were typically forced into a quick monetization path e.g. via *an international growth strategy early on* to offset their high investment costs into regulatory licenses. For instance, Xena could only raise capital from investors on the condition to expand quickly into Asia to reach more customers. As a co-founder reflected on how the investor conversation had changed over time, he noted:

"So we're meeting the incoming investors from around the world, which is pretty cool in itself, and they're almost, "Okay, we're wanting to invest in you. But, we need you to go to Asia." So here's the strategic play."

In the case of Mythos, we observed that they internationalized into Europe and the USA early on to offset their costs and break even. An investor into Mythos explained: "It's a high set-up cost, so you need volume to compensate". Overall, we found that fintech ventures that prioritized acquiring regulatory resources were typically strapped for funds and highly dependent on investor support for pursuing this strategy. Their high costs pushed them to minimize investment in developing proprietary technology and to pursue an internationalization strategy earlier than other firms to reach critical mass in customers.

1b. Prioritizing Technology: Mors and Wasi

Other fintech ventures in our sample made the opposite choice, investing in the accumulation of technology resources at the expense of acquiring a financial banking license. This approach focused on building algorithmic code in-house for machine learning purposes and typically majored on specific financial functions where the capability to analyse data using these tools gave a competitive advantage,

such as in lending or PFM. To pursue this strategy, these fintechs needed to hire technical staff, purchase expensive software licenses, and incur legal and patenting costs to protect their intellectual property claims in relation to the newly developed technology. However, these costs were relatively less capital intensive than regulatory resources and could be incurred incrementally over time.

While building proprietary technology, these fintechs paid other financial institutions to use their regulatory licenses. This meant, for example, that customer would legally direct funds to a third party rather than the fintech for deposit keeping, with the fintech as licensee paying a volumetric fee to the licensor. The licensor would then undertake the regulatory reporting and management obligations associated with holding a license, such as doing client identification checks to ensure they were compliant with anti-money laundering regulations. The proprietary technology, therefore, mainly focused on customer acquisition and retention but none of, what one fintech founder described as, the "plumbing costs" of managing financial services. The CEO of lending fintech Wasi described their logic in following this approach as follows:

"One of the things I talk about in this space when I'm asked is that I talk about how do you build the best bank in Australia by 2030? You don't start by building a bank [with a banking license]. I think that's the worst way to build the best bank in Australia by 2030. What you do is you do a whole range of other things where you can acquire customers and have a million, two million Australians who know you [from a data perspective]. Then actually becoming a bank [by getting a license] is easy." Constraints caused by prioritizing technology: As the quote above clearly demonstrates,

ventures who made the choice to develop a machine learning algorithm did so because they believed that machine learning capability would give them a greater competitive advantage for acquiring and servicing lucrative customers. However, these ventures faced significant <u>challenges in attracting retail</u> <u>customers</u> to their platforms at scale given the high cost of marketing and low brand recognition, which made it hard to explain the benefits of the new product to customers with little familiarity with the technology or new brand. As an executive at Wasi who advertised on the Internet to attract customers to their platform noted, "It's crazy but Google ads used to be maybe 30 or 40% of my [sales] budget.... Now it is 60-70% because it is really hard to attract customers".

Not being able to attract customers also challenged their <u>ability to turn their technology resource</u> <u>into a capability, i.e. to turn their algorithm into machine learning capability</u>. Attracting customers early on was crucial as customer data 'trained' the algorithms and improved their functionality and utility. Mors, which offered a technology to enhance customer's savings habits, described this constraint as follows: "[We need to] get customers directly because we need the data flow in order to train our platform... [So the algorithms can do things like] to categorise the data, and enrich the data, and make sure that the data is consistent." An executive at Wasi explained that access to customer data as "how you train your AI".

As acquiring customers organically required significant financial resources and time, yet the data from these customers was crucial in building machine learning capability, many fintech ventures quickly realized that in their race against time (before running out of money), they needed to acquire customers in bulk, which led them to the strategic path described below.

Implications on strategic growth decisions: We observed that new ventures with a technologyfocus quickly reverted to a B2B business model as they depended on access to customers to train their algorithm. These fintechs formed *partnerships with incumbent institutions (banks, creditors)* to obtain access to the incumbent's customers. As the CEO of Mors noted, "we had to go with a B2B model with the banks because that was the only way we could really access customers at scale. The banks already have all the customers, they just don't have the technology".

This business model was necessary so that these fintechs could acquire data quickly. Yet it also <u>restricted their product offering</u>. Incumbent institutions typically agreed to partner with fintechs because it gave their customers early access to new technologies. However, they insisted on the fintech offering services using the same loan rates and other terms as the main bank, since the product would be labelled as a product of the bank. In addition, the banks asked fintechs to sign a non-compete arrangement wherein these fintechs could not pursue (more profitable) retail customers directly through their existing B2C channel. They could sell their services to other financial institutions (i.e. their bank

competitors), but on less favourable terms than early bank partners. For example, early bank partners were often given lower annual subscription costs and lower volumetric pricing compared to later partners who joined once the technology had been "de-risked" (Mors). Fintechs accepted this compromise of non-competition or neutrality because of their inherent dependence on access to large amounts of customer data. The founder of Mors described this constraint as follows:

"I think as part of creating that platform that I described, we came to the realisation that neutrality is extremely important. And so we didn't want to be in a situation where we're competing directly with our [B2B] customers for their people, because... the nature of that network platform is they're putting consumers into our platform and getting the value out And so, the closest we are [to being a competitor] is a lot of them want to do a PFM and we have PFM. So that's kind of the only place where we compete with our [B2B] customers."

Another example of this dependence on partners, which affected the product offering, was the case of Wasi, which provided customers with a fast and easy loan approval process, but relied on a licensed loan provider to provide "warehouse financing" to these customers. This constrained the interest rate they could offer to customers, as one executive noted, "we have got our own warehouse funding loans set up. We take money for two percent, and we charge it at three-and-a-half percent. ...Because we don't run our own balance sheet, we have to take what we've got".

Overall, we found that fintech ventures where the founders prioritized accumulating technology resources faced barriers in turning these resources into a capability due to lack of access to data, and had to revert to a B2B business model through corporate partnerships, which gave them customers in bulk, but limited their control over the expansion of their products.

1c. Neither Regulatory nor Technology Focus: Sphinx, Sociale, and Brione

Thirdly, we observed that founders of some cash-strapped fintechs strategically sought to not focus on regulatory resources or technology building from the outset. Instead, they focused their time and effort on developing products for an underserved market segment by borrowing regulatory resources and repackaging technologies from incumbent institutions. Sphinx, for example, focused on a top-up bank account targeted at teenagers who received pocket money from their parents. With a top-up (rather than

current) account, Sphinx reduced their need for regulatory licenses to a minimum and focused on a revenue model based on a per-user subscription fee. Brione, on the other hand, focused on helping lowincome customers, particularly women, to save money through an advanced budgeting tool, again relying on a per-user subscription fee for revenue. The founder of Brione explained how rather than taking out a banking license to be able to move money across accounts, they prioritized creating value for consumers by combining existing technologies in a single portal:

"We have never been interested in moving money. Partly because I think it's another set up in terms of difficulty in risk, and a whole bunch of reasons. If it became easy at some stage we would potentially look at doing it but for me the trade-off between the extra value that we can create for the consumers and the extra complexity in risk, the tradeoffs is just not right for a business like ours at this point."

Constraints caused by lack of critical resources: Starting out without no banking license nor proprietary technology was the most cost-efficient of the four strategies we observed. It also corresponded with fintechs who lacked financial resources at the start. However, fintechs within this category <u>struggled to secure customer interest and trust</u> and therefore carried significant risks for survival. This was because customers, who were risk averse to start with, perceived the added value of these services, which were both limited in what they were legally allowed to do with customers' money and also not technologically advanced, as low. For instance, the co-founder of Sphinx explained how, due to a low level of investment, their prototype product was technologically not very advanced and therefore customer feedback was poor, as below:

"We had this little web page, and it was so bad. It had three buttons on it and, in the first version, two of the buttons didn't work...But we ended up hacking together this really clunky prototype, and it helped prove to us a lot of things...but the customers were hard to win over." Similarly, the CEO of Brione noted how they struggled to differentiate themselves from traditional

services without resources:

"We have tried to take advantage of customers dissatisfaction with the bank. But it's difficult because the banks have so much more resources." To survive, these fintech ventures chose a particular strategy trajectory, as explained below.

Implications on strategic growth decisions: We observed that founders of these low-resource

fintechs typically pursued two growth strategies. First, they were typically focused on frugal innovation

aimed at reducing the cost of customer acquisition to the lowest possible level to drive <u>break even</u> <u>economics</u>. These founders believed that they had an innovative approach to the problems of a particular target customer group. The founder of Brione, for example, talked about its focus on female savers as its competitive advantage: "having a loyal customer base among women is more important than technology or regulation since finance is ultimately about trust.". The co-founder of Sphinx majored on its trusted relationship with young savers as its unique selling point:

"We knew there was a product/market fit when we spoke to a number of early prototype members about pulling down the prototype, and they said no. So I think if you're building a product and it comes out clunky, and people don't want you take it away from them despite how bad it is, it's an indicator that you're solving a problem." [Sphinx Co-Founder]

However these advantages were conceived, these founders focused their strategy on breaking even quickly. Sphinx was focused on attracting a particular customer segment cheaper than incumbents. As the co-founder noted: "We acquire customers for \$3, \$4, \$5 per an account. A bank's cost of acquisition is much higher than that...". Solving this problem became the over-riding strategy of the firm, as the co-founder explained:

"Our next steps is getting this business set on its own feet. So build this business [and manage costs] to a point of profitability because that buys you the right to solve [the next] problem" Brione was also focused on getting to break-even rather than winning market share. The founders believed that creating a self-sustaining position financially allowed it to open itself up to new opportunities. As the CEO noted: "Our mission is to get to a position where we are self-sustaining [i.e. break even] as quickly as possible. It's not that easy"

In addition to being focused on breaking even, these low resource ventures constantly assessed opportunities <u>to get acquired</u>. Within a year after market entry, for example, Brione commenced a partnership with one of Australia's leading investment management firms. In addition to integrating their app into the incumbent's systems, the incumbent purchased 80% equity in the fintech taking its controlling stake. This allowed the fintech to serve as an added service of the incumbent firm. Sphinx also headed in this direction, facing a number of approaches from incumbent banks to take equity in the business but facing a lack of interest from venture capitalists. Indeed, the co-founder of Sphinx

explained that venture capitalists wrestled with how to financially value the business: "I think the challenge people have with this business is in valuation. ...The only people that can realize the asset value we have will be a financial institution"

Overall, we found that entering the market without regulatory or technology resources was a low-cost option for a fintech without funds. However, as these ventures did not have proprietary technology, they could not leverage a B2B business model for monetization like the ventures that prioritized building technology. In addition, these fintechs did not have a banking license, so they could also not 'touch consumer money'. Therefore, their only choice for future development was to reach break-even quickly and/or survive until they were integrated into a larger player's offering.

1d. Prioritizing Both Regulatory and Technology Resources: Venus, Eifion

A fourth resource path we encountered among our sample ventures was to try and structure a portfolio with both regulatory and technology resources from inception. This meant that the fintech pursued regulatory licenses to become a bank at the same time that it developed novel, proprietary digital technology to collect and analyse customer data.

Constraints caused by dual focus: Pursuing this dual resource strategy *required the largest amount of investment capital* of all the categories in our sample. This was typically possible when founders had high net wealth themselves and were therefore able to contribute their own money, which helped with reducing investor risks.

In addition to the high upfront financial investment associated with managing these resources simultaneously, we observed that these fintechs experienced a surprisingly *limited ability to develop their technology while dealing with regulators*. Executives in these ventures unanimously stated that regulators' low-risk preferences significantly affected what they were allowed to do on the technology side, and that in order to secure the banking license, regulators required the fintech to use technology that was tested and that the regulators were familiar with. A co-founder at Eifion, a fintech still waiting

for their full banking license during data collection, noted: "Generally the regulators get quite uncomfortable when you've got a solution that hasn't been tried and tested." Head of Product Development at Venus, a fintech that instigated the process for obtaining a full banking license while developing a core banking architecture, similarly explained:

"There's a disincentive to the regulator of [issuing a license to a fintech]...As a regulator, I don't really like new stuff because it hasn't really been tried and tested and I'd just prefer that you didn't do anything new. We literally had the regulator say that, "we'd prefer it if you didn't do it. We're all in favour of innovation - providing nothing changes" "Have you just heard what you said!" I said to them. "You've heard that haven't you?! Huh?!"

Implications on strategic growth decisions: Fintech founders that considered getting a banking license while developing proprietary technology unanimously agreed that the high costs and not having the "permission to innovate" (Venus) forced them into *compromises on the technology front*. For instance, Venus executives wanted to build a cloud-hosted bank, which would be the first in the market. To get this approval, Venus had to compromise on the kind of technology that it used: the regulator only accepted the new technology "if it originated domestically and not from overseas" (Venus Co-Founder). The co-founder explained that he would have wished to work with a more novel, blockchain technology overseas but "there was no way the regulator was going to approve a blockchain company as a partner".

We observed that one of the ways in which they dealt with the risk of "running out of money and being caught between regulation and innovation at the same time" (Eifion Co-Founder), was to <u>structurally separate the technology and the organization</u> to simultaneously develop compliant and innovative products. For example, Venus executives attempted to separate the compliance and innovation functions internally and gave the innovation team tasks that were independent from the more compliance driven part of their technology deck. The innovation team was charged with customer-facing activities, such as designing experiences and banking interactions that were seamless, immediate, and digital. The compliance team, on the other hand, was focused on building technology solutions that were safe, resilient to attack, and compliant with regulation. As these priorities did not necessarily entail the same procurement choices, Venus executives decided to structurally separate these functions as much as possible. As an executive described: "We said, 'OK, the people who are building the banking products [with compliance], you adhere to this process. The people who are innovating, you get to do this process and be remotely located''.

However, this separation was hard to achieve. First, it was not always easy to cleanly separate the technologies that had a sole compliance purpose versus those that could be truly innovative. While many customer facing interfaces could be innovative, this separation was less clear when it came to decisions about using cloud services or other technologies for data access, storage and transaction management. One Eifion executive noted:

"We've had a variety of things, regulators saying "screen scraping and provision of information to customers, we don't really like that", "okay, but it's not illegal here is it?", "no", "and it's regulated predominantly by ASIC not by APRA", "yes", "And ASIC have said they're neither in favour nor against it", "yes", "lots of other people are already using this, other banks are using this", "yes, but we'd still prefer you not to do it." These choices affect customers experience in the end, you know?" In addition, Venus executives explained how this situation put pressure on the venture to

develop organizational capabilities to manage this duality of compliance and innovation. The innovation team needed skills in design thinking and displaying empathic engagement with Venus's intended customer. These individuals exhibited flexibility and creativity in their organizational approach. On the other hand, the compliance team required trusted relationships with the regulator, and needed capabilities around forecasting risks and detailing conservative responses to problems. A Venus executive explained this realization as follows: 'we are getting better at separating...but we realized we need different capabilities in our team between those who can deliver on compliance, and those who can innovate''.

A second strategic implication of this dual process was that the continued high costs associated with it forced the founders into doing large capital raises early on, and therefore created a <u>heavy</u> <u>reliance on investors</u>, similarly to the cases in Section 1a. In the case of Venus, as new investors came onto the share register and the funding rounds got larger, it became apparent that the investors needed a way to 'exit' their investment. These larger rounds engaged investors, such as pension funds and

institutional asset managers, with larger chequebooks, but who also led to larger responsibilities to multiple investors. This investor profile was markedly different to the initial founders, who were more patient in their expectations for investment returns. This meant that Venus executives had to decide to do an initial public offering earlier than they had desired. As one co-founder reflected,

"You start getting even private equity firms, venture capital firms, and ...a key question is, they need to have clear view of when they can exit their investment. To that point, in the last 10 days, we just announced that we will be IPOing in the middle of next year, because there are a lot of investors, PE firms, VC firms, whose mandate required an exit, or the option to exit, within a certain timeframe". This mandate in itself influenced their strategy development. The nature of public markets, for example, required the firm to have a steady flow of news and ambitious targets that allowed investors to have confidence in the business. This in turn shortened the time horizon for execution. As the cofounder noted, "the first thing they'll say is, your growth targets aren't ambitious enough. You need to ramp them up. You need to grow a lot faster".

While we see that both ventures in Sections 1a and d (here) faced the issue of heavy reliance on investors, firms in 1d had an advantage as they had opportunities to monetize their technology. To this end, Venus executives could *follow a dual B2C and B2B business model from early on*. More specifically, they launched a consumer savings account in the B2C space while also building a technology deck in order to then license it to 3rd parties, e.g. airlines, supermarkets, that wished to offer banking services to their existing client base. The choice to start with a savings rather than debit account in the B2C space had two motivations. First, a savings account was much more cost effective to provide for a bank compared to a credit account. It required minimal customer checking, unlike credit accounts which required credit risk assessments on each customers. In addition, a savings account served as a complementary product for the B2B clients who would use the Venus technology deck to offer a debit account. The VP of Business Development explained:

"Partners of various scales are seeking to offer banking services under their own brand. So we are the licensed bank – it's powered by <Venus> – and we are ultimately responsible for the compliance around providing banking service products...but with a transaction account under their brand." Within a year, Venus executives had formed fifty-five lucrative B2B partnerships with clients that

wanted to license their technology deck either fully or partially. However, we observed that similar to

the previous cases of fintech ventures with technology resource only (Section 1b), this B2B strategy led to a loss of control in the growth of product offerings. The Head of Product Development at Venus explained this as follows:

"I think there was this trade-off. If you want to own the customer directly then there's a bunch of investment that you have to validate your financial wellness around it, whatever it is that you want to use to acquire customers, raise some equity. This is fine, but expensive. If you go through a partner model, you take on the partner's reason [for opening the account], but you don't have as much direct control over the customer. There seemed to be a bit of a trade-off there."

Overall, venture founders that prioritized both regulatory and technology resources faced difficulties in terms of high financial costs and limitations in technology development due to regulators' low-risk preferences. This influenced their strategies, pushing them to develop a dual organizational structure as an attempt to handle innovation and compliance simultaneously, and to raise funds quickly through public offerings and licensing their technology through a B2B business model in parallel.

After having described the four different responses we observed to the trade-off between regulatory and technology resources, we lay out how our sample ventures attempted to change their resources over time, and what trade-offs they faced in the process.

2. Challenges in Restructuring a Venture's Resource Portfolio

Once fintechs had secured a resource base, we observed that the trade-offs this entailed made it challenging to later re-configure it. We found a couple of instances across our sample firms where ventures attempted to do this.

First, founders who had committed early to building a regulatory resource base (a full banking license) and borrowing technology to manage costs (Section 1a) attempted to develop proprietary technology after launching their products in the market. Mythos and Xena illustrate how this process created tensions with various stakeholders. As Mythos scaled, for instance, the founders realized that their underinvestment in technology incurred significant issues, including increasing fulfilment costs and bugs between the poorly-integrated technology systems, as discussed in Section 1a. However, Mythos' attempt to create its own technology base later created *tensions with regulators*, as each introduction of proprietary technology undermined the regulatory base it had secured, eliciting further

requests for approval from the regulators. As a result, Mythos founders faced a trade-off between maintaining its strong regulatory resource base on borrowed technology, and investing in building technology but jeopardising its products' regulatory approval in the market. Eventually, the regulators closed down the opportunity for new ventures to seek additional banking licenses due to changes in the macroeconomy, locking in the trade-off choice between those firms that had decided to maximize regulatory resources early on and those that had not.

We also observed this issue in the case of Xena, when the founders decided to invest in building proprietary technology that allowed them to offer customers not just personal loans but also larger lending products, like home loans. The co-founder explained that the regulators perceived the creation of additional technology to facilitate more rapid growth in home loans as "risky", and felt that it "rocked their relationship", as further described below:

"We respect and appreciate the regulators in the sense that we have got to prove ourselves before we can go to do other things. But we are building technology that we can turn on and scale very quickly and take around the world. That is what we need to do to be a novel technology company. ... We had and still have a very aggressive business model where we are here to grow the business very quickly. But the regulators said, "Oh, just slow down...."

The ventures in this category also identified *tensions with investors* when the founders decided to accumulate technology resources. The lack of proprietary technology so far had meant that these fintechs were set on an international expansion strategy to monetize their regulatory resource base, as per Section 1a. In this process, investors often had little patience for building technology as they wanted the venture to focus on monetization once the offering was clear. A Xena co-founder noted, "once you've got the [initial] tech set up the expectation [from investors] is you can scale quickly and that you don't tweak it much".

Finally, fintechs experienced *tensions with customers* in the process of building technology later. As Mythos transitioned from borrowed technology to their own proprietary technology in order to reduce their dependencies, the transition process led to the bank's systems to go down for several days, leading to a loss of customers. As an industry expert explained, "this is bad news for them. [...]

People <customers> are already worried." Head of Product Development at Mythos described this process as follows:

"This was one of the most challenging periods of the business: where we're growing faster than expected...we're running out of money because we're growing and we have fulfilment costs on the technology side. And half the team ...either talk to customers or fix the bugs that are coming in <during the technology transition>."

Conversely, ventures that had solely invested into technology at the beginning struggled with acquiring more regulatory resources later on. These ventures faced all the usual challenges of engaging with regulators, but with the added complication that regulators had not been implicated in the technology design from the get-go. Thus, they faced the risk of *failing to get regulatory licenses* with the innovative technology that they had already built. A Mors co-founder described:

"The regulators spoke to us and said "look, we're not going to tell you to stop doing this, but we're not going to say yes". That became the poison pill for working with us."

Overall, we observed that developing proprietary technology or acquiring regulatory licenses later on was not a smooth process and created tensions with various stakeholders. Most significantly, not focusing on these distinct resources simultaneously created tensions with regulators due to the interdependence between technology and regulation in this market. Roadblocks in the relationship with regulators in turn led to many months of waiting time, which was financially detrimental for these new ventures. The CEO of Eifion explained, 'the provision of the new licence we're told is imminent but it's been imminent for quite a while...' Emphasizing the difficulties of separating the technology development and licensing, one fintech founder explained how limited financial resources had kept them from developing these resources simultaneously, although they would have ideally followed Venus' footsteps, as below:

[Venus] is building it all which makes them unique, we're the ones leasing it for a long period of time while we get to scale... If we raised that kind of money we probably wouldn't stick with [payments processor], we'd probably do what they're doing because it's easier and there's less migration later; but because we're a start-up and we're like a proper startup that doesn't get much cash, we have to do it that way, migrate [to proprietary technology]later."

DISCUSSION

This study explored how new venture founders in a regulated industry respond to trade-off choices in structuring an initial portfolio of critical resources. Tracing ten fintech ventures in the Australian banking sector, we reveal which resources matter for these ventures, how the founders respond to trade-off choices in acquiring them, and how these early decisions affect subsequent venture growth paths. We now discuss these contributions in detail.

New Ventures' Resource Needs in Regulated Industries

Our findings contribute to extant literature in entrepreneurship and the resource-based view by unveiling which resources matter for new ventures in regulated industries. In the start-up period of new ventures in a regulated industry, we identify the critical role of regulatory resources and uncover the costs and benefits of acquiring them. Extant literature has extensively explored one type of regulatory resource, which is *patents*, defined as legal rights to exclude others from use of technology resources such as proprietary inventions (Rumelt, 1984; Teece, 1986; Hsu and Ziedonis, 2013). While patents are firm-specific resources that can be used to limit competitors, other more restrictive licenses also exist in regulated industries to control entry and operations for all firms. In banking, education, oil and gas, among others, firms' entry, survival and success is contingent upon acquiring and sustainably managing regulatory licenses to conform with the legal requirements of the sector.

Prior research on entrepreneurship and regulation emphasizes that regulation overall restricts entrepreneurship (Baumol, 1990; De Soto, 2000; Gray, 1987; Haveman and Norsworthy, 1989; Joskow and Rose, 1989), due to regulatory costs (e.g. legal work, reporting to various institutions) diminishing available resources for new ventures (De Soto, 2000; Djankov et al., 2002; Dobbin and Dowd, 1997). Recent studies have mostly documented how, for this very reason, firms try to *avoid* having to get regulatory licenses by using technologies that fall into regulatory loopholes (Gurses and Ozcan, 2015) or actively changing their regulatory category (Ozcan and Gurses, 2018). In contrast, our study looks at the acquisition of regulatory resources in an environment where they are not optional and shows how the need to acquire them shapes entrepreneurial strategy and growth. More specifically, we find that new ventures entering a regulated industry decide on the scope of products and services they will offer, to a great extent, based on what licenses they are willing to acquire given their financial resources and their view of what they should prioritize, technology building or regulatory licenses, in order to gain competitive advantage.

Extant work has established that new ventures hoping to take on incumbents in an established industry typically try to gain competitive advantage by differentiating themselves through advanced technology (Porter, 1985; Bower and Christensen, 1995). We find, however, that in a regulated industry, technology and regulatory licensing not only emerge as two critical resources (as also evidenced by the fact that those ventures that accumulated neither struggled to continue independently), but these resources also constitute a trade-off for ventures with limited financial resources. Both of these resources are crucial as regulatory resources allow the development of a variety of products and services while technology resources can be turned into firm-level capabilities that provide competitive advantage over incumbents. This is a foundational tension which is generalizable to other regulated industries with similar dynamics in place, such as healthcare and energy.

Resource Trade-Offs, Sequencing and Strategic Growth in New Ventures

By examining how founders respond to the above described trade-off choices in structuring an initial resource portfolio, we find that when they cannot simultaneously focus on two resources that are both critical for growth in a particular environment due to financial constraints, they typically make a choice between them and acquire / accumulate them *sequentially*. This finding goes beyond the existing literature at the intersection of entrepreneurship and the resource-based view which has examined resource bundling, but largely assumed that resource bundling is fungible. Clarysse et al (2011), for example, suggest that strategic decision makers have latitude over how they choose to bundle resources at any point of time in response to the external environment: 'ventures *manage* resources according to the specific demands of the competitive environment, which in turn results in a given growth path' (p. 138, emphasis added). However, by following how founders seek to structure and revise a resource

portfolio *over time*, we go beyond this to reveal that entrepreneurs actually experience constraints in this process and are often forced into sequencing the acquisition of certain resources, which demands a preview of how they envisage the external environment unfolding and their relative strategic positioning within that context. This finding of resource trade-offs and sequencing is generalizable beyond regulated markets to any setting where entrepreneurs have to decide between different resource paths where the expense makes them mutually exclusive, e.g. between getting a patent for a technology (and therefore delaying user testing) versus setting up these tests early on at the expense of such patent protection, or between diversifying the product portfolio versus entering a foreign market with the extant product.

Our study shows that how entrepreneurs sequence the resources they deem important is not universal and depends on a number of factors including the founders' background (e.g. technology versus not) and priorities, as well as the pressure from investors¹. In our data, we have seen that different founder teams made different decisions, some of them prioritizing regulatory licenses over proprietary technology development, with the logic that they wanted to compete with incumbent financial institutions through directly comparable products, while others made the opposite decision of prioritizing technology development, with the logic that advanced technology (e.g. machine learning capability) will constitute more of a competitive advantage over industry incumbents. The four choices made by our sample firm founders in this regard are summarized below in Table 4 along with the observed advantages and disadvantages of each choice.

-----INSERT TABLE 4 ABOUT HERE------

As seen in Table 4 above, we find that in a regulated market, entrepreneurs that prioritize regulatory licenses are faced with high upfront financial costs, which cannot be incurred gradually, for setting up the appropriate infrastructure and staff for compliance and then working closely with

¹ The focus of our study is not the decision process of the ventures for prioritizing one resource over the other but rather the consequences of these initial choices. We therefore do not examine these factors leading to the initial decisions more closely.

regulators at a relatively slow pace. We also find that incurring such costs has consequences for the venture's relationship with investors, in that it creates a heavy reliance on investors, and investors can then pressure founders to choose strategic growth paths that lead to *quick monetization*, e.g. through an international growth strategy early on.

This finding contributes to extant literature by uncovering the effect of investor relations on a venture's strategic decisions. Earlier work described investor-entrepreneur relationships as 'resource exchange' where entrepreneurs provide ideas and technological capabilities, while VCs provide capital, managerial support, expertise and access to networks (Gomez-Mejia et al., 1990; Cable and Shane, 1997). Studies have also established that most VCs require involvement in strategic decisionmaking in order to ensure that entrepreneurs act according to their expectations (Floyd and Lane, 2000), and that in this relationship, conflicts can occur as VCs have a clear preference to reduce "the concentration of executive power in the hands of owners and entrepreneurs as a condition for their participation" (Williams et al., 2006, p. 310). Most recently, Brinckmann et al (2019) found that the resources entrepreneurs acquire usually come with specific requirements or conditions imposed by the investors due to new ventures' lack of legitimacy and proven track record, which affect entrepreneurs' flexibility to strategically reshape their resource base. Our study expands this line of research by highlighting a specific conflict that arises from misaligned interests between entrepreneurs and VCs when entrepreneurs sequence their resource focus but VCs push the venture down monetization paths, e.g. via quick expansion into foreign markets, instead of using more financial resources in order to gain competitive advantage.

Another important finding regarding founders that prioritize high-cost regulatory resources forces is that this forces these resource-constrained ventures to rent technology rather than building it themselves. However, we find that the long-term sustainability of this strategy depends on the terms of the technology rental. If vendors charge per data / production volume, as we have observed in financial services, this third-party reliance on the technology front becomes increasingly expensive and forces

the ventures to move quickly to also developing in-house technology. This finding highlights the obstacles in the resource management process of new ventures, emphasizing how entrepreneurs may need to envision the process as consisting of different stages, as certain resources cannot be borrowed for the long-term due to their increasing cost.

When we look at entrepreneurs who prioritize proprietary technology development over regulatory licenses, we find that they face an entirely different dilemma. Despite their focus on technology, not being able to reach a critical mass of customers whose data would train their machine learning technologies forced such ventures to pivot from a B2C to a B2B business model and build partnerships with incumbent institutions. This highlights the constraints and dependencies that new ventures face in the development of machine learning capabilities. We find that machine learning capability is difficult to build in B2C as slow growth in consumer numbers that are typical for a new venture has a direct negative effect on the R&D process due to lack of data that trains and therefore enables the algorithm to learn.

Overall, a comparison between these two unique paths to structure a resource portfolio shows that prioritizing regulatory licenses versus technology create entirely different external dependencies for a venture. While the high upfront costs of regulatory license acquisition make ventures dependent on investors and force them down a path of quick monetization, a prioritization of technology, and in particular machine learning, without regulatory licenses puts less pressure on the investor side, but more pressure on acquiring data, for which the ventures typically become dependent on B2B partners and face limitations in competitive product development. These findings extend the existing literature by highlighting the drawbacks of different resource paths, as well as the path dependencies they create and the pressures they put on relationships with different stakeholders. In contrast with classic RBV and resource management studies (e.g. Heirman and Clarysse, 2004; Druilhe and Garnsey, 2004; Sirmon et al 2011) that largely assume that venture founders have significant agency in developing resources and bundling them, we find that resources do not come without strings to a venture as they typically have external stakeholders with demands which need to be managed.

More broadly, these findings also imply that in a regulated industry, the 'blueprint' of a venture (Decuyper, Clarysse, and Phillips, 2020) gets determined by three stakeholders: founders, financers, *and* regulators. Our findings show that while founders have some agency in the initial strategic choice of focusing on regulation versus technology, their agency in resource management is limited by the stakeholders that provide secondary resources: finance and regulatory approval. We find that founders' initial choices create a path dependency about the way in which the ventures grow.

Resource Interdependencies in Regulated Markets

Another set of contributions centers on the *interdependence between different resources* that are critical for a new venture. Our comparison of ventures across four categories shows that for technology ventures in regulated markets, not developing their technology simultaneously with obtaining regulatory licenses creates tensions with regulators due to the interdependence between these activities. We find that when founders attempted to first build their technology and then acquire regulatory licenses, they risked having to undo part of their cutting-edge technology as the regulators had not been implicated in the technology design from the get-go and thus required significant changes before approval. Conversely, building proprietary technology after obtaining regulatory licenses put the licenses at risk, as the technological choices of the venture had consequences for the risks imposed on the consumers.

Resource configurations have attracted growing attention in recent studies of new ventures (Heirman and Clarysee, 2004; Druilhe and Garnsey, 2004). However, the determinants of these configurations have largely been framed in terms of their relationship to external market considerations such as the venture's intended end-market (Mangematin et al 2003), or internal organizational factors such as the characteristics of the venture's managers (Helfat and Lieberman 2002; Coen and Maritan 2001). Our study shows that *the relationship between the critical resource types* the venture needs is

also an important factor in how new ventures are able to grow. This finding on resource interdependence brings greater nuance to resource bundling literature (Clarysee et al 2011; Druilhe and Garnsey 2004), showing how certain resources need to be bundled not because they go well together, but because acquiring them sequentially is much harder given that getting one undercuts the other. Because these resources cannot be easily sequenced, this itself prompts some firms to develop them simultaneously, making them dependent on high amounts of venture capital, which affects their strategic growth path, as described above. In their study of resource configurations, Gruber et al (2010) argued that the performance outcomes of different resource configurations would help "managers in their efforts to think through alternative configurations" and "design a superior, flexible configuration that is more robust to environmental change" (p. 1347, see also Fiss 2007). Our findings challenge this conclusion, suggesting that the flexibility of managers to revise their resource configuration can be limited in regulated markets.

Data from our sample firms that attempted to focus on regulatory licenses and technology development simultaneously show that these ventures have more monetization opportunities to offset the high pressure from investors as they can use their technology in B2B settings early on. However, we also find that even if a venture raises sufficient funds to manage both resources, the management process itself is not a straight-forward one. Our sample ventures in this category faced significant limitations in technology development due to regulators' low-risk preferences. This influenced their strategies, pushing them to develop a dual organizational structure as an attempt to handle innovation and compliance simultaneously, with the caveat that demarcating which product or piece of technology belonged to the innovation side and which one to compliance was not always easy. These observations suggests that dual structures may be a necessary feature for new ventures, going beyond a similar pattern observed in established organizations (Tushman & O'Reilly, 1996; Jansen et al, 2009). However, as also observed in established organizations, certain dual processes may be difficult to

establish and maintain (Jansen et al, 2009), due to the difficulty of separating elements of the product technical architecture (Tee and Ozcan, 2020).

Overall, our findings show that regulatory resources do not merely serve as a burden to entrepreneurship but rather afford particular interdependencies with technology development that shape what types of growth strategies are available to a technology venture entering a regulated industry. In this respect, we shift away from clear normative claims that more resources are better and provide a more nuanced account of the role of new ventures in regulated markets. Our findings imply that entrepreneurial entry into a regulated market requires significant financial resources, not only due to the cost of regulatory compliance, but due to the necessity of developing technology and acquiring licenses *simultaneously*.

CONCLUSION

To conclude, then, our paper shows how venture founders initially manage critical resources and how choices affect their venture's strategic growth. We highlight qualitative differences in the nature of resources and show what external dependencies they impose on the venture in terms of the acquisition of other resources and firm growth. In doing so, we seek to contribute to entrepreneurship and strategy literatures by offering a more nuanced view of entrepreneurial entry and growth in regulated markets.

Our findings have great value for entrepreneurs who aim to enter a regulated market with technology products. We highlight the initial resource management choices they have to make, the trade-offs these constitute, and the difficulties of reconfiguring a resource portfolio in a regulated environment. The findings also carry implications for policy makers in that they highlight the challenges of entrepreneurship in regulated markets, and show ways for regulators to facilitate new technology entrants not just by introducing innovation-friendly new regulations, but also by redesigning critical processes such as regulatory licensing for entrepreneurs.

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Table 1: Sources of data collection

Period of data collection		June 2018 – March 2020				
Data Sources		Semi-structured interviews, plus observations at industry events and conferences in Australia (e.g. SIBOS, Stone &				
		Chalk events), and internet sources (newspaper articles, business publications, reports)				
Total # of interv	iews conducted	59				
Types of inform	ants	Executives of fintechs with titles such as Chief Executive Officer, Chief Financial Officer, Head of Product				
		Development, Managing Director, Head of Payments, Engagement Manager. Industry experts with roles such as				
		strategy consultants, regulators, industry analysts, and industry organizers				
Focal Firm	Market Segment	Vision	Resource Focus	Informants at the Firm		
(Pseudonyms)						
Brione	Personal financial	Help individuals save in their	Neither technology nor	Founder / CEO, Co-Founder (left venture)		
	management	money management	regulatory			
Tyros	Personal financial	Support regulatory compliance	Regulatory	Founder / CEO, Co-Founder / Head of Product		
	management	associated with everyday		Development		
		transactions				
Sphinx	Personal financial	Help parents manage financial	Neither technology nor	Founder / CEO, Co-Founder / VP Business		
	management	accounts of their children	regulatory	Development		
Mors	Personal financial	Gamify money management for	Technology	Founder / CEO, Co-Founder / VP Operations		
	management	individuals				
Wasi	Lending services	Small personal loans	Technology	Founder / CEO, Chief Financial Officer,		
				Engagement Manager, Head of Payments		
Sociale	Lending services	Small-medium personal loans	Neither technology nor	Founder / CEO, Chief Strategy Officer, Chief		
			regulatory	Financial Officer, Head of Product		
				Development, Engagement Manager		
Xena	Neo-banking	Home and personal loans for	Regulatory	Founder / CEO, Chief Risk Officer		
		millennials				
Mythos	Neo-banking	Home loans and personal loans	Regulatory	Founder / CEO, Head of Product Development,		
		for millennials		Engagement Manager,		
Eifion	Neo-banking	Banking services allowing	Both regulatory and	Founder / CEO, Chief Financial Officer, VP		
		multiple actors to offer lending	technology	Business Development		
		and transaction services				
Venus	Neo-banking	Banking services allowing	Both regulatory and	Founder / CEO, Head of Product Development		
		multiple actors to offer lending	technology			
		and transaction services				

Regulatory Resource	Description	Affected Market Segment(s)
Banking license	Allows a firm to accept financial deposits either from individuals or businesses. A restricted license differs from a full license. It offers a provisional (i.e. 2 year) license with lower requirements on balance sheet capital requirements, disclosure obligations, liquidity commitments on the asset base, and deposit limits	Neo-Banking
Credit license	Allows a firm to lend money (consumer credit) based on various ongoing obligations. This includes, amongst other things, that the firm can show that consumers are not being encouraged to take on unsuitable levels of credit – known as a responsible lending obligation	Lending services, Personal financial management, neo- banking
Anti-money laundering and counter-terrorism obligations	Firms that seek to move money through their services are required to have the technology and service provisions that guarantee that money is not moved between parties suspected or terrorism or money laundering.	Personal financial management, neo-banking
Payment systems provider obligations	Firms that seek to offer stored value to customers must either have a banking license or be an exempted entity.	Personal financial management, neo-banking
Consumer data protection obligations	Firms that seek to store (as opposed to use) customer data need to comply with obligations around data ownership and identity protection.	Lending services, Personal financial management, neo- banking
Financial advice license	Firms that purport to be offering financial products to customers must comply with particular commitments, such as providing a statement of advice and financial services guide to customers	Personal financial management, neo-banking

Table 2: Examples of regulatory resources available to fintechs

Table 3:	Supplementary	/ Illustrative	Quotes
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Primary	Secondary	Illustrative quotes			
themes	themes				
New	Regulatory-	"For me the priority from the beginning was around licensing. In order to get an Australia credit license, or an Australian Financial Services license, you need			
Ventures'	focus	chunks of infrastructure already set up Certainly there is insurance, policies [in place], people [to manage license obligations], systems, functions. Then from a			
Resource		capital perspective there are requirements around capital adequacy." (Chief Risk Officer, Xena)			
Focus		"We describe ourselves as a fintech with a banking license. So we have to take all the technology from [the parent company] and we don't have a lot of flexibility			
		there. But we do have all the service provision of a fully licensed bank." (CEO, Mythos)			
	Technology-	"We very much took a view that the best way to build a bank in Australia at the moment is not to be a bank. It's the approach we took from a regulatory point of			
	focus	view, from a capital point of view [based on the capital requirements of holding a banking license], from a compliance point of view. I think attracting deposit			
		accounts is pretty hard, from a value proposition point of view. I obviously wish them [the bank license holders] very well, and will be watching with great interest,			
		but I think we're more focused on the customer-facing technologies. We want to be a non-banking player in multiple technology products and so on". (CEO, Wasi)			
		"We decided in the end to not go for a banking license. I mean, ultimately, we want the consumers to have their data with [Mors] and they're sharing that data with			
		their accountant to get their taxes done. They're sharing it with their robo advisor to increase their returns. They're sharing it with their bank because they get a home			
		loan. They're sharing it with their insurance because it lowers their premium. That's kind of the vision, right? So, we [at Mors] have a whole ecosystem of solutions			
		that the consumer might use, and we want to own the technology that managers the financial data of the consumer, rather than own the deposits per se" (CEO, Mors)			
	Neither	"So we realized you could run a tech company but outsource the regulatory pieces, which is where the complexity lies. And then we realized the valuable part with			
	regulatory	the tech is not owning the tech per se but rather understanding the consumer better." (CEO, Sphinx)			
	nor	"The issues for us really from a regulatory point of view are- there's a regulatory environment that allows for providing financial advice, financial product advice and			
	technology	what constitutes financial advice. So we want to deliver in a way that is compliant with the regulatory regime around those things, but we don't want to invest in			
	focus	regulatory costs or new technology. We plan to just be a customer-facing 'skin''' (CEO, Brione).			
	Dual	"We've gone for a full ADI license in our own right The approach that we've gone down is that we also want to do the technology differently: we do everything			
	regulatory	over the phone. If you can't do it on the phone, we can't do it. Everything is done through the app - so we don't have a website but we do have technology that is			
	and	quite different I think than some [So the license and technology allows us to offer] a very simple, very narrow range of products from launch: transaction			
	technology	accounts, very simple savings accounts a deposit account with a basic interest rate and a bonus rate on top of that So to do that you need to have a banking			
	focus	license but with your own technology mix." (CFO, Eifion)			
		It's a really heavily documented, onerous, long process. If you're going to apply the same process to any organisation beginning here, either it kills innovation or it			
		slows it down. How do you internally manage to set yourself up so that you go, "Okay, the people who are building banking products, you adhere to this process.			
<u> </u>	<i>a</i>	The people who are innovating, you get do this first and be remote." (Head of Product Development, Venus)			
Constraints	Constraints	"We thought we'd have the license by this time to be honest. It's been very trustrating that every time we contact them they say, "We're working on it". I ask,			
Caused by	with investor	"When do you think you might have finished working on it?". They say, "Couldn't possibly say". I respond, "Right, I'll tell that to my board shall I? Is that what the			
Resource	engagement	investors want to hear" (Chief Risk Officer, Xena).			
Focus		"It just took a lot more cash then expected because the time it takes for regulators to make decisions is enormous. So you burn through a lot more without any			
	<u> </u>	advancement on the sales side, and that puts a strain on investors and the valuation of the company at which you can raise new capital" (CEO, Tyros).			
	Constraints	"We really need the customer data to train the AI. If we don't have the data, then the algorithms are useless" (CEO, Mors)			
	with	"Getting customers onto the platform is really hard. It's expensive to market to them and so a lot of our attention is on what we call the top of the funnel. How do we			
		get people into the system so that we can get more customers using the product but, also, train the technology" (CFO, Wasi)			

	customer engagement	
	Constraints with financial viability	"I'd say that particularly the four large banks in Australia [that dominate the market] are continually undermining the credibility of screen scrapping as a method of accessing dataThat is crucial to our business model but they are doing it because they are trying to remove competition. They are actually conflicted and so it's difficult because there is a cartel of large retail banks that are trying to undermine the credibility of screen scrappingI've no doubt that there is some sort of collaboration goes on between the four large retail banks in terms of lobbying against these sorts of things" (CEO, Brione). "It's very difficult to raise enough money to show something that is good for customers but isn't new technology They actually don't know how to value a business like that" (CEO, Sphinx)
	Constraints with regulators	"You have to realize that regulators are not paid to take risk. They are paid to stop risk. That puts them at odds with a technology company" (Co-Founder, Volt) "The regulator has a vested interest in not issuing new licences because it just means the amount of institutions they have to survey increasesIt particularly has a disincentive about small institutions [like fintechs] because, historically, they've been a real nuisance. They haven't been terribly compliant, they've got lower capital bases, and they're potentially more riskyso the regulators are hard to deal with" (CFO, Eifion)
Consequen t Strategic Growth Decisions	International ize early	"Our investors were initially pretty hands off and pretty silent partners. Now that's almost changed. They are saying they will invest in us but only if we take neobanking to Asia. So it's much more of a negotiation now". (Chief Risk Officer, Xena)
	Partnership- based market entry	"We don't do a huge amount of marketing anymore because most of our sign ups [of customers] come via our bank partners. We have over 50 clients using our data platform. Our clients have apps that implement Mors' data platform into their serviceso that is how we get the customers on board training our AI" (CEO, Mors) "We have moved to a model where companies pay us for access to our data platform, and we also do some consulting and development work to help them actually build their products, depending. It just makes a lot more sense for us to be focused on the technology and let our partners acquire the customers" (CEO, Wasi)
	Targeting corporate acquisition	"In the end, we are better placed to help a large business than be a stand alone proposition. It is hard to compete with the scale of incumbency and so we are exploring conversations with corporates and where they might want to acquire" (CEO, Brione) "We are just focused on improving the cost of customer acquisition and see which [incumbent bank] that becomes attractive to. We can't get too focused on who is out there and is interested in us as, to some extent, it is beyond our control" (CEO, Sphinx)
	Pursue large capital raises	"We have a strategy of pursuing large capital raises both for the balance sheet security and to develop the technology. It's the only way to do a full-service offering at scale" (Co-Founder, Venus) "The capital demand from mortgage products [associated with a full-banking license] means that the initial A\$50-60m that [the initial cornerstone investor] put in will quickly be dwarfed by the capital amount we need to raise to support the rising mortgage book So this is a very capital intensive business model" (CFO, Eifion)
Reconfigur ation of Existing Resource	Challenges adding technology resources	"Once the product is out in the market, it is very hard to upgrade the technology because there are some many interdependencies. When you change one thing it can have a whole raft of kick-on effects which means it gets very expensive very quickly" (Chief Risk Officer, Xena) "Once investors think you have the product, they have a low tolerance for spending more to make the technology better. It is all about getting sales after that" (CEO, Tyros)
Portfolio	Challenges adding regulatory resources	"The regulators have actually frozen adding any more licenses. So what we're realizing is that it is actually pretty unpredictable and the ability to actually shift [and add a license] once you have a particular strategy in place is somewhat limited" (Chief Strategy Officer, Sociale) "Well, the regulators are really pushing back against [the new technology] I think there's a good chance that they will rule that the technology is not allowed. The problem is that once the early stages of the market have been defined and the regulators have got an approach, it is very hard to change that and alter the regulator arrangements. They are just not flexible in their [regulatory] approach". (CFO, Wasi)

Table 4: Strategic growth decisions based on resource management priorities and experienced constraints

Resource Focus	Constraints Experienced	Consequent Strategic Growth Decisions	Further Constraints Caused by Strategic	Case Examples
			Growth Decisions	
Regulatory- focus	 High initial costs as a result of regulatory license acquisition and compliance Long time to market due to slow licensing process Heavy reliance on investor relations Heavy reliance on external technology partners License may be revoked when venture adds new technology later 	 Minimize initial technology investment Follow quick monetization paths (e.g. international growth) due to investor pressure 	- Difficulty adding novel technology later due to investor and regulator pressure	Xena Mythos Tyros
Technology- focus	 Difficulty in accessing B2C customers directly due to trust issues and high marketing costs Limited ability to train the machine learning algorithm due to lack of customer data Technology may be rejected by regulators if venture pursues a license ex post 	 Pivot from B2C to B2B model for quicker data access License technology to third parties for monetization 	 Limited freedom to develop new products due to B2B partner pressure 	Mors Wasi
No regulatory or technology focus	Difficulty in surviving solo due to low customer trust and lack of differentiation	 Focus on reaching break even Pursue strategies to partner with or be acquired by resourceful third parties 		Brione Sphnix Sociale
Dual regulatory and technology focus	 Highest initial costs due to dual focus Heavy reliance on investors due to high initial costs Regulators may push-back and reject technology due to high risk aversion to novel technologies 	 License technology to third parties for monetization Structurally separate compliance and innovation process to move forward on both 	 Difficulties of running an ambidextrous organization 	Eifion Venus