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The Role of Timing in the Business Model Evolution of Spinoffs

The Case of C3 Technologies

Timing should not be confused with speed in the development of successful spinoffs.

Mattias Axelson and Erik Bjurström

OVERVIEW: The view of time that dominates conventional management thinking, including the Lean Startup movement's "fail fast and pivot" approach, often leads to failure in the business model evolution of new ventures spinning off from established firms. Timing is critical for spinoffs because it is a key element of the balance between minimizing risk and maximizing opportunity. In the literature on business model evolution and lean startups, however, the issue of timing is given limited consideration. To address this issue, we present and analyze the role of timing in the business model evolution of C3 Technologies, a spinoff from Saab. The results offer insight regarding the use of managed timing to allow evolutionary processes to let the right moment present itself—and enable the organization to move quickly to seize the moment. This approach allows managers to control the evolutionary process despite the high uncertainty associated with exploring new business models.

KEYWORDS: Lean Startup, Business model design, Spinoffs

Spinoffs offer a way for firms to realize the latent commercial value of existing technology outside their core business lines (Parhankangas and Arenius 2003). The potential value of spinning off technology is high, since these new ventures can benefit from the incumbents' resources, such as technical know-how, intellectual property, and experience in scaling a business. However, although many companies spin off new businesses, those attempts frequently fail (Bertels, Koen, and Elsum 2015).

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One reason for the high failure rates is that managers lack knowledge about how to explore functioning business models in a cost-efficient and low-risk way (Chesbrough 2010). Certainly, as the process of designing a productive business model begins, uncertainty is high and the value of the technology cannot be predicted (Euchner and Ganguly 2014; McGrath 2010). The Lean Startup movement (Blank 2013; Reis 2011), which advocates an iterative, experimental approach to business model evolution, has gained momentum in response to these realities. Lean Startup is a process for perceiving and resolving uncertainty through validated learning (Reis 2011); Blank (2013) describes it as "evidence-based entrepreneurship." A key principle is to "fail fast and pivot" to avoid investing too much in ideas that have limited business potential (Reis 2011).

The idea is compelling, but it relies on a conventional, linear view of time as merely clock time. That view privileges speed—evidenced in the emphasis in much of the literature on, for example, being first to market—in a way that can be problematic. There is another understanding of time as event-based (Kunisch et al. 2017); this conception of time is more in line with the evolution of business models. This understanding, which approaches the role of serendipity in innovation from the perspective of Pasteur's adage that "chance favors the prepared mind" (Liu and De Rond 2016, p. 432), may be useful in addressing knowledge problems in entrepreneurial action (see Townsend et al. 2018) in

Testing new business ideas in the market means dealing with both market timing and resource timing.

relation to windows of opportunity (Huy 2001; Tyre and Orlikowski 1994).

This view of time adds an important perspective that is particularly useful in complex markets. For example, in situations where a new product or service may not be immediately appreciated by potential customers, demand may take time to develop. Furthermore, organizational competence, partnership expertise, and customer relationships need time to develop before a testable hypothesis, such as a new value proposition, can be fully articulated. Thus, testing new business ideas in the market means dealing with both market timing and resource timing—and that timing won't always allow for a "fail fast" approach that is tethered to clock time. Understanding these different conceptions of time is important for the evolution of a spinoff's business model because getting it right—properly balancing the two understandings of time—is a key to striking the right balance between minimizing risk and maximizing opportunity.

In the literature on business model evolution and Lean Startup, however, the issue of timing has been given limited consideration (see, for instance, Bertels, Koen, and Elsum 2015; Blank and Dorf 2012; Chesbrough 2017; Reis 2011, 2017). As a result, little is known about the specific role of timing in the evolution of a spinoff's business model.

To address this issue, we present a case study of C3 Technologies, a spinoff from Saab that was eventually acquired by Apple for \$240 million. C3's story offers insight into the value of managed timing as a cautious and reactive approach that can allow managers to control the evolutionary process despite the high uncertainty associated with exploring new business models. Practically, the C3 case suggests that a new venture may have a better chance of success if it proves itself on the market before being extensively financed.

The Evolution of the Spinoff Business Model

Spinoffs are particularly common in knowledge- and technology-intensive industries. In this context, Clarysse, Wright, and Van de Veld (2011) show that spinoffs that have clear and focused technological bases are well placed to grow quickly. Spinoffs founded from an incumbent's technology base are more likely to survive than startups created by independent entrepreneurs (Agarwal et al. 2004; Zook 2016). Another factor that influences the success or failure of a spinoff is the configuration of its business model, defined as how it creates value for

customers and converts that value into profit (Zott and Amit 2007).

Chesbrough and Rosenbloom (2002) showed how business models created by spinoffs played a central role in realizing the value of technology developed by Xerox. The best financial results are often achieved by spinoffs that develop business models that diverge from those used by the parent company (Chesbrough 2003). They emphasized the importance of adapting the business model to the unique market context facing the spinoff, rather than building on the business model logics of the sponsoring incumbent; others have echoed this principle (see, for instance, Miller and Floricel 2004). Hence, understanding the business model evolution of spinoffs is central to realizing the latent potential of technology.

Every business model has a market side and a resource side (Massa, Tucci, and Afuha 2017). Zott and Amit (2007) and Teece (2010) characterize business models as systemic answers to the question of how a company creates and captures value by interconnecting the resource side and the market side. This definition pinpoints the challenge of new ventures—to discover both what will create value for customers and how to harvest that value to generate profits. Discovering value creation potential does not necessarily lead to value capturing. Hence, the evolution of a business model in the case of a spinoff venture can be seen as a process of defining the formula for value creation in relation to value capture.

Business models are often not defined at the start of new ventures; instead, they evolve over time through interaction with the market (Dmitriev et al. 2014; Mullins and Komisar 2009). Indeed, business models often emerge through a trial-and-error learning process (Sosna, Treviño-Rodríguez, and Ramakrishna Velamuri 2010). Lean Startup offers one framework for such a trial-and-error process, providing an experimental methodology as a means of resolving uncertainty (York 2018).

Although Lean Startup provides an attractive methodology for incumbent companies considering spinoffs as a way to realize latent value outside their core business areas, it is still implicated in conventional, linear thinking about time and timing. Conventional business approaches to exploring new business models are deeply concerned with notions such as time to market and return on investment (especially how long it will take to realize the hoped-for return). In this regard, Lean Startup shares its perspective with management efficiency and control practices such as just-in-time inventory management and fiscal-year budgeting (Orlikowski and Yates 2002).

The literature of Lean Startup also mirrors that of conventional management approaches in its scant attention to time. When researchers and thinkers do consider time, they rely on the standard concept of clock time and maintain conventional valuing of speed, arguing, for example, that experiments should be limited to a few weeks (Reis 2011). However, this traditional notion of time is less relevant to

innovation practices than it is to conventional management disciplines (Reinecke and Ansari 2015). Rather, Reinecke and Ansari argue, time should be considered relative, defined by the context in which the company operates. When evolving a new business model in a largely unknown context, incumbents cannot rely on prior knowledge of conditions such as customer understanding and relationship maturity or on prior experience of how long it takes for these elements to emerge. Thus, the ideal speed of development is not simply a matter of clock time—being fastest—but rather a matter of finding the right time—the moment when the resources and the market align.

This perspective is necessary to the process of business model evolution. Lean Startup is correct in its assertion that the uncertainties around the design of a new business model may be resolved through experimental testing; however, the time required for learning and experimentation to generate understanding is necessarily not linear. Both the resource and market sides of the business model must be discovered, and the time required by this discovery process is relative and context dependent—not linear or definable in advance. Hence, learning has to be allowed to occur within the specific context of the spinoff and its projected market, and decisions about when to move forward with business model evolution need to reflect that context.

The Lean Startup literature has yet to offer a consideration of this issue. Another approach is needed to help managers deal with issues of timing. Against this background, we designed a case study to explore the role of timing in the evolution of a spinoff business model.

The Study

To address the question of timing in evolving a spinoff business model, we used a case study methodology to gain in-depth understanding of the many complex aspects of business model evolution. We began with theoretical sampling (Eisenhardt, Graebner, and Soneshin 2016), selecting for our case a company that was representative of a larger population of spinoffs, thereby enhancing empirical relevance of the knowledge generated. To select that case, we established three criteria; we sought a spinoff that a) was from a well-established company, b) had been built on technology developed by the incumbent, and c) had successfully entered a new product–market position with a new business model.

C3 Technologies, a Saab spinoff, met all three criteria: it was built on technology that Saab had developed for a particular market, but the company recognized that the technology had potential outside its core business and spun off C3 to explore that potential.

The primary source of data was 12 interviews with individuals involved in the development of C3 Technologies, including two of the spinoff’s CEOs and three members of its board (Table 1). We selected as interviewees people who could offer different perspectives on the company’s evolution. Each interview lasted one and a half to two and a half hours; interviews were semi-structured. A series of open-ended questions was used to elicit information about the evolution of the spinoff’s

TABLE 1. Case study interviewees

Company	Role	Number of Interviews
C3 Technologies	Chairman of the board	2
	Member of the board	1
	Member of the board (Also Saab technology expert)	2
	1st CEO	1
	2nd CEO	1
	Technology expert	1
Saab	Technology expert	1
	Technology expert	1
	Head of Saab Corporate Ventures	2

business model. The interviews were recorded, and the interviewees made notes in order to enable analysis of key results.

We also collected secondary data in the form of both internal documents—such as business plans and presentations of the model Saab used to spin off the company—and external documents, such as newspaper articles and other information about C3 Technologies, its product, and its eventual acquisition by Apple. Using different data sources allows for triangulation and validation of observations. To provide further validation of the data and avoid drawing misleading conclusions, we participated in a data feedback meeting with the managers engaged in the development of C3 Technologies.

Data were processed using an inductive data reduction methodology (Eisenhardt 1989). The analytical process started with categorization of the data, using categories drawn from the literature of business model design; we initially used Osterwalder and Pigneur’s (2010) business model canvas to structure the data. The categories were kept open-ended during the analytical process, allowing existing categories to develop and new categories to emerge from the increasing understanding of the specifics of the empirical data (Laamanen and Wallin 2009). The actual analytical process was therefore not linear, but iterative, moving between writing, reviewing field notes, listening to recorded interviews, and creating and reviewing new categories. An important part of that process was the comparative analyses of the empirical categories in relation to theoretical business model constructs (Glaser and Strauss 1967).

The ideal speed of development is not simply a matter of clock time—being fastest—but rather a matter of finding the right time.

As with all case studies, generalization to a larger population is difficult. However, case studies are valuable as a means to gain insight into and enhance understanding of the characteristics of a managerial issue. Understanding the role of timing in business model development will advance the practice and theoretic understanding of Lean Startup and help managers consider how best to explore the potential of existing technology in spinoff ventures.

Business Model Evolution at C3 Technologies

In 2011, the defense industry company Saab Technologies announced that it had sold its stake in C3 Technologies, a company it had spun off, for SEK 1.5 billion (\$240 million). The buyer was later revealed to be Apple (Karlsberg 2011). This successful deal was the end result of a long process of business model evolution, from initial idea to functioning business model. Throughout this process, the new venture's expansion emerged naturally as a response to market confirmations, rather than being pushed to match a preconceived timeline. Speed was never a focus; waiting for the right time to move the venture forward was the management team's priority. Rather, Saab and the C3 management team sought to limit investor risk by focusing on generating cash flow before making substantial investments. The evolution of C3 Technologies could be seen as occurring in four stages, from identifying latent value in the technology to confirming the potential of that value with customers and building sales and partner networks to accelerating the development of the business model.

Exploring the Idea of Latent Value (late 2006–mid-2007)

Saab had developed an algorithm to generate 3D maps for military use. In 2006, an engineer raised the possibility that the algorithm could have civil applications. The response was positive; managers felt that it was worth making a small investment to test the idea. Saab's management team made clear, however, that if the business did not generate revenue soon, it would have little interest in further investment.

To validate the potential for latent value, the head of Saab's internal venture function recruited a consultant to investigate market opportunities. In a preliminary report, the consultant concluded that the technology could be the basis for a unique and very valuable company, although the potential target market was still unidentified. The consultant, who was an experienced salesperson, was hired on a short-term basis to develop the idea further and explore its potential. He quickly began to contact other companies to investigate their interest in 3D maps. He generated a range of applications and business

ideas, such as surveillance of power grids. These ideas were discussed internally at Saab, but all of them fell short in terms of scalability. Selling 3D maps to a single customer on an irregular basis did not offer the potential of a large business. In the first half of 2007, however, a new idea surfaced from the team's crafting of a draft business model, deduced from the clues from the market: to create 3D maps of major cities that could be resold repeatedly to a variety of users.

Confirming the Value Potential with Lead Customers (mid-2007–early 2008)

Seeking to confirm the potential value of the new business idea, the consultant tested different alternatives. One of those alternatives was the CEO of a telephone directory company, Hitta.se., who saw in the idea the potential for his company to gain market attention by offering a unique customer experience. Hitta.se signed a deal with Saab for the delivery of 3D maps of Stockholm. At the time the contract was signed, during the summer, the technology for the commercial solution was not ready. The schedule was tight: Hitta.se requested that the photographs be taken before the leaves fell in October. Saab dedicated a team to developing the algorithm to meet the commercial requirements, and a period of intensive work followed. For Saab, the experience of the first deal provided confirmation that the project should continue; C3 Technologies was established as a legal entity in early 2008.

Hence, the deal with Hitta.se, the first for the new technology, played a double role: it both confirmed the technology's commercial potential in a new market context and reoriented the new venture's business model trajectory—away from a focus on the technology *per se* and toward an intensified focus on user value. According to an interviewee at Saab, “The first deal was absolutely decisive for us. It defined a market for the technology and showed the potential for a scalable business.”

Building Sales Capacity and a Partner Network (2008)

In early 2008, when the company was founded, its only assets were access to a unique algorithm (still owned by Saab) for creating 3D maps and the experience of the first deal. There was no organization or plan for the business model, only a belief in the business's potential and an urgent need to get the business running. The consultant who brokered the deal with Hitta.se was hired as CEO—and the first employee—of C3 Technologies in January 2008. Saab's philosophy was that the new business should cover its own costs. As a result, the venture's budget was tight. Consequently, C3 Technologies had to sell something it did not have, then build the production capacity to meet customer expectations. The new CEO thus focused on building sales capacity rather than technical expertise, relying on Saab's expertise in technology development and imaging operations.

Another urgent task was the development of a network of partners to fill the gaps in the new company's capabilities. Because C3 Technologies did not have the imaging equipment, operational processes, or people to fulfill its first contract, it had to rely on external partners to produce those first images.

Speed was never a focus; waiting for the right time to move the venture forward was the priority.

A company from the Netherlands was contracted to provide the photography equipment and a Norwegian company became the partner for organizing the flights. The company contracted with Saab, its parent firm, to produce the 3D maps. As one of the company's managers pointed out, "We started off with a virtual resource base, relying heavily on external partners, including specialists from Saab." Using an external network to actually provide the product was crucial in the beginning. It was cost-efficient, provided access to state-of-the-art technologies in all phases of the process, and allowed the company the time to determine what resources it needed.

In early 2008, the first customer, Hitta.se, launched a map service based on C3 Technologies' product. The successful debut drew media attention, to Hitta.se and to C3. The initial launch by Hitta.se also generated new deals with Hitta.se in Norway and Finland. Eniro, a major competitor with Hitta.se, also showed interest in offering its customers maps generated by C3 Technologies.

After the first deals were made, the board debated about whether to start expanding the company. The debate was driven on one side by recognition of the company's great potential and an understanding that the next step would be to aim for larger contracts in the global market. On the other side, there was reluctance to increase spending. The company had to prepare for further developments without overextending itself. Instead of expanding ahead of the market, the board decided to wait for new deals before extending its reach. One manager from Saab explained the philosophy: "To verify the market potential, it is best to let the new innovations starve. We do not invest ahead of the market, we invest in what the market has confirmed as valuable. Let the cash generated from real customers speak for itself."

Accelerating the Business Model (2009–2011)

Market confirmation was crucial to the board's approach to growing the new company, but the company had to act to achieve that market response. A new CEO, a leader with experience in building international technology companies, was recruited to enhance sales. The new CEO traveled frequently to meet potential customers in Europe.

In 2010, with the goal of improving its map offering, Nokia asked C3 Technologies to produce 3D maps of 25 world cities. This deal, which was worth SEK 100 million (approximately \$15 million), provided a strong indicator of the new venture's substantial potential. It was time, the board decided, to start investing in developing the internal competencies needed to develop 3D maps independently. According to an interviewee at C3 Technologies, "Having competence within reach was crucial for the development of the company as the size of operations grew."

The Nokia deal confirmed the company's transformation from a Swedish startup to a global player in the map industry. Delivering a quality product to Nokia was the ultimate proof that it had found a viable business model. For the company's board, it was the signal to start working toward an exit—a step completed with the sale of the company to Apple in September 2011.

Discussion

In retrospect, the development of the business model for C3 Technologies followed a clear trajectory. The point of departure was the idea that a technology developed by the parent company had potential value in a market outside the parent's usual reach. The consultant developed and tested various hypotheses about what that value might be, in the form of business ideas. Eventually, one of those ideas proved interesting enough to test. An early deal provided confirmation of the market value of that idea, generating a market-driven value proposition and defining target markets, not through a hypothesis but through real customer behavior. Keeping fixed costs low by relying on partners to provide operational support gave the company time to determine its operational requirements while building a market. Finally, increasing confirmation from the market, in the form of more and larger deals, made expansion of internal operations not only reasonable but necessary, increasing fixed costs. At that point, it was time to draw conclusions about the final form of the business model and leave the exploratory phase. For C3 Technologies and Saab, that meant an acquisition.

This evolution illustrates business model evolution characterized by an experimental and cost-efficient approach using timing to maximize opportunities and minimize risks. Saab's market-first approach enabled the new venture to be patient and await the right moment, identified by market confirmation, to invest in more costly resource compositions and market relationships. Three episodes stand out as critical investment triggers that pushed the company to the next phase. First, the initial deal motivated the actual founding of the company and the establishment of a separate structure. Second, follow-on deals provided the motivation for further investment. And third, the Nokia deal triggered large investments in operational resources. Each trigger episode enhanced knowledge and confidence about the value-creating and value-capturing potential of the business model.

The case of C3 Technologies provides particular insight into how timing can be used to resolve uncertainty in the exploration of the latent value of a high-potential technology. Rather than pushing the company into a development timeline, the leadership chose to wait for market relationships to mature and provide additional insight. This approach to market-based experimentation called for new steps that increase costs to be taken only when revenue streams were secured or at least very probable. In this context, timing refers not to clock timing but to a building awareness of the right time to act. It reflects a managerial attitude of waiting for events to develop rather than

Timing can be used to resolve uncertainty in the exploration of the latent value of a high-potential technology.

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one of pushing for results. This ability to wait allowed the spinoff the time it needed to learn how to match the market capacity with a business model that allowed it to fully realize the potential of its technology while limiting its resource needs, thereby freeing it to seize opportunities when they appeared.

This conscious decision to be cautious and reactive and to allow the evolutionary processes to move toward the right moment for investment can be understood as *managed timing*. Managed timing should be understood as a conscious choice to manage business model evolution in cases when only time and actual customer engagement can dissolve uncertainty. It is a way of avoiding what McGrath (2010) calls the “black hole strategy” of investing in business models with uncertain future cash flows with high uncertainty. This kind of timing refers not to clock time but to “event-based time” (Kunisch et al. 2017). It is also associated with notions of windows of opportunity. This kind of timing does not preclude swift action when it is called for; rather, it is an alternative perspective on timing that allows space for the new venture to explore the business potential of latent values.

The underlying reason this approach may be effective is that the moment when sufficient learning will be achieved and opportunities will appear cannot be foreseen. The clock-time method of driving exploration of a spinoff’s business model to a set timeline may lead to premature conclusions on issues like the direction and business potential of a new venture. The unknowns may not be resolved before the deadlines simply because the time it takes to match technology with a market cannot be foreseen; the match has to appear, and it has to be grounded in learning about what a functioning business model looks like in the context of that match. Hence, being patient with clock time and allowing insights and relationships to mature enhances the potential of success.

This concept of managed timing adds new perspective to the Lean Startup literature, by suggesting the need for additional flexibility in the “fail fast” model. In many contexts, a new business model will need the flexibility to await the right moment to move forward and accrue the learning to see that moment when it arrives. More generally, as Kunisch and colleagues (2017) argued, there is a need to develop an enriched understanding of explicit time consideration in strategic change processes. The observations of managed timing make such a contribution in the context of enabling business model evolution in a cost-efficient and uncertainty-resolving manner.

Conclusion

The evolution of the spinoff business model shares characteristics with Lean Startup principles (Reis 2011; York 2018). This study provides insight into the role of timing in business model evolution and the use of managed timing to realize the latent value of technology in markets outside the incumbent’s usual business lines. Understanding the role of timing in developing a functioning business model means understanding that the realization of the latent value of technology cannot be forced or rushed. It can happen only when the right opportunities present themselves, when the market conditions are right.

Practically, this case study adds to the understanding of how established companies may realize latent value through new business model evolution, using managed timing as a way to control risk and cost. In this approach, companies should invest little to get the first market confirmation and allow the size of subsequent orders to drive the size of subsequent investments. This managed timing approach can be used to navigate the thin line between rushing ahead, in reflexive response to clock-time deadlines, and missing opportunities by quitting before the technology’s potential fully materializes.

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