

CRAFTING BUSINESS ARCHITECTURE: THE ANTECEDENTS OF BUSINESS MODEL DESIGN

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Anchored in the broad design literature, we derive four antecedents of business model design: goals, templates, stakeholder activities, and environmental constraints. These business model design antecedents are illustrated using interview data from nine new ventures in the peer-to-peer lending space. We proceed with the theoretical development to link the design antecedents to the design themes of business models and conclude with implications for business model research and entrepreneurial leaders. Copyright © 2015 Strategic Management Society.

INTRODUCTION

Progress in information and communication technologies has facilitated new types of technology-mediated interactions between economic agents. These developments have enabled firms to fundamentally change the ways they ‘do business,’ in particular, the ways they organize and conduct exchanges and activities across firm and industry boundaries with customers, vendors, partners, and other stakeholders (Amit and Zott, 2001, 2012; Chesbrough, 2010). The technological advances enable entrepreneurs to consider innovative designs of boundary-spanning exchanges and activities. This design is captured by the firm’s business model.

The business model describes the system of interdependent activities performed by a focal firm and its partners and the mechanisms that link these activities to each other. An activity in a focal firm’s business model can be viewed as the engagement of human, physical, and capital resources of any party to the business model (the focal firm, end customers, vendors, etc.) to serve a specific purpose toward the

fulfillment of the overall objectives (Zott and Amit, 2010). This activity-system definition is broadly consistent with a range of conceptualizations that have been proposed in the literature (for a review, see Zott, Amit, and Massa, 2011), and also with the various ways in which the term ‘business model’ is often used in practice, for example, as ‘the way your business is run’ (Economist Intelligence Unit, 2005).

While reaching consensus on the concept of business model is important to advance the study of business models, we believe that the questions of how to design a business model and what its antecedents are, are just as important for both scholars and practitioners. A few articles have begun to address this issue. Zott and Amit (2007, 2008), for example, have introduced the idea of ‘design themes,’ which orchestrate and connect the elements (i.e., the content, structure, and governance) of a business model. But these early contributions have not considered the question: what are the antecedents that foster a particular design theme? This question is important for two reasons. First, since design themes are linked with actual value creation outcomes (Zott and Amit, 2007), considering the antecedents of business model design enables researchers to develop more robust theories that link business model design with the performance of a focal firm. Second, by thoughtfully considering the

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range of antecedents of business model design, entrepreneurs are better able to mitigate blind spots and cognitive biases and thereby strengthen the overall value proposition to each stakeholder. Hence, we ask: what are the antecedents of business model design? And, how do these antecedents relate to the design themes of business models?

In this article, we draw on the design literature as a starting point to address these questions. Since designers are typically faced with the need to design something (e.g., a house, a software algorithm, a product) from scratch, we focus on the design of business models for new ventures rather than the redesign of business models for established firms. Building on the received business model literature, we then provide further theory development. Although the design literature allows us to identify a set of design antecedents, it does not tell us precisely how they are linked to the design outcomes (e.g., design themes) that are relevant for business models, as opposed to products, which have been the focus of design in the management literature. This makes theory development necessary.

Business model design and product design differ in a number of theoretically meaningful ways: product design centers on the broad relationship between the focal firm and its customers (Luchs and Swan, 2011), while business model design includes considerations of multiple stakeholders, such as suppliers and partners, in addition to the firm and its customers. In other words, business model design involves the conceptualization of a boundary-spanning activity system that includes the mechanisms that connect these interdependent activities and the identification of the party that carries out each of the activities within the system. Product design, however, is ordinarily centered on identifying a set of interdependent physical components and features that characterize the firm's offerings to its clients. Relevant features of product design, such as technical functionality or aesthetic appeal, do not readily apply to business model design. Hence, any theory that links antecedents and outcomes of product design does not automatically carry over to business model design.

Using a conceptual theory development methodology that is anchored in the design literature, along with illustrations drawn from interviews with founders and senior executives of nine new ventures in the financial services industry, we identify and analyze the following four design drivers: goals to create and capture value, templates of incumbents, stakehold-

ers' activities, and environmental constraints. Our theory development suggests that these design drivers crucially affect the resulting business model designs in terms of their design themes.

BUSINESS MODELS AND THEIR ANTECEDENTS

The business model concept has rich theoretical roots. In one research stream, Chesbrough and Rosenbloom (2002: 529) link the business model to technology management and define it as the 'heuristic logic that connects technical potential with the realization of economic value,' emphasizing its role in linking technology to market outcomes. Consistent with this perspective, Casadesus-Masanell and Ricart (2010) posit that one important component of business models is the set of managerial choices about how the organization operates, such as compensation practices, procurement contracts, location of facilities, or assets employed. Another component of business models, according to this view, relates to the consequences of these choices, such as low cost or culture of frugality, which describe the 'logic of the firm' (Casadesus-Masanell and Ricart, 2010; Sanchez and Ricart, 2010).

Other scholars have promoted a more parsimonious definition of the business model. McGrath (2010) suggests thinking about business models by using two core ideas concerning managerial choices: units of business (i.e., what you are selling that someone is prepared to pay for) and key metrics (i.e., the set of activities employed to sell those units). The idea of business models as boundary-spanning systems of transactions and activities has been developed in a series of research articles by Amit and Zott (2001) and Zott and Amit (2007, 2008, 2010) to capture the essence of 'how firms do business.' A focus on the activity system—a 'system that is made up of components, linkages between the components, and dynamics' (Afuah and Tucci, 2000: 4)—could indeed provide a useful common perspective across the various conceptualizations of the business model (Zott *et al.*, 2011) and, hence, we adopt it in this study.

Zott and Amit (2010) have shown that the design of a business model can be characterized by 'design themes,' which are specific configurations of the content, structure, and governance of activities. There are at least four such design themes: novelty, lock-in, complementarities, and efficiency. The

essence of novelty-centered business model design is the adoption of new activities, new ways of linking activities, or new ways of governing activities. Lock-in-centered design refers to the elements of business models that help attract and keep customers, partners, or vendors as business model stakeholders. Complementarities-centered design refers to bundling activities and exchanges within a business model to promote synergies among them. Lastly, an efficiency-centered business model design aims at linking activities in a cost-reducing manner.

Although recent work in entrepreneurship and organization theory has begun to address the important role of design in the entrepreneurship process (Hargadon and Douglas, 2001; Romme, 2003), relatively little is known about the antecedents of business model design, specifically, what these antecedents are and how they influence the design themes. Given that the design themes, in turn, have been shown to affect firm performance (e.g., Zott and Amit, 2007, 2008), there seems to be a 'missing link' that prevents the development of a more fully specified model of business model design and performance.

Indeed, early contributions to the business model literature have focused more on factors that broadly enable the development of new business models than on specific design drivers. These broad enablers include new technologies and technological change (Chesbrough and Rosenbloom, 2002), changing customer preferences (Teece, 2010), and new capabilities (Seelos and Mair, 2007). While important, these broad enablers and change drivers do not answer the question of what the resulting business model designs (should) look like. Some of the more recent work, focusing mostly on business model innovation, has also identified a number of change triggers such as external threats and opportunities, competition, technology, regulation, and deep knowledge about customers (Casadesus-Masanell and Zhu, 2012; Frankenberger *et al.*, 2013). Moreover, it has emphasized the importance of the individual business model designers, especially their cognitive abilities and beliefs (Aspara *et al.*, 2011), creativity (Svejenova, Planellas, and Vives, 2010), and persistence (Sosna, Treviño-Rodríguez, and Velamuri, 2010). Although these general factors explain why managers of established firms might wish to reconsider their existing business models and why firm founders might wish to pay attention to the design of their new business models, it is not clear how they could provide specific guidance about the resulting designs which, in turn, affect performance.

There are also studies that mention certain antecedents such as the use of templates (Chesbrough, 2010), environmental constraints or stakeholder activities (Sanchez and Ricart, 2010), and the importance of value creation and appropriation goals (e.g., Teece, 2010), which are discussed later in this article. However, these antecedents are often introduced in an isolated fashion. What is more, the links between these factors and possible design outcomes (e.g., design themes) are either missing or underdeveloped. For example, Sanchez and Ricart (2010) note that constraints could either hinder or help novelty-centered business model design.

To summarize, the received business model literature provides a foundation for the analysis of antecedents of business model design. However, the literature does not identify what the design-relevant antecedents are, nor precisely how they are linked to the design themes of business models (i.e., novelty, efficiency, lock-in, complementarities). This is the gap in the literature we are addressing in this article.

METHODS

Research design and analytical process

Given the scarcity of prior work in this area, we rely on sources of inspiration outside the received business model literature for identifying and developing theory on the antecedents of business model design. Specifically, we rely on conceptual theory development, i.e., theory development by logical reasoning (see Corley and Gioia, 2011; Sutton and Staw, 1995; Weick, 1995), anchored in the broader design literature. According to Simon (1996: 111), 'Everyone designs who devises courses of action aimed at changing existing situations into preferred ones.' At the organization level, design is the process of grouping activities, roles, or positions in the organization to coordinate effectively the interdependencies that exist (Pfeffer, 1978). More generally, design 'is concerned with how things ought to be, with devising artifacts to attain goals' (Simon, 1996: 114). At the business model level, design can be conceived as the particular configuration of activities enabled by business model stakeholders and the resources they deploy.

Although it has been emerging since the mid-1970s, a commonly accepted, unified science of design does not yet exist (Simon, 1996). Therefore, in our conceptual theory development, we draw on ideas from various design fields (e.g., architecture,

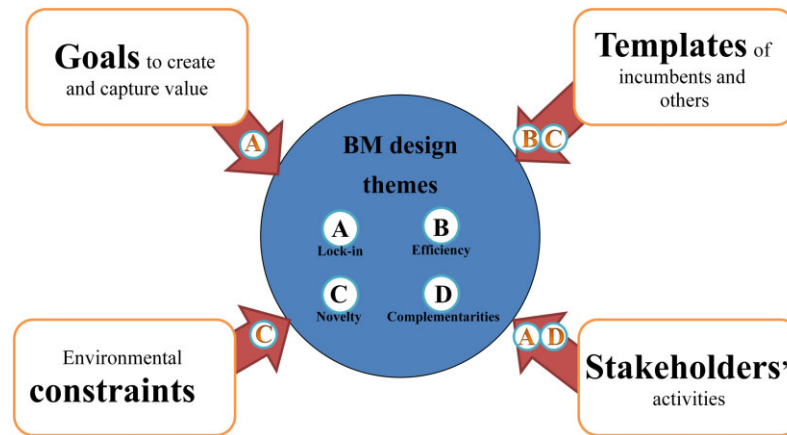


Figure 1. Antecedents of business model design

engineering, sociology, choreography, and music). These fields were reviewed by Boland and Collopy (2004), who synthesized from their analysis of the various design literatures a number of design concepts (i.e., design antecedents, design process steps, and design consequences) they deemed as particularly relevant for management. Building on Romme's (2003) distinction between design content (i.e., what is being designed, including factors that shape the design and that characterize the design outcome) and design process (how something is being designed), we make a distinction between *antecedent-related design concepts* (referring to factors that shape the design), *consequence-related design concepts* (referring to factors that characterize the design outcome), and *process-related design concepts* (referring to factors that describe how something is being designed). Following that distinction, we classified each of Boland and Collopy's (2004) 41 design concepts as antecedent, process, or consequence related. This yielded 12 antecedent-related concepts, which we retained, and 21 process-related and eight consequence-related concepts, which we discarded (see Appendix). By grouping similar antecedent-related design concepts together, we distilled four factors, which we refer to as 'antecedents of business model design.' These include: goals to create and capture value, templates of incumbents, stakeholders' activities, and environmental constraints.

Our theory development links these antecedents to the four design themes of business models introduced earlier, namely novelty, lock-in, complementarities, and efficiency. In this exploratory study, we focused on the primary linkages as suggested by our

emerging theory on the role of design in the context of business models, summarized in Figure 1.

Data used for illustration

We complement our conceptual analysis with data from nine new ventures that were collected as part of a pilot study aimed at better understanding the emergence of new business models. Because of data limitations, however, we did not conduct grounded theory development. We used our data solely to illustrate the relevance of the conceptually derived antecedents of business model design. We used data collected from interviews with executives of nine new ventures in 2007 and 2008. The setting for these interviews was the emerging global peer-to-peer (P2P) lending industry, where Internet-based business models were first launched in the United States in 2000, in the United Kingdom and Australia in 2005, and subsequently in other countries. The new business models tackled the established mode for lending and borrowing in the twentieth century, which relied on the use of a bank as an intermediary. The new business models incorporated online tools and marketplaces that enabled direct lending and borrowing among individuals, thus diminishing the role of the bank as a borrower (of deposits) and lender (of credit). Table 1 provides an overview of the companies and interview sampling data. (For ease of exposition, interview quotes are *italicized* in the article.)

As can be seen in Table 1, for some companies (e.g., ALPHA and BETA), we have significantly more data than for others (e.g., EPSILON, LAMDA, SIGMA). Because of this limitation, as well as the scale and nature of the study itself, we use our data

Table 1. Sample characteristics and data collection

	ALPHA	BETA	GAMMA	DELTA	EPSILON	KAPPA	LAMDA	SIGMA	OMEGA
Business description	Allows people to lend money to those who wish to borrow, instead of using savings accounts and bank loans	Operates a Web site where individuals can invest in personal loans or request to borrow money	Acts as a broker-dealer specializing in micro-finance securities for retail investors	Facilitates development through micro-credit	Originates loans and offers loan trading	Facilitates micro-credit to small businesses in developing countries	Gives alumni the opportunity to make loans to students	Operates a Web site where individuals can invest in personal loans or request to borrow money	Provides tools such as legal documentation and loan agreements to facilitate the setting up of loans between individuals who know each other
Venture type	Start-up	Start-up	Corporate venture	Social venture	Start-up	Start-up	Start-up	Start-up	Corporate venture
Location	U.K., U.S., Australia	U.S.	U.S.	U.S.	U.S.	Denmark	U.K.	Germany	U.S.
Founding year	2005	2006	2006	2005	2006	2006	2007	2007	2000
Interviews	8	6	2	3	1	3	1	1	2
Interviewees	Cofounder and CEO, CEO (2), CTO, cofounder and business architect, cofounder, manager (2)	Cofounder and CEO, cofounder, project manager, CFO, CMO (2)	CEO, Founder	Founder and CEO, finance director (2)	Founder and CEO	Cofounder and CEO, COO	Founder and CEO	Founder and CEO	Founder and CEO, architect and head of software development
Interview dates	June 2007 (6), August 2008 (2)	March 2008 (2), Sept. 2008 (4)	Sept. 2008 (2)	Oct. 2007, March 2008, Sept. 2008	Sept. 2008	May 2008, Sept. 2008 (2)	August 2007	August 2008	August 2008, Oct. 2008
Total interview length	9h15min	4h40min	3h	4h	1h20min	4h	1h	1h15min	2h

only for illustration. The interviewees were cofounders and senior executives who were key witnesses to the development of the business models of their respective firms. In the case of ALPHA, the job title of one cofounder was ‘business architect,’ reflecting his crucial role in designing the business model. That cofounder told us:

‘I think my role in ALPHA was always designing the business from the start, designing how the model was going to work and how the business was going to work and creating that vision going forward. So in terms of what an architect does: designs a house, how it looks, and how it works.’ (Cofounder and business architect, ALPHA)

He went on to elaborate on his particular task to design the business model (and not, for example, the internal organizational structure of the venture):

‘I designed really only the business model. The major design piece was in actually understanding how to match up lenders and borrowers. How was that process going to work? How would we balance supply and demand across different markets? How would we spread liquidity across different markets? It was much more than a strategic role. It was a very design-led role and it was a really interesting problem to solve.’ (Cofounder and business architect, ALPHA)

Thus, our interview data are important and unique in illustrating the pivotal role of the design of the business model for developing new ventures.

FOUR ANTECEDENTS OF BUSINESS MODEL DESIGN

Goals to create and capture value

The first antecedent of business model design that we identified is the goal (or goals) to create and capture value. According to Boland and Collopy (2004: 272):

*‘A design problem must have a **goal**¹ or it will not be a viable design project. The goal should be open-ended (as in a purpose) rather than specific, so that it can serve as the basis for posing an ideal that is sought in the design. This allows the design problem*

to be one that calls for one’s best efforts to strive beyond default solutions.’

To illustrate an open-ended, or rather broad, ‘goal’ of business model design, consider the case of P2P lending company BETA. The cofounder of this company noted that he and his founding partner ‘had the view that one of the great social injustices of the world was lack of transparency in lending.’ He elaborated that lending was a business that touched on many people’s lives in personally meaningful and important ways and that this insight was at the heart of their efforts to design a P2P business model:

‘Everything that’s important in your life has debt baked into it, and yet it is an area of society that we as consumers have virtually no control over. We can barely see our own credit scores. . . Wouldn’t it be great if it was fairer than that. . . We sketched together what a Web site like that would look like, and then we did some design work . . . We spent our days arguing: is it the most efficient, is it the most consumer friendly, is it the most helpful?’ (Cofounder, BETA)

Here, the relatively broad goal of giving people fairer access to lending inspired a P2P business model design. It triggered a design process that centered on the goal of creating value for consumers; the resulting model had to be ‘efficient,’ ‘consumer friendly,’ and ‘helpful.’

Many conceptualizations of business models refer to the goals of a business model design as the creation and capture of value through the fulfillment of the perceived customer needs. For example, Amit and Zott (2012) posit that the design of any new business model begins with the question, ‘What customer need will the business model address?’ And for Chesbrough and Rosenbloom (2002), the value proposition for customers is an integral part of a business model. The design literature acknowledges the goal of fulfilling customer needs. Boland and Collopy (2004: 269) observe that:

*‘A designer always has a **client** and is always producing a product or service for that client. A client is indispensable to the statement of the design project and the setting of the design problem.’*

Entrepreneurs often agonize extensively to better understand their customers’ needs and how to meet them. In that regard, Boland and Collopy (2004: 267) note that:

¹ Terms in bold in this section indicate design concepts from Boland and Collopy (2004) classified in the Appendix of this article as antecedent related. Bold added.

*'To **agonize** is to be more than just worried or concerned about an issue. It is an emotional struggle with the competing forces and demands of the situation and indicates an intense level of care about the right course of action.'*

The 'agonize' concept can thus be related to the designer's goals and specifically his/her concern about clients' perceived needs and desires. Business model designers are indeed often concerned with creating value for *other* stakeholders, not just for their *own*, focal firms. Thus, an important antecedent for adopting a particular business model design would be the goal of creating value for *all* business model stakeholders, that is, a focus on total value (Brandenburger and Stuart, 1996), rather than a focus on value capture by the focal firm. The total value created through the business model of a focal firm can be defined as the willingness-to-pay of all customers minus the opportunity cost of all suppliers and partners in the business model, including the focal firm (Zott and Amit, 2008). Through adopting a total value perspective, business model designers 'integrate the resource and demand side of the strategy equation,' as Priem, Butler, and Li (2013: 481) noted. To illustrate, one ALPHA manager told us that, 'I worry more about maximizing the value to our credit union partners and maximizing the value to our existing customers [than about maximizing value for ourselves].' And the CEO of GAMMA noted that, 'everybody in the supply chain has to be profitable or you won't succeed in the industry.'

By creating value for all participants in the business model, the designer of the focal firm's business model increases the opportunity cost of breaking away from the focal firm's business model and joining another one and, thereby, enhances the commitment of business model stakeholders to the business model of the focal firm. This creates lock-in, which prevents the migration of customers and strategic partners to competitors (Amit and Zott, 2001). Lock-in-centered business model design refers to the measures that firms may take to achieve stakeholder lock-in through their business models. But the business model designer does need to take into account potentially competing goals and objectives of various business model stakeholders. Therefore, based on Boland and Collopy (2004: 268, 276), we consider 'balance' and 'tension' as further goal-related antecedents of business model design. They note that:

*'A good design solution always reflects a **balance** of competing demands among user needs, the environment, future generations, resource capacities, real costs, and the unique historical tensions of the situation.'* And,

*'A good design problem has multiple **tensions** between the competing logics, needs, and goals of its many stakeholders. Engaging those tensions openly and creatively is necessary for good design.'*

When founders balance the goals of value creation (for all stakeholders) and value capture (for their focal firms), they take into account, and likely strengthen, the incentives of other business model stakeholders to participate in the focal firm's business model, thereby emphasizing its lock-in-centered design (Amit and Zott, 2001). To achieve this balancing act, human judgment is needed, which is 'an art developed over time by one who takes a designer's responsibility for shaping the world that others must live in' (Boland and Collopy, 2004: 268). An emphasis on value creation without regard to value capture would be naïve, and it would put the economic viability of the focal firm at risk. Conversely, a preoccupation with value capture might unnecessarily reduce the amount of total value that could be created and increase the likelihood that some participants might find it unattractive to participate in an assigned role in the business model. As a result, the business model might fall apart. The balancing act required to prevent this from happening is akin to the one faced by platforms to balance the need to lock in customers on the one hand and developers on the other hand, although the inherent trade-offs may be distinct to platform ecosystems (Cennamo and Santalo, 2013).

The switching costs faced by the stakeholders of a business model in which the goals of value creation and value capture are balanced are anchored in the economics literature (see Farrell and Klemperer, 2007) as well as in the marketing literature (Pick and Eisend, 2013). Specifically, the goal of value creation is linked to the notion of relational switching costs. The evolution of relationships among the parties to a business model may lead to accumulation of trust and mutual knowledge about the competence of the stakeholders, and this leads to 'relational contracting' among the parties, which can be an efficient exchange mechanism (Gibbons and Henderson, 2012).

The goal of value creation may also be realized through network externalities among business

model stakeholders. The original idea of network externalities has been refined and is now used almost interchangeably with ‘two-sided markets’ (Rochet and Tirole, 2006) and ‘platform markets’ (Zhu and Iansiti, 2012). As the name suggests, ‘two-sided markets’ involve two separate networks, typically a buyer network and a seller network, as is the case, for example, in a P2P lending site. Interactions occur within each network and across the two networks to create value: when network externalities are positive, they create incentives to ‘herd’ with others which, in turn, can lead to a single platform (or natural monopoly) created by a business model dominating an industry. Furthermore, it may not necessarily be the best platform from a technical perspective; it just needs to be adopted by a critical number of early users before it becomes overwhelmingly attractive for anyone new to the market to join that platform. Absent some kind of regulation, the result is often a winner-takes-all (WTA) phenomenon, although Cennamo and Santalo (2013) have pointed out that there are important trade-offs associated with simultaneously pursuing aggressive WTA strategies. The goal of value capture is also manifested by procedural switching costs that may derive from learning and set up or from proprietary technology which may provide pricing power to the focal firm.

Based on these arguments, we combined these five antecedent-related concepts from the design literature (‘goal,’ ‘client,’ ‘agonize,’ ‘balance,’ and ‘tensions’) into a single one that we labeled ‘goals to create and capture value’ (in short, ‘goals’). Although this antecedent may be related to any of the four design themes of business models (novelty, lock-in, complementarities, efficiency), our theorizing suggests a strong link with lock-in. Specifically, we hypothesize that the emphasis on the lock-in design theme of a business model increases to the extent that the business model designer heeds the goal’s antecedent, especially its balancing dimension. We also surmise that the more strongly the business model is geared toward fulfilling important yet poorly served needs of customers, all other things being equal, the higher the customers’ willingness to embrace the model, and hence the higher its switching costs—not just for customers, but also for all other parties to the business model as well. This is because the greater the gap in the market addressed by the business model, the more business model stakeholders stand to gain by filling that gap which, in turn, strengthens the business model’s

lock-in design theme and the corresponding value proposition to customers and partners.

The arguments put forward in this section lead to our first proposition.

Proposition 1: Focusing on the ‘goals to create and capture value’ antecedent by (1) balancing value creation for all business model stakeholders and value appropriation by the focal firm and (2) responding to the needs of business model stakeholders enhances the lock-in-centered design theme of the resulting business model for a new venture.

We illustrate the ‘goals to create and capture value’ antecedent and, in particular, how responding to the needs of customers enhances business model lock-in by drawing on some of our examples from the design of P2P lending models. The identified customer need was the availability of unsecured personal loans at attractive rates. Banks were servicing the need, albeit in an inefficient and incomplete way, charging high interest rates for their services and servicing only a narrow range of individuals who were considered creditworthy. Inspired by the analogy of corporations creating their own debt instruments, the idea was conceived of individual customers issuing their own debt to other people. The cofounder and self-proclaimed ‘business architect’ of P2P venture ALPHA explained how he was considering specific features of a P2P business model, such as customer credit ratings, while he was brainstorming about potential customer needs in the unsecured lending niche of the financial services market space:

‘The thought that I had was, what if as a consumer you could issue your own debt? Instead of having to go to a bank you could raise funds from a variety of sources rather than just a bank, and you could have your own credit rating as most companies do and you could retain that credit rating into the market and use that to attract funds at a rate that is appropriate for the risk that you as a person have.’
(Cofounder and business architect, ALPHA)

Clearly, the goal to meet the perceived need of customers here constituted an important driver of business model design, in particular the question of *how* the perceived customer need could be best met, where ‘best’ refers to fully satisfying the customer. In the case of ALPHA, customer satisfaction involved not only low interest rates, but also high

transparency about the lending process for both borrowers and lenders. This, in turn, would create a two-sided market with its associated expected lock-in effect. In another case (BETA), the relevant value proposition to customers was not purely financial, but also encompassed notions of social fairness. As the founder and CEO of BETA told us, ‘People want to make a good return on their money, but the average person also wants to feel like they’re helping somebody.’ Therefore, it is important for business model designers to understand the goals of the various stakeholders that they need to balance in the design and that could serve as a source of relational switching costs.

Templates of incumbents and others

The second antecedent of business model design that we propose—‘template’—is anchored in the design concepts ‘borrow,’ ‘default,’ ‘recycle,’ and ‘vocabulary.’ According to Boland and Collopy (2004: 268):

‘To borrow ideas and approaches in design work is commonplace. And an awareness of those elements of a design that are being taken from another project, another colleague, or another sphere of human activity is helpful in creating good design solutions. Designs almost always display borrowing because the slate is never blank at the beginning of a project, and all ideas or design elements are ultimately related to others. The important thing is to recognize what one is borrowing from other designs and situations, so that one can reflect the appropriateness of using it, rather than inventing a new approach for this situation.’

A business model designer can draw inspiration (i.e., borrow) by observing existing firms, or ways of organizing activities and exchanges, and by talking to investors, mentors, or colleagues who might be able to offer advice. Borrowing is commonplace in business model design. Especially founders of new firms search widely for examples of other business models from which to copy elements (Snihur and Zott, 2015). If firms in the same product-market space are observed, chances are that the designer will replicate (recycle) an existing (default) solution.

‘The most familiar and expected solution to a design problem is the default solution. It is often the first thing that comes to mind and is related to the logic of path dependency . . . Default solutions are often the safest organizationally, but are usually the least

effective in creating an advantage for the firm. Being aware that default ideas will be generated first in a design process can make it easier to reject them and search beyond them for higher pay-off, path creating solutions.’ (Boland and Collopy, 2004: 269–270)

Thus, design theory suggests a potential trade-off between efficiency-centered design (which aims at lowering ‘organizational risk’) and novelty-centered design (which aims at creating ‘an advantage for the firm’) when selecting the default solution. Default solutions foster efficiency-centered design at the expense of novelty-centered design.² ‘Dominant designs’ (Utterback and Abernathy, 1975) of business models provide important clues to new entrants about the efficient deployment of resources and capabilities that undergird the activity system. These dominant designs are likely to link activities in a cost-reducing manner; that is, individual activities are linked with each other in a way that reduces transaction costs in the activity system as a whole, which is manifested in the structure and governance of the activity system. Hence, in the design of the structure and governance of new business models, drawing on the most prevalent designs of business models in an industry is likely to enhance the efficiency-centered design of the new models. However, as noted, this may come at the risk of path dependency, which implies lack of novelty-centered design. In that regard, Boland and Collopy (2004: 275) further observe that:

‘Aspects of design that have worked in the past are often drawn upon again in subsequent projects. This can be a good idea, but is dependent on the designer having awareness that they are recycling the elements. Without such an awareness, the designer risks producing a default solution or strengthening a path dependency.’

That is, design theory suggests that ‘awareness’ of the designer is an important contingency condition that influences the ways in which templates shape the resulting design outcome. Awareness refers to the cognitive aspects of a business model and requires recognition in real time that one is recycling

² This means that if one adopts the default solution, the resulting business model is more likely to be efficient rather than novel. It does not mean, however, that a novel solution (i.e., one that departs from the default solution) cannot be more efficient. (See also Zott and Amit (2007), who argue that novelty-centered design and efficiency-centered design are not necessarily mutually exclusive.)

elements from a design template. It is akin to the concept of mindfulness, which refers to a ‘state of active awareness characterized by the continual creation and refinement of categories, an openness to new information, and a willingness to view contexts from multiple perspectives’ (Levinthal and Rerup, 2006: 502; Langer, 1989).

Mindful business model designers are keenly aware of their options when they consider templates, and they know the pros and cons of each template. They realize that they are borrowing from existing business model designs, recognize precisely what they are borrowing, and reflect on the appropriateness of doing so. This process of deep reflection rejects simplified interpretations. It is anchored on the wide attention breadth of the designer (Dane, 2011) and enhances the probability of reaching a desirable design outcome, although the latter cannot be guaranteed (Rerup, 2005). Mindful consideration of templates leads designers to consider more alternatives and reject options that are less likely to be desirable, feasible, or viable (Brown, 2009). Through enhanced scanning processes and more context-relevant interpretations, they can make better discriminating decisions, especially in the face of bandwagons (Fiol and O’Connor, 2003). Therefore, Dane (2011) theorizes an overall positive effect of mindfulness on task performance. Specifically, it can enhance the process of entrepreneurial discovery and exploitation through ‘the adjustment of routines, templates, and business plans’ (Rerup, 2005: 461). Mindful consideration of templates from incumbents in an industry might lead to their rejection and, thus, (perhaps counterintuitively) increase novelty-centered business model design.

Mindless business model designers, by contrast, act as if they are on ‘automatic pilot’ (Langer, 1997), for example, when accepting and drawing on received templates. This typically entails suboptimal design outcomes, as Pfeffer and Sutton (1999: 77) suggest: ‘When people in an organization engage in mindless acts based on precedent, such behavior precludes them from even considering whether practices need to be reexamined.’ Thus, although *mindful* imitation of an incumbent’s template (i.e., adopting a well-honed, efficient, legitimate business model while being fully aware of what one is doing) might be desirable when efficiency-centered design is the overriding objective, *mindless* copying of an incumbent’s template might be costly. In this case, business model designers stick to a default model because they do not know any better (e.g., due to

path dependency, bias, and/or bounded rationality) and simply follow the given ‘**vocabulary**’—that is, the ‘set of images, concepts, sensibilities, tastes, preference, and logic that have been developed through time and experience’ (Boland and Collopy, 2004: 276)—not because of a reflective, explicit, well-reasoned pursuit of efficiency.

The arguments put forward in this section are captured by the following propositions:

Proposition 2a: Focusing on the ‘template’ antecedent by mindfully considering templates may increase efficiency-centered and/or novelty-centered design of the resulting business model for a new venture.

Proposition 2b: Focusing on the ‘template’ antecedent by mindlessly drawing on templates of incumbents in an industry promotes efficiency-centered business model design for a new venture, but reduces its novelty-centered design.

As an illustration, the young P2P lending market space offers a glimpse into the importance of mindfully using templates for coming up with new designs. The founders of ALPHA, for example, were influenced by business model designs from outside their targeted domain of activity (commercial lending). According to one cofounder, they considered Internet auctioneer eBay, as well as the market for corporate bonds, and mindfully blended these templates: ‘We combined the corporate bond market with an eBay model and the two of them then became ALPHA.’ eBay, probably due to its unprecedented success as a matchmaking platform for e-commerce, was used as a template by other P2P firms as well, who aspired to become ‘the eBay for money’ (CEO, BETA). As the CEO of KAPPA explained, ‘We were inspired by eBay because eBay is an infrastructure. eBay is not deciding whether or not this chair is being sold, eBay is just being the logistics.’ Other examples of templates used for designing P2P business models included Craigslist and Grameen bank (DELTA), Wall Street and the Hoi credit system in Vietnam (BETA), online banks (ALPHA), and iPod and iTunes (KAPPA).

Business model designers can also draw on templates from other domains of social life, for example, politics. The founders of BETA were inspired by the ideas of democracy and community service and mindfully drew on them when they designed their P2P lending venture. As a cofounder of BETA noted,

'The original business model was that we would act as a servicing platform, and that goes back to a core value that we shared: people should be dominant and democracy should be dominant and people's voices should dominate.'

Our data, thus, provide some illustration of the importance of template business models. The mindful consideration and subsequent rejection of the traditional banking model led the founders of many P2P firms to adopt novelty-centered designs. There were, however, also firms, such as ALPHA, that partially embraced received banking templates (including online banks and bond markets). ALPHA's resulting business model design, although novel, indeed appeared to be more efficiency-centered than that of other P2P firms. It included a creditor risk assessment based on an in-house proprietary algorithm, geared at lowering the probability of credit defaults. Thus, ALPHA's new business model was both novelty as well as efficiency centered.

Stakeholders' activities

The third antecedent of business model design that we propose is rooted in the design concept 'collaboration.' This concept can refer both to cooperation with partners during the design process and to cooperation as a defining characteristic of the resulting business model design. Given that the focus of this article is on design content rather than process, we discuss collaboration here with respect to the latter meaning (i.e., cooperation embedded in the design solution). According to Boland and Collopy (2004: 269):

*'A path-creating design will necessarily involve **collaboration** among partners who each bring unique expertise and talents to the project. Without collaboration across boundaries of disciplines, organizations and perspectives, a design project has limited possibilities for invention of new solutions.'*

The concept of collaboration is also discussed in the literature on business ecosystems. 'In a business ecosystem, companies...work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations' (Moore, 1993: 76). The business ecosystem includes companies to which activities or business functions are outsourced and also institutions that provide financing, firms that provide

technology on which companies draw (e.g., an LTE wireless network in the telecommunication industry), and makers of complementary products. 'It even includes competitors and customers [and]... entities like regulatory agencies and media outlets that can have a less immediate, but just as powerful, effect on your business' (Iansiti and Levien, 2004: 71).

In a business model, the focal firm collaborates with business model stakeholders across its ecosystem (partners, customers, suppliers, financiers) to craft a unique solution. Some of the activities are performed by these stakeholders. In order to distinguish this business model antecedent from collaboration as a process, we refer to it as 'stakeholders' activities.'

Since business model design involves system-level thinking, it requires the simultaneous consideration of multiple outsourcing and partnering arrangements involving stakeholders' activities. Unlike the decision of whether to outsource one particular activity or not (i.e., whether to 'make or buy' it), which, given the activity, hinges mostly on transaction cost considerations (Williamson, 1985), the decision at the system level about the bundle of activities performed by the focal firm and its partners involves two steps. First, it requires a conceptualization of the set of activities that will encompass the activity system. This step in the development of the business model content centers on the concept of complementarities, that is, whether activities potentially reinforce each other with respect to some defined outcome (Amit and Schoemaker, 1993). For example, does a P2P firm include a credit risk assessment of borrowers in its business model or does it leave it up to its customers (the lenders) to perform one (or not) at their own discretion?

The second step involves a consideration about the appropriate activity governance. If the activity is to be included in the business model, who should perform it—the focal firm or one of its partners, vendors, or other stakeholders? For example, in the P2P lending market space, possible business model stakeholders may include banks (to ensure compliance with a country's legislation and regulations), credit data firms (to facilitate the risk assessment of borrowers), commercial lending firms (to inject liquidity into the system), and payment processing firms (to enable payments), amongst others. To illustrate, the head of software development at OMEGA told us that in addition to all of the previously mentioned partners, they 'partially outsource IT, Web

design, Web analytics, usability auditing, and creative work.’ The many different combinations of stakeholders and activities that these stakeholders could perform define a potentially vast solution space for the business model designer.

Entrepreneurship and management scholars have, of course, long recognized the importance of collaboration for new ventures and examined its associated benefits and costs. At the product and firm levels, researchers such as Schumpeter (1934) have emphasized the importance of novel resource combinations, taking into account that entrepreneurs may not always own or control the required resources and capabilities, in which case they will have to rely on their networks (Aldrich and Ruef, 2006) and/or use techniques such as symbolic management (Zott and Huy, 2007) to acquire them. Another possibility is for entrepreneurs to make do with the resources that are at hand by recombining them creatively in a process of bricolage (Baker and Nelson, 2006). At the network level, the focus is on the set of collaborative interfirm relationships that constitute the firm’s strategic network (see Gulati, Nohria, and Zaheer, 2000). Stakeholder theory (for a review, see Laplume, Sonpar, and Litz, 2008) highlights the role of relationships among groups that have a stake in the business. It highlights the importance of managing the diverse interests of all the stakeholders and adopts a relational and value-based view of the nature of the business (Freeman, 1984), suggesting that business ‘can be understood as a set of relationships among groups which have a stake in the activities that make up the business’ (Freeman, 2010: 7).

Stakeholder theory advances a number of conditions under which the diverse interests of stakeholders are better coordinated and managed, including: interest alignment (Freeman, 2010), fairness (Bosse, Phillips, and Harrison, 2009), stakeholder integration (Plaza-Úbeda, Burgos-Jiménez, and Carmona-Moreno, 2010), and stakeholder management (Roloff, 2008). On the premise that the realization of complementarities among stakeholders’ activities requires the cooperation and coordination of related stakeholders and alignment of interests among stakeholders, better stakeholder management lays a foundation for realizing complementarities.

Further, newly formed businesses need to overcome the lack of legitimacy at the beginning of the business-building process, which includes the business model design stage. Once the first reputable stakeholders are on board and committed to per-

forming activities within the focal firm’s business model, a critical legitimacy threshold may have been reached beyond which signing up further partners should be easier. Thus, if in the end the business model relies at least partially on activities performed by highly reputable stakeholders, then this may enhance the lock-in design theme of the business model. The fact that reputable third parties are participating in the business model enhances its draw for other, potentially less committed stakeholders (e.g., customers) who will perceive the business model as more legitimate and trustworthy (Aldrich and Fiol, 1994). In the presence of positive network externalities, it also increases the switching costs for business model participants, thus strengthening the lock-in-centered design even further.

These considerations lead us to propose the following:

Proposition 3a: Focusing on the ‘stakeholders’ activities’ antecedent promotes a complementarities-centered business model design for a new venture. This effect is enhanced through capabilities for stakeholder coordination and management.

Proposition 3b: Focusing on the ‘stakeholders’ activities’ antecedent by relying on highly reputable partners promotes a lock-in-centered business model design for a new venture.

To illustrate the importance of stakeholders’ activities for complementarities-centered business model design, consider how the cofounder of P2P lending firm BETA described their complex design task to engineer the architecture of their firm’s activity system by considering the activities of complementary players—banks, credit bureaus, and collection agencies:

‘We got all the banks and the credit bureaus and collection agencies, and we got all the pieces that we needed and we got them at reasonable rates. And the system [came] together. . . To some extent it is value engineering. You’re designing partners the way you would design a Web page or you would design a piece of machinery, and you have to say, ‘What’s the value? What can I do myself? Can we use open source software for this? Do we have to make our own? Can we use a partner? Should we outsource some of the development? [Should we] do this as a long-term partner or a short-term partner?’ (Cofounder, BETA)

Thus, as in the case of the new ventures in the P2P space, a focal firm may wish to collaborate with other stakeholders in order to alleviate its resource constraints—provided, of course, that these stakeholders agree to collaborate. To get this agreement may not always be easy, especially when the partners enjoy reputations that could enhance the lock-in design theme of the new venture's business model.

Environmental constraints

The fourth, and last, antecedent of business model design that we discerned is anchored in the design concept 'constraint.' According to Boland and Collopy (2004: 269):

'Every project has constraints that serve to give boundaries to a problem. In a decision attitude, constraints are seen as undesirable, but to a design attitude, constraints are the elements of challenge in the problem situation. They can serve as stimuli to the invention of new approaches and to the creative adaptation of materials, techniques, and practices from other domains. When one identifies the constraints of a design problem, one is defining the problem.'

The concept of 'constraint' is central to the design literature. As Brown (2009: 19) put it, 'the willing and even enthusiastic acceptance of competing constraints is the foundation of design thinking.' In the case of business model design, we can distinguish between external and internal constraints. *External constraints* refer to the conditions imposed on the business model designer by the economic, legal, sociopolitical, regulatory, and cultural environment in which the business model will be embedded; we refer to these constraints as 'environmental constraints.' *Internal constraints* concern the availability of activity-enabling resources and capabilities of the focal firm. If the firm does not own or control the requisite resources or capabilities to conduct relevant activities that will be central to its business model, it needs to decide whether and how to develop these or it needs to contemplate partnering options whereby other potential business model stakeholders could help. In this case, the business model designer will have to consider 'stakeholders' activities,' an antecedent of business model design we introduced and discussed in the previous section. For this reason, we focus our discussion of the fourth antecedent of business model design on envi-

ronmental constraints.³ This also helps us sharpen the distinction among (and reduce the conceptual overlap between) the identified antecedents of business model design.

To illustrate the environmental constraints design antecedent, we draw on our interviews with representatives from P2P lending companies. The founder of SIGMA commented that they had initially underestimated the challenge of banking regulations: 'One important component we did not have in our planning was the regulatory side of the whole business model. . .we learned that we had to integrate those aspects within our business model.' And the cofounder of U.S.-based P2P lending firm BETA elaborated that 'the problem in P2P lending is regulatory. It took us the better part of a year just to understand the U.S. landscape, and we've lived here our whole lives.' They had to dig deep into the U.S. banking regulatory framework to determine whether collaboration with an existing bank would have to be part of their business model and, if so, how exactly the interaction with the bank should be structured and which activities must be carried out by the bank. These design decisions were determined, to a large extent, by applicable banking regulations, an environmental constraint.

Institutional theory (e.g., Hargadon and Douglas, 2001) suggests that the viability of a new business model design depends in part on the degree to which it complies with important legal, regulatory, technological, and industry norms and requirements. These external factors affect the range of design alternatives that may be considered. In other words, external constraints affect the feasibility of intended business model designs, and they also influence the specific ways in which activities within the business model can be carried out.

Although institutional theory highlights in general the pressures caused by constraints toward mimetic isomorphism (DiMaggio and Powell, 1983), recent work on institutional entrepreneurship has shifted the focus from conformity to entrepreneurial agency. It centers on institutional entrepreneurs—individuals or organizations that create or change institutional arrangements (Hwang and Powell, 2005). This may

³ The environmental constraints design antecedent is also related to Boland and Collopy's (2004: 276) design concept of 'thrownness,' which establishes that designers are thrown into situations that already have 'interested actors, cultural norms, path-dependencies, infrastructures, policies, laws, and expectations related to it that will shape the problem space being addressed.'

happen in emerging as well as mature markets. Emerging markets have a low degree of institutionalization and ‘favor institutional entrepreneurs’ use of rhetorical strategies that exploit the general fascination with novelty’ (Battilana, Leca, and Boxenbaum, 2009: 85). Institutional theory suggests legitimacy and cognitive-based strategies for institutional entrepreneurs to counter constraints and create novelty. Santos and Eisenhardt (2009) have added to this a power perspective that focuses on dominance. They emphasize how individual entrepreneurial firms use a broad range of boundary mechanisms to construct new, emerging markets and become dominant players in those markets. Thus, to paraphrase Battilana *et al.* (2009), institutional entrepreneurs might become fashion setters in creating new business models that interest and attract new business model stakeholders and simultaneously legitimize the business model.

Key to dealing with environmental constraints by creating novelty rather than mimicking existing business models seems to be the adoption of a design attitude (see the introductory quote from Boland and Collopy (2004) in this section) that views constraints as stimuli and creative challenges rather than as obstacles that require taken-for-granted responses. It is akin to the refusal to adopt norms without questioning them, which otherwise would lead to the enactment of boundaries that might not exist objectively (Weick, 1979). In the entrepreneurship literature, such an attitude has been termed ‘entrepreneurial mindset’ (McGrath and MacMillan, 2000).

An entrepreneurial mindset, or design attitude, is probably more prevalent in new than established firms, which makes the emergence of novelty-centered business model designs more likely in start-ups than in corporate ventures. Corporate ventures often inherit structures and processes from their parent corporations and then borrow core competences and resources (Sharma and Chrisman, 1999), as well as cognitive models, which generally limit, rather than foster, the emergence of novel business models. Corporations, furthermore, typically suffer from fears of cannibalization (Christensen, 1997), which again makes them less likely to embrace business model novelty. Although the availability of slack resources can make them more resilient in the face of setbacks (Garud and Van de Ven, 1992), the very same resources could favor path dependencies and core rigidities, especially when companies use ‘induced processes’ (set up by management and

aligned with the firm’s current activities) rather than ‘autonomous processes’ (challenging current activities and often covertly undertaken) to manage their internal venturing processes (Burgelman, 1991).

Thus, our discussion in this section leads us to propose the following:

Proposition 4: Focusing on the ‘constraints’ antecedent as a creative challenge (i.e., with a design attitude) enhances the novelty-centered design theme of the resulting business model.

To illustrate how a focus on constraints can lead to novel design elements in ventures’ business models, consider again our interviews from the emerging P2P lending market space. Although none of the interviewees explicitly thought of their firms as ‘banks,’ they were nonetheless all operating in a gray zone of the financial services industry, where it was unclear which regulations were relevant and how these would apply. Ignorance of this issue, or failure to adhere to this potentially important constraint of business model design, could entail dire consequences, as the finance director of DELTA observed: ‘[A competing firm] recently had to stop their operations because the SEC had come back and said that they basically could not lend anymore until they were registered.’ The business architect of ALPHA agreed: ‘The SEC is obsessed with calling a glass of water a security if it can.’

It is interesting that most of the *de novo* start-ups in our sample tried to address the regulatory constraints directly through the novelty-centered design of their business models (and not through other means such as lobbying or applying for a banking license), so as not to be classified as a bank. The business architect of ALPHA explained why they made a novel business model design choice (i.e., to set up individual contracts between borrowers and lenders) in order to meet potential regulatory concerns: ‘We were in danger of being regulated. If we had pooled risk, we would have been considered by the [regulatory authorities] as a collection investment scheme with a whole load of regulatory issues.’ The same founder noted that while limiting, the constraints imposed by the legal system fostered other important design objectives, for example, to ‘set up a system where if it ever did fail, the lenders still had a legal right to their money.’ Thus, as suggested by design theory, environmental constraints can be stimuli for new business model designs. As a further illustration of this, consider the display of personal

credit data, a central piece of information for lenders which, according to the CEO of ALPHA, was novel and ‘not allowed by country law.’ However, after being turned down by one credit bureau, they talked to another and ‘they said yeah, if you use us we’ll let you do it,’ which led to a business model innovation.

While many new ventures in our sample dealt with the regulatory challenges by designing novelty-centered business models, one corporate venture, GAMMA, took a very different approach, which illustrates our conjecture about the difficulty of novelty-centered business model design in corporate ventures. They decided to go the conservative route and apply for a license as a broker-dealer, which delayed their launch. As their CEO noted:

‘We had to figure out what the legal framework was and then we had to apply for a brokerage license, which took us six months. And it ended up being a system that was slightly more complex because it had to bring in all of the compliance infrastructure that was necessitated by being a broker.’ (CEO, GAMMA)

Taking a more conservative approach to deal with the regulatory constraints was probably due to the desire of the corporate parent to minimize its exposure to legal risks. This was also apparent by the way in which GAMMA dealt with its other constraints. Unlike DELTA, which used a network of volunteers in order to perform important activities within its business model, GAMMA decided against this innovative solution:

‘You know, once a day someone comes up saying, ‘I’ll work for you for free, just give me something.’ And I can’t, [the corporate parent] won’t let me. We have to pay anyone who wants to work on [GAMMA] stuff fair market [pay] because they’re afraid they’re going to get sued. And then [DELTA] has got an army of people for free, right? Their labor force is huge.’ (Founder, GAMMA)

DISCUSSION AND CONCLUSION

With few exceptions (e.g., Boland and Collopy, 2004; Hargadon and Douglas, 2001; Romme, 2003; Siggelkow, 2002; Simon, 1996), management and organization scholars have centered theory development on the design of internal organizational structures. The term ‘design’ is often used as a metaphor to denote organizational structure rather than as the ‘science of the artificial,’ as ‘problem-solving,’ or as

the ‘search for solutions’ (Simon, 1996). In this article, we build on the insight that in addition to designing the internal organization, that is, grouping activities, roles, or positions *within* the organization (Pfeffer, 1978), entrepreneurs and corporate leaders need to develop and manage an activity system that may span organizational boundaries (Zott and Amit, 2010). Our analysis suggests that the designers of these complex activity systems need to consider the following four antecedents, giving equal weight and attention to each of them in their efforts to deliver value-creating designs: goals, templates, stakeholders’ activities, and environmental constraints.

Our theory development on each of these antecedents has implications for the strategy, entrepreneurship, and business model literatures. First, with respect to the *goals* antecedent, we note that a business model design needs to satisfy the incentive compatibility constraints of all business model stakeholders—chief among them the focal firm, but also customers, suppliers, and strategic partners. It needs to fulfill twin objectives of value creation and value appropriation in a balanced manner. Much of the strategy literature to date has focused on explaining value *appropriation* (e.g., firm rents), while entrepreneurship scholars have tended to focus more on value *creation*. A design perspective on business models strongly suggests, however, that one needs to emphasize *both*. It helps achieve this integration by adding a focus on the customers and their needs, thus complementing much of the traditional strategy literature characterized by a supply-side focus (Priem *et al.*, 2013). However, in this article, we go a step beyond merely stating that value creation for customers, suppliers, and partners is an important goal for business model designers, on which there is broad agreement among business model scholars (e.g., see Amit and Zott, 2001; Casadesus-Masanell and Zhu, 2012; Chesbrough, 2010; Teece, 2010). We further articulate how taking into account value creation and appropriation considerations affects the resulting business model design (Proposition 1), thus contributing to a more refined understanding of the link between business model design objectives and outcomes.

The second antecedent, using *templates* in business model design, is important because templates are proof of successful concepts and, as such, can be used for framing and benchmarking and, thus, for shaping one’s own and other people’s perceptions. Templates can help entrepreneurs manage the uncertainty associated with the introduction of a new

business model (McGrath and MacMillan, 2000) by giving them important cues about what designs might work and why. Although the business model literature has acknowledged templates (e.g., Chesbrough, 2010), it has not yet linked the construct to business model design themes. In addition, it has failed to highlight the important contingency condition of mindfulness that influences how templates affect the resulting business model designs. By contrasting the effect of mindless versus mindful use of templates in promoting efficiency- and novelty-centered designs, our Propositions 2a and 2b help fill this gap, contributing to a more refined understanding of the link between business model design templates and outcomes.

Third, considering how *activities performed by stakeholders* could enhance business model designs by strengthening the complementarities and lock-in design themes is important *per se* because it emphasizes the business model as a unit of analysis that is nested between the firm and network levels (i.e., that is *not* the same as the focal firm). Although it seems to be broadly accepted in the business model literature that the business model as a construct can span firm and industry boundaries (Zott *et al.*, 2011), much of the literature still underemphasizes its boundary-spanning aspects and centers on its firm-level characteristics. Our theory calls for shifting the focus beyond the focal firm. Specifically, it seeks to provide a more refined understanding of the relationship between the stakeholders' activities antecedent and specific design outcomes (such as complementarities- and lock-in-centered designs; see Propositions 3a and 3b). Thus, our conceptual development alerts researchers and business model designers alike to the possibilities for leveraging resources that exist within the business ecosystem (Adner and Kapoor, 2010). It also helps clarify the relationship between the constructs. The business model describes how a focal firm taps into its ecosystem to perform the activities that are necessary to fulfill the perceived customer needs. In other words, it focuses on the activities performed by the subset of actors in the focal firm's ecosystem from which the firm receives services that are interwoven within its own internal activity system.

Lastly, *environmental constraints* (our fourth and last antecedent of business model design) have been discussed in the business model literature mostly as barriers or stumbling blocks (e.g., Chesbrough, 2010) and only rarely linked with positive design outcomes such as novelty-centered design (for an

exception see Sanchez and Ricart, 2010). Our theory development, anchored in a design perspective, however, suggests that constraints can serve as a source of inspiration and creativity. It reminds researchers and entrepreneurs about the importance of viewing constraints not only as challenges and potential sources of failure, but also as opportunities for designing innovative solutions—which, according to Schumpeter (1934), is one of the basic premises of entrepreneurship. Compliance with environmental constraints does not necessarily require the adoption of isomorphic business models (DiMaggio and Powell, 1983). On the contrary, when business model designers are keenly aware of the design antecedent environmental constraints and pair such awareness with their own creativity, this can drive business model innovation and differentiation. Our research not only reminds business model researchers about this fundamental truth, but it also suggests contexts in which it is more likely to hold: emerging markets and start-ups, as opposed to established markets and corporate ventures.

In summary, our conceptual development supported by illustrative evidence from nine new ventures suggests that designers can influence the architecture of their business models by paying close and equal attention to the four antecedents: goals, templates, stakeholders, and constraints. By linking these design antecedents to the design themes of business models (novelty, lock-in, complementarities, and efficiency; see Zott and Amit, 2010), as shown in Figure 1, our conceptual work begins to delineate the relationships that exist between business model design antecedents and design outcomes (design themes). Thus, our article charts a path toward a more complete understanding of business model design and, thereby, facilitates the development of more predictive theory on business models.

In addition to addressing this gap in the academic literature, our research has managerial implications. It offers entrepreneurs a framework for considering four important antecedents in designing complex new business models. It also alerts business model designers to potential cognitive biases triggered by their professional background or education, which could influence the kinds of antecedents that receive more attention and those that receive less, leading to potential biases in the resulting business model designs. For example, lawyers might focus more on constraints and bankers more on templates (especially those from their own industry, which they know very well). Our analysis suggests that this

could indicate potential cognitive ‘blind spots’ that give rise to suboptimal designs.

This all suggests considerable opportunities for future research. First, future conceptual research could develop the back end of our theory, namely, the link between specific design themes and actual business model performance outcomes (e.g., in terms of value created for the focal firm and other business model stakeholders). Second, business model researchers could consider different design themes (e.g., specific customer value propositions anchored in the marketing literature) and relate them to the design antecedents, as well as performance outcomes. Third, we realize that our conceptual development in this article focuses on the (static) content, rather than the (dynamic) process of business model design. However, the conceptualization we propose lends itself to a dynamic extension of our conceptual framework. Future work could, for example, examine how the antecedents of business model design interact with distinct business model design outcomes (such as emphasis on specific design themes) in a dynamic process, in which design antecedents may change over time, and/or design outcomes may reflect back on antecedents in a recursive design cycle. Fourth, researchers could set out to empirically test the propositions put forth in this article. Last but not least, we also need to understand how the linkages between the antecedents of business model design and relevant design outcomes as developed in this article apply to the case of established firms that are faced with the challenge of redesigning and changing their existing business models. Such firms face strong internal constraints (e.g., established asset structures and business relationships) that may warrant specific theoretical consideration and require the modification of some of our propositions or the development of new ones.

To conclude, by drawing on the design perspective and building on the received entrepreneurship, strategy, and organization literatures to develop and refine the theory of business model design, which we have attempted in this study, we hope to have laid the foundations for fruitful avenues for future research on business models.

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REFERENCES

- Adner R, Kapoor R. 2010. Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal* **31**(3): 306–333.
- Afuah A, Tucci CL. 2000. *Internet Business Models and Strategies: Text and Cases*. McGraw-Hill Higher Education: New York.
- Aldrich H, Fiol M. 1994. Fools rush in? The institutional context of industry creation. *Academy of Management Review* **19**(4): 645–670.
- Aldrich H, Ruef M. 2006. *Organizations Evolving*. SAGE Publications: Thousand Oaks, CA.
- Amit R, Schoemaker P. 1993. Strategic assets and organizational rent. *Strategic Management Journal* **14**(1): 33–46.
- Amit R, Zott C. 2001. Value creation in e-business. *Strategic Management Journal* **22**(6/7): 493–520.
- Amit R, Zott C. 2012. Creating value through business model innovation. *Sloan Management Review* **53**(3): 41–49.
- Aspara J, Lamberg J, Laukia A, Tikkanen H. 2011. Strategic management of business model transformation: lessons from Nokia. *Management Decision* **49**(4): 622–647.
- Baker T, Nelson RE. 2006. Creating something from nothing: resource construction through entrepreneurial bricolage. *Administrative Science Quarterly* **50**: 329–366.
- Battilana J, Leca B, Boxenbaum E. 2009. How actors change institutions: towards a theory of institutional entrepreneurship. *Academy of Management Annals* **3**(1): 65–107.
- Boland RJ, Collopy F. 2004. Toward a design vocabulary for management. In *Managing as Designing*, Boland RJ, Collopy F (eds). Stanford University Press: Stanford, CA; 265–276.
- Bosse DA, Phillips RA, Harrison JS. 2009. Stakeholders, reciprocity, and firm performance. *Strategic Management Journal* **30**(4): 447–456.
- Brandenburger AM, Stuart H. 1996. Value-based business strategy. *Journal of Economy and Management Strategy* **5**: 5–25.
- Brown T. 2009. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. HarperCollins: New York.

- Burgelman RA. 1991. Intraorganizational ecology of strategy making and organizational adaptation: theory and field research. *Organization Science* **2**(3): 239–262.
- Casadesus-Masanell R, Ricart JE. 2010. From strategy to business models and onto tactics. *Long Range Planning* **43**: 195–215.
- Casadesus-Masanell R, Zhu F. 2012. Business model innovation and competitive imitation: the case of sponsor-based business models. *Strategic Management Journal* **34**(4): 464–482.
- Cennamo C, Santalo J. 2013. Platform competition: strategic trade-offs in platform markets. *Strategic Management Journal* **34**(11): 1331–1350.
- Chesbrough H. 2010. Business model innovation: opportunities and barriers. *Long Range Planning* **43**(2/3): 354–363.
- Chesbrough H, Rosenbloom RS. 2002. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change* **11**: 529–555.
- Christensen CM. 1997. *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Harvard Business School Press: Boston, MA.
- Corley KG, Gioia DA. 2011. Building theory about theory building: what constitutes a theoretical contribution? *Academy of Management Review* **36**: 12–32.
- Dane E. 2011. Paying attention to mindfulness and its effects on task performance in the workplace. *Journal of Management* **37**(4): 997–1018.
- DiMaggio PJ, Powell WW. 1983. The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review* **48**: 83–160.
- Economist Intelligence Unit. 2005. Business 2010: embracing the challenge of change. Economist Intelligence Unit: London, U.K.
- Farrell J, Klemperer P. 2007. Coordination and lock-in: competition with switching costs and network effects. In *Handbook of Industrial Organization* (Vol. 3), Armstrong M, Porter R (eds). North Holland Publishing: Amsterdam, The Netherlands; 1967–2072.
- Fiol CM, O'Connor EJ. 2003. Waking up! Mindfulness in the face of bandwagons. *Academy of Management Review* **28**(1): 54–70.
- Frankenberger K, Weiblen T, Csik M, Gassmann O. 2013. The 4I framework of business model innovation: a structured view on process phases and challenges. *International Journal of Product Development* **18**: 249–273.
- Freeman R. 1984. *Strategic Management: A Stakeholder Approach*. Pitman: Boston, MA.
- Freeman R. 2010. Managing for stakeholders: trade-offs or value creation. *Journal of Business Ethics* **96**: 7–9.
- Garud R, Van de Ven AH. 1992. An empirical evaluation of the internal corporate venturing process. *Strategic Management Journal* **13**(1): 93–109.
- Gibbons R, Henderson R. 2012. Relational contracts and organizational capabilities. *Organization Science* **23**(5): 1350–1364.
- Gulati R, Nohria N, Zaheer A. 2000. Strategic networks. *Strategic Management Journal* **21**(3): 203–215.
- Hargadon AB, Douglas Y. 2001. When innovations meet institutions: Edison and the design of the electric light. *Administration Science Quarterly* **46**: 476–501.
- Hwang H, Powell WW. 2005. Institutions and entrepreneurship. In *Handbook of Entrepreneurship Research*, Alvarez SA, Agarwal R, Sorenson O (eds). Springer: New York; 201–232.
- Iansiti M, Levien R. 2004. Strategy as ecology. *Harvard Business Review* **82**(3): 68–78.
- Langer EJ. 1989. *Mindfulness*. Addison-Wesley: Reading, MA.
- Langer EJ. 1997. *The Power of Mindful Learning*. Addison-Wesley: Reading, MA.
- Laplume AO, Sonpar K, Litz RA. 2008. Stakeholder theory: reviewing a theory that moves us. *Journal of Management* **34**(6): 1152–1189.
- Levinthal D, Rerup C. 2006. Crossing an apparent chasm: bridging mindful and less-mindful perspectives on organizational learning. *Organization Science* **17**(4): 502–513.
- Luchs M, Swan KS. 2011. The emergence of product design as a field of marketing inquiry. *Journal of Product Innovation Management* **28**(3): 327–345.
- McGrath R. 2010. Business models: a discovery driven approach. *Long Range Planning* **43**(2/3): 247–261.
- McGrath R, MacMillan I. 2000. *The Entrepreneurial Mindset*. Harvard Business School Press: Boston, MA.
- Moore JF. 1993. Predators and prey: a new ecology of competition. *Harvard Business Review* **71**: 75–86.
- Pfeffer J. 1978. *Organizational Design*. AHM Publishing: Arlington Heights, IL.
- Pfeffer J, Sutton R. 1999. *The Knowing-doing Gap: How Smart Companies Turn Knowledge into Action*. Harvard Business School Press: Boston, MA.
- Pick D, Eisend M. 2013. Buyers' perceived switching costs and switching: a meta-analytic assessment of their antecedents. *Journal of the Academy of Marketing Science* **42**(2): 186–204.
- Plaza-Úbeda J, Burgos-Jiménez J, Carmona-Moreno E. 2010. Measuring stakeholder integration: knowledge, interaction and adaptational behavior dimensions. *Journal of Business Ethics* **93**(3): 419–442.
- Priem RL, Butler JE, Li S. 2013. Toward reimagining strategy research: retrospection and prospection on the 2011 AMR decade award article. *Academy of Management Review* **38**: 471–489.
- Rerup C. 2005. Learning from past experience: footnotes on mindfulness and habitual entrepreneurship. *Scandinavian Journal of Management* **21**(4): 451–472.
- Rochet JC, Tirole J. 2006. Two-sided markets: a progress report. *RAND Journal of Economics* **37**(3): 645–667.

- Roloff J. 2008. Learning from multi-stakeholder networks: issue-focused stakeholder management. *Journal of Business Ethics* **82**(1): 233–250.
- Romme AGL. 2003. Making a difference: organization as design. *Organization Science* **14**: 558–573.
- Sanchez P, Ricart JE. 2010. Business model innovation and sources of value creation in low-income markets. *European Management Review* **7**: 138–154.
- Santos FM, Eisenhardt KM. 2009. Constructing markets and shaping boundaries: entrepreneurial power in nascent fields. *Academy of Management Journal* **52**(4): 643–671.
- Schumpeter JA. 1934. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Harvard University Press: Cambridge, MA.
- Seelos C, Mair J. 2007. Profitable business models and market creation in the context of deep poverty: a strategic view. *Academy of Management Perspectives* **21**: 49–63.
- Sharma P, Chrisman JJ. 1999. Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. *Entrepreneurship Theory and Practice* **23**(3): 11–27.
- Siggelkow N. 2002. Evolution toward fit. *Administration Science Quarterly* **47**: 125–159.
- Simon HA. 1996. *The Sciences of the Artificial* (3rd edn). MIT Press: Cambridge, MA.
- Snihur Y, Zott C. 2015. Towards an institutional perspective on business model innovation: how entrepreneurs achieve robust business model design. Working paper, IESE Business School, Barcelona, Spain.
- Sosna M, Treviño-Rodríguez RN, Velamuri SR. 2010. Business model innovation through trial-and-error learning: the Naturhouse case. *Long Range Planning* **43**(2/3): 383–407.
- Sutton RI, Staw BM. 1995. What theory is not. *Administrative Science Quarterly* **40**: 371–384.
- Svejenova S, Planellas M, Vives L. 2010. An individual business model in the making: a chef's quest for creative freedom. *Long Range Planning* **43**: 408–430.
- Teece DJ. 2010. Business models, business strategy and innovation. *Long Range Planning* **43**: 172–194.
- Utterback JM, Abernathy WJ. 1975. A dynamic model of process and product innovation. *Omega* **3**(6): 639–656.
- Weick KE. 1979. *The Social Psychology Of Organizing*. Addison-Wesley: Reading, MA.
- Weick KE. 1995. What theory is not, theorizing is. *Administrative Science Quarterly* **40**: 385–390.
- Williamson OE. 1985. *The Economic Institution of Capitalism*. Free Press: New York.
- Zhu F, Iansiti M. 2012. Entry into platform-based markets. *Strategic Management Journal* **33**(1): 88–106.
- Zott C, Amit R. 2007. Business model design and the performance of entrepreneurial firms. *Organization Science* **18**: 181–199.
- Zott C, Amit R. 2008. The fit between product market strategy and business model: implications for firm performance. *Strategic Management Journal* **29**(1): 1–26.
- Zott C, Amit R. 2010. Designing your future business model: an activity system perspective. *Long Range Planning* **43**: 216–226.
- Zott C, Amit R, Massa L. 2011. The business model: recent developments and future research. *Journal of Management* **37**: 1019–1042.
- Zott C, Huy QN. 2007. How entrepreneurs use symbolic management to acquire resources. *Administrative Science Quarterly* **52**(1): 70–105.

APPENDIX**Classification of Boland and Collopy's (2004) design concepts as antecedent, process, or outcome related and grouping of antecedent-related design concepts**

Design concept	Classification	Relevant design antecedent
Agonize	Antecedent related	Goals to create and capture value
Artifact	Outcome related	
Balance	Antecedent related	Goals to create and capture value
Borrow	Antecedent related	Templates of incumbents and others
Boundary object	Process related	
Circulation	Process related	
Client	Antecedent related	Goals to create and capture value
Collaboration	Antecedent related	Stakeholders' activities
Constraint	Antecedent related	Environmental constraints
Crystallization	Process related	
Default	Antecedent related	Templates of incumbents and others
Dialogue	Process related	
Drawing	Process related	
Emotion	Process related	
Experiment	Process related	
Fit	Outcome related	
Form	Outcome related	
Functional	Outcome related	
Gesture	Outcome related	
Goal	Antecedent related	Goals to create and capture value
Groundlessness	Outcome related	
Handrail	Outcome related	
Improvise	Process related	
Iteration	Process related	
Liquid	Process related	
Love	Process related	
Model	Process related	
Opportunistic	Process related	
Path creating	Process related	
Path dependent	Process related	
Placeholder	Process related	
Play	Process related	
Project	Process related	
Prototype	Process related	
Recycle	Antecedent related	Templates of incumbents and others
Repertoire	Process related	
Space	Outcome related	
Study	Process related	
Tension	Antecedent related	Goals to create and capture value
Thrownness	Antecedent related	Environmental constraints
Vocabulary	Antecedent related	Templates of incumbents and others