



Business Models and Modelling

Crafting an Innovative Business Model in an Established Company: The Role of Artifacts

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CRAFTING AN INNOVATIVE BUSINESS MODEL IN AN ESTABLISHED COMPANY: THE ROLE OF ARTIFACTS

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ABSTRACT

Business models can be considered as cognitive models that managers or analysts can use to describe, understand, or test business activities. However, the emergence of a new business model requires not only cognitive operations but also concrete modifications to the realities of a company's operations and structures. In this paper, we adopt a sociomaterial view of organizational change based on actor-network theory, and underline the role of artifacts in the emergence of new business models. We base our discussion on a case study of a French leader in kitchen electric appliances. Despite the fact that the building of its new business model is

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still in progress, this empirical study provides important suggestions concerning the role of artifacts.

Keywords: Business model; sociomateriality; open innovation; actor-network theory

INTRODUCTION

During recent years, the “business model” concept has become a hot topic in various management fields (information systems, entrepreneurship, strategic management, marketing, supply chain management, and even accounting and finance – see Zott, Amit, & Massa, 2011). This scholarly interest is essentially due to the upsurge of the use of the term in managers’ day-to-day language, and the concept’s ability to describe the complex reality of an organization’s pattern of operations from a holistic perspective.

However, little is known about the origins of given business models (Baden-Fuller & Mangematin, 2012). Several researchers (e.g., Demil & Lecocq, 2010; Sosna, Rosa, Trevinyo-Rodriguez, & Ramakrishna, 2010; Svejenova, Planellas, & Vives, 2010) have studied business model change, evolution, and implementation. These studies have particularly underlined the role of individuals’ vision and values, the incremental interactions between constituent business model elements, or the trials and errors of their implementation. They tend to insist on the gradual emergence of business models, and on the progressive refinements that need to be made to them over time so they become efficient. However, empirical research has not focused clearly on the micro-processes leading to a business model’s emergence. While Doganova and Eyquem-Renault (2009) and Sabatier, Mangematin, and Rousselle (2010) have documented the role of the business model as a template for entrepreneurs and start-ups, the processes involved in moving to a new business model in an established company remain relatively underexplored. However, it could be argued that crafting a new business model in a mature company involves specific problems because actors face sunk costs and structural inertia, among other issues. Due to the pre-existence of the organization, and of its structure, products, technology, and customers, the processes involved in defining and implementing a new business model may differ from those in a new venture.

Our research question in this paper is therefore: *How is a new business model crafted in an established company?* We aim to contribute to the literatures on business model innovation (Spieth, Schneckenberg, & Ricart,

2014) and on the rejuvenation of mature companies (Baden-Fuller & Stopford, 1992). The paper is structured as follows. First, we develop the idea that the business model is not only a cognitive model but requires artifacts to become an organizational reality. Second, we draw on the sociomaterial literature – and especially that on actor-network theory (ANT) – to provide conceptual tools for analyzing business model design and implementation. Third, we present our empirical field, an established world leader company in the household electrical goods sector. Fourth, we discuss our (provisional) findings about the processes of crafting a new business model in a mature company. In conclusion, we sum up the role of sociomateriality in this process.

THE SOCIOMATERIALITY OF BUSINESS MODELS

An important element of the business model concept is the word “model.” This idea, and the importance of business models as cognitive templates, has been nicely captured by Baden-Fuller and Morgan (2010). In their view, models play several important roles: they help to describe different business activities, and to establish taxonomies and typologies allowing for the classification and comparison of business models. They also provide managers with recipes and show lessons of success in different contexts, as models can be manipulated and so allow for experimentation. This conception of business models demonstrates the importance of recognizing their cognitive dimensions when working with them. Such a cognitive conception has several implications: it provides examples to copy or to inspire, an intermediate level of understanding that managers can grasp and manipulate, and more or less detailed descriptions that can be communicated to various stakeholders (investors, employees, journalists, and so on). In a nutshell, a cognitive view of business models, and more generally of strategies, offers researchers opportunities to question different phases of managers’ work, such as business model formulation and implementation (Narayanan, Zane, & Kemmerer, 2011). It portrays managers as manipulating models, making sense of their own and of others’ experiences, and taking their decisions accordingly.

However, the strategy-making process does not consist only of cognitive activities – indeed, organizational strategy making also demands other considerations. Of particular interest is the question of how actors and their actions make strategy (e.g., Jarzabkowski & Spee, 2009). Strategy is enacted through the multiple interactions between actors and practices at

different levels of an organization. Looking at business models with this lens leads to the question of how business models emerge and are implemented concretely in organizations.

Moving beyond the cognitive and conceptual dimensions of business models also involves looking at their materiality, which entails considering the artifacts that exist in the organizational context. In social sciences, the notion of artifacts refers to objects produced by humans. Its use conveys artificiality in two senses – both as being made by machines and made by society – as the crafted results of purposeful human action. Moreover, the concept of artifacts implies the physical and material world that constrains human actions, even if different actors understand them in various ways (Jarzabkowski & Pinch, 2013; Latour, 1992). Their inventors and designers intend artifacts to discipline other actors according to some socially encoded prescriptions, which give them capabilities to circumscribe and transform others' actions. However, the prescriptions embedded in artifacts can never completely determine the action of others – they may always be misunderstood, or used wrongly or incompletely in terms of how they are aligned with others artifacts. As Latour suggested: “A scene, a text, an automatism can do a lot of things to their prescribed users at the range – close or far – that is defined by the circumscription, but most of the effect finally ascribed to them depends on lines of other setups being aligned” (Latour, 1992, p. 162).

Consequently, a physical representation of a business model can be considered an artifact in itself, which is intended to synthesize and describe the way in which a business creates and captures value, and to make sense of and to portray it to others (Stigliani & Ravasi, 2012). This has been exemplified in the various representations that academics have proposed (e.g., Demil & Lecocq, 2010; Osterwalder, Pigneur, & Smith, 2010), but also by managers themselves (Doganova & Eyquem-Renault, 2009). These representations have several properties that make them resemble artifacts. Like machines, they are made of various parts – such as the customer experience – that must be patiently crafted and connected with each other (selection of targeted customers, cost structures, prices, etc.). The connections between these different parts can be considered as causes and effects – that is, causal relationships exist between them (Casadesus-Masanell & Ricart, 2010). These characteristics have been nicely developed by Doganova and Eyquem-Renault (2009) in their case study of a young academic spin-off, which shows how its business model appeared and evolved through PowerPoint presentations, business plans, web articles, supported by surveys of different audiences: public and private investors, journalists,

customers, etc. Departing from an essentialist conception of a business model, they show how it was adapted for different audiences and how it created a network that allowed a technological innovation to reach the market. In this view, the representation of a business model is a market-device that works as both a narrative and a calculative tool, and is sufficiently flexible and ambiguous to be modified over time and space. By circulating among various audiences, the business model builds coordination between the actors involved, and stabilizes a supportive network for the project – so playing a crucial role in enacting reality. In this case, the business model representation is an artifact that creates commensurability, allowing for translation between actors by encompassing various dimensions of the business (activities, customers, prices, costs, etc.).

Based on these arguments, we contend that, beyond its cognitive dimensions, the social and material dimensions of the concept have to be taken into account to explain the process of crafting a business model. The next section provides the theoretical ground for our empirical investigation.

A SOCIOMATERIAL VIEW OF BUSINESS MODEL EVOLUTION

The sociomateriality perspective (e.g., Jarzabkowski & Pinch, 2013; Kaplan, 2011; Leonardi, 2012; Orlikowski, 2007; Orlikowski & Scott, 2008) assumes that the material dimension of reality (i.e., the role of artifacts in defining and shaping reality) and the social dimension (i.e., the practices and interactions that take place around artifacts) must be considered jointly. Indeed, as Orlikowski (2007) notes: “the social and the material are considered to be inextricably related – there is no social that is not also material, and no material that is not also social” (p. 1437). This general approach makes technological and material devices concrete and gives them an important role in social life.

Several theoretical streams share the assumptions of sociomateriality about material devices. For instance, the strategy-as-practice literature considers artifacts as epistemic objects, which appear in various forms in organizational life and connect managerial practices (Jarzabkowski, Spee, & Smets, 2013), gaining their specific properties through their different uses in localized situations. ANT represents another prominent sociomaterial approach to the study of workplace situations (Orlikowski, 2009). Since the 1980s, this approach has proved fruitful for explaining diverse organizational phenomena such as technological innovations, controversies, and

entrepreneurial work. However, summarizing this approach is not a simple task: its promoters suggest that ANT has often been misunderstood (Latour, 2005), while Law (2008) warns against seeking a single, unified interpretation of ANT, and underlines the multiple streams that cross in this literature. Our goal in this section is to frame the crafting of a new business model, based on a review of literature of the main authors in the ANT stream (Callon, 1986, 1998; Callon & Muniesa, 2005; Latour, 1999, 2005, 2006, 2007; Law, 2008; Law & Hassard, 1999).

The first important point about ANT is that it presents itself as methodology more than as theory. The authors propose using an ethnomethodological lens to analyze reality: “For us, ANT was simply another way of being faithful to the insights of ethnomethodology: actors know what they do and we have to learn from them not only what they do, how they do [it] and why they do it. It is us, the social scientists, who lack knowledge of what they do, and not they who are missing the explanation of why they are unwittingly manipulated by forces exterior to themselves and known to the social scientist’s powerful gaze and methods” (Latour, 1999, p. 19). We contend that ANT provides a toolkit with which researchers can analyze the social and material dimensions of reality, and may be considered less as a theory (due to its lack of ability to predict why things happen as they do) than as a method to describe how things happen. Consequently, it has been used to analyze and explain numerous empirical situations in accounts of scientific controversies, technological innovations, market mechanisms, and organizational phenomena.

ANT can be characterized as having two major foci: “More profoundly, it is a sensibility to the messy practices of relationality and materiality of the world” (Law, 2008, p. 142). Concerning the first point (relationality) – in accordance with its ethnomethodological stance – ANT postulates that, in themselves, things have no substance, but that they emerge from and are defined by the webs of relationships in which they are embedded. The main questions are thus: *How are these networks of relationships established? How do they create and transform objects and individuals?* and *What effects do these relations generate?* The stability and strength of these networks depend on these relationships, and on the actors who have been enrolled in those networks. Thus, an ANT study is always a study of actors’ relations with others.

As noted above, in a sociomaterial approach, a representation of a business model can be considered as an artifact. But, in an ANT framework, an organization’s business model can be considered as a network of multiple artifacts. Thus, as well as their representations located in the minds of managers or academics, business models have material dimensions that go

far beyond visual or narrative representations and encompass various artifacts that populate the focal organization and its environment.

A consequence of this approach – in terms of relations between elements – is that, at any point in time, the adjective “social” designates what has been previously assembled, but is far less well adapted for analyzing movements – the processes of change and innovations that contribute (in this case) to constituting a new business model – and does not depend on the essence of just some of those elements, as if some things were social and others not (Latour, 2005, 2006).

Compared to other frameworks within the sociomateriality perspective, ANT appears particularly suitable for our research, as it covers how things are agglomerated and assembled to create new realities. Indeed, the identification of constituent elements and the study of the relationships between these elements appear crucial to understanding business model evolution (Demil & Lecocq, 2010).

The second point – materiality – refers to the fact that ANT considers all “actants” (human and non-human actors) symmetrically (i.e., gives them all equal weight). Callon (1986) illustrates this principle particularly in his study of the case of the scallops in the Saint-Brieux Bay, considering the fishermen, the scallops, and the scientists equally as actants. Thus, artifacts enact reality in the same way as humans (Latour, 2007). The subsequent empirical difficulties concern reintroducing non-human objects “actively” without creating a technical determinism in networks that makes it seem as if humans and their actions were determined by non-humans (especially technologies), and to consider humans and non-humans symmetrically. This leads to avoiding considering that the social world is only populated by humans, that is, a society with a soul but without a physical body, as Latour underlines.

Instead of thinking of human actors as the starting points for any modifications of reality, ANT considers them as mediators, that is, as actants who can transform reality because they are connected to other actants. In this framework, action is never an individual act – it’s always a collective process, shared with others: so actants have to convince others (humans and non-humans) to accompany them, to associate with them in such actions. This process is labelled “enrollment” in ANT, and is materialized by the construction of chains of actants. This collective aspect of any action explains why surprise, novelty, innovation may always arise during actions, as other actants can never be completely supervised and controlled.

Finally, ANT entails a rejection of such classical polarities as human and non-human, actors and structure, social and material, and freedom and

determinism. For instance, knowledge is inscribed in each material artifact, so it yields knowledge from other places and times. Latour argues that humans can “delegate” some power and functions to non-human actants, which is why artifacts can have properties associated with them that explain their important roles in having effects that complement those of macro-conditions on micro-situations. Thus, artifacts sometimes play roles independent of human intervention: beyond enacting reality, they can enable actions to endure, and to have effects aside from those of direct human interactions.

For instance, the strawberry market in the small French town of Fontaines en Sologne reached a form of perfect competition after investments had been made to adopt a particular way of organizing transactions, which was physically inscribed in how the buildings and market devices were conceived (Garcia, 1986), and which involved the absence of contacts between sellers and buyers; technologies enabling actors to withdraw from the market according to the evolution of prices; and prices being visibly accessible for everyone without additional costs. Thus, artifacts enact reality, and can have pervasive effects due to their materiality and the “solidity” of the chains of relationships they create. In the case of the strawberry market, the material dimensions (the technologies used and the way the space was organized) worked to create a “perfect” market. Thus, the advent of a new business model creates and articulates new artifacts and their relationships with human actors. Where a company is well-established, we argue that changing its business model is a very complex task, as it will eventually involve modifying many business model constituents (products, resources, organization, partnerships, competencies, etc.). Based on ANT, we speculate that actors craft or redesign various artifacts to contribute to business model change. Thus, we argue that business model change requires the creation of a new chain of actants – the recombination of artifacts (some new, some not, some redefined) into new networks. However, investigating how actors create these artifacts, and how they link them in new business models, involves an empirical research effort.

RESEARCH DESIGN AND METHODS

Data Collection

Our empirical study ran from 2012 until late 2014, and was set in a French multinational company, SEB, which was trying to effect a radical change in the business model of its Kitchen Electrics Business Unit, and, potentially,

to diffuse this new business model across the group's other business units. Especially, it intended that the new business model would be materialized in the form of several projects which would offer more services (whether bundled within products, or accessible online), and that the model would promote digitalization within the firm. Several of these projects were still in development and so had not been completely implemented by the time our investigations ended. Thus, for this paper we employed a longitudinal research approach that was largely exploratory. Our research constituted a chance to observe business model change in a mature company "as it happens," rather than through an a posteriori reconstruction.

In terms of methods, ANT proposes two major approaches. One is to "follow the actor," via interviews and ethnographic research. The other is to examine what ANT terms "inscriptions" – including texts, but also images of many sorts, data from databases, and the like – and artifacts more generally (e.g., Callon, Law, & Rip, 1986; Latour & Woolgar, 1986). When following ANT principles, two biases have to be avoided when conducting empirical research. First, artifacts should not be treated as if they were entirely manipulated by humans. Second, they should not be considered as completely determining humans' actions. In this research, we conducted interviews with key actors and analyzed relevant artifacts in order to understand the interactions between the social and material dimensions of business model change.

We conducted a longitudinal case study on SEB's Kitchen Electrics Business Unit so as to observe the crafting of its new business model. We collected primary data from 11 interviews with the general manager of the focal SEB division, with top division managers (the VPs for finance, marketing and HRM, and the R&D Director) and other key players involved in the business model change (including the digital workshop manager, community project manager, and a Chef recruited to improve the interactions between cookware and complementary products). We also collected secondary data – articles from newspapers, company press releases and annual reports, and documents on its markets, processes and competitors, and opinions from its customer forum, and were given access to various internal documents (internal reports, corporate newsletters, etc.).

Based on the approaches of Orlikowski (2007), Orlikowski and Scott (2008), D'Adderio (2011) and Leonardi (2012), we empirically observed the materiality related to our research purpose. We tried to identify artifacts related to the new business model and the processes leading to their development and manipulation. However, we did not focus on artifacts and materiality during our interviews with the actors involved – rather we

concentrated on themes related to the current business model, the new (future) business model, the rationale for change, and the processes implemented to design and implement the new business model. Discussing these themes, actors mentioned some objects that, in their opinion, were important in the business model change or in crafting the new model. Thus, in this research, we identify artifacts as those objects that the actors involved in the business model change process saw as being particularly important.

Data Analysis

The artifacts we identified included a consortium agreement establishing the partners' relationships, labels and wording, details of grants obtained from research project documents, a new department dedicated to the business model change, new products, PowerPoint slides, charts etc. The social processes we observed around these artifacts include negotiations between partners, internal and external communications, accounting management processes for new kinds of products, and of innovation.

Being a very broad notion, the business model construct is very inclusive and it was difficult to decide what we should have observed and how we should have organized and analyzed the material we collected. Literature has yielded various categories to help understand business model components and to facilitate data analysis. We decided to adopt the RCOV framework (Demil & Lecocq, 2010) to study and trace back the artifacts and practices related to each business model component: the framework categorizes the Resources and Competences (RC), the internal and external Organization (O), the value proposition (V), and the revenue and cost models. As Teece (2007) has noted, "A framework, like a model, abstracts from reality. It endeavors to identify classes of relevant variables and their interrelationships. A framework is less rigorous than a model as it is sometimes agnostic about the particular form of the theoretical relationships that may exist" (p. 1320). The RCOV framework provides the opportunity to study both the internal and external dimensions of the changes involved in creating a new business model, and the new forms of interaction between different components – and so can capture the dynamics and evolution of the firm's business model (Casadesus-Masanell & Ricart, 2010). RCOV categories have been used as coding categories to analyze empirical material in recent studies, such as that by Gerasymenko, De Clercq, and Sapienza (2014). In order to understand SEB's business model change, we used inductive coding to retrace the processes of creating artifacts and of connecting them.

RESEARCH FIELD

We studied SEB, a French industrial company originally created in 1857, which is a worldwide leader in the cookware, kitchen electrics, and home and personal care appliance sectors, which are the group's three divisions. The firm has a portfolio of 24 local or worldwide trademarks, including Krups, Calor, Moulinex, Tefal, Lagostina, Rowenta, most of which have resulted from acquisitions over recent decades. These acquisitions have led the group to become largely internationalized, so that only 14% of its current turnover is now generated in France. Over its long history, the company has displayed an impressive track-record, winning numerous prizes for the design and innovation of its products. It has 25,000 employees worldwide and a turnover of €4 billion, and has industrial plants located both in France (10 industrial sites) and over the world (19 sites).

The group's strategy has always been based on product innovation. Since early in its history, the company has taken a clear strategic orientation toward differentiating its products, and has tried to avoid the risk of commoditization. Today, it allocates more than 3% of its annual turnover to R&D (€150 million in 2013) and each year launches about 200 new products, and patents around 100 innovations. Nearly 60% of its revenues are generated by products that are less than three years old – a performance similar to companies such as Apple.

In May 2011, the CEO declared that

Connected products are appearing progressively in our kitchens (...) we think that the kitchen will develop in the future around digital recipes and associated services.

This declaration opened the movement toward a new business model based on a new “servitization” logic, largely based on digitalization. The servitization concept was first proposed by [Vandermerwe and Rada \(1988\)](#) to refer explicitly to the trend where companies derive more and more value from providing services based on and accompanying their products ([Baines, Lightfoot, Benedettini, & Kay, 2009](#)). This general movement has been globally documented in some empirical studies of industrial sectors (e.g., [Fang, Palmatier, & Steenkamp, 2008](#); [Neely, 2008](#); [Visnjic & Van Looy, 2013](#)). While most occidental economies have seen a movement toward services since the mid-20th century – which now represent nearly 80% of their GNP – the novelty over the last two decades is that this new orientation has transformed manufacturers' business models more or less profoundly, so that they are no longer concerned exclusively with traditional functions such as logistics or production.

In this study, we investigate the Kitchen Electrics division of the SEB group, which took an important initiative at the end of 2012 to design and implement a new business model. It is important to note that people in SEB were already talking about their business model being changed before we started our study, so our interviews did not introduce the subject to the company. Our empirical study gave us the opportunity to follow the crafting of the unit's new business model, which was embodied in a project labelled "OFS Foodle" (where OFS stands for "Open Food System"), which encompassed three main elements:

- 1) The creation of an online community of consumers,
- 2) The launch of new products and complementary services (in a "hardware" + "software" logic),
- 3) The creation of an ecosystem of partners to supply food, kitchen products, and services.

This project can be considered as a radical innovation for the company, as it implied acquiring new internal competencies, developing new kinds of "smart" products (products with embedded software elements that could help consumers cook recipes, and which could eventually connect to other similar products or to the Internet), modifying how the company interacted with its customers, creating a network of partners, and revising its internal processes. Several interviewees underlined that this new business model involved the company "leaping into the unknown" – as the R&D Director said: "[compared to other innovations], the digital business is a tsunami."

We gathered SEB's official news releases over the period 2008–2014 and selected news items related to open innovation, digitalization, servitization, collaborations, and other organizational modifications related to the new business model (Table 1) to trace the overall process. These items reveal that activity was particularly intense around 2012, both within and outside the group.

RESULTS

Our study analysis is divided into three parts. First, we characterize the newly emerging business model and compare it with the existing model. Second, we focus on the company's learning process – indeed, crafting a new business model can be considered as an experimental and learning process rather than an analytical exercise: "Rather, they [business models]

Table 1. Chronological Chart Concerning the New Business Model in the Group.

March 2011	Appointment of a new digital marketing manager at the corporate level (a new position in the group)
May 2011	Creation of <i>SEB Alliance</i> , an investment fund targeting technological start-ups in several strategic domains: energy, ecology, digital. First major stake in a US company in the digital sector (Key Ingredient)
February 2012	Partnership with an engineering school (<i>Ecole Centrale of Lyon</i>) to promote open innovation
April 2012	Tefal, one of the group's trademarks, announces the release of a new website with a simultaneous presence on <i>Facebook</i> and <i>Youtube</i>
April 2012	<i>SEB Alliance</i> participates in a new investing fund (<i>Technocom 2</i>) to take stakes in digital technology start-ups
May 2012	Release of the first mobile app dedicated to recipes
May 2012	Launch of <i>Cookeo</i> , the first "smart" cooking device
November 2012	Formalization of the OFS as a research consortium with numerous industrial and research partnerships partially subsidized by public funds
November 2012	Sales of 1,500 computer tablets to promote the <i>My Foodle</i> website
October 2013	Launch of <i>Cookeo USB</i> , a catalog of 100 recipes to plug in to the <i>Cookeo</i> (a connected product) – most of them could be cooked in less than 11 minutes
November 2013	SEB releases an open innovation website "Innovate with group SEB"
December 2013	Release of the first connected cooker, <i>Nutricook connect</i> ; connected to a Smartphone app which could import any one of 200 recipes and guide customers through cooking them

Source: SEB group press releases.

must be learned over time, which emphasizes the centrality of experimentation in the discovery and development of new business models" (McGrath, 2010, p. 248). Finally, we underline the roles of artifacts in the learning process, two of which appear particularly prominent: they are produced or modified via several processes that helped give birth to the new business model; and they promote sensemaking about the resulting business model.

The Newly Envisioned Business Model

After the mid-2000s, the company came under increasing pressure from competitors in low-cost countries, who were able to launch products 3 or 4 times cheaper than SEB's. In addition to this hypercompetitive environment that faced SEB's kitchen division over several years, the advent of

Internet made the company reflect more intensely about its future. Indeed, the Internet threatened the division's main clients – the retailers – directly. Beyond this general technological change, the second area for reflection early in the century was the migration of value capture, which SEB's managers thought would become more and more difficult with its existing business model. The competition from low-cost countries and the company's positioning in offering differentiated products at the high end of the market threatened to put it at risk over the middle- and long term. Indeed, SEB was used to dedicating huge sums to its R&D efforts, and to innovating high-end products, with strong trademarks. The division ran four different innovation processes designed to develop new products regularly. The first involved products that represent radical innovations with high margins; the second concerned premium products, that is, high quality products but with few risks as far as innovation was concerned; the third process was called "time to market" and referred to incremental innovations essentially intended to replace existing products; and the final process targeted new designs to reduce costs of products that sold high volumes but only at low margins. But none of these processes was exactly adapted to innovating the company's business model.

SEB managers felt that the group's customary differentiation strategy had probably reached its limits, and that a new way of producing value needed to be identified. Margins couldn't be increased indefinitely, especially given how the economic crisis was affecting the company's mature markets. So the kitchen division's general manager engaged in an exploratory process in two broad directions. The first notion was that in the future value would be increasingly generated from services and complementary products. When it sold a bread-making machine, the company must also look to sell ingredients (such as yeast) and recipes. Examples from the mobile phone and video games industries were seen as patterns for this kind of evolution, and the successful case of Nestlé's launch of the Nespresso range was also kept in mind as an inspiring strategy. The most important thing then becomes that the installed base of machines sold must be sufficient to be addressed regularly with new services and products. The second pillar of this new vision was that SEB should develop its activities in more and more cooperative ways. Indeed, the successful development of complementary products generally involves partners with – if possible – strong trademarks, such as L'Oréal or Heineken. Beyond the development of complementary products, the company's innovation efforts were also to be opened to new partners, such as universities, engineering schools, and software companies. As the general manager explained:

The general idea is to introduce more services and to promote more openness (...) The concept of openness means there are no longer any barriers between hardware and software. There is a less proprietary approach. We can imagine that tomorrow we will recruit our new customers via Facebook. (General Manager)

Both of these pillars rested on a massive movement toward digitalization, with less importance being given to the products by themselves, even if connected products – and thus, product innovation – were intended to be part of the general movement that was envisaged: “The transformation to provide solutions consists in creating an ecosystem with a lot of partners, with a lesser role for the hardware and the creation of a lot of services” (VP for Marketing). The “digitalization” that was envisaged promised to impact all the company’s traditional activities – for instance, traditional retailers would probably be progressively replaced by sales via e-commerce channels. Developing services entailed favoring the emergence of a virtual community of consumers, who could exchange recipes and advice. Connected devices could also provide consumers with personalized experiences – instead of marketing products to which the consumers would adapt, the company envisaged that future products could adapt themselves to the consumer, and would propose personalized suggestions, as the R&D Director underlined:

The idea of the company with the digital revolution and Internet is to focus on nutrition more than on recipes, by enlarging our interest in food security and quality, Internet and web services, supply of ingredients, kitchen hardware etc. ... We would like to answer such questions as “What will I eat tonight?”, “I would like to have a healthier diet”. We put the consumer in front of an appliance and it suggests some possible answer.

Finally, traditional TV advertisements would also decrease in the future, and be replaced progressively by investments in Internet communications.

Overall, the company’s mission would evolve from being a product-centric toward a consumer-centric company, offering different value propositions – as the VP for Finance suggested:

The traditional mission of SEB is to ensure the transformation of ingredients into a result. We are specialists in transforming technologies such as heating and cutting technologies, appliance motors ... But there will be little differentiation in these technologies over the mid-term. Differentiation by design is also not enough. The differentiation by interfaces, with screens on devices, has to be completed by introducing new elements to make [our appliances] “smart”].

Table 2 summarizes the new business model that was envisioned.

Table 2. The Traditional Business Model Contrasted with the Envisioned Business Model.

Traditional Business Model	New Business Model
TV advertisement	Web advertisement and sponsorship
Value localized in the innovative products	Value partly located in services and complementary products
Internal development	Open innovation
Retail chains and dealers	E-business
Main product function: transforming ingredients into a result	Smart products to offer a personalized experience

Crafting a New Business Model as an Experimental Process

The general vision outlined above has guided the company toward a new business model over recent years. At first glance, these ideas appear as logical, obvious, and understandable evolutions, given the changes in the market environment and SEB's fear of missing the next revolution in its sector. But the path from ideas to implementation is far from obvious, and is likely to involve a trial-and-error learning process, especially when the targeted business model is – as in this case – radically different from that which currently exists (Sosna et al., 2010). In this context, the company experimented with many initiatives – some succeeded, others failed and some had mixed results. But even the failures could have potential benefits for the future success of the business model, in terms of the opportunities for learning that they offered (McGrath, 2010).

At the organizational level, the experiments were led by a specific task project – labelled “Digital Workshop” – which was in charge of the OFS Foodle project.

The idea to create a digital workshop was to build up a different department functioning as a start-up, to better understand the Internet, to explore this new field and to propose how to position the company in this new world. This digital workshop can be compared to light cavalry, more agile, able to explore. (R&D Director)

Starting with two people in 2011, the team grew to ten employees a few months later, and its status was extended from a product line to a business unit. In addition to the hierarchical line modifications required to provide the workshop's actors with high levels of autonomy, its new profile also led to it developing new competencies. The workshop was in charge of developing mobile applications, and thinking about recipes, the semantics involved and the uses of appliances. At the end of 2012, the company took

another major strategic decision in the experimentation process when it signed a general agreement with 60 other middle-sized companies in various sectors (electronic and software companies, ingredient makers, culinary-oriented companies, etc.) to launch the OFS. These two initiatives allowed all the actors involved in the OFS network to partake of the global progress the company's Digital Workshop had made, especially the new competencies it had acquired and the "smart bricks" it had developed to be integrated into future products: "Three years ago, the group was not ready for digital at all. Today, we have really gained new skills. We understand better today what digital means ... what we can do" (Digital Project Manager).

These structures helped the company develop new products, and that process generated further new knowledge. The product most cited by the interviewees was *Cookeo*, the company's first "smart" connected cooker, which was launched in 2011.

Thanks to Cookeo, we understood we needed to improve our understanding of taste, uses, and nutrition (...) Till now, we had lines of "obscure products", that is, devices whose functioning consumers did not understand. They don't know how a microwave or a cooker work ... and what temperature levels to use. They rely on the machine. With Cookeo, the machine has to understand what the consumer wants and what they want to cook. This breaks the paradigm. The consumer no longer has to be the variable to be adjusted. (Digital Workshop Manager)

An example of an experiment where the results were more mixed was the case of *My Foodle*, one of the *OFS Foodle* project initiatives. It demonstrates that purely cognitive reasoning may lead to the elaboration of a new business model, but that the transition toward the model's implementation is much more complex. The project started from the basic idea that the company's customers may not be interested in technological innovations or sophisticated electronics – above all, they are interested in cooking. At the heart of this (quite obvious) preoccupation lies the recipe – so the more recipes are available, the more value cooking devices can deliver. This interest in recipes reintroduces the question of the possibilities of the Internet. The notion was that, in the kitchen of the future, the various appliances will be able to receive information from the Internet, and communicate with each other to propose recipes to the consumer. At the end of 2012, SEB sold 1,500 tablets cheaply to encourage consumers to use their new services, and to engage them in progressively enriching the recipes on the associated website (lefoodle.com). This experience was set up to learn how to manage a community of consumers and how best to use their input. But the experiment had to be stopped only a few months after it began due to problems of users plagiarizing recipes from other websites. Thus the

attempt to build an active community partly failed, as it did not take off as expected. This problem illustrates that actors (SEB on one hand and customers on the other) may have different views about the role of an artifact (the website) and may manipulate it to match their different expectations.

While the actors involved in this initiative recognize the progress that has been accomplished and the experience accumulated over the last three years, they also realize the great uncertainty about the final results of the experimentation process which are still unclear, and the experiment runs the risk of having failed. As the division's General Manager said:

We are largely in unknown territory with this new business model. For instance, how to set up the margins of the hardware compared to those of the software? To a great extent, it's a gamble. We may screw up completely.

Indeed, the process is far from being over. As well as uncertainty about the final business model, actors are also uncertain about the paths to be taken to reach that end. Numerous questions remain unanswered, concerning – for instance – the pricing strategies, the innovation processes that should be implemented, or the products or services the company should offer in the future. As the VP for finance said:

We are at “the edge”. We have made mistakes concerning some products, such as the computer tablet ... but as long as it's only products, it's not so important. It would be another thing to make a mistake on the business model (...) How to monetize the potential market of communities? We are making progress but we are still groping for final answers.

Considering the experiments and the subsequent learning processes involved, the SEB case underlines the difficulties of putting a new business model vision into organizational reality. Some progress has been achieved, but the innovation process is now beginning to enter into a convergent phase after the explorations of the past three years. Some projects are becoming, progressively, connected to each other:

In the process, some projects are developed independently, but converge progressively. We integrate progressively them to the [OFS] Foodle [initiative]. For instance, Actifry and Cookeo [two successful connected devices] are currently converging. (Director of R&D)

The Digital Workshop is itself becoming more and more connected with the R&D department and reintegrated into the classic product innovation process. The convergence occurs at the corporate as well as at the business unit level, as several projects developed in other group divisions have benefited from the tools developed by the Digital Workshop.

The Role of Artifacts in the Learning Process

External triggers played important roles in the learning process involved in building a new business model (Sosna et al., 2010). Companies may test and re-test several alternative ways of facing their environments and analyze the environment's "reactions." In our case, while the environment plays a role in the learning process, it does not seem a very important one – indeed, references to the environment remain relatively vague in the company documents, and only concern macro-trends (the advent of the Internet, the modification of retailing, competition from low-cost countries, new consumer behaviors, or migration of value). These trends represent real threats – and are interpreted as such – but have not yet been embodied in competitors' value propositions, so their responses can't be observed and imitated. Thus, in our view, the environment was only a limited source of learning for SEB compared with its own trial-and-error experiments, which consisted of launching many independent initiatives, and in making them converge at a future stage. In this sense, it is interesting to note that several interviewees mentioned the idea of "bricks" – new products or objects that constituted some markers or components of building the new business model for them.

In summary, SEB promoted autonomous processes in the first stage of building its new business model, where new ideas arose at lower organizational levels, before giving more importance to what Burgelman (1991) terms "induced processes." In the first experimentation phase (exploration), the learning process was essentially triggered by internal elements. More specifically – and in accordance with ANT – we can analyze this phase as being characterized by a succession of new artifacts emerging from the company's experiments. Each artifact contributed to enacting the business unit's new business model in one way or another. This process accords with Latour's (2005) argument that the more artifacts there are that mark a new reality, the more that reality "solidifies" and so is itself enacted.

Table 3 summarizes the various changes in the company's traditional business model and the artifacts introduced in association with the change, categorized according to the RCOV framework.

Beyond just the creation of new artifacts, our analysis shows that several different processes were involved in bridging the "old" and "new" business models so that the latter could be accommodated and realized. In our case, we identify five such processes:

- 1) The *creation of new artifacts* within and outside the organization was the most obvious and richest category of outputs from the exploration

Table 3. Analysis of Artifacts in SEB Business Model Change via the RCOV Framework.

Business Model Components	Illustrations of Business Model Changes	Examples of Artifacts
Resources and Competencies	New competencies recruited such as web managers, experts in semantics, anthropologists, and nutrition specialists; Creation of a consumers' community	The "Foodle" trademark; A revised salary grid for recruiting employees with new profiles; Technological roadmap; The Foodle user community
Value propositions	Connectivity between different devices; Personalized recipe services	Tablet computers; "My Foodle" website; New line of "smart" kitchen products; Nutrition apps; Recipes available on Internet and directly connected to company products
Organization (internal and external)	Numerous partnerships to enrich the offer; Dedicated project structure; Creation of investment funds	"OFS Foodle" consortium contract with partners; "Innovate with group SEB," open innovation website; Internal project group: "the digital workshop"; Revised project methodology

process. Several new artifacts were crafted or implemented for each business model component, such as new trademarks, websites, communities of users, new organizational functions, a technological roadmap, or tablet computers dedicated to cooking recipes.

- 2) The *modification of existing artifacts* can be seen as adaptations of the existing organizational reality to the new business model. For instance, the new business model may require redefining some organizational functions, such as reorienting the product manager function toward thinking more in terms of solutions than of products, or redefining the methodologies involved in developing innovations.
- 3) Related to such modifications, another process is characterized by the *increase or decrease of the comparative weight of some existing artifacts*. In this case, the modification does not concern the content of the artifact but the importance attributed to it within the company. For instance, the new business model required adaptations to the legal department's role due to the multiplicity of collaborative innovation

projects. In the same vein, the customer gains greater prominence in the new business model, as the company begins to organize user communities and to promote exchanges with and between them. Given the importance of recipes, the “Garage” – an independent building entirely dedicated to culinary experiments, to proposing and testing new recipes – also becomes increasingly important.

- 4) The *disappearance of some existing artifacts* appears as a way of overcoming obstacles in the experiments. For example, the margin or revenue norms used in developing new products have to be – at least temporarily – suspended, to allow for experiments with new products or services: the experimentation process could simply not be conducted if such margins were maintained.
- 5) The *creation of interactions between artifacts* appeared as an increasingly important process. When innovation projects were undertaken in a semi-autonomous way in the exploration phase, more and more connections were made between the new artifacts involved. For instance, connections between Kitchen Electrics products and Internet services were increasingly promoted, and interactions between the digital workshop and the R&D department increased, as did relationships between the Kitchen Electric division and other divisions to share digital expertise. The artifacts created progressively bridged the main business model components (resources and competences (RC), value propositions (V), and organization (O)), whereas at the start of the experimentation process, they more often related to single components.

A first role of artifacts in the enactment of SEB’s new business model concerned how they progressively populated the organization and became increasingly interconnected. The new business model was progressively established through actions involving those artifacts, showing that such processes are not just cognitive, particularly as far as mature companies are concerned. We note that the open innovation policy (as a means of obtaining contributions from complementors to enrich product diversity for customers, so creating indirect network externalities) also involved creating and manipulating artifacts outside the focal organization (SEB), and thus creating boundary-spanning objects such as consortium contracts or co-branded products. We can also observe that, in an established company, that is, a market leader as in our case, actors face a specific tension between (1) producing artifacts to “create” the new business model and (2) ensuring that the situation remains reversible so that the new business model will not cannibalize the current one in the short

run, a tension that Teece (1986) noted in the case of new technologies. We observe that this tension also operates at the business model level, and so reinforces the need to consider the notion of a business model portfolio (Sabatier et al., 2010).

A second role of the artifacts we observed in our case study concerned sensemaking. Each new artifact helps actors make sense of the business model component to which it relates. Indeed, since the interactions between social actors and artifacts promote a sociomaterial view of the business model crafting process, the meaning attached to those artifacts illustrates the cognitive dimension involved. Hence, this makes it less easy to distinguish between the definition and the implementation of the new business model, as the new artifacts involved modify the definition of the business model itself. Griffith (1999) has previously noticed how artifacts contribute to sensemaking, and how technologies can generate unanticipated interpretations on the part of users. Actors in mature companies are especially likely to be confronted with established sets of social relations and artifacts (existing products, processes, rules, departments, etc.), so that changing their business models may require both changing the networks of actors and artifacts (as developed above) and also the meanings associated with the artifacts. The interactions between sensemaking and artifacts are well illustrated in questions about how to consider software expenses and applications, as the following quotations underline:

Should an app [application] such as My Actifry [a connected product] be profitable? Yes. But should it be financially profitable? I'm not sure personally. My Actifry increases the company's reputation, customer experience, and thus, eventually, its sales. If the service is a part of an entire solution, digital has to be considered as an investment in a product category rather than something that should be profitable in itself. (Digital Project Manager)

I think people should stop considering software outsourcing as investments but as charges ... so they can be integrated into the P&L [accounts]. That would enable us to avoid having to amortize them over long periods. (VP for finance)

These quotations refer not only to the appearance of new artifacts, but also to how actors make sense of them (Stigliani & Ravasi, 2012). Indeed, evolving into unfamiliar territories requires solving such questions if the change process is to be managed successfully. In our empirical field, some questions are solved and clear understandings are reached after debates between the different departments involved (such as how to account for software outsourcing, as noted above). But some other debates – such as the concept of “digital” – remain open to multiple interpretations:

We do not know exactly what we mean by digital (...) Digitalization is obvious. We sell an experience, an ecosystem, a solution. The problem is that each department interprets the word in its own way. For me, it's not just having a website. It means making good contacts with our customers, before they buy, but also in terms of letting them know about all the services that accompany the product ... it's a more global and complex vision. (VP for Marketing)

We don't all share the same vision about the digital business model. We do not talk about the same investments and we do not try to make the new services profitable in the same ways. The group remains an industrial one and digital developments do not merge into its processes easily. (Digital project Manager)

These debates remain open at a general level, and so do not hamper the emergence of the new business model. But we can hypothesize that different interpretations may conflict at times when empirical decisions have to be made, so the disparities in the meanings different actors attach to particular artifacts need to be resolved.

DISCUSSION

This research adopts a sociomaterial view of change to consider the processes via which mature companies change their business models. The case study of the on-going business model change process in a leading worldwide company produces several contributions to the literature on business model innovation and on the practices involved in company rejuvenation (Baden-Fuller & Stopford, 1992).

First, our research contributes by going beyond the study of successful cases. The advantages and benefits of a given business model are generally only identified and become obvious after its implementation. Thus, the literature has tended to observe the emergence of new business models a posteriori, and studies that start by studying an existing business model and then follow the successive attempts to modify it are rare. We think that such a longitudinal approach to studying the crafting of a new business model can inform researchers and managers about the difficulties of implementing such changes, as well as enabling us to limit the retrospective biases inherent in conventional a posteriori studies.

Second, at a conceptual level, the business model construct has been used to describe organizational change (Demil & Lecocq, 2010), but the literature has tended to overlook some dimensions of the process. In this paper, we document how the material and social processes of change intertwine, and argue that artifacts are crucial in the change process as they

generate new interactions between actors, creating a new network of “actants” that constitutes the new business model reality. From a methodological point of view, a consequence is that business model change can be analyzed in terms of the presence (or absence) of a collection of artifacts. In fact, the business model concept is very difficult to operationalize, and identifying the artifacts involved and their web of interrelations seems a promising approach.

Third, business models are paradoxical in the sense that they can constitute blueprints (Magretta, 2002) or may be seen as models (Baden-Fuller & Morgan, 2010) which simplify reality and allow for communicating and discussing entrepreneurs’ or organizations’ projects. However, when the time comes for a new business model to be (re)defined and newly crafted for internal or external reasons, organizational complexity arises. Indeed, when crafting and implementing a new business model, actors may have to leave the holistic approach of an outline sketch behind, and move toward making specific decisions about the multiple components involved and their interrelationships. This can create great complexity for them, and they become no longer able “to see the wood for the trees” – that is, to retain their vision of the whole new business plan (the wood) because of their involvement in defining its precise elements (i.e., the trees that constitute the wood). As a consequence, actors may implement iterative processes in which they produce individual artifacts (i.e., plant trees) to materialize the new business model but, meanwhile, each artifact in itself contributes to creating and defining the new business model (i.e., the wood). As a consequence, a new business model as a blueprint can only be fully understood a posteriori in an established company, as it results from multiple separate sensemakings (Weick, 1995) more than just from its ex ante design. However, the fact that actors do not grasp the business model they want to create easily and entirely may also have positive effects for the company. It allows room for entrepreneurial decisions at the local level: executives in each department can test new ideas and implement new processes, to contribute to the overall crafting of the new business model. Thus, the inability to stick to an ex ante detailed blueprint of the new business model can empower actors and promote their creativity.

Fourth, our research shows that actors craft artifacts to create reality, and that these artifacts contribute both to the emergence of new business models and to how those actors subsequently make sense of them. However, actors also try to craft artifacts while ensuring business model “reversibility” so as to avoid being locked too quickly into the new one, and this reversibility is ensured, for instance, by the lack of connections

between artifacts in the first stage. Most artifacts are first developed locally and have only a local reach. We may hypothesize that during the early – autonomous – phase (Burgelman, 1991) of new business model crafting, the main processes consist of creating new artifacts, and of modifying or eliminating existing ones. These processes allow the company to experiment and to engage in a global creative process: at this stage, connections are rare, so reversibility is high. At the second stage, induced processes (Burgelman, 1991) become more predominant, which requires establishing many more connections between the artifacts to gain efficiency, to connect the different elements of the new business model and to reintegrate them into the firm's existing networks of artifacts and actors. Once included in these networks, the new artifacts are much more difficult to change and reversibility is drastically reduced.

Finally, this paper contributes to identifying the origins of given business models, and more particularly the processes which lead to new business model development in an established firm that is a leader in its market. It takes a sociomaterial approach to the building of a new business model, shedding a new light on the process leading to the emergence of new organizational patterns. Moreover, this study is both theoretically and empirically grounded. We demonstrate that bridging between an “old” and a “new” business model is realized through the creation of artifacts within and beyond the organization, and the interactions between those artifacts. We may speculate that the more the new business model differs from the old one, the more actors have to craft artifacts to materialize it progressively. Further research could adopt a similar sociomaterial approach to comparing business model change processes in different contexts.

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