

## UNDERSTANDING AND INNOVATING BUSINESS MODELS: SOME BASIC METHODOLOGICAL ISSUES

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**Abstract:** We discuss basic components of the business model concept, with particular emphasis on rigorous and preferably quantitative methods of analysis of business models. We focus on factors which influence the process of developing customer value proposition - a crucial part of any business model. We also present an international collaborative project aimed at developing methods of making existing business models of SMEs more innovative.

**Keywords:** business model, consumer value proposition, innovation, quantitative methods.

### 1. Introduction

Although, the term "business model" has become an essential part of management vocabulary in the last two decades, many companies do not truly understand their own business models. This is partly caused by the multitude of definitions of this concept and also by the fact that existing definitions may be quite imprecise (1). In a recent comparison of 12 conceptualizations of business models, the authors listed 42 distinct building blocks of the business models reviewed, but only 20 among them were found in more than one business model (2). The rise of e-business has created the need for new typologies of business models, built with respect to the mode of value creation or of generating revenue [e.g. fee versus free business model; see (3)], or the type of Internet technology used (1). This area of study is clearly at an early stage of development, and the concepts have not been solidified and are often applied without sufficient rigour [see also Roger & Bock (4) who reviewed many different views on the business model concept, with insights to the methodology of research in this area].

As a consequence of the lack of clarity described above, reinventing business models, and ultimately reinventing business itself remains an unnecessarily difficult challenge. It is not surprising, therefore, that business model innovation accounts for mere 10% of total innovation-related investments among global firms (5). Most of the attention and resources are allocated to developing product or process innovations, resulting from technological progress in the field, but without paying attention to the crucial issue of whether such innovations are part of an appropriately transformed business model. Interestingly, business model innovation may benefit from the wide experience that has been accumulated in managing product innovation – both processes share structural similarities, but we know much more about product innovation (6).

According to Johnson et al. (5), building a business model begins with formulating the customer value proposition (CVP), which entails understanding what the customer needs. Each of the existing business model conceptualizations contains a similar building block,

although the terminology used differs, but with the commonly emphasized notion of “value creation” [see e.g. (2)].

## 2. Customer value proposition

*"Launching a breakthrough idea is like shooting skeet. People's needs change, so you must aim well ahead of the target to hit it." - Raymond Kurzweil*

An observant and sensitive business model innovator shines here, proposing value to customers for aspects they have taken for granted or in which they have not realized their full potential. However, rather than keeping an ear tuned to the “voice of the customer”, it may be just as important, if not more important, to look beyond customers’ expressed wishes (7). Customer co-creation almost inevitably means the customers’ voice will drown out unique and truly revolutionary vision of the innovator, and it may yield incremental innovations that fail to meet unexpressed future customer needs (8; 9). Several studies showed that proactive (rather than responsive) market orientation is more effective at generating innovative products (10; 11).

Invention, when there is no one who needs it, generates no value in the company’s current business model (12; 13). Sometimes, success can lie in inventing something that no one needs or wants, but will do so in the future, as the case of single-crystal silicon, used now in all electronic devices, nicely illustrates: the production process (still used today) was developed by a Polish chemist Jan Czochralski in 1916, well before the digital “silicon era”.

Of course, waiting several decades for commercial success is not a viable business strategy. The ideal scenario is to create something that customers do not realize yet that they will soon not be able to imagine their lives without. A true visionary *creates* new aspects of customers’ everyday lives – ones that were not in existence yesterday. At some point in the past, CVPs with such qualities were, e.g. a traveller’s check [made popular by American Express in 1891, (14)], a credit card (introduced by Bank of America in 1958), a walkman (offered to the customers by Sony in 1979), or a cell phone (Motorola’s DynaTAC in 1983).

The barriers that typically limit customers’ productivity or comfort usually result from poor access, insufficient wealth, lack of time, or low skills (5). A new CVP which offers a product or service at a lower price, more easily and quickly and, at the same time, it will be easier to use, is on the right path to success. For example, the Sears-Roebuck mail order catalogue-based business model (introduced in 1888) or Wal-Mart’s discount stores (started in 1962) were meant to address the *insufficient access* to purchasing opportunities in small towns and rural areas of the United States. The commercial success of the Biedronka store chain in Poland in the first decade of the 21<sup>st</sup> century results from addressing the same issue with easy access to goods in Polish towns and villages.

Tata’s cheap Nano car was meant to address the *insufficient wealth* problem, which affected many families in India, forced to rely on scooters for transportation (5). Similarly, the Polish Fiat 126p was meant to solve the same problem in Poland of the 1970s, reducing the necessity of using public transportation and releasing the spirit of entrepreneurship. *Insufficient time* is a ubiquitous pressure behind many consumer-oriented or industrial innovations, such as pre-packaged frozen dinners, instant soups, drive-through fast-food restaurants etc.

Finally, Apple’s one box design and user-friendly interface of the Macintosh desktop computer from 1984 were meant to break the *insufficient skill* barrier (of using personal

computers). Computer-assisted visualization of oil platform work environments (developed by i3D, a Polish IT firm) allowed BP to break the skill barrier by providing safe on-land training for freshly recruited and often poorly educated employees. An alternative approach to the skills problem would be simplification of tasks in assembly-line production, which allows plant managers to hire less-skilled workers.

Businesses may use several mutually reinforcing drivers of value creation [initially defined in the context of e-business (15), but applicable also in more general contexts]: novelty, lock-in (i.e. a system of products that must be used together, like coffee capsules and espresso makers), complementarity (e.g. between on-line auction portals and PayPal payment service), and efficiency [see also (16; 17)].

### **3. Is CVP on target?**

The winning streak of several consumer products of universal appeal (e.g., iMac, iPod, iPhone, iPad), has made Apple the most valuable brand in history. However, it is never easy to be sure that our assessment (read: guess) of the CVP attractiveness to the customer is correct. Success results from deep knowledge of cognitive and economic psychology, ergonomics and design [see e.g. an account of Steve Jobs' approach to product development in (18)]. It is also an issue of statistical inference and of making decisions based on samples of customer opinions (19; 20)]. The initial failure of the EuroDisney park in Paris [which opened in 1992, see (14)] was due to wrong diagnoses as to the expectations and behavior of European visitors whose preferences were different from those of the American guests of theme parks. Such mistakes could have been averted if appropriate surveys and analyses had been carried out up front.

It is very important to avoid shortcuts and temptations of assigning business significance to the observed survey results that are not *statistically* significant. One can surmise that such statistical foolhardiness was the cause of many unexpected failures of promising CVPs: their promise existed only in the minds of their creators who suffered from a typical case of "wishful thinking". All too often business losses or firm bankruptcies are blamed on, more or less unspecified, macro- or micro-economic circumstances, while, in fact, the cause lies within the company, in the way it manages innovations.

### **4. Other building blocks of the business model**

*"Real artists ship"* – Steve Jobs

Reality checks must be carried out to turn the vision of CVP into an actual product, and therefore a business model must include another three building blocks. They may appear less creative and "glamorous", but without them new inventions never become true innovations, but stay in the realm of hallucinations (to paraphrase Thomas A. Edison's quip on "*vision without execution*"). This example may be somewhat unfair to the early mp3 players introduced to the market in 1998, but they did not succeed not only because of their 32 MB storage capacity (sufficient to store only 6 songs). The market for mp3 players was weak until Apple (in 2001) managed to combine technological advance with successful iTunes business model of providing legal content which could be used with Apple's iPods.

The second building block of the business model comprises profit-related decisions, i.e. cost structure (especially the costs of resources used in production), revenue model, expected profit margins and resource utilization patterns (turnover rates of assets and inventory). Zott et al. (1) call this aspect "cost/revenue architecture".

The third building block is composed of all key resources that the company has at its disposal, i.e. people, skills, technology, facilities, equipment, logistics, existing product lines etc. (21). For example, Apple's business model includes: Jonathan Ive (its chief designer, responsible for the physical appearance of the company's main products, from iMac, through iPod, iPhone, to iPad), patents for many technological solutions, Apple's main campus in Cupertino (California), the growing population of unique Apple stores, from New York City to Shanghai, on-line distribution centers App Store and iTunes Store etc.

Finally, the fourth building block is about the key processes that form the "metabolism" of the firm, including recruitment, training, production and quality control, sales and service and also elements of the firm's organizational culture (22).

## **5. Are business models models?**

Model is a methodological concept which, in science, clearly means more than it does in business and management. Any description of a selected groups of aspects of business activity is already dubbed "a business model", while it is often no more than a hand-waving story and an optimistic "narrative" [a term used by e.g. Magretta (14)]. When we start using words in their over-encompassing meanings, or, in other words, when they are meant to mean anything, they are no longer useful.

"Business model" deserves to be called a "model" only if such description fulfills certain requirements. What are they? The crucial characteristic which changes a loose collection of concepts into a structure which may become worthy of the name "model" is the degree to which the building blocks are interdependent. Importantly, it is this web of interdependencies that makes business model a valid unit of description, a real subject of development and innovation, and of legal protection (1; 23). It is real in the same sense that a network of metabolic pathways may be considered a product of natural selection.

One may study such interdependency of variables through sensitivity analysis in which one explores how the values of other variables change when the settings of one of the building blocks are modified. Postulating precise quantitative relationships between the variables may be unrealistic, however, and simpler, less rigorous analyses are likely to suffice in many cases. Even a carefully thought-through flow-chart, with explicitly illustrated causal connections between building blocks, represents progress, compared to a purely verbal description. Some of the connections are bi-directional (paralleling correlation analysis in statistics) and others reflect decisions of which variables are independent, which are covariates, and which are dependent (like in partial and multiple regression analyses). It is difficult to build rigorous, quantitative relationships between its components into a business model, but it is only then that we could move away from business models as narratives. Some authors equate the numeric side of business models with the Profits & Losses math, but we believe that "quantitative" should mean much more than that.

Scientific study of business models must follow the same methodological principles that apply to biomedical research, with emphasis on building null hypotheses and avoiding the fundamental trap of the, so called, "pseudoreplication" (24). Extreme versions of this malpractice of empiricism are the "N=1" studies or self-experimentation when the researcher becomes the subject of experimental treatments. One can easily see a parallel between such self-experimentation and description of the effects of reinvention procedures administered by a business on itself (25). Whether the treatment is efficacious or not

depends on many circumstances, and in any given case it is impossible to conclude that it is the innovative modification of the business model rather than a change in any other aspect of the firm's environment that is responsible for the observed state the firm is in.

## **6. ReInvent: A platform for studying business model innovation**

We would like to briefly present one of the approaches to the study of business model innovation. The ReInvent project (entitled "Transforming SMEs in Creative Sectors Through Business Model Innovation") is a collaborative project involving two universities (University of Reykjavik and Nowy Sacz Business School - National-Louis University) and three SMEs (one from each country: Iceland, Poland, and Denmark). The creative sectors present unique opportunities for innovation and economic growth. As much of manufacturing and many types of service delivery are shifting to lower-cost areas such as Asia at a rapid pace, the creative sectors are increasingly important for Europe. At the same time, the creative sectors are experiencing unprecedented rates of change and the more traditional sectors, such as architecture, tend to be stuck in the business models that have served them well for decades. The ReInvent project aims to actively address this concern by developing new theory in the area of business model innovation. This will not only advance knowledge in the field of business model innovation, but also provide actionable guidance for creative sectors in Europe.

The advent of electronic business (e-business) has brought with it novel exchange mechanisms and transaction structures that are inconsistent with traditional business models (15). ReInvent focuses on SMEs in smaller or emerging economies, where business model innovation is a particularly relevant strategy as geographical boundaries lose their strength in the face of virtual markets. At the same time, ReInvent takes into account the barriers that still exist when SMEs want to extend their reach to the international sphere, namely barriers created by different languages, cultures and cross-border logistics (15).

The ReInvent project is funded by the European Union under the Marie Curie Industry-Academia Partnership and Pathways program (IAPP). The IAPP program is based on collaboration and knowledge transfer between industry and academia. The cornerstone of the IAPP program is a "two-directional" system of study visits by researchers between industry and academia, which affords optimal opportunities for knowledge transfer and intellectual cross-pollination.

## **7. Conclusions**

A recommendation from Johnson et al. (5) about the mindset required when reinventing a company's business model says: "be patient for growth but impatient for profit". In other words, profits generated with a new CVP are the best indication that the business model it is part of is successful – 'the proof is in the pudding'. There have been several studies addressing the causal link between the type of business model and firm performance (26; 27). Obviously, environmental influences impacting the firm's success must be held under control either through careful firm selection for analyses, or through statistical means (for example, covariance analysis).

Importantly, however, one should always be ready to modify and make corrections to the business model – it is not carved in stone and there is no set amount of time which must pass before the current business model is due to be checked for relevance and applicability. For example, it took EuroDisney several adjustments until its business model succeeded in

the European reality (14). Interestingly, some business models (like Dell Computer's) had built-in features, which ensured automatic data collection from the customers about their ever evolving preferences and the absence of intermediate resellers allowed the company to have access to such data when collecting orders from end users (14).

When reading the literature on business models one cannot escape an impression that we are just rediscovering basic truths about the ways of doing business, carefully repackaging and refreshing them for the new reality of the connected world. Some concepts in management clearly require such refreshment, since the Internet truly affected human interaction not only in the quantitative sense, by making transfer of data faster and cheaper, but also in the qualitative sense. For example, normative decision theory, developed originally by Vroom and Yetton in 1973, in its 1988 version contained several additional elements that were meant to provide tools for dealing with the globalized world, multinational companies and culturally diverse workforce (28). However, web-based management practices rendered some of these "updates" not only obsolete, but also redundant. Similar processes happened to many business models which now require re-inventing.

Business visionaries need not worry when they recall the quote from 1899 by Charles H. Duell, Commissioner of the U.S. Office of Patents: "*Everything that can be invented has been invented.*" There is some evidence to support the view that he was dead wrong. Besides, he clearly did not have business models in mind.

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