



Facultat de Ciències Jurídiques  
i Econòmiques · **FCJE**

*Approach to ex ante business model  
assessment methods*

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## -Introduction

The study is focused on business models and more specifically on business model assessment methodologies. Schoorman et.al (2018) analysed a series of business model assessment techniques and classified them into various. However, this study focuses on the possibility of performing *ex ante* evaluation, or indeed not.

First, a literature was undertaken, covering both the generation and evaluation of models. This phase of the research was designed to ensure that all relevant models and evaluation techniques, for *ex ante* analysis, were taken into account. It also examined the importance of strategy in the formulation of the business model, as well as the process of translating a product or service into a functioning, sustainable business. The analysis focused on a range of business models, from the relatively traditional (the standard business plan) to those associated with high-tech start-ups and internet businesses, such as the Lean Start-Up.

Thereafter, it examines the process of business model generation, and the means by which companies translate their commercial concepts into models which are sufficiently robust to, for example, attract third-party investment, and sufficiently flexible to be able to adapt to rapid and continuous market change.

In the final section, a detailed analysis of the four primary *ex ante* business model analysis techniques is undertaken. Four approaches were considered in detail. These approaches vary considerably in the centres of focus, and attempt to provide some degree of objectivity. One, for example, is designed solely for the purpose of analyzing online retail business models. Another, which is more general in nature, focuses analysis on eight variables, on a five point scale, so as to provide a more or less numeric score for the business model overall.

The study does not seek to rank these models or critique them as good or bad. Rather it examines appropriateness and usefulness as *ex ante* analysis tools.

It concludes that the processes of creating and assessing business models is changing continually (not only for *ex ante* analysis). Not only are the demands of investors, innovators and entrepreneurs creating new planning and assessment needs, but also, more traditional businesses are evolving their approaches so as to become more dynamic, agile and experimental. In both cases, therefore, *ex ante* analysis is becoming increasingly important. The ability to assess the viability of a new business or venture, before any material quantity of money has been spent and implementation started, is being recognised widely as a critical business tool.

## **-Conceptualization of the business model**

### **BUSINESS MODEL AND STRATEGY**

Business model and strategy are very prominent concepts in the business world. It is important to highlight the differences between both issues. The strategy is related to the value chain concept, which was described by Porter (1985). While the business model is understood as part of the strategy, constituting this "a set of interdependent activities" (Zott and Amit, 2011) or as described by Casadesús, Mascarell and Ricart (2007) "the business model is the reflection of the materialization of the strategy of the organization or company "

Thus, it is possible to affirm that the strategy is what makes the business model evolve since it is referred to a higher dimension. In relation to its role of adapting the business model, it is referred to as a "dynamic capacity" (Teece, 2010)

Also, before starting a business, you must define the business model (which could replicate something that already works in another sector or innovate - often this is key to obtaining a competitive advantage) and will gradually guide it through the strategy.

The concept of business model has important repercussions in any sector, from those more mature and traditional industries to those more oriented in radical innovation. The ultimate goal of this is the achievement of a sustainable competitive advantage.

The business model explains the functioning of an organization and responds, according to Magretta (2002), to the following key questions formulated by Drucker in 1984: Who is the customer?, What does the customer value?, and How is it going to generate money in that business? (through the resources and distinctive skills to achieve a competitive advantage)

### **IDEA AND BUSINESS MODEL**

A company always starts from an initial business idea that, subsequently, is manifest in a product or service from which an economic benefit is obtained. For the success of this business, a series of factors are taken into account, such as the differentiation of the product or service (from potential rivals), which focuses on real needs or desires amongst potential customers, in order to ensure that a sufficient number of real customers exists and that the business is therefore capable of generating economic benefit.

A business model helps set out how an organization can create value and therefore generate revenues. During the last few decades, there has been a sustained focus on the 5 competitive forces (Porter, 1985), but other aspects, such as the generation of value, have acquired special relevance. The challenge is not only to compete; success is achieved by innovating in the business model itself.

A business model explains the operation of a company by defining potential customers, distribution channels, key partners and the value of the offer (product or service) for customers, at an appropriate cost. Prominent roles are played by concepts such as organizational structure, the value chain, revenues and costs, segmentation and competitive strategy.

The usefulness of this tool lies in its integration of aspects including positioning and sustainability, and achieving a realistic and dynamic vision of the development of competitive advantage. In a certain way, it connects the formulation and the implementation of business strategy.

A good business idea is one that:

- satisfies customer needs
- provides a product or service for which such customers are willing to pay a certain amount
- responds to market demands

There are several key points in the evaluation of business models. One of them is the alignment of the business model with the objectives of the organization. Internal coherence is also necessary between the various elements of the model, that is, their interrelation. In turn, another criterion is robustness, which refers to the ability of the business to execute a timely response to certain variables that may threaten the sustainability of the model.

## THE BUSINESS MODEL CONSTRUCTS

The conceptualization of the business model is based on three constructs. These are related to the notion of generating value, based on an underlying operating model, and the idea of a business model as a form of organizational architecture.

The first describes how the business should go about the process of value generation (Davenport et al., 2006, Christensen et al., 2008, Teece, 2010); the second considers the business model as a reflection or consequence of the strategy (Hamel, 2000, Magetta, 2002, Casadesus-Masanell and Ricart, 2010); while the third defines the business model as a system of interdependent activities that make up the organizational structure, focusing in a more detailed way on the organization of resources and capacities in specific activities to achieve the desired result (Afuah and Tucci, 2000; and Lecocq, 2010).

Often, the business model is described statically, as the "general scheme" of activity in a business (Magretta, 2002) and how to be profitable in the sector in which it operates (Afuah, 2004). As such it is seen as a synthetic description of how to create value in a company.

At the same time, a dynamic vision is also necessary given the evolution of the business model over time. In this way, the business model by definition must include adjustment processes, based on the organization of strategic resources that generate value and income, in response to change.

The business model is defined as a combination of resources and competencies, organization of activities, and value propositions. Its objective is to ensure dynamic consistency between the different elements of the business model, anticipating the impact of changes in one dimension over the others, in order to allow the organization to maintain its sustainability while introducing changes in its business model.

The business model is a tool for managers which is closely related to the dynamics of organizations. It is directly related to emerging change in the environment and the consequences of strategic decisions adopted by the organizations. The RCOV model (Lecocq et al., 2006) - Resources, Competencies, Organization, Value - is a good indicator of the evolution of the business model. The same can be said of Osterwalder's business model canvas, which will be discussed in more detail later.



Source 1. Modelo RCOV- the main elements of a business model (Lecocq, Demil y Warnier, 2006)

## INNOVATION IN BUSINESS MODELS

Innovation in business models is a topic of central interest nowadays. Any individual in charge of a business wants to achieve the greatest possible benefit, that is, to ensure that that the initial idea is met by market demand and therefore the business is successful. However, even an apparently convincing business model can of course be unsuccessful, and lead inevitably to failure.

Innovation in business models has become one of the main aspects of interest in relation to strategic innovation (Hamel, 2002). Many organizations ask what can be done differently, through technological or process innovation, which delivers a high degree of strategic differentiation and therefore delivers non-incremental change.

To this end, one of the central tools is the business plan, although this has recently been supplemented by other methodologies. The business plan is a planning tool that estimates the response of potential customers and the market share that could be achieved. This helps to plan, based on incremental innovations, and is undoubtedly very useful in environments of lower uncertainty (more traditional sectors). There are, however, other more powerful mechanisms such as the Lean Start-up, which have come to be seen as more useful when the level of uncertainty is high and radical innovations are required.

## THE BUSINESS PLAN

The business plan involves the writing of objectives, the start-up process, the resources and the commercial and financial justification for the underlying product or service. Four issues related to business plan feasibility have been set out: the technical aspect (turning an idea into a product or service which can be sold); the commercial element (which refers to the attributes of the product or service and its appeal to potential customers); the economic perspective (making a comparison of income and expenses through estimates and forecasts), and; the financial (which takes into account the initial outlay, equity, debt, working capital and other aspects).

The drafting of the business plan should contain an executive summary which describes what the company offers and to whom (origin of the idea, definition of the target market, market segmentation and so on); a marketing plan (detailing price, product, communication, distribution...); an economic-financial plan detailing the initial disbursements, costs, income estimates; and finally, legal aspects such as the type of company structure and agreements regarding intellectual property such as patents or trademarks.

## THE LEAN START-UP

This philosophy or business planning tool is focused on helping with the creation of a viable company within the context of a new or emerging market (with unknown characteristics and size,), in which the innovator seeks to have a relevant role through the development of an innovative product or service. The process on which this is based is composed of three phases: devise, test and redefine.

Within the context of this approach, the focus is less about exploiting existing opportunities and more about the configuration of a new market in which the proposed product or service fits. One of the ideas within this methodology is the Minimum Viable Product (MVP), which is based on the premise of fast and inexpensive learning. The focus herein is the development and launch of a product or service on the basis of the shortest, least expensive route to market, with skeletal initial capital outlay. Doing so minimises the down side risk of the market not being interested in the proposition (and theoretically allows the company to rapidly re-innovate and relaunch with a more relevant offer).

A series of hypotheses are formulated in order to optimise the chances that the initiative delivers value to potential customers. Two key issues are of central



importance: the creation of value (provision of a product or service that meets a formally unmet need) and potential market growth. Evidently, given that for the most part this approach is used in newly created markets, the latter is difficult to assess. It is not uncommon therefore to rely on softer measures such as word-of-mouth, anecdotal evidence and digital chatter (from social networks and the like).

In the event that a business model does not work, there is no other option but to pivot, that is, make a profound change in the business model. Under the Lean Start-Up philosophy, this would not necessarily constitute a failure because it may not represent financial ruin for the company (given the inherent low capital outlay, low cost approach), and is therefore potentially remediable.

If the answer is unequivocally negative after the redefinition of the business model (the pivot), then there may no option but to abandon the business or rethink the model again. It is advisable to keep a maxim in mind: get out quickly and cheaply (if you're wrong).

If the model works, it is important to measure progress, that is, to achieve customer loyalty and manage relationships with clients, and of course, acquire a dominant position in a new market which will likely attract new entrants.

One of the functions of business models (lean or otherwise) is to provide a set of descriptors which set out how a company is organized, how value is generated and how operations are designed to deliver benefit.

## -Generation of business models

### APPROACHES AND CONSIDERATIONS

With regard to the generation of new models, substantial research has been carried out, focused mainly on two approaches.

On the one hand there is experimentation, that is, the invention of a new business model with the hope of success.

On the other hand, there is the translation of a successful business model into an adjacent or entirely new market or industry. This option implies a lower risk and is related to Teece's Theory of Resources and Capabilities (2009). Similarly, a company can replicate a business model if it has resources or capabilities similar to those of its competitors, as exemplified by low-cost airlines. (Mateu Céspedes, 2015)

The generation of a business model is a complex task, which needs to be broken down into three key issues, as set out by Hagel and Singer (1999): the relationship with the customer, product innovation and infrastructure management. However, research has been undertaken on additional creative tools that can be useful in generating a business model. It is worth considering prototyping, based on the construction of a prototype, which is the starting point for many business models, and from this it is necessary to analyze the different existing alternatives in order to reconfigure the prototype to the current market or indeed, use it to enter another market.

Business model	Product innovation	Customer relationship management	Infrastructure management
Economy	An early entry into the market allows companies to charge higher prices and gain market share.	The high cost of attracting customers requires a high level of spending.	A high level of fixed costs requires large sales volumes to achieve a low unit cost.
Culture	It focuses on talent. Few barriers to entry. Many small businesses thrive.	It focuses on the competitive landscape. Consolidate quickly.	It focuses on scale. Consolidate quickly.
Competitors	It focuses on employees. Creative talents are nurtured.	Orientation to services. "The customer comes first".	It focuses on costs. Emphasis on efficiency.

Source 2. Key aspects on generation business models. Hagel y Singer (1999)

Closely related to this technique is the creation of scenarios, which consist basically of the consideration of various options that a company must take into account and the mechanisms for managing them so as to reduce uncertainty as far as possible.

Every creative tool helps to represent ideas but many times the generation of new ideas is difficult. Given this situation, authors such as Osterwalder and Pigneur (2010) propose asking “what would happen if...?” This question and many others that affect our business model should be asked and answered continuously, since it is possible that there is some key aspect of a model that is threatened by changes made by competitors or changes in the environment that threaten a key pillar of the model.

The deconstruction of an existing business model can serve as a useful starting point for analysis and even for the generation of a new model. Casadesús-Masanell and Ricart (2010) propose aggregation (of existing models), Kim and Mauborgne (2005) propose Osterwalder's canvas to analyze the different elements of the business model.

It is important not to forget aspects related to the creation and maintenance of a competitive advantage, which is sustainable. This is, after all, the most decisive and critical factor of any plan.

Typically, both cost leadership and differentiation are key strategies to be developed, but there are many companies that do not dynamically link these elements, but instead develop a hybrid strategy (Porter's strategic watch).

Regarding the factors that arise in relation to the first, aspects such as the application (or not) of economies of scale, the network effect, the scope effect, the experience curve, and so on are considered.

Regarding differentiation, the key notion lies in understanding the attractiveness of the value proposal. Within this context, a multiplicity of factors play a role, including: the price of the product, its utility, quality of the service, exclusivity, the use of value signals to reinforce the differentiation, and the overall cost structure of the underlying business (including critically, capital and financial costs).

In an environment that changes rapidly, it is important to consider the effect of the Internet. What Porter refers to as "the reconfiguration of the value chain to be exclusive through novel ways" (Porter, 1985), can imply anything from new distribution channels or sales approaches which require changes in the value chain in order to offer the best

possible solution to the client, the greatest possible addressable market and, at the same time, the most substantial economic benefit.

When trying to create a new market, businesses often find themselves exploring a completely new idea, moving away from what is known and resorting to what is called lateral thinking (De Bono, 1967), focusing on the search for radical solutions that blend comfortably into the business model being created. Evidently, the viability of the underlying business to be developed should not be overlooked. Lateral displacement implies disruptive change and therefore, the realistic and honest evaluation of the business model must play a prominent role when judging whether the proposed idea is worthwhile or not.

In the case of viability, all elements should be reconfigured, allowing the model to accurately and consistently sustain new developments and directions. The application of lateral thinking can be made viable through several models such as Osterwalder's business model canvas or other approaches to business model evaluation that are described below.

### -Evaluation of business models

When properly and clearly articulated, a business model should concisely describe the lines of action to be followed by the company and the objectives to be achieved within a certain period of time, and how to achieve them using available resources.

The business model is a key point in the (larger) business strategy, with its formulation and implementation playing a prominent role. In order to review the coherence of a particular business model, it is necessary to carry out an in-depth analysis.

This can be carried out *a priori*, based on carefully justified estimates and provisional data, or *a posteriori*, though in the latter case, of course, losses may already have been accrued if the model has not achieved its anticipated success. However, focusing on the assessment that interests us, *a priori*, estimates and forecasts are often not the most (or only) appropriate measure that exist when assessing the viability of a model. There are other evaluation tools which may be more useful.

The table below illustrates those elements of the business model that have been most researched.

Value proposal	What does the customer value?
Income and costs	How to make money in the business?
System of activities	Structure of the value chain, key processes
Relationship with customers	Knowledge management, brand building and reputation
Key partners	Position in the value chain.

Source 3: Own elaboration

Focusing on the type of evaluation (*a posteriori* or *a priori*), the latter is preferable as allows the company to choose between several potential business models, after making a reasoned comparison, but before deploying capital and potentially accumulating losses.

An *a posteriori* (*ex post*) evaluation would of course indicate if the implementation of the business model has been successful or if it has not achieved the desired results. But this implies that the business is already in operation and there is no possibility of going back, without paying for the consequences. Research has been carried out (Amit and Zott, 2001) relating to *a posteriori* (*ex post*) evaluation, highlighting four critical

indicators: novelty, barriers to customer churn (lock-in), complementarity and effectiveness).

The research set out in this document aims to give a high-level view on business models, how they are generated and how they are evaluated. In this last sense, the key issue is the possibility (or not) of carrying out *ex ante* evaluations.

The evaluation of business models assesses (to a certain extent) its potential, based on the availability of certain resources and capabilities. It also analyzes key aspects of the value chain such as the activities undertaken by suppliers, key partners and more generally, the structure of costs and income. The latter is achieved by means of forecasts, in the case of wanting to carry out an *ex ante* evaluation.

Likewise, when an entrepreneur has generated a new business model, its objective is to illustrate the viability of the enterprise in financial, technical, commercial and economic terms, that is, to obtain the greatest possible benefit by minimizing the costs incurred. Therefore, *ex ante* evaluation is of great interest; especially types of evaluation in which objective criteria are established that can be evaluated by an expert in order to predict the potential of a business model without having to make estimations that could turn out not to be correct. This is done so as to prevent a business model from failing due to erroneous estimates, forecasts and so on.

In relation to what has been described above, variables should be defined for the *ex ante* evaluation of business models, which allow for the comparison of the potential of new business models, taking into account the effect of contingent factors that may affect operations.

In this document, the approaches to evaluation of business models have been compared. Recent research has been carried out which groups them into different categories (Schoorman, et al, 2018). From all of the above, a summary of a model belonging to each of the categories described has been made. The categories defined are the following:

- (I) Benchmark-, Comparison- and Trade Off-Oriented Evaluation
- (II) Economic-/Financial-Oriented Evaluation and Metrics
- (III) Mathematical-Oriented Evaluation Methods
- (IV) Survey- and Questionnaire-Oriented Evaluation

- (V) Simulation-Based Evaluation Modelling Techniques/Tools
- (VI) Strategy-Oriented Evaluation Tools
- (VII) Business Model Ontology-Oriented Evaluation
- (VIII) Decision Structuring-Oriented Evaluation
- (IX) Pattern- and Key Question-Based Evaluation
- (X) Value Proposition-Oriented Evaluation Tools

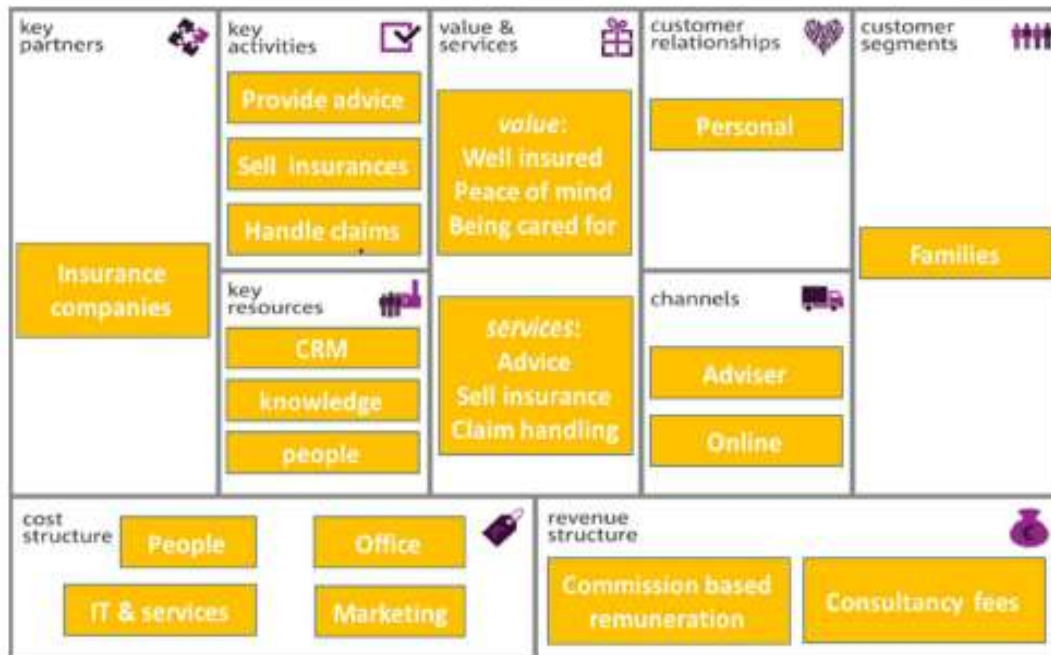
## SUMMARY SHEETS

Below are some of the most representative models of each of the typologies described in the research mentioned above (Schoorman et al., 2018). A sheet of a characteristic model has been prepared for each of the identified categories, indicating the scope (referred to if the model is oriented towards an economic, ecological or social perspective or a combination of these, and if the model described is qualitative, quantitative or mixed), a summary of the model, exemplified by graphical representations and bibliographic references.

-Sheet nº1

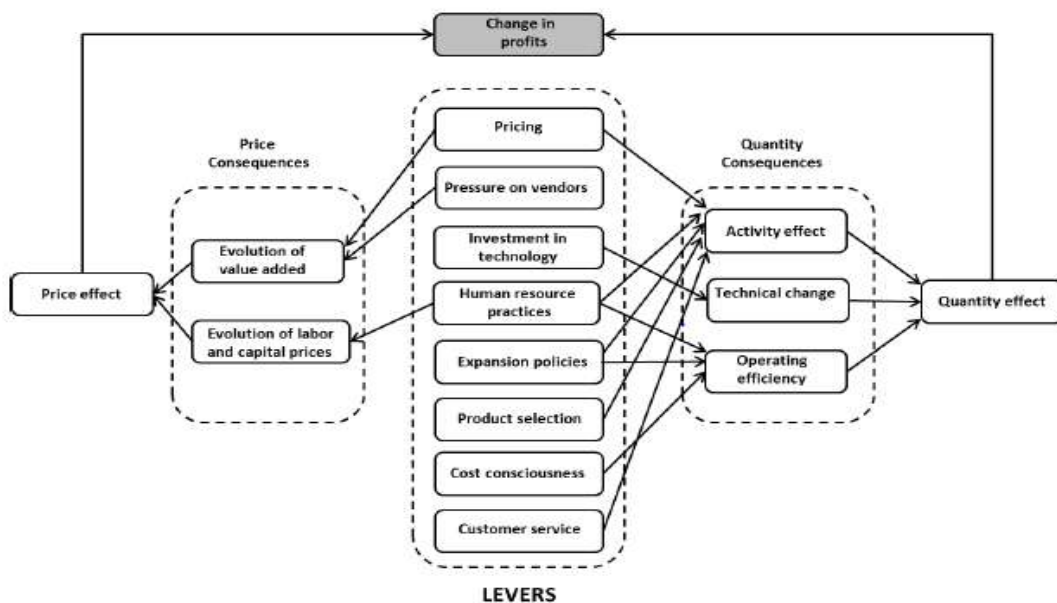
Typology (6)	<i>-Benchmark-, Comparison- and Trade Off-oriented Evaluation</i> Comparison / identification of alternatives It is also classified as questionnaire, simulation, strategy and ontology
Scope	Economic, ecologic, social. Mixed
Ante o post	Post; also ex ante
Summary	Expansion of the Osterwalder model, developing each of the key aspects in an example of practical application to the automotive industry. Identify a series of critical factors ("stress factors") that are key to the business model and create a heat map, marked in different colours according to the impact on each of the critical factors in order to later be able to draw conclusions about the business model analyzed.
Authors	Haaker, T., Bouwman, H., Janssen, W., de Reuver, M.: Business model stress testing: A practical approach to test the robustness of a business model. <i>Futures</i> . 89, 14–25 (2017).





Outcome	BM component	Impact & Coloring
Ban on commissions for all insurance products	Revenue structure	Current revenue model no longer possible; new models required
	Customer segments	Customers don't accept explicit payment for intermediation services as commission based is model perceived as 'free'.
	Partnerships	Partnership with insurance companies needs to be reconsidered.
Cognitive system helpdesk	Key activities	Implies a shift in activities from humans to systems
	Key resources	Requires attention to build and needs (big) data as input
	Cost structure	Initial costs are high but in the longer term save costs as labour is reduced
DIY insurance interest is growing	Value proposition	If especially young people turn to self service and direct writers, the current proposition is not sustainable
DIY insurance interest is growing	Channel	strengthening online channels and self service in multichannel strategy
Care duty is strict	Customer relationship	Customer relationship will become essential when care duty is strict

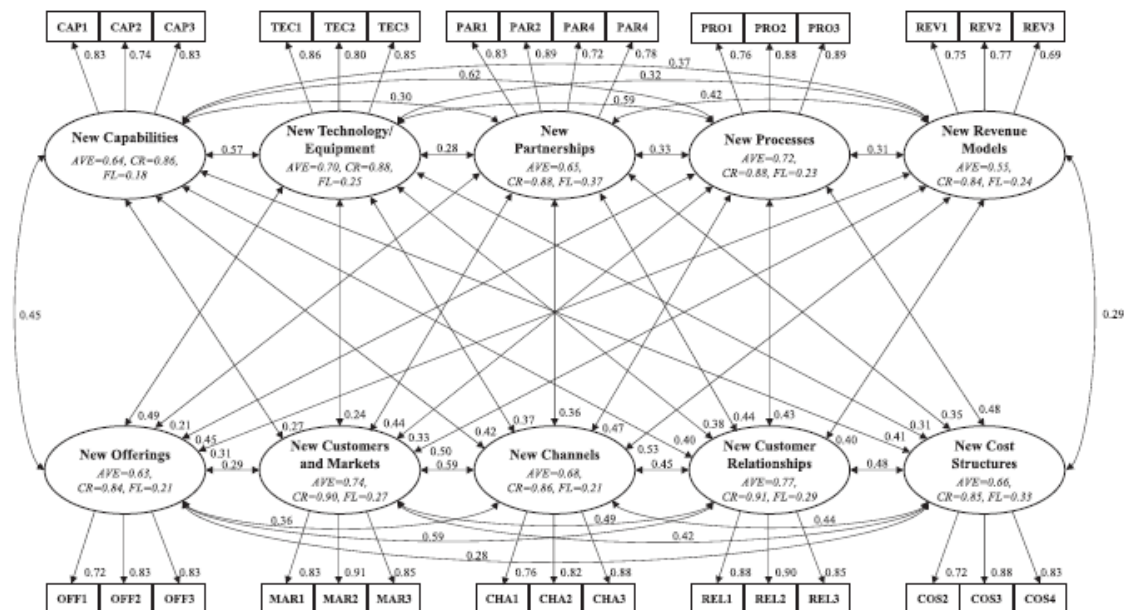
Typology (40)	<i>-Benchmark-, Comparison- and Trade Off-oriented Evaluation</i>
Scope	Economic. Quantitative
Ante o post	Post
Summary	Quantification of different sources of competitive advantage - analyzes the quantity effect and the price effect, and how these bear influence through different levels (price, pressure on sellers, investment in technology, human resource practices, policies, expansion, service to customer or cost consciousness) for a change in profitability of the business
Authors	Brea-Solís, H., Casadesus-Masanell, R., Grifell-Tatjé, E.: Business Model Evaluation: Quantifying Walmart's Sources of Advantage. <i>Strateg. Entrep. J.</i> 9, 12–33 (2015).



-Sheet n°3

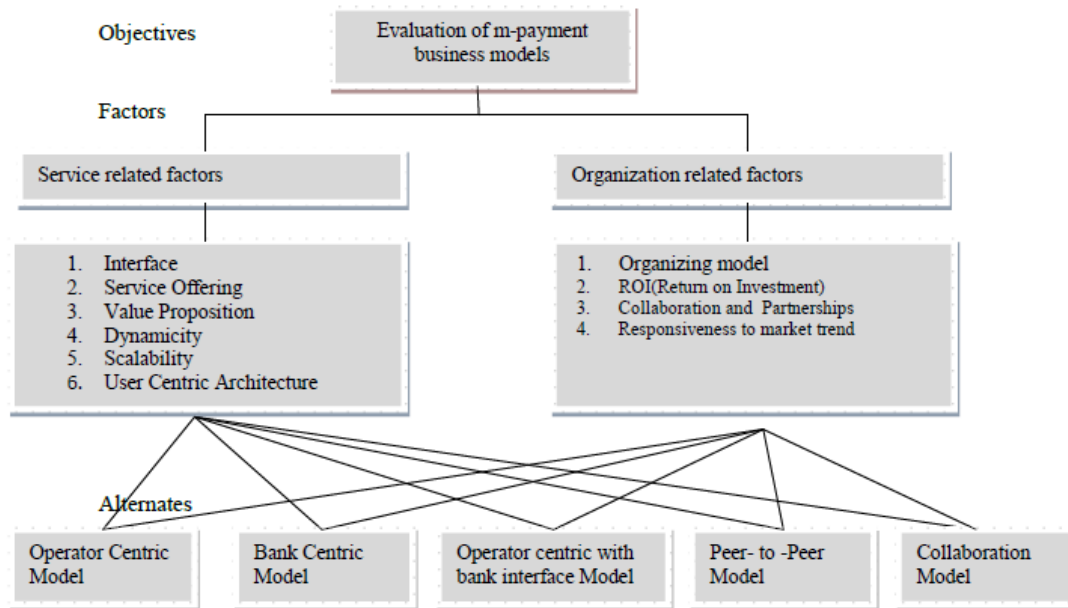
Typology (42)	<i>-Benchmark-, Comparison- and Trade Off-oriented Evaluation</i>
Scope	Economic. Quantitative
Ante o post	Post
Summary	Measures innovation in the business model through: -the creation of value: through new capabilities, technologies, relationships with customers, processes -the value proposition: new offers, new distribution channels, reach new markets and customers -Value generation: income model and cost structure
Authors	Clauss, T.: Measuring business model innovation: conceptualization, scale development, and proof of performance. <i>RD Manag.</i> 47, 385–403 (2017).

Value creation innovation	New capabilities	Our employees constantly receive training in order to develop new competences.	CAPI		
		Relative to our direct competitors, our employees have very up-to-date knowledge and capabilities.	CAP2		
		We constantly reflect on which new competencies need to be established in order to adapt to changing market requirements.	CAP3		
	New technology/equipment	We keep the technical resources of our company up-to-date. Relative to our competitors our technical equipment is very innovative.	TEC1 TEC2		
		We regularly utilize new technical opportunities in order to extend our product and service portfolio.	TEC3		
		We are constantly searching for new collaboration partners. We regularly utilize opportunities that arise from integration of new partners into our processes.	PAR1 PAR2		
	New partnerships	We regularly evaluate the potential benefits of outsourcing. New collaboration partners regularly help us to further develop our business model.	PAR3 PAR4		
		We were recently able to significantly improve our internal processes.	PRO1		
		We utilize innovative procedures and processes during the manufacturing of our products. Existing processes are regularly assessed and significantly changed if needed.	PRO2 PRO3		
	Value proposition innovation	New offerings	We regularly address new, unmet customer needs. Our products or services are very innovative in relation to our competitors.	OFF1 OFF2	
			Our products or services regularly solve customer needs, which were not solved by competitors.	OFF3	
			We regularly take opportunities that arise in new or growing markets.	MAR1	
New customers and markets		We regularly address new, unserved market segments. We are constantly seeking new customer segments and markets for our products and services.	MAR2 MAR3		
		We regularly utilize new distribution channels for our products and services.	CHA1		
		Constant changes of our channels have led to improved efficiency of our channel functions. We consistently change our portfolio of distribution channels.	CHA2 CHA3		
New customer relationships		We try to increase customer retention by new service offerings.	REL1		
		We emphasize innovative/modern actions to increase customer retention (e.g. CRM).	REL2		
		We recently took many actions in order to strengthen customer relationships.	REL3		
Value capture innovation		New revenue models	We recently developed new revenue opportunities (e.g. additional sales, cross-selling).	REV1	
			We increasingly offer integrated services (e.g. maintenance contracts) in order to realize long-term financial returns.	REV2	
			We recently complemented or replaced one-time transaction revenues with long-term recurring revenue models (e.g. Leasing).	REV3	
	We do not rely on the durability of our existing revenue sources.		REV4		
	New cost structures	We regularly reflect on our price-quantity strategy. We actively seek opportunities to save manufacturing costs. Our production costs are constantly examined and if necessary amended according to market prices.	COS1 COS2 COS3		
		We regularly utilize opportunities which arise through price differentiation.	COS4		
		Value capture innovation	New revenue models	We recently developed new revenue opportunities (e.g. additional sales, cross-selling).	REV1
				We increasingly offer integrated services (e.g. maintenance contracts) in order to realize long-term financial returns.	REV2
We recently complemented or replaced one-time transaction revenues with long-term recurring revenue models (e.g. Leasing).	REV3				
We do not rely on the durability of our existing revenue sources.	REV4				
Value capture innovation	New cost structures	We regularly reflect on our price-quantity strategy. We actively seek opportunities to save manufacturing costs. Our production costs are constantly examined and if necessary amended according to market prices.	COS1 COS2 COS3		
		We regularly utilize opportunities which arise through price differentiation.	COS4		



-Sheet n°4

<p>Typology</p> <p>(38)</p>	<p><i>-Economic-/Financial-oriented Evaluation and Metrics</i></p> <p>Economic-financial-ROI</p> <p>It is also classified as: mathematical, questionnaire, simulation</p>
<p>Scope</p>	<p>Economic. Quantitative</p>
<p>Ante o post</p>	<p>Post</p>
<p>Summary</p>	<p>Evaluate business models based on m-payment. It takes into account factors related to the service (the interface, the service offered, the value proposal, dynamism, scalability) and others related to the organization (organizational model, return on investment, collaboration and key partners, adaptation and response to market trends).</p>
<p>Authors</p>	<p>Ali, A.: An MCDM approach towards m-payment business models evaluation. <i>Int. J. Anal. Hierarchy Process.</i> 7, 273–294 (2015).</p>



	Int <sup>1</sup>	SO <sup>2</sup>	VP <sup>3</sup>	DY <sup>4</sup>	SC <sup>5</sup>	UCA <sup>6</sup>	E.V <sup>7</sup>
Int	1	2	1	1/7	1/2	½	0.092
SO	1/2	1	1/2	1/2	1/9	1/9	0.047
VP	1	2	1	1	1/2	½	0.118
DY	7	2	1	1	1/2	½	0.201
SC	2	9	2	2	1	1	0.271
UCA	2	2	2	2	1	1	0.271

- 1) Interface, 2) service offering, 3) value proposition, 4) dynamicity, 5) scalability, 6) user centric architecture, 7) Eigen value

**Prioritized form of Service related Factors**  
Inconsistency-0.10





-Sheet n°5

Typology (54)	<i>-Survey- and Questionnaire-oriented Evaluation</i> It is also classified as mathematical
Scope	Economic. Quantitative
Ante o post	Post
Summary	Analyze the degree of hierarchy proposed based on the Osterwalder model, for example, regarding customer segments. In the first place, it investigates whether they continually get new customers, then the location of these, the gender and finally the acquisitions made. All this in order to better understand the preferences of the customer and adapt the offer to their characteristics. It uses questionnaires in order to subsequently evaluate human resources, research activities, the progress made in the project, whether knowledge has been transferred via the activities and the level of satisfaction with technical support.
Authors	Kayaoglu, N.: A Generic Approach for Dynamic Business Model Evaluation, (2013).

	Levels of the proposed hierarchy			
	Business Block	Block Criterion	Criterion Unit	Unit Dimension
<b>Customer Segments</b>				
Are we continuously acquiring new customers?				
Location				
Gender				
Customer acquisition				
<b>Value Propositions</b>				
Do we have satisfied customers?				
Area				
Type				
Satisfaction				
<b>Channels</b>				
Are our channels very efficient?				
Channel type				
Time				
Efficiency				
<b>Customer Relationships</b>				
Do we have strong customer relationships?				
Equity goals				
Retention				
Strength				
<b>Revenue Streams</b>				
Are we continuously acquiring new customers?				
Revenue source				
Gender				
Continuity				
<b>Key Resources</b>				
Do we deploy key resources in the right amount at the right time?				
Human Resources				
Individual members				
Quantity and timing				
<b>Key Activities</b>				
Is execution quality high?				
Projects				
EU-projects				
Execution quality				
<b>Key Partnerships</b>				
Do we enjoy good working relationships with key partners?				
Countrywide/worldwide				
Private partnerships				
Quality				
<b>Cost Structure</b>				
Are operations are cost efficient?				
Cost type				
Responsible cost center				
Efficiency				



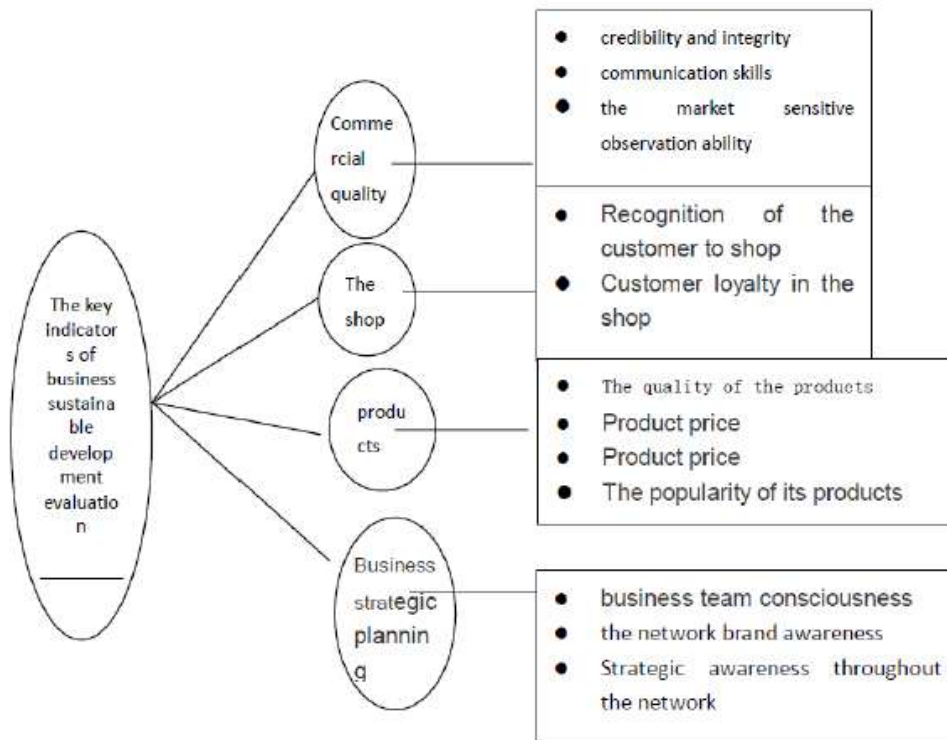
Typology (76)	- <i>Survey- and Questionnaire-oriented Evaluation</i>  It is also classified as mathematical
Scope	Economic. Quantitative
Ante o post	Post
Summary	<p>It uses a series of criteria and makes measurements through key indicators.</p> <p>In the management of strategy, it evaluates the technological core, innovation capacity, brand value and corporate culture.</p> <p>In terms of the market environment, it measures the growth rate of the industry, government support and public acceptance.</p> <p>Regarding the value of the customer, it takes into account the average customer: in terms of revenue, satisfaction and loyalty, etc.</p>
Authors	<p>Zhang, G., Jiang, Y., Chen, X., Wang, Z.: The Research on Business Model Evaluation Based on Internet Free Services. In: 2012 Proceedings of Computer Science and Information Management (ICIIIM 2012). pp. 97–102 (2012).</p>

Assessment criteria level	Key index level
management strategy	Core technology, innovation capability, brand value and enterprise culture.
organization structure	management system, upgrade capability
resource setting	operation/total profit, diversified income
products& services	core products share, product service differentiation, registered users, advertising browse ratio
financial condition	profitability, ability to raise capital, income, cost
profit potential	profit margin ,derived income index, access number conversion rate, income growth rate
customer value	client base, customer pace of expansion, customer satisfaction, customer loyalty
market environment	industry influence rate, government support force, public acceptance

U	U <sub>i</sub>	E	G	C	D	U <sub>i</sub>	E	G	C	D
Operating strategy	U <sub>11</sub>	0.32	0.21	0.24	0.23	U <sub>13</sub>	0.32	0.21	0.24	0.23
	U <sub>12</sub>	0.56	0.33	0.07	0.04	U <sub>14</sub>	0.75	0.1	0.1	0.05
Organizational structure	U <sub>21</sub>	0.34	0.34	0.21	0.11	U <sub>22</sub>	0.65	0.22	0.1	0.03
Resources set	U <sub>31</sub>	0.61	0.11	0.18	0.1	U <sub>32</sub>	0.11	0.13	0.32	0.44
Products and service	U <sub>41</sub>	0.65	0.21	0.14	0	U <sub>43</sub>	0.23	0.12	0.54	0.11
	U <sub>42</sub>	0.25	0.25	0.25	0.25	U <sub>44</sub>	0.25	0.25	0.25	0.25
Financial situation	U <sub>51</sub>	0.79	0.11	0.1	0	U <sub>53</sub>	0.8	0.2	0	0
	U <sub>52</sub>	0.55	0.22	0.13	0.1	U <sub>54</sub>	0.22	0.11	0.56	0.11
Profit potential	U <sub>61</sub>	0.12	0.16	0.65	0.07	U <sub>63</sub>	0.25	0.25	0.25	0.25
	U <sub>62</sub>	0.25	0.25	0.25	0.25	U <sub>64</sub>	0.1	0.1	0.7	0.1
Customer value	U <sub>71</sub>	0.58	0.23	0.09	0.1	U <sub>73</sub>	0.25	0.25	0.25	0.25
	U <sub>72</sub>	0.21	0.23	0.33	0.23	U <sub>74</sub>	0.28	0.22	0.31	0.19
Marketing environment	U <sub>81</sub>	0.77	0.11	0.07	0.05	U <sub>83</sub>	0.21	0.29	0.32	0.18
	U <sub>82</sub>	0.25	0.25	0.25	0.25					

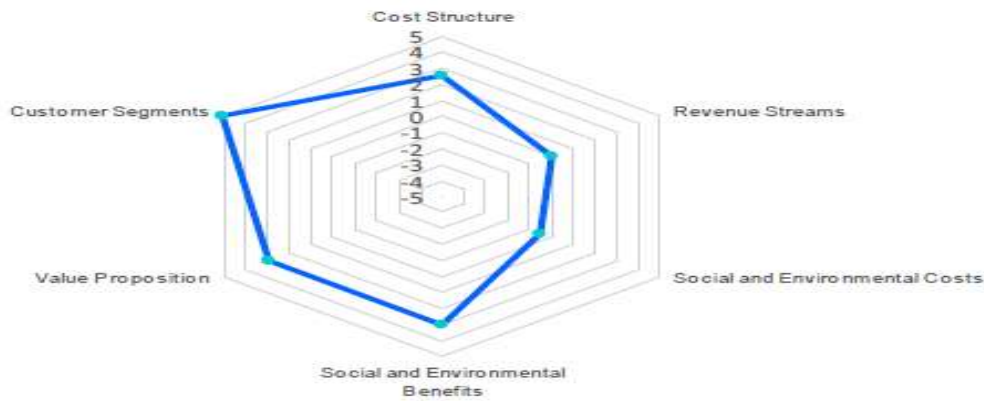
-Sheet n°7

Typology (75)	<i>-Mathematical-oriented Evaluation Methods</i>
Scope	Economic, ecologic, social. Quantitative.
Ante o post	Ante
Summary	<p>Synthesize the evaluation of the business model using four key indicators:</p> <ul style="list-style-type: none"> <li>-Commercial quality: credibility and integrity, communication skills and the ability to observe and respond to a sensitive or changing market.</li> <li>-The store: recognition of the store by the customer and loyalty to it.</li> <li>-Products: quality, price and popularity.</li> <li>-Strategic planning: awareness of the business team, awareness of everything that encompasses the brand, global strategic thinking.</li> </ul>
Authors	Zeng, D.-B., Lu, H.-X.: Evaluation study of Internet commercial sustainable development under the new commercial civilization. (2014).



-Sheet nº8

Typology (16)	- <i>Survey- and Questionnaire-oriented Evaluation</i>
Scope	Economic, ecologic, social. Mixed
Ante o post	Post
Summary	Using questionnaires, it evaluates six parameters through twenty-nine questions and creates a "radar chart". It concludes that the value of a business model is the sum of the cost structure plus the revenue stream plus the value proposal plus the social benefit / cost, all multiplied by the size of the customer segment.
Authors	Díaz-Díaz, R., Muñoz, L., Pérez-González, D.: The Business Model Evaluation Tool for Smart Cities: application to smart Santander use cases. <i>Energies</i> . 10, 262 (2017).



$$VBM = (CE + RE - SEC + SEB + VP) \times CS$$

$$VBM = (CE + RE - SEC + SEB + VP)CS$$

**VBM = Value of the Business Model**

**CE = Cost Structure**

**RE = Revenue Streams**

**SEC = Social and Environmental Costs**

**SEB = Social and Environmental Benefits**

**VP = Value Proposition**

**CS = Customers Segment**

-Sheet nº9

Typology (59)	-Survey- and Questionnaire-oriented Evaluation  It is also classified as patterns and key questions
Scope	Economic. Mixed
Ante o post	Ante
Summary	Ex ante evaluation of business models through eight key issues measured on a scale of 1 to 5 by means of examples. Conditions for the creation of value; value proposition; adequate market size; access to the potential customers; predisposition to spending; affordability; superiority over competitors; existence of entry barriers.
Authors	Mateu, J.M., March-Chorda, I.: Searching for better business models assessment methods. (2016)

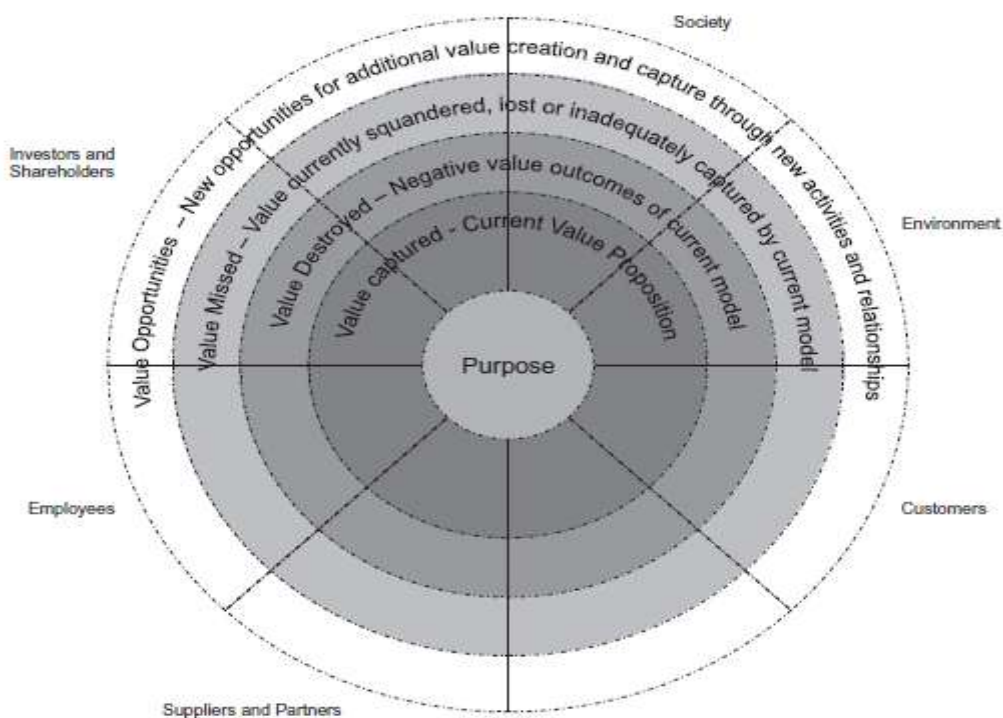
1. ¿Cómo le aportará utilidad al potencial cliente? ¿En qué orden de magnitud? (HIPÓTESIS DE LA CREACIÓN DE VALOR)
2. ¿Están todos los elementos complementarios necesarios a disposición del cliente a un precio razonable? En caso contrario, ¿está en nuestras manos incorporarlos?, ¿en qué plazo y con qué esfuerzo? (HIPÓTESIS DE LA PROPUESTA DE VALOR COMPLETA)
3. ¿Cómo es de grande el segmento de potenciales clientes? ¿Qué volumen de compra representan? (HIPÓTESIS DEL TAMAÑO DE MERCADO SUFICIENTE)
4. ¿Cómo de complicado resultará demostrar al potencial cliente que la propuesta le aportará valor y no se trata de una mera moda pasajera? (HIPÓTESIS DEL ACCESO AL POTENCIAL CLIENTE)
5. ¿Estarán los potenciales clientes dispuestos a pagar el precio y el esfuerzo que les pedimos a cambio del valor que les ofrecemos? (HIPÓTESIS DE LA PREDISPOSICIÓN AL ESFUERZO)
6. ¿Será costoso ofrecer el valor prometido al cliente o contaremos por el contrario con un margen atractivo? ¿Existen mecanismos (directrices de coste) que nos permitan ampliar ese margen? (HIPÓTESIS DE LOS COSTES ASUMIBLES)
7. ¿Existen propuestas de valor de competidores que resuelvan el mismo problema al cliente? ¿Cómo es el valor creado por ellas frente al creado por la nuestra? (HIPÓTESIS DE LA SUPERIORIDAD FRENTE A LA COMPETENCIA)
8. ¿Tiene el modelo de negocio mecanismos para evitar la copia por parte de posibles imitadores? (HIPÓTESIS DE LA EXISTENCIA DE BARRERAS DE ENTRADA)

Scale for *ex ante* assessment business model by March-Chorda, I y Mateu Céspedes, J.M (2016)

-Sheet nº10

Typology (18)	- <i>Value Proposition-oriented Evaluation Tools</i>
Scope	Economic, ecological, social. Qualitative
Ante o post	Ante
Summary	Creation of a value map for a sustainable business model. A business model should take into account a number of factors such as: investors and interest groups, society, the environment, customers, employees and partners and distributors. -the value proposition: what value is provided, and to / for whom?

	<p>-the creation / delivery of value: how is value created / provided?</p> <p>-the value captured: how is the company able to earn money and capture other forms of value?</p>
Authors	Bocken, N.M.P., Rana, P., Short, S.W.: Value mapping for sustainable business thinking. J. Ind. Prod. Eng. 32, 67–81 (2015).



<p><b>Value proposition</b></p> <ol style="list-style-type: none"> <li>1. Product/ service,</li> <li>2. Customer segments and relationships,</li> <li>3. Value for customer, society, and environment</li> </ol> <p><i>What value is provided and to whom?</i></p>	<p><b>Value creation &amp; delivery</b></p> <ol style="list-style-type: none"> <li>4. Activities,</li> <li>5. Resources,</li> <li>6. Distribution channels,</li> <li>7. Partners and suppliers,</li> <li>8. Technology and product features</li> </ol> <p><i>How is value provided?</i></p>	<p><b>Value capture</b></p> <ol style="list-style-type: none"> <li>9. Cost structure &amp; revenue streams,</li> <li>10. Value capture for key actors incl. environment &amp; society</li> <li>11. Growth strategy/ ethos</li> </ol> <p><i>How does the company make money and capture other forms of value?</i></p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



## CONCLUSIONS

The current study focuses on ex ante evaluation, that is, the evaluation of any new business model that has been generated but has not yet been implemented. For the ex ante evaluation of business models, it is necessary to define criteria or critical factors that substitute the projections that have been made in the evaluation of business models. Among the aspects to be taken into account, we could consider all those that Osterwalder includes in the business model canvas such as the revenue stream and cost structure, activities, resources and key partners, the management of relationships with customers and the value proposition. It is also possible to evaluate through a series of indicators or key issues, which should be done by an expert, such as:

-What is the utility of our product or service? Also the frequency of use and if supplements are required, and the price of these.

- In what way will our product or service satisfy customer needs? What is the price that the customer would be willing to pay?

- What is the addressable market size? It is necessary to define the target market and the way to service it.

- What differentiates us from the competitors? Detail our distinctive competences, our resources and capabilities that make the customers choose our option.

- What is the cost incurred in the offer of the product or service? Study the behavior of costs with variations in quantity and price.

- On what pillars is the value proposal based?

The answers to these questions would suppose in practice an *a priori* assessment of the business model, an assessment of the potential of its implementation. But to be manageable an investigation would have to specify these issues, objectifying the possible answers and defining the possible ranges of response.

As Drucker (1984) states, a business is made up of three parts: the assumptions about the environment of an organization, the specific mission of the company and the basic competences necessary to fulfill said mission. And all this is closely related to the maintenance of a competitive position. Thus, it seems that the key activities by which the company creates value end up becoming the true substance of the business model.

The evaluation of a certain business model is difficult to carry out *a priori* if without knowing exactly what elements of the organizational culture of the company are to be evaluated. The basic presumptions, beliefs and expectations of the members of an organization can project themselves outwards through their actions and behaviors. In this way, culture is less susceptible to modification than the business model. Therefore, the importance of evaluating *ex ante* business models persists.

*Ex ante* business model assessment is very useful, especially for those business models that do not resemble existing models, and those never implemented. In many cases an *ex ante* evaluation is carried out, but in an intuitive way, through forecast data, that is, through projections of income and expenses, and these may be questionable. However, the interest of *ex ante* evaluation is found in its evaluation of innovative business models that have not yet been implemented.

The process of entrepreneurship needs time and if it is important to compete in an existing market as well as in a new market, the viability of the business model must be evaluated through an *ex ante* evaluation, choosing the model with the greatest potential.

The business model canvas can serve as a starting point to the development of an *ex ante* evaluation methodologies without the need to carry out forecast estimates. The research carried out leads us to the conclusion that there are relatively few credible *ex ante* assessment business model methods. Below is a selection of the most outstanding contributions in this area, which are very recent.

In conclusion, the choice of business model and subsequent choice of evaluation approach depend fundamentally on the nature of the individual business and the markets in which it operates. That said, there is a growing trend toward the creation of more dynamic and adaptive business models, which are often considered more realistic, as the availability of data becomes ever greater (thanks in no small part to the internet and so-called “big data”). It is becoming easier to capture vast amounts of data about market dynamics, customer behaviour (especially consumer behaviour), capital market movements, supplier availability and real-time trade. As a direct result, it has become possible to create business plans and models which are based on meaningful, relevant information. Moreover, it is now not only possible, but desirable, to do so before a business is launched and before money is invested.

That same availability of data can make the process of analysing the effectiveness and appropriateness of a given business model materially easier. Not so long ago, the only



way of assessing the effectiveness of a business model was the bottom line; were sales and financial goals achieved. Nowadays it is increasingly possible to assess a business model on the basis of much more intricate and meaningful data; if customers didn't buy our product, whose did they buy, why, and at what price?

These two processes – developing and evaluating the business model – are evolving rapidly. Even traditional industries such as mining, agriculture and so on, are steadily moving towards more dynamic modelling and evaluation. Moreover, traditional businesses seeking to diversify their operations are increasingly turning to ex ante analysis tools in order to reduce the risks inherent in such diversification.

A business model will always be based to some degree on guess-work. But as the number and diversity of tools and techniques grows, it may be possible to de-risk the modelling, planning and evaluation process. Specifically, the use of multiple, parallel techniques which centre on materially different measures, may provide greater clarity and surety. That is to say, by following two or more approaches, especially in the assessment of business models, a company can provide itself with valuable “sanity checks” – if two methodologies generate radically different expected outcomes, it is then clear that something is profoundly wrong with one or both of them.

## SELECTION OF EX ANTE BUSINESS MODEL ASSESSMENT METHODS

Four methodologies for evaluating *ex ante* business models have been selected, which are described below.

### -Ex ante evaluation proposal n<sup>o</sup>1

In addition to the canvas that serves to represent a business model, Osterwalder (2017) proposes an *ex ante* evaluation methodology that would be classified in the category of patterns and key issues on each of the elements of the business model canvas.

#### Customer segments

- Are there new customer segments we could serve?
- Could we regroup/segment customers better according to their needs?

#### Value proposition

- Could we offer our different customer segments more tailored needs?
- Do our customers have other needs we could satisfy relatively easily by ourselves or with partners?
- Could we complement our value proposition through agreements with partners (e.g. joint value propositions)?

#### Revenue streams

- Could we increase our customer base by better using our channels?
- How can we better use expensive channels for highly profitable clients and cost efficient channels for unprofitable clients?
- Can we better integrate our channels (e.g. better link websites with physical outlets)?
- Could we introduce new communication and distribution channels to reach our customers (e.g. partner distribution agreements)?

#### Communication and distribution channels

- Could we increase our customer base by better using our channels?
- How can we better use expensive channels for highly profitable clients and cost efficient channels for unprofitable clients?
- Can we better integrate our channels (e.g. better link websites with physical outlets)?
- Could we introduce new communication and distribution channels to reach our customers (e.g. partner distribution agreements)?

#### Customer relationships

- What level of personalization do each of our customer relationships require (e.g. dedicated relationship manager or automated self-service)?
- How can we spend less time and resources on unprofitable clients?
- Should we introduce frequent buyer programs?

#### Key resources

- Are there some key resources we could get rid of or substitute?
- Are there some key resources that could be better supplied by partners and cheaper?

#### Key activities

- Are there activities we would better outsource to partners?
- Are our activities adapted perfectly to our value proposition?
- How could we streamline activities?

#### Partner network

- Which partners could help us complement our value proposition?
- Which suppliers could help us streamline our business model?

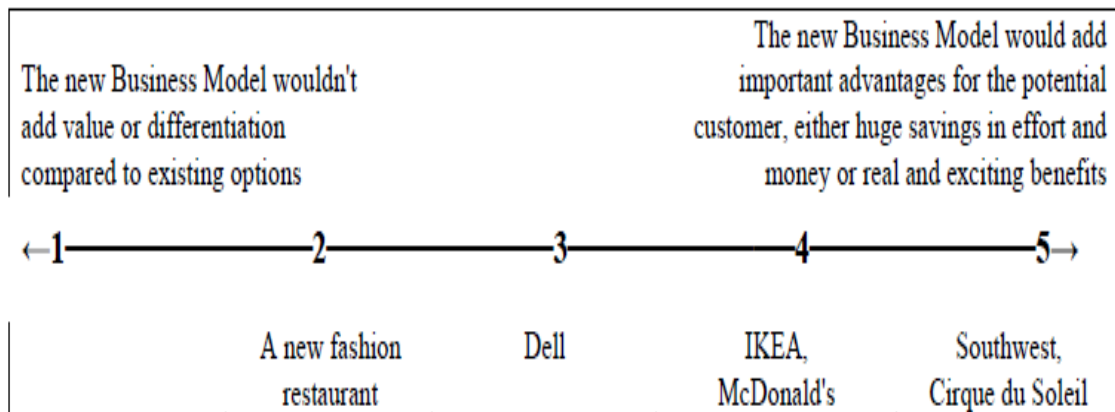
#### Cost structure

- Are there ways we could reduce our cost structure (e.g. partnering, outsourcing, new suppliers, etc.)

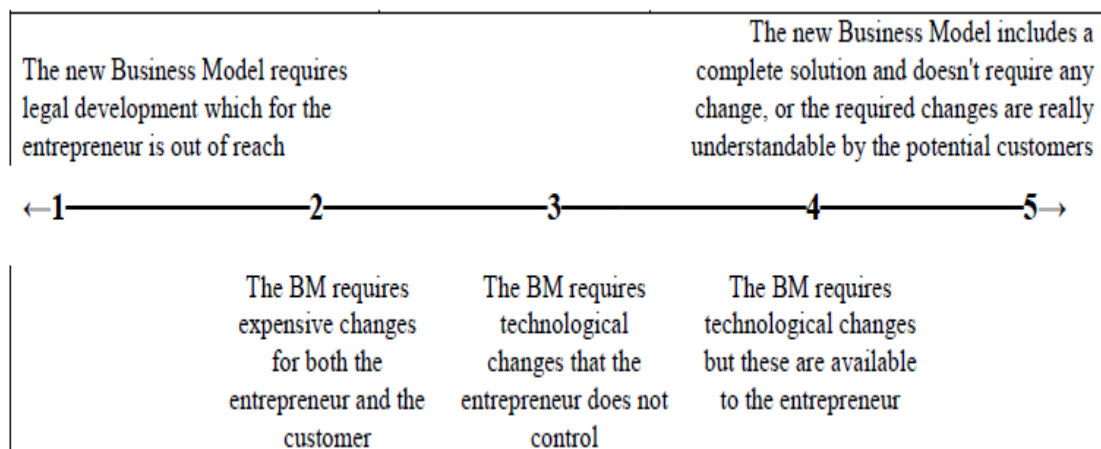
-Ex ante evaluation proposal n°2

Likewise, the evaluation model proposed by March-Chorda and Mateu Céspedes (2016) through eight indicators is another of the *ex ante* evaluation proposals that have been established. It is an *ex ante* assessment business model method which focuses on a series of indicators that evaluate the consistency of a business model before its implementation, always considering the key factors that have been described in the previous pages. A Lickert 1-5 scale is used to measure each of the 8 proposed indicators, in which each of the possible responses is exemplified, thus facilitating a more objective evaluation.

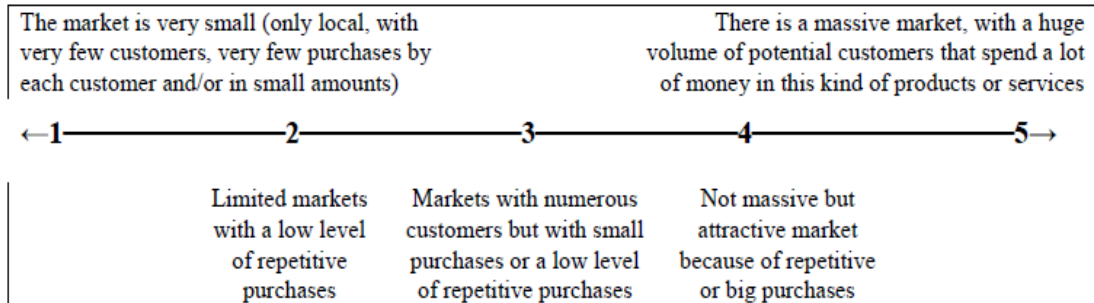
Conditions to create value



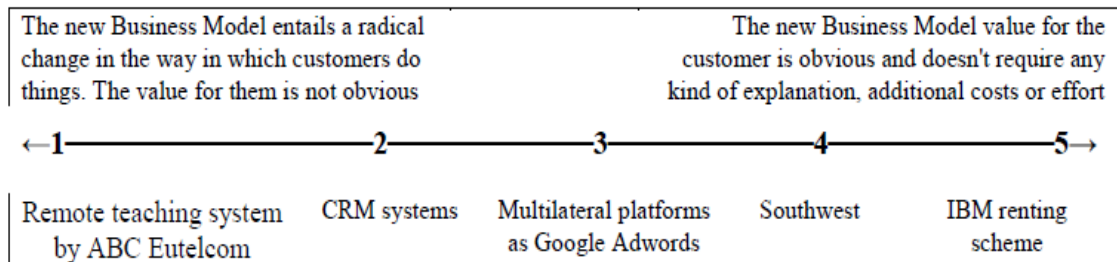
Value proposition



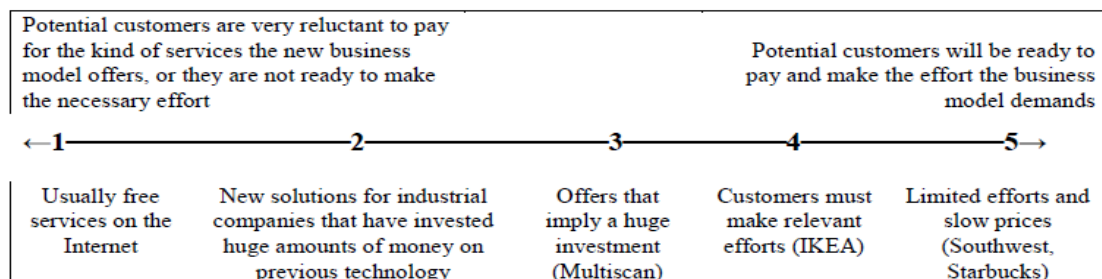
## Market size



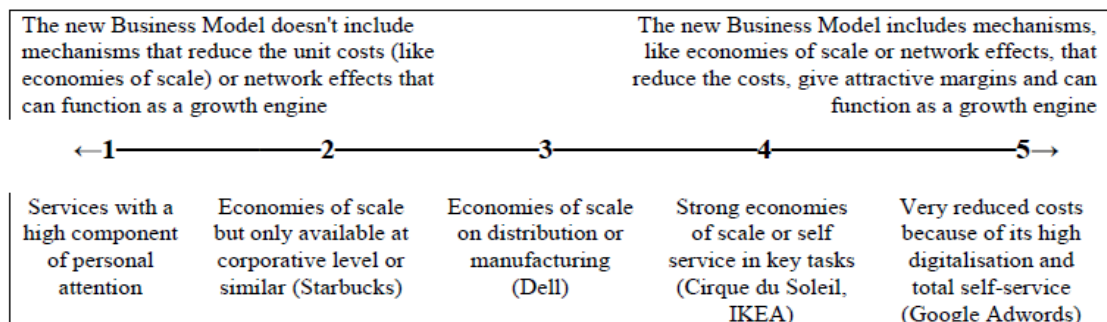
## Access to the potential customer



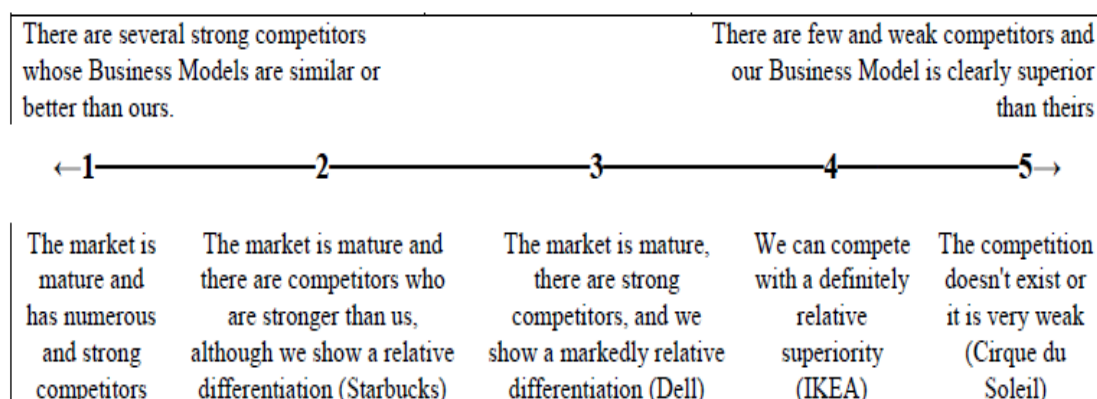
## Customer predisposition to spending



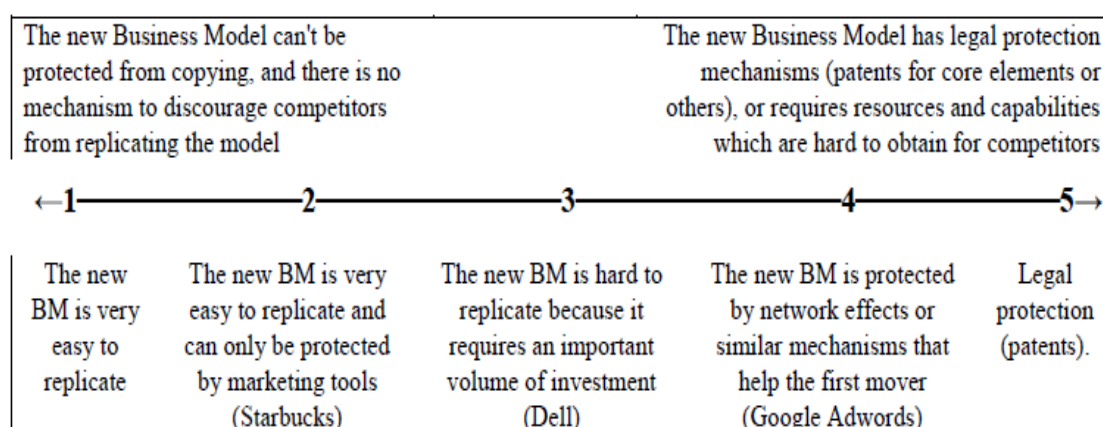
## Affordable costs



## Superiortiy over competitors



## Existence of entry barriers



## -Ex ante evaluation proposal n°3

We also find another evaluation of the business model, in this case, in the field of online sales, in which a model is evaluated through key indicators such as commercial quality (the ability to track the market, communication skills and the credibility of the actions carried out), the store (in this case, through the recognition of this by the customer), the products (in relation to quality, price and value of the brand) and strategic planning, analyzing global awareness of the brand and the business team (Zeng, D.-B., Lu, H.-X, 2014).

-Ex ante evaluation proposal n°4

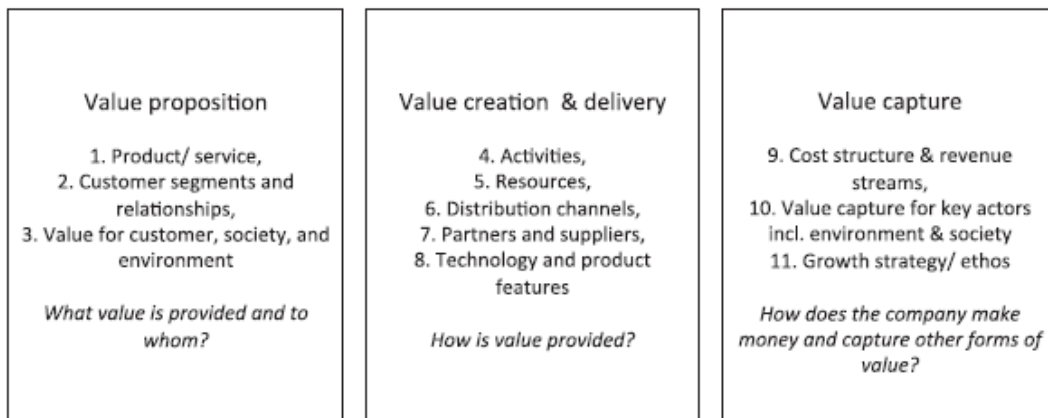
The following ex ante business evaluation was proposed by Bocken et.al (2015) and it is included in the value proposition category. It takes into account a number of factors such as employees, customers, partners, distributors, society or the environment. Analyze the following questions:

This model analyzes:

-the value proposition: through the product or service offered; customer segments and the management of relationships with them; and the value of the proposal for customers, for society and for the environment. It would answer the question, what value is provided and to / for whom?

-the creation / delivery of value: measured through activities, resources, distribution channels, partners and distributors, technology and product attributes. In short, how is value created / provided?

-the value captured: analysis of the cost structure and the income generation model, the value captured by the key players (including the environment and society) and strategic growth. In short, how is the company able to earn money and capture other forms of value?



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