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Abstract

Business model innovation has been proposed as a powerful strategic tool, able to offer competitive advantage, create markets and even reshape industries. Despite these powerful effects, little research has been conducted into studying and improving business model generation methods, and even less study has gone into analysing how to define new business models that can exert a disruptive effect on markets and industries. Our work tries to fill this gap, analysing whether experience encourages or discourages the generation of disruptive business models. An empirical analysis was carried out using an experimental methodology. The results seem to contradict the currently dominant Resource-Based View, but can be explained by the theory on inertia in organizations.

Key words:

Business model; Innovation strategy; Organizational inertia; Idea assessment.

1.- INTRODUCTION

New business models explain the success of a large number of internationally well known companies. This success goes beyond company limits, generating new markets (Dew et al. 2011), and creating new industries (Teece 2010). We believe business model innovation can do this because its effects have already had an impact on some markets and industries. "Business Model Innovations have reshaped entire industries and redistributed billions of dollars of value" (Johnson, Christensen, and Kagermann 2008, p. 52).

Expectations are even greater: "... a company has at least as much value to gain from developing an innovative new business model as from developing an innovative new technology" (Chesbrough 2010, p. 356). A business model therefore becomes an essential part of the strategy followed by a company in order to gain sustainable competitive advantage (Casadesus-Masanell and Enric Ricart 2010), and the ability to generate new business models, choose the best ones and implement them in a new or old organization, becomes a real dynamic capability (Teece, Pisano, and Shuen 1997).

Despite the benefits that can arise from business model innovation, and the expectations it generates, the field of business model generation methods has not been thoroughly explored. Based on the classification made by Rajagopalan and Spreitzer (Rajagopalan and Spreitzer 1997), we can see that a significant volume of work has been done under the umbrella of the 'content' school of thought in strategic change, in other words, a rational perspective has been used (i.e. analyzing what elements of business models can or must be changed). Conversely, fewer efforts have been invested in the 'process' school of thought in strategic change, i.e. the application of a learning and cognitive perspective. Some recent articles indicate that conducting research from a cognitive perspective could be a promising line of investigation (Spieth, Schneckenberg, and Ricart 2014, Demil et al. 2015). Our study also comes under the cognitive research agenda.

The implications of our work can also be relevant in prescriptive ways. Who should be involved in business model generation tasks? What is the best composition of a team to explore new models? Should we include our most experienced staff or involve less experienced people instead?

The currently dominant Resource-Based View (Barney 1991); (Wernerfelt 1984) seems to recommend experience as a useful resource in any scenario. Other authoritative voices point in the opposite direction, saying that experience can be a burden. In fact, several factors often seem to conspire against the assumed intrinsic value of experience (Rumelt 1995).

To answer the question that gives our work its title (Is experience a useful resource for business model innovation?) we used an experimental methodology. The design of our experiments required preparatory work to clarify business model generation and assessment methods. This preliminary theoretical work was expected to improve these methods.

The remainder of the study is organised as follows. We have included a short review of our theoretical framework and have formulated our hypotheses. The experimental methodology and research results are then presented. This article finishes with some concluding remarks and comments about the limitations of this study and possible developments for the future.

2.- THEORETICAL FRAMEWORK AND HYPOTHESIS FORMULATION

2.1.- Business model innovation

The business model concept has been receiving growing attention since the mid-nineties, especially among managers and consultants (*practitioners*). In addition, it has not gone unnoticed in academia (*scholars*) with the term (*business model*) appearing in 1,202 academic articles until December 2009 (Zott, Amit, and Massa 2011).

Some limitations have arisen due to the concept's recent development, with the lack of a commonly accepted definition being one of them, meaning there is still no common position about the concept in academic circles. In fact, some academics seem reluctant to acknowledge the term (Baden-Fuller and Morgan 2010).

Magretta (2002) described business models as "stories that explain how enterprises work", and added, "a good business model answers Peter Drucker's age-old questions: Who is the customer? And What does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customer at an appropriate cost?" (Magretta 2002, p. 87). Similar definitions proliferate among other authors (Chesbrough and Rosenbloom 2002); (Teece 2010); (Zott and Amit 2008); (Morris, Schindehutte, and Allen 2005), ...).

A second category of definitions describes the concept by listing its components. Osterwalder and Pigneur's ontology split the business model into nine elements or blocks: value proposition, customer segments, channels, customer relationships, key resources, key activities, key partners, revenue streams and cost structure (Osterwalder and Pigneur 2010) and its graphic representation is known as the Business Model Canvas. Akin to this, several other definitions have included a similar set of components (Lindgardt et al. 2009), (Johnson, Christensen, and Kagermann 2008).

Nevertheless, academics find the true potential of this concept in the discovery and implementation of new business models, namely in business model innovation (Johnson, Christensen, and Kagermann 2008); (Chesbrough 2010). But, what is business model innovation? When a business model is new?

By business model innovation, some authors mean any change in a business model component (Clauß and Hock 2014), (Heij, Volberda, and Van Den Bosch 2014). In our view,

this is an overly broad conception of business model innovation, which would include all kinds of innovation, from technological advances to any change in marketing.

Lindgardt et al. (2009, p. 2) suggested a narrower definition of business model innovation: "Innovation becomes business model innovation when two or more elements of a business model are reinvented to deliver value in a new way". This definition implies more disruptive innovation, in the meaning highlighted by Christensen (Christensen 1997), and can lead to greater changes in an overall business model.

Our interest in changes that can create new markets and reshape industries makes the narrow definition of Lindgardt *et al.* a particularly useful one. Along these lines, Bucherer, Eisert, and Gassmann (2012, p. 184) viewed business model innovation as "a process that deliberately changes the core elements of a firm and its business logic".

2.2.- New business model generation

Up until now, two new business model sources have prevailed: experimentation and the transfer of successful business models from one market to another or from one industry to another.

"Strategies that aim to discover and exploit new models must engage in significant experimentation and learning - a 'discovery driven' rather than analytical approach" (McGrath 2010, p. 247). Experimentation is present in the business model cases analysed by several authors (Sosna, Trevinyo-Rodriguez, and Velamuri 2010); (Svejenova, Planellas, and Vives 2010); (Chesbrough 2010); (McGrath 2010).

Copying or transferring successful business models to other markets or industries has been a widely used practice, taking advantage of the fact that it is hardly realistic to prevent business models from being copied (Dickinson 2009).

A more systematic search for new business models recommends differentiating between the creative tool itself and the conceptual object or artefact to which the creative tool is applied. Business model innovation literature argues that the generation of new ideas for new business models requires and is facilitated by providing structure and guidance to frame and focus thought, through artefacts for instance (Eppler, Hoffman, and Bresciani 2011).

Some conceptual objects have been used to generate new business models. For instance:

- Business model components, as defined by Osterwalder and Pigneur (2010) in their Business Model Canvas.
- The market, be it in the form of real customers (Kelley 2001), changes in customers' perceptions, attitudes or their needs and wants (Drucker 1985), or changes able to create uncontested market space or temporary monopolies (Kim and Mauborgne 2005).

- Organizational activities and the value chain ((Richardson 2008); (Svejenova, Planellas, and Vives 2010). "The interdependence of activities is the focal point of business model concept" (Zott and Amit 2009, p. 114).
- The overall business system: aggregation, for instance (Casadesus-Masanell and Enric Ricart 2010).
- Intermediate level analytical instruments. Hagel III and Singer's decomposition, for instance (Hagel and Singer 1999), and the framework that uses three 'systemic' ways of business model innovation proposed by Giesen et al. (Giesen et al. 2007).

In terms of creative tools applied to business models generation, the list by Osterwalder and Pigneur includes Customer Insights, Ideation, Visual thinking, Prototyping, Storytelling and Scenarios Design (Osterwalder and Pigneur 2010).

Other creative tools suggested by the literature include the systematic deconstruction/unpacking of existing business models (Teece 2010), the *decomposition* in different groups of choices and consequences that can be analysed in isolation (Casadesus-Masanell and Enric Ricart 2010), the introduction of changes that rebuild the market's boundaries (Kim and Mauborgne 2005) and aggregation in order to examine the business model from a distance thus allowing us to see the larger picture without getting lost in the details (Casadesus-Masanell and Enric Ricart 2010).

Nevertheless, if we are looking for new business models that may create new markets, we need to think *outside the box*, and escape the natural trend to explore well-known territories. Instead, attention should be geared towards uncharted territories in search of truly disruptive ideas, challenging what is established in markets and companies. In Edward De Bono's words, we must escape from linear thinking and turn to lateral thinking (De Bono 1967).

Lateral thinking provides a way to avoid solutions that fit in with the usual patterns, by pointing to radical and disruptive solutions, instead of incremental ones (Christensen 1997).

Lateral thinking is a latent power which everyone has (Butler 2010). The great advantage is that it can be applied in a systematic way (De Bono 1967).

2.3.- Business model assessment

The usefulness of a business model can be measured *ex-post*, when it has been implemented and the consequences of this implementation have been revealed (eventual success or failure). This *ex-post* assessment is not useful for our goals. We need assessment methods that allow us to give a mark to new theoretical business models before their implementation, in order to choose the most promising business models.

In fact, the lack of *ex-ante* assessment methods often turns the business model election into a purely intuitive choice, which is not based on rational criteria. Even venture

capitalists, who could be defined as rational decision-makers, seem to keep to this rule: "VC (Venture Capitalists) are intuitive decision makers". (Zacharakis and Shepherd 2001, p. 312).

Reliable *ex-ante* indicators could effectively help us to figure out the potential of the tentative business models available, irrespective of whether they have been copied from other markets or industries or are totally new (i.e. generated by us).

Amit and Zott (2001) suggest a set of four indicators to assess business models: novelty, lock-in (barriers that discourage customers from switching supplier), complementarities and efficiency. Some authors start with this contribution to analyse the correlation between two of these variables (novelty and efficiency) and company performance, using a sample of companies that implemented different business models (Zott and Amit 2008); (Brettel, Strese, and Flatten 2012).

David J. Teece (2010) proposed a wider set of questions, based on strategic rationality criteria, that may be useful as a point of departure when assessing *provisional* business models *ex-ante* (the questions quoted below are taken from (Teece 2010, p. 189). These questions are related to the value given to a business model by its potential customers (for instance, "How does the product or service bring utility to the consumer?"), the price that customers will be ready to pay ("What may the customer 'pay' for receiving this value?"), the size of the market, the availability of required complementary factors, the alternative offers available to the customers, the cost behaviour when volume or other factors change and the appropriability regime ("How can imitators be held at bay?"). We will turn these questions into measurable and manageable indicators in point 3.2.

2.4.- Experience in the business strategy framework

"The business model construct builds upon central ideas in business strategy and its associated theoretical traditions. Most directly, it builds upon the value chain concept and the extended notions of value systems and strategic positioning" (Morris, Schindehutte, and Allen 2005, p. 728).

Porter (1996, p. 68) defined strategy as "the creation of a unique and valuable position, involving a different set of activities", while Zott and Amit (2010) conceptualized business models as systems of interdependent activities. We can therefore say that a business model is part of a strategy or, as Casadesus-Masanell and Enric Ricart suggested (2010, p. 205): "a firm's business model is a reflection of its realized strategy".

Strategy involves the creation and defence of the market position and, accordingly, strategy must drive the evolution of the business model. The strategy should anticipate possible future contingencies and thus go beyond the business model. The capability to make the business model evolve includes a set of skills, such as discovering, assessing and implementing new business models (Velu and Stiles 2013). Business model innovation thus becomes a dynamic capability (Teece, Pisano, and Shuen 1997), and can be framed within

the Resource-Based View framework (RBV), the current dominant framework in strategy literature (Newbert 2007). This framework leads to the assumption that experience works as a useful resource for business model innovation. However, there is another stream of literature which goes against this conclusion that should be reviewed.

Although the origins of the RBV framework go back in time to Penrose (1959), the first attempt at formalizing the framework arose when the firm was considered as a set of resources (Wernerfelt 1984). The main step forward in the development of RBV is attributed to Barney, who defined the characteristics of the resources that can give competitive advantage to the firm (Barney 1991).

There is a significant difference between Wernerfelt's contribution and that made by Barney (Montgomery 1995). While Wernerfelt (1984, p. 172) defined resources as "anything which could be thought as a strength or weakness of a given firm", Barney (1991, p. 101) used a narrower definition, considering resources to be "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness".

Barney therefore focuses on the positive side, on resources that can help the company to become successful. Subsequent development of the RBV has largely built on this perspective. Yet the real firm is more complex, and some weaknesses are inextricably associated with certain strengths, as two sides of the same coin. This implies that, "particularly in large firms, inertia, rather than plasticity, is the norm" (Rumelt 1995, p. 101).

The search for efficiency, usually based on the *routinization* of activities, has been identified as a source of competitive advantage. This routinization is introduced into companies through rules of behaviour based on patterns that were efficient in the past. Accordingly, efficiency-oriented knowledge that has been obtained by the company is stored (and is turned into tacit knowledge) by transforming it into routines (Nelson and Winter 1982).

The main issue is that routines are useful tools for exploitation in the same environment in which they were generated, but are less useful for exploration in search of new answers in a significantly changing environment. In fact, routinization introduces a great deal of inertia into organizations, when inertia is understood as the effect that makes change within organizations slower than in the environment (Hannan and Freeman 1984). Core capabilities become core rigidities in many cases (Leonardbarton 1992).

Rumelt's contribution (Rumelt 1995) described the significant forces that introduce rigidity into organizations, dividing them in five sources of inertia: distorted perception, dulled motivation, failed creative response, political deadlocks and action disconnects. The third source, in particular, refers to the lack of strategic vision, mental agility or procedural flexibility, which all reduce the creative ability to respond to changes. In practice, this wide

range of rigidities closes off the available options, and prevents real free choice (Nelson and Winter 1982).

Pardo del Val and Martínez Fuentes (2003), when working on Rumelt's contribution, analyzed *resistance to change*, a concept they found to be similar to inertia. They focused on the distinction between evolutionary and strategic change, according to the scope and disruptiveness that change means for the organization. Their analysis concluded that the resistance is higher in strategic changes than in evolutionary ones. We find this conclusion to be relevant given that little research has been done around "risky but highly rewarded projects" (Goldenberg, Lehmann, and Mazursky 2001, p. 80).

This rigidity, or resistance to change, could come from experience. "We understand experience as a conscious or sub-conscious knowledge about facts and methods that is caused through an application of one's own actions" (Pahl, Badke-Schaub, and Frankenberger 1999, p. 489). This conceptualization is particularly useful in the case of knowledge developed in the course of professional activity.

Evidence from different fields supports the negative impact of experience in strategic change. In fact, "experienced decision-makers may be less likely to engage in counterfactual thinking" (Shepherd, Zacharakis, and Baron 2003, p. 382). This has also been observed in companies facing technological changes (Furr, Cavarretta, and Garg 2012) or disruptive business model innovation (Osiyevskyy and Dewald 2015). These authors distinguish between experience gained from working in the current industry (industry tenure) as opposed to exposure to other industries, and show how the first "could lead to cognitive rigidity, commitment to the status quo, and reluctance to making strategic changes" (Osiyevskyy and Dewald 2015, p. 66).

2.5.- Analysis model

With this controversy as a backdrop, our work attempts to clarify what role experience plays in business model innovation processes, inferring that experience could also have an impact on this. Are the skills developed through experience useful for business model innovation? Or conversely, is experience a source of rigidity that discourages or prevents this kind of innovation?

After reviewing the existing streams of literature, we chose to focus on inertia, hypothesizing that experience discourages business model innovation, both in terms of industry experience (we used 'the number of years in the industry' as a proxy indicator of this experience) and general experience (measured as 'the number of years working in any economic sector'). Thus, our first hypothesis was postulated as follows:

HYPOTHESIS 1.- The greater the industry experience of the people that generate new business models, the lower the potential of the generated business models.

When extending the analysis to general experience, we postulated:

HYPOTHESIS 2.- The greater the general experience of the people that generate new business models, the lower the potential of the generated business models.

Next, we introduce our analysis model, in which these hypotheses are displayed.

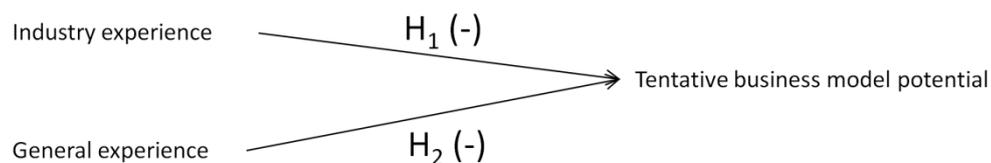


Figure 1.- Analysis model.

3.- METHODOLOGY

3.1.- Experimentation in the business model innovation field

This study used an experimental methodology to test our hypotheses. This methodology has been gaining momentum in our field in recent years (Elston, Harrison, and Rutström 2005); (Burmeister and Schade 2007); (Sandri et al. 2010); (Sarasvathy 2008); (Perry, Chandler, and Markova 2012), because it allows us to "test designs, layouts, etc. without committing resources to their implementation" (Shannon 1998, p. 7).

In the more specific field of new ideas and model generation for new businesses some studies use experimentation as their core methodology (see for instance (Thomke 1998) and (Ward, Patterson, and Sifonis 2004)). Closer to our work are the research of Girotra, Terwiesch, and Ulrich (2010) in search of outstanding (disruptive) ideas, Yong, Sauer, and Mannix (2014) in analysing how creativity is related to the composition and work environment of teams, Goldenberg, Mazursky and Solomon (1999) in generating ideas for new products through lateral thinking and other methods, and Eppler, Hoffman and Bresciani (2011) in using different tools to generate new business models.

3.2.- Analysis method

We organized eight experiments in the first half of 2014, involving 105 people (between five and 28 participants per experiment) that were divided into 24 teams (between two to five teams per experiment). These experiments were organized as training workshops, in conjunction with different entities (universities, technological institutes and professional associations). Managers and technicians with different backgrounds, as well as students with little or no experience, responded to the call of the host organizations, and were

enrolled in the experiments. We asked them to fill in a form in order to gauge their experience and organize teams.

Each workshop began with a four-hour class of theoretical and practical training on the subject (business model concept, business model innovation, business model generation methods), and ended with the experiment itself.

The experiment began with the organization of the teams, in which participants with similar levels of experience were grouped together. Experienced teams selected the sector in which they worked whereas teams with no experienced members worked in the 'food delivery industry'. This sector was chosen because its traditional business model is quite intuitive, even for people that have never worked in it.

Once the teams had been organized, the experiment continued, following the schedule shown in Table 1.

Task	Approximate time
Generation of business models, applying the generation method assigned to the team	45 minutes
Selection the best model from those generated by the team, preparing the presentation and selecting spokespeople	10 minutes
Presentations of each team's model to the rest of the participants in the experiment	5 minutes per team
Presentation of the assessment scale by the authors and filling in of assessment templates by the participants	15 minutes

Table 1.- Experiment schedule

As each participant assessed all the business models presented in its experiment, the number of assessments totalled 386, with an average of 16 assessments for each of the 24 business models.

Following the theoretical framework, the business model generation methods employed in the experiments were based on a conceptual tool or artefact and a creative tool. The conceptual tools were the Business Model Canvas, given its current popularity, and the Value Chain, in order to set a powerful classical tool in the context of a new field. Both artefacts assured a proper balance between content richness and simplicity. The creative tool was lateral thinking for both methods, because of the considerations set out in section 2.2.

In summary:

- Method 1: to apply lateral thinking to the Business Model Canvas (Osterwalder and Pigneur 2010).
- Method 2: to apply lateral thinking to the value chain (Porter 1985).

Both methods were randomly assigned to teams.

To assess the business models we used a set of questions based on Teece (2010) which are presented in section 2.3, turning them into a manageable format. Thus, an eight-indicator scale was defined to assess the business models. Each indicator was introduced by a question, which could be understood as a relevant condition to be satisfied by the business model under evaluation. A 5-point Likert scale was used for each of the indicators.

The list shown below divides the questions into three categories and gives details about the questions and the associated conditions to be satisfied.

- A. How good for the customer is the specific value proposition included in the business model and how large and accessible is the targeted market?
 1. How would the value proposition be useful to the customer? To what extent? (VALUE CREATION CONDITION).
 2. Are all the necessary complements already available? If not, can we obtain these complements or develop them easily and at a reasonable cost? (COMPLETE VALUE PROPOSITION CONDITION).
 3. How large is the market in terms of both customer volume and purchasing power? (SUFFICIENT SIZE OF THE MARKET CONDITION).
 4. How difficult will it be to explain the benefits of the value proposition to potential customers? (ACCESS TO THE POTENTIAL CUSTOMER CONDITION).
- B. How can the company capture a substantial part of the value created by the business model?
 5. Would potential customers be ready to pay the price and make the effort required by the new business model? (PREDISPOSITION TO MAKE AN EFFORT CONDITION).
 6. Will it be costly for us to offer the value proposition?, or, on the contrary, will it provide us with an attractive margin? (AFFORDABLE COSTS CONDITION).
- C. Does the business model offer a sustainable competitive advantage?
 7. Are there many alternative value propositions competing for the same customers? How valuable are those alternative options? How strong are those competitors? (SUPERIORITY OVER COMPETITORS CONDITION).
 8. Does the new business model provide a mechanism to hold imitators at bay? (ENTRY BARRIER EXISTENCE CONDITION).

The analysis model is now expanded in Figure 2.

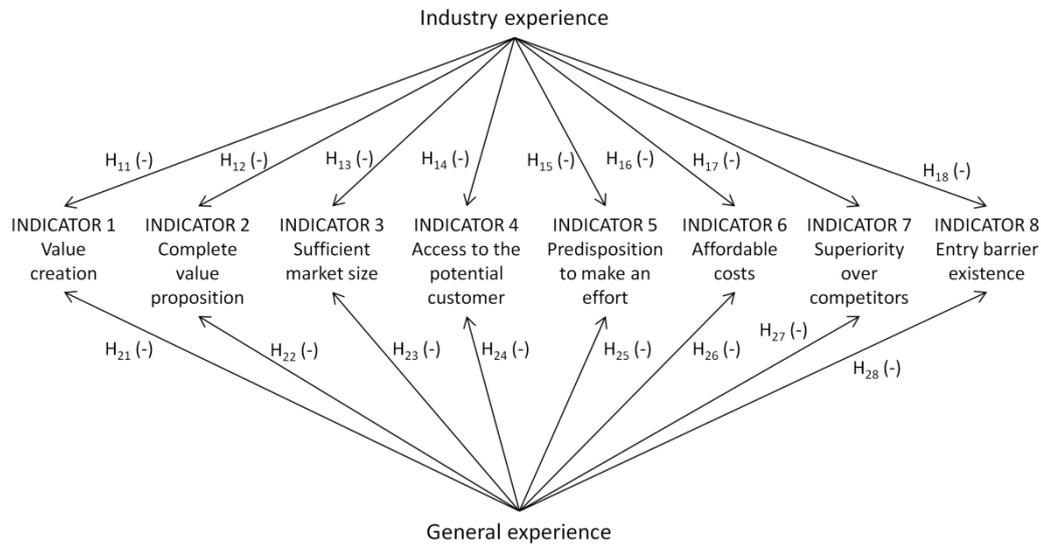


Figure 2.- Expanded analysis model

3.3.- Data analysis methodology

We adopted the independent variable in Hypothesis 1 as being dichotomous (Non-experienced team / Experienced team). The eight dependent variables were numeric (the eight indicators on the scale). To test Hypothesis 1 we compared the assessments obtained from the models generated by people without experience with the models generated by those with experience. As the subsamples were independent, the t test was appropriate.

Levene's test drove us to assume equal variances. The contrast was in one tail (hypothesizing a negative sign).

For Hypothesis 2, the dependent variables were again the eight indicators on the scale, and the independent variable was also numeric (the average years of general experience of the members of the team). We applied a simple linear regression analysis to each of the indicators on the scale. We used a different method than in Hypothesis 1 in order to contrast the results.

The model regression for each indicator (Ind_i) is stated as follows:

$$\text{Ind}_i = A_i + B_i * \text{Exp}_j + e_j$$

In this model, Ind_i_j was the observed value for Indicator i , A_i was the constant of the regression model for Indicator i , B_i was the slope of the regression model, Exp_j was the observed value of the explicative variable (Experience) and e_j was the random error.

We used the PSPP statistical package.

4.- RESULTS

Table 2 shows the assessments obtained by non-experienced teams' business models compared to the models generated by teams with experience in the sector. The main parameters of the t test are furnished for each of the eight indicators.

Indicator	Particip.	N	Mean (Stand. Dev.)	Dif. Means	Equal variance? Levene: F/Sign.	t	Sign. (1 tail)
Ind. 1	NonExp Exper	242 144	3.20 (1.05) 2.92 (1.08)	0.29	Yes 0.01/0.91	2.56	0.005
Ind. 2	NonExp Exper	242 144	3.57 (1.08) 3.35 (1.20)	0.21	Yes 3.94/0.05	1.79	0.037
Ind. 3	NonExp Exper	242 142	3.14 (1.03) 3.09 (1.10)	0.04	Yes 0.07/0.79	0.40	0.345
Ind. 4	NonExp Exper	241 142	3.44 (1.03) 2.95 (1.13)	0.48	Yes 0.03/0.86	4.30	0.000
Ind. 5	NonExp Exper	241 142	3.38 (1.16) 3.08 (1.26)	0.30	Yes 2.07/0.15	2.34	0.010
Ind. 6	NonExp Exper	239 142	2.63 (1.19) 2.50 (1.15)	0.13	Yes 0.15/0.70	1.06	0.145
Ind. 7	NonExp Exper	238 141	3.12 (1.19) 2.64 (1.31)	0.48	Yes 5.19/0.02	3.57	0.000
Ind. 8	NonExp Exper	239 142	1.96 (1.02) 1.93 (1.04)	0.03	Yes 0.50/0.48	0.30	0.382

Table 2.- Comparison between models generated by non-experienced teams and teams with experience in the sector

The results displayed in Table 2 show that, on average, non-experienced teams' business models obtained better assessments than the models generated by teams with experience in the sector, and this was true for all of the eight indicators on the scale. These results were statistically significant for five of the eight indicators (indicators 1, 2, 4, 5 and 7). So, the null hypothesis of no relation between experience in the sector and business model potential could be rejected for five of the indicators.

Our data thus gives support to Hypothesis 1: The greater the industry experience of the people that generate new business models, the lower the potential of the generated business models.

The general experience of the participants in the generation of new business models is shown in Table 3, which summarizes the statistical models, in Table 4 which shows the ANOVA parameters and Table 5, which displays the adjustment coefficients.

In order to better understand these tables, it should be pointed out that they do not collect the parameters of multiple linear regression (as their appearance might suggest), but rather reflect the parameters of eight simple linear regressions. All of these parameters have been displayed in the same tables in order to simplify matters, yet we feel it is appropriate to add this comment in order to avoid confusion.

Indicator	R	R²	Adjusted R²	Standard error of the estimator
Ind. 1	0.06	0.00	0.00	1.04
Ind. 2	0.01	0.00	0.00	1.15
Ind. 3	0.14	0.02	0.02	1.04
Ind. 4	0.18	0.03	0.00	1.09
Ind. 5	0.15	0.02	0.02	1.23
Ind. 6	0.11	0.01	0.01	1.20
Ind. 7	0.12	0.01	0.00	1.25
Ind. 8	0.08	0.01	0.00	1.05

Table 3.- Summary of the analysis of eight simple regression between the average general experience of the participants and each of the indicators on the business model assessment scale

		Sum of squares	Df	Mean square	F	Sign.
Ind. 1	Regression	1.01	1			
	Residual	279.52	256	1.01	0.92	0.34
	Total	280.53	257	1.09		
Ind. 2	Regression	0.02	1			
	Residual	340.09	256	0.02	0.02	0.90
	Total	340.11	257	1.33		
Ind. 3	Regression	5.88	1			
	Residual	276.17	256	5.88	5.45	0.02
	Total	282.05	257	1.08		
Ind. 4	Regression	10.63	1			
	Residual	303.17	256	10.63	8.98	0.00
	Total	313.80	257	1.18		
Ind. 5	Regression	8.94	1			
	Residual	385.04	256	8.94	5.95	0.02
	Total	393.98	257	1.50		
Ind. 6	Regression	4.40	1			
	Residual	370.71	256	4.40	3.04	0.08
	Total	374.53	257	1.45		
Ind. 7	Regression	6.21	1			
	Residual	401.39	256	6.21	3.96	0.05
	Total	407.60	257	1.57		
Ind. 8	Regression	1.69	1			
	Residual	282.05	256	1.69	1.54	0.22
	Total	283.74	257	1.10		

Table 4.- ANOVA parameters of the analysis of eight simple regressions between the average general experience of the participants and each of the indicators on the business model assessment scale

	Non Standardized Coefficients		Standardized Coefficients	T	Sign.
	B	Standard error	Beta		
Constant	3.17	0.14	0.00	21.95	0.00
Ind. 1	-0.01	0.01	-0.06	-0.96	0.34
Constant	3.48	0.16	0.00	21.87	0.00
Ind. 2	0.00	0.01	-0.01	-0.12	0.90
Constant	3.53	0.14	0.00	24.63	0.00
Ind. 3	-0.02	0.01	-0.14	-2.33	0.02
Constant	3.58	0.15	0.00	23.83	0.00
Ind. 4	-0.03	0.01	-0.18	-3.00	0.00
Constant	3.71	0.17	0.00	21.91	0.00
Ind. 5	-0.03	0.01	-0.15	-2.44	0.02
Constant	2.88	0.17	0.00	17.37	0.00
Ind. 6	-0.02	0.01	-0.11	-1.74	0.08
Constant	3.05	0.17	0.00	17.63	0.00
Ind. 7	-0.02	0.01	-0.12	-1.99	0.05
Constant	2.05	0.14	0.00	14.13	0.00
Ind. 8	-0.01	0.01	-0.08	-1.24	0.22

Table 5.- Coefficients of the analysis of eight simple regression between the average general experience of the participants and each of the indicators on the business model assessment scale

These results again show the correlation between the experience of the participants in the generation of business models (in this case, in terms of the team members' average experience) and the potential of the new business models. All the slope coefficients were negative, and half of the correlations showed statistical significance (indicators 3, 4, 5 and 7).

These results give support to Hypothesis 2, and show a negative correlation, with statistical significance for four of the eight indicators. We can therefore conclude that the greater the average experience of the team that generates the business model, the lower the assessment obtained by their model.

Figure 3 shows these results specifying the significance level of the analysis: 5% (*), 1% (**), or 1%₀ (***).

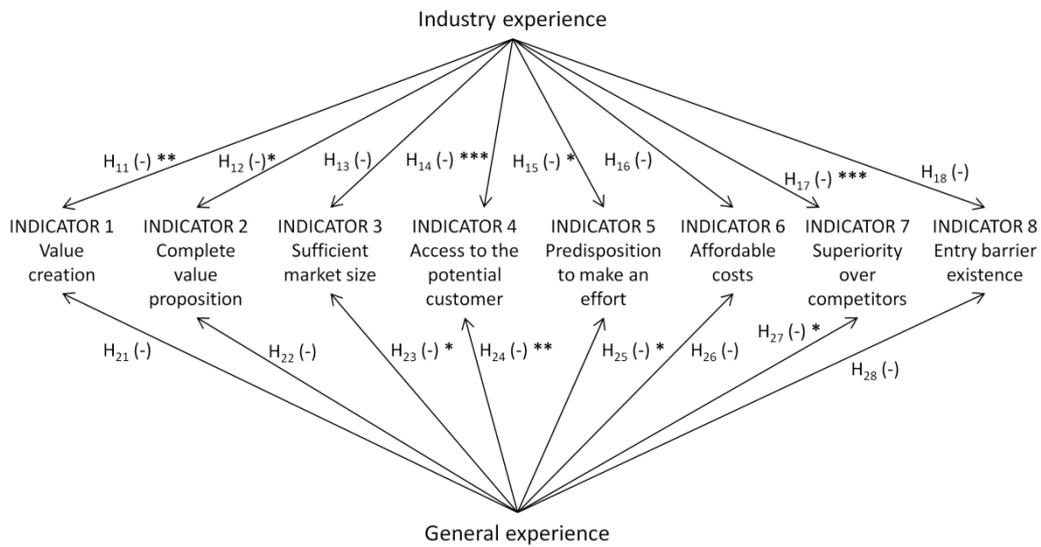


Figure 3.- Results

These findings lead to some worthy practical and prescriptive implications and confirm the prediction suggested by the theory on inertia in organizations (Rumelt 1995), described in section 2.2. Our results confirmed this theory, which usually remains veiled by the dominant Resource-Based View theory.

In line with this theory (Rumelt 1995); (Pardo del Val and Martínez Fuertes 2003), poorer ability to generate good business models is seen as an undesired effect of experience, career path and other cultural factors. The culture of the organization is embedded in the minds of its staff, and when these people are invited to participate in a business model generation workshop or any other activity, this culture holds them back blocking their work and behaviour. A company's orientation towards continuous improvement and evolution tends to rely on the strategies that led them to success in the past, hence discouraging them from exploring areas linked to more radical change. Resistance to disruptive innovation solutions emerges from those attitudes.

Companies should fight against these unwanted effects, particularly if they are willing to explore and open up to new business models. A first solution would involve assigning the tasks related to radical innovation (business model innovation, for instance) to less experienced staff who are more open to new ideas. In the same way, less experienced staff should be included in strategic decisions (Govindarajan and Trimble 2011).

From a theoretical point of view, our work encourages the need to analyze the facts from different angles, in order to provide an idea of its real scope. Although literature has traditionally searched for an integrative paradigm, "strategic management is necessarily a multi-paradigm discipline, requiring varied theoretical perspectives and methodologies"

(Hoskisson et al. 1999, p. 444). Our results builds on the cognitive perspective as a viewpoint that "addresses limitations in managerial implications of current perspectives on business model innovation" (Martins, Rindova, and Greenbaum 2015, p. 100). Whilst the rational perspective is not enough to design a methodology that proactively generates business model innovation, the cognitive perspective can shed light on how to improve business model innovation processes. In fact, analysing managers using a cognitive approach suggests that their behaviour is the result of their learning processes. *Routinization* aimed at further optimization may introduce rigidity into managers' minds, and thus into the organization. Fighting against this dark side of the learning process is a must. Accordingly, optimization processes should be counterbalanced by actions that centre on maintaining an open mindset amongst managers.

5.- CONCLUSIONS

We have conceptualized innovation as a design and learning process that can be analyzed and optimized. This analysis and optimization is particularly relevant if the firm's goal is to go beyond the known and commoditized market space, looking for new business models that may create a new market.

Our research has focused on how the generation of new business models might be influenced by the prior experience of participants, whether it be general experience or specific experience in a sector.

In an attempt to design useful experiments to study this issue, we started by conceptualizing business model generation methods, differentiating the creative tool from the cognitive concept the creative tool is applied to. We defined two business generation methods based on this conceptualization, which were used during the course of an innovative experimental methodology.

Similarly, we developed a new scale for an *ex-ante* assessment of new business models, based on prior suggestions by Teece, and consisting of eight indicators.

Our work has shown that the potential and expected future performance of the new business models generated was negatively correlated with the experience of the participants in the generation process. We have argued that these results may be explained by the inertia embedded in organizations. Experienced participants in generation tasks might be less able to break the rules of the sector, or to change the traditional way of doing things. Conversely, non-experienced professionals might be more open to new ways of thinking and acting, and even more willing to go beyond traditional boundaries.

The results have a prescriptive corollary, related to the assignment of tasks in generating business models. This is that experience may not be a criterion to take into account when choosing people for this task. In fact, the opposite may be true with, less experienced staff

being more useful for this task. Our study concludes that open minded people are a better choice for companies that are determined to discover new disruptive business models.

6.- LIMITATIONS AND FUTURE DEVELOPMENTS

Business model innovation is a promising field for research, but also a complex one. A simple research study like the analysis presented here fails to cover all that complexity, due to scarcity of resources and time limitations, and this is why we decided to focus on a specific issue: the impact of experience on this kind of innovation. Other aspects of business model innovation processes were not examined (such as other contingent factors related to teams for business model generation).

In future research we plan to expand our knowledge of business model generation and assessment processes by including other factors that might influence these processes. To analyse the way new business models are implemented is a field of great significance, although it is beyond the purpose of this study. The after-implementation findings will be crucial to improve the business model election process and to spot outstanding new business models able to create markets and reshape industries.

We will be paying close attention to a new stream of studies that are in line with this perspective, focusing on the competition between business models in the context of a new market configuration (Markides and Sosa 2013, Bohnsack, Pinkse, and Kolk 2014).

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