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### Alignment between business model and business strategy and contribution to the performance: Empirical evidence from ICT Tunisian venture.

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#### ABSTRACT

The development of information and communication technologies, the emergence of new markets, increased trade between countries, the challenges of sustainable development, the growing uncertainty in the global economy, have led to radical changes in the approach to business management. Businesses must seize opportunities, explain the purpose and objectives, and predict the future operation of the company by designing, modeling, communicating the rationale for the coherence of the project. This model is named business model. The major challenge of this study will be to assess the fit between business strategy and business model as a new contingency factor that captures the structure of transaction to achieve performance. The data collected from 220 ICT ventures confirm the existence of a higher intensity relationship than the direct relationship between the business model and organizational performance. This result tends to demonstrate the importance of aligning the business model with the strategy to explain better organizational performance. The model of this study will allow entrepreneurs to become aware of issues facing the technology entrepreneurship, to assess the strengths and weaknesses of the current business model and make the right decisions to create and deliver value to communicate a distinct business model in turbulent environment.

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#### 1. Introduction

The interest in the business model is relatively recent, much of the research on this concept are in the period of the New Economy (Morris, Schindehutte, & Allen, 2005). The companies operating in a competitive environment can't well be successful without the development of an effective business model (Zott & Amit, 2007). Furthermore, competitiveness in the 21st century requires effective strategic and entrepreneurial action (Hitt, Ireland, Camp, & Sexton, 2001). Thus, to meet the interests of our research, the study of the importance of the mobilization of the business model on performance, we will adopt a business model perspective integrating entrepreneurial approach and strategic approach. Strategic actions are those through which the companies developing and exploiting the competitive advantages and entrepreneurial actions identify and exploit opportunities (Hitt et al., 2001). Tikannen, Lamberg, Parvinen, and Kallunki (2005) assume that the function of the strategy is to give understanding and directions on developing the business model; they suggest that the strategy and structure are one component of business model.

To study this relationship in depth, we need to identify the variables that may occur for training performance. We have chosen to adopt a theoretical approach to explain the performance: contingency theory. The strategic alignment perspective included in this theory suggests that organizational performance is the result of a strategic alignment of two or more variables. Our work will therefore

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focus on the alignment between two variables: companies with a business model based on the information and communication tools to speed transactions up to a good level of performance when they conceptualize their business model based on value creation and operation opportunities and align with corporate strategy. To our knowledge, there is no such research in developing countries, especially in Tunisia. The objective is to study the impact of the alignment between the business model and corporate strategy on organizational performance in a turbulent environment.

#### 2. Literature review

The issue of the impact of the business model on organizational performance is still largely unexplored theme. The business model allows the ICT ventures to be competitive on the market (Casadesus & Ricart, 2010). It thus represents a potential source of competitive advantage (Markides & Charitou, 2004). According to Afuah and Tucci (2001), the business model can explain the performance and competitive advantage through the best combination of resources to create value for the consumer and have a profitable income. To our knowledge, only Zott and Amit (2007) rigorously explored the impact of the business model on performance. They located the business model at the intersection of the theory of entrepreneurship, the theory of transaction costs, and the strategy and showed that the business model influences the performance when focused on innovation and efficiency. The business model proposed has two themes: business model innovation: it is to create value by using new ways to drive economic exchanges for stakeholders (new transaction mechanisms, connecting with prospects, business model innovation, operating benefits); business model efficiency: it is the actions that can take the ICT ventures to complete its transactions with efficiency, that is to say, by reducing transaction costs and creating substantial value (reduce existing transaction costs for the central firm and its partners, reduce the complexity of transactions, reduce uncertainty and information asymmetry by increasing transparency, and reduce the risk of transaction). The theory of transaction costs is the basis of this factor (Williamson, 1975). The results show that the first business model focused on innovation and efficiency product strategy and market are a separate built, they are in fact complementary rather than substitutable. A second result says the hypothesis that the two concepts influence the performance of the firm. This complementary refers to the need to review the business model of the firm as a source of competitive advantage. Another significant result ensures that the business model is centered on innovation and is combined with the differentiation strategy, cost leadership, and focus more the firms performing. So we notice the contingent role of the business model for the determination of the market value.

Patzelt, Knyphausen-Aufseb, and Nikol (2008) used the business model as a moderating variable affecting the relationship between top management team composition and performance. Similarly, Giesen, Berman, Bell, and Blitz (2007) suggest three ways to innovate the business model: the industry model, revenue model, and business model. This proposal was confirmed through a case study of 35 companies. The results show that these models are performing.

A recent study that of Brettel, Strese, and Flatten (2012) examined the relationship between the business model and performance by integrating relationship marketing as a moderating variable. They relied on conceptualizing Zott and Amit (2007). The model shows that entrepreneurs should focus on the relationship with their customers in the design of the business model.

Contingent analysis provides a perspective that is very well suited to our study. Within the meaning of Weill and Olson (1989), on the one hand, this perspective is specifically adapted to study performance, and secondly, it requires simultaneous consideration of multiple variables for the study of performance. The concept of aligning its origins in contingency theory. Rather than seeking universal answers, we determine the conditions under which an organization is performing. This is from the work of Woodward (1958), which was formulated according to contingency theory, based on the idea that the efficiency of the organization is the result of the match between his situation and structure, or the consistency between the structural determinants and organizational variables.

According to Miles and Snow (1984), the alignment is "a dynamic search for aligning the organization and its environment and adjust the internal resources of the firm to support this alignment." At first, the alignment has been applied to strategy and relationship with structure (Chandler, 1962). He reveals that the fit between the choice of external positioning (strategy) and internal arrangements (structure) promotes performance. He suggested that the strategy must be positioned with the adaptation of different business functions. He defined the strategy as creating long-term objectives, the selection of courses of action that would achieve these objectives, and the deployment of resources to achieve these goals. It succinctly summarizes his arguments as "structure follows strategy." Yin and Zajac (2004) call for the study of the alignment between strategy and structure with other forms of organization. Drawing on the work of Chandler, this research focuses on the study of the impact of co-alignment of strategy and business model (considered as a new structural form of organizations). The relationship between structure and strategy has been well validated in the literature.

Furthermore, the degree of stability and complexity of the environment and its more or less hostility agree on the one hand with the adopted structures (Burns & Stalker, 1961; Lawrence & Lorsch, 1967) in our study with the business model and strategy (Ginsberg & Venkatraman, 1985; Hambrick & Lei, 1985; Venkatraman & Prescott, 1990). Despite the wealth of their initiative, we notice that their commitment to the current contingency environment variable has been neglected. We assume that their explanatory power is limited.

Porter (1999) argues that generic strategies are identified from the industry. They seek to bring out the strategic formulation best suited to the intentions of the ICT ventures in relation to available resources. These strategies result in values for customers, definition of products offered, study of the competitive environment, market share, and adaptability to the context. Competitive strategies focus on the specifics of the firm and its value in the set. These strategies seek to improve the cost structure, to compare with competitors in innovation, strengthening the competitive position, build and defend a competitive advantage in costs and/or differentiation thus giving a profit (Porter, 1999). In our research, we focus on strategies, namely, competitive strategy cost leadership and differentiation strategy. Several studies ensure that the business model is a source of competitive advantage (Chesbrough & Rosenbloom, 2002;

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Afuah, 2004; Markides & Charitou, 2004; Morris et al., 2005). The resource theory seems to provide answers to conceptualize a business model exploiting the opportunities and creating value. To show the business model's contribution to creating a competitive advantage, Hedman and Kalling (2003) propose a business model based on the theory of resources and strategic design Porter value chain, the five forces, generic strategies. Similarly, Schweizer (2005) proposes a model based on resource theory; it emphasizes the need to identify the resources and skills to create a competitive advantage. Amit and Zott (2001) describe the business model as a new unit of analysis; they incorporate five theoretical approaches: the theory of transaction costs, strategic network theory, resource theory, the theory of Schumpeter creative destruction, and the theory of Porter's value chain.

The resource theory is a promising approach to study the performance-related business model. Similarly, it is a suitable theoretical vision to understand value creation by business model (Amit & Zott, 2001; Hedman & Kalling, 2003).

Also, with the advancement of technology, it is important to consider the role of the information to create an advantage by conceptualizing the structure of the business model of exchange based on the contribution of the theory of transaction costs (TTC). Indeed, TTC has been used by many authors to conceptualize the business model (Amit & Zott, 2001; Warnier, Demil, & Lecocq, 2004; Zott & Amit, 2007; Brettel et al., 2012).

Indeed, a business model based on the theory of transaction costs is designated as the basic hypotheses of this theory are reducing existing transaction costs for the central firm and its partners, reducing the complexity of transactions, reducing uncertainty and information asymmetry by increasing transparency, and finally, the reducing transaction risk.

The growth of the turbulence of the environment involves the reduction of competition; a growing need for information, innovation, and speed of the development cycle; in addition to the difficulty in predicting customer expectations (Achrol, 1991; Pine, Victor, & Boynton, 1993; Chakravarthy, 1997). Managers must learn new ways to respond to turbulent environments (Davis, Morris, & Allen, 1991). Similarly, the ICT ventures will focus its resources' adaptation and flexibility and enhance the lightness of its structure (Martinet & Petit, 1982).

#### 3. Theoretical model and research hypotheses

Our research model aims to achieve a primary goal, that of determining when the business model and corporate strategy are sufficiently co-aligned to significantly increase organizational performance. However, we add the direct effect of different independent variables on performance because these variables are a priori likely to explain organizational performance independently.

Venkatraman (1989) states that "researchers must explicitly justify their specification on the perspective of alignment in the context of research."

So what is the most appropriate perspective to address our research question?

To meet the objectives of the research, we chose a dual approach: first the covariation approach to study the alignment between the business model and corporate strategy. This is based on the principle of systems approach (Van de Ven & Drazin, 1985), that the analysis must simultaneously consider all relationships between all factors' latent variables. This seems to respond to the context of our research.

Then the approach of moderation to investigate the moderating effect of the environment. According to Venkatraman (1989), this approach is most suitable in the case where the relationship between the explanatory variable and explanation depends on the context variable from the environment in which the business is located.

In order to predict the overall effect of the business model centered on efficiency and innovation performance, one must take into account its effect on the ability of the ICT ventures to appropriate the value for all participants the transaction. Coff (1999) used the theory of resources as a significant theory to the performance of the firm since it allows simultaneous capture and explores the generation of value. The author applies the model of bargaining power in the context of resource-based theory of competitive advantage since it is related to the generation of value (Amit & Zott, 2001; Hedman & Kalling, 2003).

Otherwise, the positive effects of the business model performance (Zott & Amit, 2007; Zott & Amit, 2008; Brettel et al., 2012) and the first direct link between the differentiation strategy and the performance and strategy of cost leadership and performance could be verified. We would then study the following hypotheses:

**H1.** The business model focused on innovation has a positive effect on performance.

H2. The business model focused on efficiency has a positive effect on performance.

H3. The choice of strategy differentiation has a positive effect on performance.

H4. The choice of a strategy of cost leadership has a positive effect on performance.

Proper alignment is generally composed of a consistent configuration that occurs to achieve performance (Siggelkow, 2001). What is the business model most consistent with the business strategy, or in other words, what is the best alignment between these built?

To answer this question, Zott and Amit (2008) developed an alignment formal model to determine the optimal combination of the themes of the business model and strategy. The objective is therefore to provide a theoretical framework for the empirical analysis. They have adapted the model to create value for the firm, the supplier, and the consumer (Brandenburger and Stuart, 1996) for transactions initiated by the business model with a product or service. This model is expressed as follows: A and B are complementary if the level of A increases with the level of B and if the level of A and B are adjusted to achieve the optimal performance (Milgrom & Roberts, 1995). That is, if the marginal effect of a theme of the business model changes (increases or decreases) when the firm focuses on a particular strategy (Siggelkow, 2002).

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That is why we want to test the following hypotheses that the more the organization is establishing a business model aligned with the strategy (co-alignment), it will be more efficient.

**H5a.** Co-alignment between the business model focused on efficiency and differentiation strategy contributes positively to organizational performance.

**H5b.** Co-alignment between the business model focused on efficiency and strategy of cost leadership contributes positively to organizational performance.

**H5C.** Co-alignment between the business model focused on innovation and differentiation strategy contributes positively to organizational performance.

**H5D.** Co-alignment between the business model focused on innovation and leadership strategy costs contributed positively to performance.

To investigate the moderating role of the environment, we will use the turbulence dimension. The choice of this dimension is based on two points: firstly, this dimension is related to an environment characterized by a high degree of innovation and the speed of change (Ansoff & McDonnell, 1990); others (Gueguen, 2001) showed that turbulence is correlated with uncertainty, complexity, and dynamism.

We consider that the turbulence of the perceived environment will influence the relationship between business model and performance, competitive strategy and performance. That is, if the moderating effect is observed, it will confirm the idea that a competitive strategy is performing next to a turbulent environment as well as a business model that is efficient to look for in a turbulent environment. The dependency theory of the resource adopts the idea that the environment of the company provides a number of scarce resources which the company needs to survive (Kreiser & Marino, 2002).

Indeed, if the interaction with the turbulence of the environment is significant, contingency theories are then confirmed.

**H6a.** Perceived environmental turbulence affects the relationship between the business model focused on innovation and performance.

**H6b.** Perceived environmental turbulence affects the relationship between the business model focused on efficiency and performance.

H6c. Perceived environmental turbulence affects the relationship between differentiation strategy and performance.

H6d. Perceived environmental turbulence affects the relationship between leadership strategy costs and performance.

#### 4. Methodology

The first stage of the sampling process is to verify that the relevant population has been well identified (Garrity, Glassberg, Yong, Sanders, & Seung, 2005). The relevant population is defined as the set of objects possessing the desired information to define the objectives of the research (Giannelloni & Vernette, 1995). To set our relevant population, we have chosen to target the companies belonging to the ICT sector.

However, the sample defines a subset of elements on which the data are collected, drawn from a larger set called population (Evrard et al., 2000).

As part of our study, we tried to contact the maximum possible business, adding to those not feeling concerned with the subject not to answer the questionnaire. The list of companies has been provided by us TUITH (Tunisian Union of Industry, Transactions and Handicrafts).

The mode of administration of the selected questionnaire is one of the survey face to face despite that the cost of production is high (Thiétart, 2007) and the time devoted to each respondent is important.

We contacted businesses by relying on a list of high-tech companies in the ICT sector that was provided to us by TUITH (Tunisian Union of Industry, Transactions and Handicrafts).

Thus, we targeted from a sample of about 300 companies. Respondents are leaders. In case of difficulty of access to leaders, we agreed that a senior, having information on the business model and the strategic choices of the ICT ventures, respond to our questionnaire.

Finally, we had a return of 250 questionnaires. For others, the leaders refrained to answer. Of these 250 questionnaires and after careful consideration, we will retain only 220 questionnaires we deem usable.

The constructs are operationalized in the model from existing measures developed and employed in previous research. The survey items for business model efficiency and business model innovation used in this study were adapted from Zott and Amit (2007) and contained thirteen items for each construct. The constructs of cost leadership strategy and differentiation strategy were adopted from Zott and Amit (2008) and included nine items. The turbulence of the environment was adapted from the measurements defined by Gueguen (2001) containing six items. The performance was adopted from the measurements defined by Venkatraman (1989) containing eight items. The generation of items follows a mainly deductive approach.

In the survey, a majority of the answers were measured on a 5-item scale, using either "1—strongly disagree" to "extremely agree", or "1—not completely satisfactory" to "5—completely satisfactory."

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#### 5. Data analysis and results

#### 5.1. Exploratory factor analysis

Exploratory principal component factor analysis, with varimax rotation, was conducted to condense the information contained in the original variables into a smaller set of factoring with a minimum loss of information (Evrard, Pras, & Roux, 2003). Anderson and Gerbing (1988) imply the need to assess, first, the dimensionality of the measurement scales and, second, assessing the internal consistency of each of its dimensions. Thus, they assume that a scale with good internal consistency is not necessarily one-dimensional. Indeed, we proceed; first, a test of unidimensionality of the scales, then we will study the reliability of measurements.

However, before proceeding with the analysis of the ability of the data to be factored, two tests must be true: it is primarily to ascertain the significance of the Bartlett test, Kaiser–Meyer–Olkin (KMO), and anti image array (MSA). For all Bartlett's sphericity test, variables are to reject the hypothesis of zero correlation (p = 0.000), and the KMO test is considered excellent. Varimax rotation has validated the dimensionality of the constructs. Some items were removed with a lower quality of representation 0.5. The six best factoring représentée the data in terms of variance explained and grouping variables. See Table 1.

xplained variance and Cronbach's alpha.			
Factor	Variance (%)		
1. Business model efficiency	94.455		
2. Business model innovation	84,316		
3. Differentiation strategy	80,420		
4. Cost leadership strategy	66,874		
5. Performance	74.5		

The following table shows the good variance to explain variables and the good reliability (all more than 0.7).

80.629

#### 5.2. Structural equation modeling

Table 1

All variables have good convergent validity. This validity is checked if the coefficient "rho convergent validity" is greater than 0.5; this coefficient represents the average of the variances between the construct and its measures. Indeed, the values of the six built Rhôvc of 0.71 for the business model focused on efficiency, 0.90 for the business model centered on innovation, 0.85 for the differentiation strategy, 0.72 for the cost leadership strategy for the turbulence of the environment and organizational performance 0.85.

Discriminant validity of the Chi-square difference between the two models is significant if it exceeds the level of 3.84 (value given by a Chi-square table for an alpha of 0.5 and 1 degree of freedom) (see Table 2) (Roussel, Durrieu, Campoy, & El Akremi, 2002). Indeed, the values of the discriminant validity were calculated using the formula for Fornell and Larcker (1981).

Table 2

Chi-square results and goodness-of-fit indexes for revised model.

6 Turbulent environment

Fit Indices	Norm	Obtained value
Absolute indications scaled ( $\chi 2/df$ )	>1 and <5	4.71058824
Goodness-of-fit index (GFI)	>0.9	0.93
Adjusted goodness-of-fit index (AGFI)	>0.9	0.91
Root mean square error of approximation (RMSEA)	<0.08	0.075

The following table shows that the normalized Chi-square is below 5 and the RMSEA, the measurement model is significant and less than 0075, thus representing a good fit. Furthermore, NFI indices and IFC are superior over the recommended threshold of 0.9. GFI and AFM are also acceptable. Indeed, given the significance of all the indices of psychometric quality of the measurement scales, we can consider that the model fits the data well and interpretation is possible.

The results of the AFC under Lisrel indicate that all items of factor contributions above 0.50 vary between 0.60 and 0.99 and Student T higher than 1.96 at the 5% significance level. For example, innov4 item has a not-standardized contribution factor of 0.07 (standard 0.96) with a Student T 9.84. Examination of the results is carried out for all indicators considered very good to hold all the items. Table 3 summarizes confirmatory factor analysis results for measurement model.

#### 5.3. Path model

The performance is thus subject to a multiple regression on the two variables of the alignment. For clarity, we have divided our global model into four structural models of the second order, in order not to make complex analysis. However, to improve the adjustment qualities, we eliminated items with high values on the standardized residual covariance matrix, which are Perf 1 Innov1, Eff 7 Domin 1, and 1 Diff.

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Cronbach α 0.988 0.979 0.938 0.810

0.791

0 960

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#### Table 3

Confirmatory factor analysis results for measurement model.

Constructs	Items	Factor loading	t-value	Average variance extracted
Business model focused on efficiency	EFF7	0.95	20.02	0.87
-	EFF8	0.94	19.61	
	EFF9	0.92	18.86	
	EFF10	0.67	11.84	
	EFF11	0.67	11.84	
Business model focused on innovation	INNOV1	0.88	17.55	0.71
	INNOV2	0.91	18.89	
	INNOV4	0.96	20.69	
	INNOV6	0.98	21.32	
	INNOV7	0.96	20.53	
	INNOV8	0.99	21.69	
	INNOV9	0.96	20.45	
Differentiation strategy	SDIFF1	0.97	21.05	0.90
	SDIFF2	0.93	19.28	
	SDIFF3	0.83	16,17	
	SDIFF4	0.95	20,21	
Costs leadership strategy	DOMIN1	0.60	10.36	0.85
	DOMIN2	0.90	18.13	
	DOMIN3	0.93	19.39	
	DOMIN4	0.92	18.96	
Organizational performance	PERFM1	0.92	36.58	0.72
	PERFM2	1.00	25.27	
	PERFM3	0.91	36.58	
	PERFM5	1.00	36.58	
	PERFM6	1.00	15,03	
	PERFM7	0.72		

The following placement of structural equation modeling analyzes, utilizes SEM to confirm the model structure and causal paths entre factoring.

The final model of this research and validated hypotheses includes 7 of the 12 originally developed.

A significant relationship was observed between business models focused on efficiency and performance (H1). The correlation coefficient between the business model focused on innovation and performance of 0.57 is significant (Student's T test for 14.72 for a significance level of 5%); the business model focused on innovation and performance (H2). The correlation coefficient between the business model focused on efficiency and performance of 0.13; differentiation strategy and performance (H3). The correlation coefficient between the differentiation strategy and the performance of 0.05 is significant (Student's T test for a 2.61 significance level of 5%), and the strategy of cost leadership and performance (H4). The correlation coefficient between the cost leadership strategy and performance of 0.34 is significant (Student's T test for a 9.98 level of significance 5%).

Four second-order structural models were used later to demonstrate the significant relationship between the co-alignment and performance (H5b, H5C, H5D have been validated). However, the relationship proved not significant between the co-alignment (the business model focused on efficiency and differentiation strategy) and performance (unsubstantiated H5a).

#### 6. Analysis

A business model focused on innovation based on the conceptualization and adoption of new ways to conduct transactions. Similarly, the business model focused on innovation may be part of the opportunity development process.

The results of these first two hypotheses about the effect of the business model focused on the efficiency and the business model focused on innovation performance confirm the results of Zott and Amit (2007), Zott and Amit (2008), and Brettel et al. (2012).

The testing hypotheses H3 and H4, respectively, effect the differentiation strategy, and leadership strategy costs are also validated. The target is to be competitive by appropriating a single character that is difficult to imitate the market. The second strategic choice that of cost leadership is also considered as a competitive strategy. The strategy focuses on reducing costs. Indeed, the organization will be totally focused on the search for economies of scale, the establishment of control procedures, elimination of marginal customer transactions, reduction of uncertain investments in research and development, and selection of services associated with products.

The H5a hypothesis rejected, studies the influence of co-alignment between the business model focused on efficiency and differentiation strategy on performance. This alignment therefore seems paradoxical. This result can be explained by the difficulty of reconciling in practice between the dilemma of which is based on a static view and the other on a dynamic vision. The entrepreneur does not only reduce costs of transactions but also try to differentiate themselves in the market.

The H5b hypothesis that tests the co-alignment between the business model focused on efficiency and leadership strategy costs is also validated. This result shows that firms that focus on reducing transaction costs among stakeholders can become more efficient with a cost leadership strategy.

The hypothesis H5C that studies the impact of co-alignment between the business model focused on innovation and differentiation strategy on performance is also validated. However, the business model focused on innovation allows the ICT ventures to create an advantage difficult to imitate organizational innovation which leads to a competitive advantage by learning the accumulation of know-how exclusive and preemption scarce resources (Amit & Zott, 2001). Furthermore, if a firm is able to launch a business

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model innovation on the market before competitors, it will thus be able to attract new customers and build its reputation on the market (Lieberman & Montgomery, 1988). The co-alignment between the business model design and differentiation strategy will be considered as a power relationship in which the contractor fosters innovation in creating value to stakeholders while adopting a strategy of differentiation. The hypothesis H5D has been validated. In the words of one of the contractors, this alignment is efficient since the high-tech firm has sufficient share investments related to innovation due to the complexity of technology, growth, development costs, and shorter product life cycles; secondly, it tackles the issue of costs by the use of external R & D resources that improve financial performance.

The last hypothesis of our research is related to the moderating role of turbulence of the environment. The following table provides a reminder of the results.

As is shown in the Table 4, no hypothesis was validated. One of the first reasons that can be attributed to this negative result relates to the selection of the size "turbulence" as a moderating variable. We recall that the choice of this dimension is based on two points: firstly, this dimension is related to an environment characterized by a high degree of innovation and the speed of change (Ansoff & McDonnell, 1990), and secondly, Gueguen (2001) showed that turbulence is correlated with uncertainty, complexity, and dynamism. However, in most studies, the external environment is characterized by four dimensions: dynamism, uncertainty, turbulence, and complexity. Indeed, if we opted for uncertainty, dynamism, and complexity, the moderating role might be of significance in our analysis.

Table 4
Standardised path coefficients and structural equations.

Hypothesis	Coefficient	t
H1	0.57	14.72
H2	0.13	4.92
H3	0.05	2.61
H4	0.34	9.98
H5a	3.04	1.32
H5b	0.97	17.72
H5C	0.99	16.74
H5D	1.05	20.15

Finally, the test of the moderating variable environmental turbulence has provided nonsignificant results on its moderating effect (H6a, H6b, H6c, H6d and unsubstantiated) since the coefficient of interaction is not significant.

A major contribution of this research concerns the theoretical originality of its strategic positioning in the field of entrepreneurship by combining strategic and entrepreneurial studies to achieve a model exploiting opportunities, creating value and competitive advantage.

Our research has also contributed to a reflection on the evaluation of the business model in two designs: the business model focused on efficiency and the business model focused on innovation. We noticed in the results that it is important to consider the role the information to create an advantage by conceptualizing the structure of the business model of transactions based on the contribution of the theory of transaction costs. However, to create value for the customer, it must be increased by the customer perception of the value and benefits that it will benefit after the consumption of the product. Companies compete to solicit the favor of customers or to appropriate the essential resources needed for production at lower cost. The results also show the importance of considering a concept of a business model focused on innovation to explain the performance. The business model focused on innovation allows the ICT ventures to create an advantage of a difficult-to-imitate organizational innovation which leads to a competitive advantage by learning the accumulation of exclusive know-how and pre-emption of rare resources.

This paper is also distinguished by the contingency perspective adopted to understand and explain the link between the business model, corporate strategy, and performance. The statistical results of the alignment effect are consistent with the theoretical and empirical foundations. This positive result shows the importance of the complementarity of the strategy and the business model as two distinct concepts that interact with each other. The competitive strategy of the ICT ventures focuses on the positioning of the ventures in relation to its competitors and the business model focuses on economic exchanges with external parties.

This work stands out from other works in the area to the extent that we have made arguments for the importance of considering the moderating role of turbulence of the environment. This variable seems to condition the relationship between the business model and performance on the one hand (Zott & Amit, 2007) and the competitive strategy of the ICT ventures and the other performance (McArthur & Nystrom, 1991). The moderating role of the environment on the relationship between the business model focused on innovation and performance and the business model centered on efficiency and performance, studied in the work of Zott and Amit (2007), was operationalized by the dimension of generosity. By cons, in our research, we chose turbulence dimension, since we consider the environment as a contingency variable. The empirical results have shown, however, the nonsignificance of moderation. These results are surprising, since according to the followers of contingency degree of stability and complexity of the environment and its more or less hostility agree on the one hand with the adopted structures (Burns & Stalker, 1961; Lawrence & Lorsch, 1967) in our study with the business model and the second strategy (Ginsberg & Venkatraman, 1985; Hambrick & Lei, 1985; Venkatraman & Prescott, 1990). Hence, despite this negative result, the theoretical contribution seems relevant and we believe that this line of research should be pursued.

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#### 7. Conclusion

The present study aimed to assess the impact of the business model on the ICT venture's performance. The conceptual and theoretical framework has covered most topics directly related to the object of research, in order to lay the foundation for the design and implementation of our study. We then opted for a strategic alignment perspective, registered in the contingency theory, under the principle that performance is the result of an alignment between two or more variables. The final research model allows to analyze a co-alignment between the business model and corporate strategy on performance.

This is to combine qualitative and quantitative approach. The first has made us, on one hand, become familiar with the subject of research and clarify the variables in the research model and also to verify the application of our model in the Tunisian context. We conducted exploratory talks with the leaders responsible for five high-tech companies. The second quantitative approach is to test the field research model.

The model of this study will allow entrepreneurs to become aware of issues facing the ICT ventures, to assess the strengths and weaknesses of the current business model and make the right decisions to create and deliver value to communicate a distinct business model.

For companies that already have a business model, this research may lead them to redefine their objectives to better focus their strategy around the business model to develop a true corporate culture centered on entrepreneurial action and strategic actions. The scale of the business model adopted and validated in this research can help organizations to conceptualize their business model.

In order to obtain satisfactory results related to co-alignment between the business model and strategy, a major concern for the evolution of the organization. It results in the following: solicit client favors, appropriate the essential resources needed for production at lower costs, increase customer perception of the value and benefits that it will benefit after the consumption of the product, reduce uncertainty for external stakeholders by controlling the flow of information and exchange, and finally promote learning, the accumulation of know-how exclusive and pre-emption of scarce resources. Finally, from a technological point of view, given the speed of technological change, an update is necessary through a new technology training plan that will promote innovation of business model.

This research has limitations but also opens some directions of new research. Under the contingency theory, the performance is the result of a consistency between two or more factors (Burns & Stalker, 1961), structural, strategic, and environmental. However, it is important to qualify that some variables have been deliberately removed, which may align with the business model and strategy to explain the performance. Not taking into account that the entrepreneurial orientation is a major limitation. The results of our research show in this regard the lack of risk-taking propensity (one of the dimensions of entrepreneurial orientation) to adopt a coalignment between the differentiation strategy and business model centered on the efficiency. Naman and Slevin (1993) have shown the positive impact of the alignment of strategy, environment, and entrepreneurial style on performance.

The negative result related to the role of the moderator variable environment can be explained by methodological limitation related to the choice of moderate regression method as a method of analysis. In this regard, Ginsberg and Venkatraman (1985) assume that to determine the strength and shape of the impact of the moderating variable, it is preferable to conduct the test by the subgroup analysis by moderate regression.

To measure this dynamic, a multi-period analysis should be conducted (Sabherwal et al., 2001). This is to consider the time variable as a moderator variable. It can be measured through longitudinal studies at different times from the same sample.

#### References

Achrol, R. (1991). Evolution of the marketing organization: New forms for turbulent environments. Journal of Marketing, 55(October), 71–93.

Afuah, A. (2004). Business models: A strategic management approach. New York: McGraw-Hill.

Afuah, A., & Tucci, C. L. (2001). Internet business models and strategies: Text and cases. New York, NY: McGraw-Hill.

Amit, R., & Zott, C. (2001). Value creation in e-business. Strategic Management Journal, 22, 493–520.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.

Ansoff, I., & McDonnell, E. (1990). Implanting strategic management. Upper Saddle River, NJ: Prentice-Hall, 185–188.

Brandenburger, A. M., & Stuart, H. (1996). Value-based business strategy. Journal of Economics and Management Strategy, 5, 5–25.

Brettel, M., Strese, S., & Flatten, T. C. (2012). Improving the performance of business models with relationship marketing efforts – an entrepreneurial perspective. *European Management Journal*, 30(2), 85–98.

Burns, T., & Stalker, J. M. (1961). The management of innovation. London: Tavistock.

Casadesus, M. R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. Special issue on business models. *Long Range Planning*, 43(2–3), 195–215. Chakravarthy, B. S. (1997). A new strategy framework for coping with turbulence. *Sloan Management Review*, 38(2), 69–83.

Chandler, A. (1962). Strategy and structure: Chapters in the history of the industrial enterprise. Cambridge (MA): MIT Press.

Chesbrough, H. W., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: Evidence from Xerox corporation's technology spinoff companies. *Industrial and Corporate Change*, 773, 529–555.

Coff, R. W. (1999). When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. Organization Science, 10, 119–133.

Davis, D., Morris, M., & Allen, J. (1991). Perceived environmental turbulence and its effect on selected entrepreneurship and organisational characteristics in industrial firms. *Journal of the Academy of Marketing Science*, 19, 43–91.

Evrard, Y., Pras, B., & Roux, E. (2000). Market, Etudes et recherche en Marketing (2ème édi ). Dunod, Paris.

Evrard, Y., Pras, B., & Roux, E. (2003). Market, Etudes et recherche en marketing (Dunod, Paris) (3ème éd.).

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.

Garrity, E. J., Glassberg, B., Yong, J. K., Sanders, G. L., & Seung, K. S. (2005). An experimental investigation of web-based information systems success in the context of electronic commerce. *Decision Support Systems*, 39(3), 485–503.

Giannelloni, J. L., & Vernette, E. (1995). Etudes de Marché. Paris: Vuibert.

Giesen, E., Berman, S., Bell, R., & Blitz, A. (2007). Paths to success, Three ways to innovate your business model. Journal of strategy and leadership, 35(6), 27–33.

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Ginsberg, A., & Venkatraman, N. (1985). Contingency perspectives of organizational strategy: a critical review of the empirical research. Academy of Management Review, 10(3), 421–434.

Gueguen, G. (2001). Environnement & Management Stratégique des PME : le cas du secteur Internet. thèse de doctorat Université Montpellier I, 587.

Hambrick, D. C., & Lei, D. (1985). Toward an empirical prioritization of contingency variables for business strategy. *Academy of Management Journal*, 28(4), 763–788. Hedman, J., & Kalling, T. (2003). The business model concept: Theoretical underpinnings and empirical illustrations. *European Journal of Information Systems*, 12(1), 49–59.

Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. (2001). Guest editors introduction to the special issue. Strategic entrepreneurship: entrepreneurial strategies for wealth creation. Strategic Management Journal, 22, 479–491.

Kreiser, P.M. et Marino, L.D. (2002). Analyzing the historical development of the environmental uncertainty construct. Management Decision, 40(9), pp. 895–905 Lawrence, P., & Lorsch, J. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, *12*, 1–30.

Lieberman, M. B., & Montgomery, D. B. (1988). First-mover advantages. *Strategic Management Journal*, 9(1), 41–58.

Markides, C., & Charitou, C. (2004). Competing with dual business models: A contingency approach. Academy of Management Executive, 18(3), 22–36.

Martinet, A. C., & Petit, G. (1982). L'entreprise dans un monde en changement. Ed. Seuil.

McArthur, A. W., & Nystrom, P. C. (1991). Environment dynamism, complexity, and munificence as moderators of strategy-performance relationships. *Journal of Business Research*, 23, 349–361.

Miles, R., & Snow, C. (1984). Designing strategic human resource systems. Organizational Dynamics, 13(1), 36–52.

Milgrom, P., & Roberts, J. (1995). Complementarities and fit: strategy, structure, and organizational change in manufacturing. Journal of Accounting and Economics, 19, 179–208.

Morris, M., Schindehutte, M., & Allen, J. (2005). The entrepreneur's business model: Toward a unified perspective. Journal of Business Research, 58(6), 726–735.

Naman, J. L., & Slevin, D. P. (1993). Entrepreneurship and the concept of fit: A model and empirical test. *Strategic Management Journal*, 14(2), 135–152.

Patzelt, H., Knyphausen-Aufseb, D., & Nikol, P. (2008). Top management teams, business models, and performance of biotechnology ventures: an upper echelon perspective. British Journal of Management, 19, 205–221.

Pine, B. J., Victor, B., & Boynton, A. C. (1993). Making mass customization work. Harvard Business Review, 108-119.

Porter, M. E. (1999). L'avantage concurrentiel. Dunod.

Roussel, P., Durrieu, F., Campoy, E., & El Akremi, A. (2002). Méthodes d'équations structurelles : recherche & applications en gestion. Paris: Economica.

Sabherwal, R., Hirschheim, R. & Goles, T. (2001). The dynamics of alignment: Insights from a punctuated equilibrium model. *Organization Sciences*, *12*(2), 179–197. Schweizer, L. (2005). Concept and evolution of business models. *Journal of General Management*, *31*(2), 37–56.

Siggelkow, N. (2001). Change in the presence of fit: the rise, the fall, and the renaissance of Liz Claiborne. Academy of Management Journal, 44, 838–857.

Siggelkow, N. (2002). Evolution toward fit. Administrative Science Quarterly, 47, 125-159.

Thiétart, R. A. (2007). Méthodes de recherche en management (3ème éd.). Paris: Dunod.

Tikannen, H., Lamberg, J.A., Parvinen, P. et Kallunki, J.P. (2005). Managerial cognition, action and the business model of the firm. Management Decision, 43(6), pp. 789–809. Van de Ven, A. H., & Drazin, R. (1985). The concept of fit in contingency theory. *Research in Organizational Behavior*, 7, 333–365.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality and measurement. *Management Science*, 35(8), 942–962. Venkatraman, N., & Prescott, J. E. (1990). Environnement-strategy coalignement: An empirical test of its performance implications. *Strategic Management Journal*, 11,

1–23.

Warnier, V., Demil, B., & Lecocq, X. (2004). Le Business Model: l'oublié de la stratégie? Actes de la 13ème Conférence Internationale de Management Stratégique–AIMS (pp. 1–4).

Weill, P., & Olson, M. H. (1989). Managing Investment in Information Technology: Mini Case Examples and Implications. MISQ.

Williamson, O. E. (1975). Markets and Hierarchies: Analysis and Antitrust Implications, Free Press, a Division of Macmillan, Inc., New York. Traduit en français (1994). Les institutions de l'économie. Paris: Inter Edition.

Woodward, J. (1958). Management and technology. In J. F. Chantal, & F. Seguin (1987) (Eds.), Her Majesty's Stationery. London. L'analyse des organizations. (pp. 105–140). Bourcheville: Les composants de l'organisation.

Yin, X., & Zajac, E. J. (2004). The strategy/governance structure fit relationship: Theory and evidence in franchising arrangements. Strategic Management Journal, 25(4), 365–383.

Zott, C., & Amit, R. (2007). Business model design and the performance of entrepreneurial firms. Organization Science, 18(2), 181-199.

Zott, C., & Amit, R. (2008). The fit between product market strategy and business model: implications for firm performance. Strategic Management Journal, 29(1), 1–26.