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The Use of Business Processes as a Source of Competitive Advantage: Evidence from a High Velocity Market

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ABSTRACT

Consistent with resource-based theory (RBV), business processes have had significant effects on firm performance. An examination of the resource-based view literature leads to the identification of business processes that are associated with the systems (e.g., intranet, EDI, and ERP) which support inter-functional coordination of activities for acquiring supplies and other raw materials along with optimising logistics and warehousing activities (e.g., supply chain systems), and other IT-based activities that help information processing about customers and markets (e.g., CRM). Business processes are internal in nature unlike other intangible resources (i.e., reputational resources such as corporate reputation and brand). Resources that are internal in nature can be difficult for competitors to replicate since it possesses the conditions of asset specificity and time compression diseconomies. Therefore, they may provide greater contribution to firm performance compared to other resources that are developed externally. This study aims to analyse the relative impact of business processes on firm performance compared to reputational resources. Hence, a self-administrated questionnaire was conducted on a sample of 161 Turkish firms which operate in different industries. The regression analysis results showed that whilst business processes provided greater contributions to the profitability and market share figures compared to reputational resources, no greater contribution was found on the sales turnover figures.

Keywords: Business Processes, Firm Performance, Reputational Resources, Environmental Dynamism, Regression Analysis.

I. INTRODUCTION

RBV suggests that firm-specific intangible resources which provide important advantages to firms are the most desirable resources in sustaining competitive advantage [1, 2]. Wernerfelt [1] theorised that resources were leveraged inside the firm and that each firm had a unique resource endowment [3]. These identified firm-specific intangible resources can be described as employee know-how [4, 5], firm-specific tacit knowledge [6, 7], human capital [8, 9], innovation [10], customer relationships [11, 9], firm reputation and organisational culture [12, 13], social capital [14], entrepreneurial skills [15], business processes [16, 17] and information technology [18, 17]. In the past, several researchers [19] conducted research activities in order to offer practical contributions to executives and managers about their resource investment decisions by revealing the key determinants of firm success and their relative importance on performance. Some [18, 16, 17] suggest that the resources that are developed internally may provide greater contribution to firm success since they address the isolating mechanisms; historical uniqueness, causal ambiguity, social complexity, time compression diseconomies and interconnectedness which make resources inimitable [20].

Business processes as internally developed capabilities and their relationship with firm performance was searched in strategic management literature. Whilst Ray *et al*. [16] found a strong relationship between the customer services process and performance figures, in a more recent study, Weigelt [21] who examined the effects of suppliers' IT capabilities on the performance of client firms on market arrangements along with financial performance by using the archival data on 964 U.S. credit unions contracting with 22 technology solution providers indicated a strong relationship between suppliers' IT capabilities and client firms' performance. However, other researchers [22, 23, 24] claim that reputational resources that are external in nature and derived mostly from the perception of external constituents (the only exception can be employees) such

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as shareholders, customers, suppliers, distributors, and even competitors and governments may provide the same contribution to firm success. Roberts and Dowling [12], and Boyd *et al*. [24] tested the relationship between the reputation constructs (*e.g*., brand reputation, corporate image) and firm performance. Their studies yielded results that prove a positive correlation between reputation and firm performance. Therefore, this study aims to analyse the relative impact of business processes on firm performance compared to reputational resources.

The following section provides the details with regard to business processes along with reputational resources that contribute to firm performance.

II. THEORY AND HYPOTHESIS DEVELOPMENT

Business processes are "actions that firms engage in to accomplish some business purpose or objective" [16]. Business processes such as intranet and ERP software that support inter-functional coordination of activities, processes for acquiring supplies and other raw materials along with optimising logistics and warehousing activities [supply chain systems], and other IT systems that help information processing about customers and markets [CRM] provide firms agility and enable them to respond market demands quickly [17]. Furthermore, effective IT and SCM systems help firms to address market needs (*i.e*., changing product ranges and/or accelerating product logistics) rapidly. Supply chain refers to a number of "value adding relations of partially discrete, yet inter-reliant, units that cooperatively transform raw materials into finished products through sequential, parallel, and/or network structures" [25]. As a business process, an effective supply chain system enables a firm to transmit its raw materials, finished goods, and services in a seamless way [25, 26]. Supply chain management is implemented through specific IT skills and ERP software that are produced by the firms like SAP and Oracle and integrates the whole business functions in the most effective and optimised manner. As a consequence, the firms that embark on supply chain management find substantial improvements in production costs and order fulfilment cycling times (the length of time between taking an order and delivery of the needed product to the customer) that are directly linked to firm performance [16, 25].

According to Ray *et al*. [17], ERP systems do not only help firms to integrate their production related functions but they also "enable firms to replicate and propagate administrative innovations *(e.g*., organisational resources) and deploy their brand and customer base – relational capital – across a wide variety of markets" [17] by providing enterprise-wide platforms (*e.g*., B2B). Hence, ERP systems *reconfigure* the resource base of firms by deploying and extending valuable organisational and relational resources broadly through a number of tools and infrastructures. An ERP system can be acquired in factor markets by other competitors as well and this prevents a supply chain management system be considered as a dynamic capability that addresses the strategic resources criteria of Barney [27] and asset stock accumulation ideas of Dierickx and Cool [20]. However, Barney [26] states that "home grown purchasing and supply chain management capabilities — that is, capabilities built organically, within the boundaries of a firm — are more likely to be sources of advantage". Given the explanations about the relationship between business processes and firm performance, it is likely to conclude that business processes are among the determinants of firm success.

Reputational resources refer to the intangible assets that develop positive feelings such as high-esteem, regard, and confidence across stakeholders of the firm by influencing their perceptions [22, 12, 13]. The impact of reputational resources comprised of brand name, corporate image/ reputation, customer service reputation, product/service reputation on firm performance was frequently emphasised in management literature. Reputational resources positively influence impressions, perceptions, and beliefs of the customers, suppliers, competitors and other stakeholders by providing a good deal of information about firms [13]. Because reputational resources inform consumers and other stakeholders about the trustworthiness, credibility, and quality of the firm, they give occasion to the valuable repercussions on firm performance such as maintaining long-lasting relationships with customers and suppliers, creating brand loyalty, and attracting new customers that, in turn, lead firms to achieve superior financial [12, 13]. Although reputation is not legally protected by property rights, may not be acknowledged as a path-dependent asset which is characterised by specificity and social complexity, and create a resource position barrier, Porter [28] argues that competitors can be deterred from entering markets through a strong reputation and erosion of firm performance can be protected. In order to reveal the unique nature of reputational resources, Dierickx and Cool [20] stress the non-tradable and economic benefits provision features of reputation.

Business processes are internal in nature unlike reputational resources that were developed externally.

Resources that are internal in nature can be difficult for competitors to replicate since it possesses the conditions of asset specificity and time compression diseconomies. A number of researchers [27, 29, 30] linked the conditions under which resources are valuable to context dependency. Priem and Butler [30] suggest that level of the interaction of a resource with the organisational strategy and external environment is the main determinant of the value of a certain resource.

Value can be attributed to a resource as long as it enables a firm to exploit market opportunities or neutralise threats from competitors. In other words, a resource can be deemed as valuable when it improves the market efficiency and effectiveness of the owner firm. Business processes were used by firms to create unique strategies and particular business models became socially complex and causally ambiguous resources over time that were difficult to be duplicated for rivals and cannot be purchased in the factor markets. A similar and good example to the creation of competitive advantage through this kind of a business process ownership is "the cross-docking system of retail giant Wal-Mart" [31]. In the early years of Wal-Mart, whilst supply chain system of the firm contained commodity-type of information technologies that can be obtained easily in the factor markets, the system underwent such a complex customisation over years that none of the competitors could afford to imitate it. Given their unique nature that stems from social complexity, causal ambiguity, path-dependency, and asset specificity, business processes that offer economic benefits to firms which cannot be easily acquired and replicated seemed to have a higher impact on firm success than reputational resources that were developed externally. Moreover, especially in high velocity markets where external changes are non-linear and discontinuous and high amount of uncertainty producing deficits in the necessary information to understand cause and effects relationships, effective business processes may enable firms to overcome their organisational inertia and myopia of learning [32, 33]. In line with this proposition, some theorists [34, 35] suggest that environments with high velocity compel firms to develop better business process capabilities which promote creation of new, situation-specific knowledge and improve creative thinking that lead to superior performance to address changes in dynamic markets. Therefore, this study offers the following hypothesis:

H_1: Business processes will make a larger contribution to firm performance than that of reputational resources.

III. METHODS

In order to analyse the relative impact of business processes on firm performance compared to reputational resources, a self-administrated questionnaire was conducted on a sample of Turkish firms which operate in different industries. The sample was selected from the database of Istanbul Chamber of Industry (ISO) that announced the largest 1,000 firms of Turkey (ISO-1000). A total of 161 useable questionnaires were obtained from 1000 firms which yield a response rate of 16.1%. Three construct categories that are, business processes, reputational resources and firm performance constructs along with an additional control variable category was used as the measurement instrument. The questionnaire was consisted of a total number of 27 items: 9 items to measure the effects of business processes that include the questions with regard to intranet, EDI, ERP, SCM, and CRM [25, 16, 17], 8 items to measure the effects of reputational resources that include the questions with regard to brand name, corporate image, customer service reputation, and product/service reputation [12, 36, 13], 5 questions to control the effects of industry structure factors [37], 3 questions to measure market and financial performance [38], and 2 questions for the demographics (age and size).

IV. ANALYSES AND RESULTS

Regression analysis (specifically, multiple hierarchical regression analysis) was used as the quantitative analysis technique to test the established hypotheses. Besides, some reliability issues were addressed in the study. Independence of the predictor (independent) variables is important in statistical testing since highly correlated independent variables can predict each other and may cause problems with multicollinearity which influence the accuracy of the regression analysis negatively [39]. This situation necessitates the examination of the inter-correlations between independent variables (Table 1). Although some significant inter-correlations between the independent variables were observed, none of the correlation coefficient was above the level considered to be serious, which is generally accepted as 0.80 or higher [39]. Moreover, variance inflation factors (VIF) were also below the score recommended as problematic, which is 10 [39]. Accordingly, moderate levels of correlations among the independent variables do not seem to create multicollinearity problem.

In hierarchical regression method, each set of independent variables is entered into separate blocks for analysis and the incremental changes of the R^2 statistic

which are assessed "as an indicator of the fraction of the variance explained by each independent variable" [31] are calculated. Hence, the explanatory power or in other words, the unique contribution of each independent variable in explaining dependent variable is explored. According to the results, the established hypothesis was accepted (Table 2). Mathematical explanation for the hypothesis is:

(Model 1) $FP = \beta_0 + \beta_1 AGE + \beta_2 SIZE + \beta_3 IND + \beta_4 REPT$

(Model 2) = (Model 1) + $\beta_5 BPROC$

FP = Firm performance, including sales turnover, market share, and profitability

β_0 = Constant

AGE = Firm age

SIZE = Firm size

IND = Industry structure factors

REPT = Reputational resources

BPROC = Business processes

Model 1 shows the separate effects of control variables (age, size and industry factors) along with the reputational resources (REPT) and their explanatory power in firm performance (see table 1). Namely, without other variables, age, size, industry factors and REPT explained 16.5% [(R^2 = .165); (F = 1.987, p<0.01)] of sales turnover, 12.3% [(R^2 = .123); (F = 1.632, p<0.001)] of market share, and 21.6% [(R^2 = .216); (F = 3.864, p<0.01)] of profitability. Having entered the business processes variable (BPROC) to model 2, the variations in market share, and profitability increased to 17.7% [(R^2 = .177); (F = 3.028, p<0.05)], and 31.9% [(R^2 = .319); (F = 5.752, p<0.001)], respectively. Therefore, entrance of the BPROC variable provided an additional and significant explanation power 5.4% (ΔR^2 = .054) for market share, and 10.3% (ΔR^2 = .103) for profitability in model 2. However, entrance of the BPROC variable yielded a tiny and insignificant (ΔR^2 = .004) increase in sales turnover. Given the analysis results, whilst business processes provided greater contributions to the profitability and market share figures compared to reputational resources, no significant and greater contribution was found on the sales turnover figures. Thus, Hypothesis 1 (H_1) is only partially supported

Table 1. Inter-correlation Matrix

	Variables	Mean	SD	1	2	3	4	5	6	VIF
1.	Firm size	361.42	355.17	1.00						1.459
2.	Firm age	25.62	21.89	.07	1.00					1.623
3.	Industry structure forces	3.56	1.13	-.02	.04	1.00				1.994
4.	Reputational resources	3.98	.76	.15***	.14*	-.06	1.00			1.761
5.	Business processes	4.47	.63	.12**	.05	.08	.25*	1.00		1.576
6.	Firm performance	3.72	.65	.09	.11**	.03	.26**	.38*	1.00	2.284

*$p<0.05$; **$p<0.01$; *** $p<0.001$

V. CONCLUSION

The findings of this study emphasise the vital role of business processes on the way of increasing financial performance within the context of dynamic Turkish business environment. However, the insignificant effect on sales turnover figures may be evaluated that business processes can contribute to financial performance through creating business effectiveness, and efficiency in production and operation functions of the firms. So, the effect may occur in the form of decreasing costs of manufacturing, delivery, and logistics. The effect of reputational resources on the way of increasing turnover was evident in the research. It is certainly true to say that Turkish consumers enjoy western-oriented richer consumption experiences and higher levels of convenience than most of the developed country consumers would aspire to [40]. Western and other global brands (including famous Turkish brands) are highly esteemed in the country. Hence, whilst Turkish firms should execute effective strategies and make necessary investments to create unique global brands, foreign firms that operate in Turkey should manipulate adequate marketing mixes which highlight western orientation of the product and deliver "good enough" quality at a lower price compared to developed economies. Besides, given the effects of reputational assets on performance, management should consider crafting, nurturing, and leveraging a positive corporate image and reputation as well as creating unique brands to achieve a high level of customer loyalty. Consequently, although allocation

of resources in favour of business process development such as strengthening IT infrastructure, SCM and logistics systems should be a concern for managers and priority should be given to the business processes, importance of reputational resources should not be omitted to stimulate the sales turnover figures of the firms.

	Sales turnover		Market share		Profitability	
Variables	β	*t*	β	*t*	β	*t*
Constant	–	5.104**	–	4.963***	–	6.757*
AGE	.021	.298	-.059	-.271	-.053	-.267
SIZE	.006	.643	.038	.732	-.036	-.712
IND	.063	1.101***	.148	1.549**	-.022	-1.668
REPT	.298	2.099*	.112	1.306**	.315	2.629**
BPROC	.203	1.086*	.184	1.997*	.549	3.998*
Model 1 (w/out BPROC)						
R^2	.165		.123		.216	
F	1.987**		1.632***		3.864**	
Model 2 (with BPROC)						
R^2	.169		.177		.319	
ΔR^2 (Change in R^2)	.004		.054		.103	
F	1.633		3.028*		5.752***	

*$p<0.05$; **$p<0.01$; ***$p<0.001$

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