Identifying Investment Opportunities:
A Business Model Performance Approach

Ebrahim Mahmoudzadeh[1] and Aghileh Mahmoudzadeh[2]

[1]Associate Professor, Department of Management and Soft Technologies, Maleke-Ashtar University, Tehran, Iran.
[2]Department of Management and Soft Technologies, Maleke-Ashtar University, Tehran, Iran.

ABSTRACT

In order to achieve the maximum productivity in a competitive business arena, organizations have to improve their performance in spite of potential limitations caused by the firm and industry's characteristics. Such progress will be possible only by choosing a proper business model, which can help managers in making appropriate decisions through systematic analysis of the company's status. The successful model creates more value for customers and finally, brings more profit to the company.

Despite the importance of the mentioned issue and frequent utilization of the concept of a business model in academic and administrative environments, this concept has been rarely studied in Iran. Based on the statements of one hundred top Iranian companies, the present study examines successful business models from shareholder's perspective. The results show that business models like manufacturers and distributors are the most common seen models in Iran. The results also show that compare to industry classifications, business models are better predictors of financial performance. In addition we find that some business models perform better than others. In particular a business model based on intangible assets in general, and manufacturers and distributors and Financial Landlord, in atomic view, have the greatest impact on the company's performance and hence achieving an appropriate competitive position.

KEYWORDS: Business Model, Financial Performance, Investment Opportunity, Regression Equation.

INTRODUCTION

Every firm starts its activities by choosing a business model. Firm's administration is always related to the concept of a business model either implicitly or explicitly. The model describes the rationale of how firms create, earn and deliver the value to customers [1]. Although implicate and explicit use of a business model at the proper time increases the productivity of companies, incorrect application and neglecting interconnected components of business model causes significant losses, even up exiting from the market. Since business model is a new concept in the management literature, there is no general agreement on its definition [2]. However, despite the observed differences, some of the roots and backgrounds are common in all definitions, which can be summarized in following four dimensions: 1) a business model is defined as a unit of analysis at the level of product, company, industry and network with cross-organization borders 2) a business model emphasizes on systemic level and holistic approach in explaining how companies do business, 3) major roles of the company and its partners' activities create the concept of a business model and 4) a business model expresses the logic of creating and capturing value [2].

In business models value creation is achieved through productivity, innovation and collaboration which are all resulting from the theory of resources and creating dependency through strategic networks which ultimately leads to the creation of wealth in the firm. [3] For the purpose of earning the market value, a business model sometimes goes beyond the bounds of the company and the industry. In other words, a business model does a systemic description including related activities, which function through the firm, partners and communication mechanisms [2].

Therefore, choosing a business model with an appropriate combination and at the right time, not only affects the performance of the firm, but also systematically influences the enactment of partners, suppliers and customers [4]. Based on studies which examine the impact of business model on companies' performance, there exists a positive impact. The coverage of firms varies among different studies, from firm level [5] to groups of similar firms with common characteristics [6]; from selected industries to national level. The most important of which is a study by Weill and Malone (2011) on all US companies in five consecutive years [7].

The current study is an attempt to examine the impact of business models on financial performance of Iranian companies; hence it provides an overall view of general Iranian business models. Additionally, based on investors' desired indicators, through analyzing the performance of top one hundred Iranian companies, this paper identifies the successful business models in achieving suitable investment opportunities.

MATERIALS AND METHODS

A business model as a new concept in management is used in the literature since the early 1990s and with the advent of internet, to describe and explain captured value in organizations based on a simple framework. Over the past two

Corresponding author: Aghileh Mahmoudzadeh, Department of Management and Soft Technologies, Maleke-Ashtar University, Tehran, Iran. ag.mahmoudzadeh@gmail.com

decades, the popularity of business model increased in academic and administrative places. The number of studies in this field grow and the 'business model' term enters to managers', entrepreneurs' and business professionals' everyday literature.

Studies related to business models usually take place in one of the following categories: definitions [8,9], components [10,11,12,13], taxonomies[14,15,16], design methods and tools [17],change methodologies [11] and evaluation models [18]. The latter, which is among the most recent areas of research, identifies the criteria to evaluate the feasibility and profitability of business models, or evaluates a business model against other models and successful patterns. Regarding to the literature, the evaluation criteria depends on the purpose of investigation. Based on the Hamel model, four main objectives of evaluation include efficiency (efficiency in providing benefit to the customer), uniqueness (the novelty of the premise of the company's existence), fit (coordination between the components of the business concept) and profit boosters [12]. We investigate and compare some well-known evaluation models in the following section.

Sharma et al.'s model presented their performance evaluation model in 2010 which was based on investigating four international companies in the field of information technology from 2008 to 2009. Success factors in their study include consumer empowerment, the proposed value, organizational model, the proposed service, ROI management, collaboration, dynamic responding to the market trend, and scalability [5]. Another study has been presented in this area by Gordijn and Ackermann (2001) in which they assessed economic feasibility based on earning value of objectives for the involved players through designing scenarios for analyzing sensitivity. In their point of view, evaluating a business model means that all players can create value or increase their economic utility. This approach creates profit based on the level of activity or player [19].

One of the most comprehensive researches on innovation and profit issues has been conducted by Amit and Zott (2001), where they examined the effect of business models on the performance. In this study which was carried out on 60 US companies, factors such as market value, innovation and effectiveness on performance assessment were investigated [20]. Then, in 2006, by examining the relationship between firms' product market strategy and their business model choices found that combining business model based on innovation and product market strategies regarding to differentiation, cost leadership and early market entry, enhances performance. [21] Another study was conducted by Zott and Amit (2007) in the field of designing and performance of a business model indicated that both the effectiveness and innovation aspects of business models affect the performance [6].

Evaluation can be done with respect to profitability, as mentioned by Afuah and Tucci (2000) [22]. They explained three levels of performance evaluation, including measures of profitability, revenue anticipation and characteristics of components of business model. Weill and Vitale (2001) investigated the key factors affecting the profitability and sustainability of e-business models, which includes factors of ownership, company's access to key information, and finally, the conflict caused by the combination of different models [16].

Finally, one of the most comprehensive studies on a business model and its effect on the performance is conducted by Weill et al. at MIT University. This study which has been conducted in 2004, 2006 and later in 2011 [23] [24] [7] at the beginning considered 1000 American companies in a fiscal year as the target population. Later on, with expanding the target population to the entire US companies during 1998-2002, authors presented a more comprehensive model. The steps of this research contain: selection of some companies as the sample, classification of their business models, and analysis of financial performance. Based on the results of this study, the business models affect performance positively. Though the performance of none of the business models is absolutely dominant, some business models are better than others in specific areas.

Researchers in the past two decades have offered various business models with respect to details. Osterwalder et al. proposed a famous model to categorize fields of research on business models into three [17]: 1) The studies that describe the concept of business model as a universal abstract concept which is capable of describing all the real world businesses. 2) The researches that classified number of various business models' with common features in a group. 3) The studies that investigate a particular business model which is in practice in the real world. Looking at these categories with a comprehensive view, the authors do not advocate any one of these three categories because they are not mutually exclusive and they all make sense and described the concept of business model with a distinct approach.

Regarding to not being able to use global business models, we used the atomic model of MIT to evaluate the performance of the business models of Iranian companies. Moreover, models which describe and assess a business model of a particular case cannot be influential. Therefore, we attempt to use some approaches that describe different business aspects, according to which businesses with common features are placed in one group, and groups are assessed. Models with such features only include Amit and Zott's model and the atomic model. Scott's opinions were put to use for comparing the proposed models. According to influential factors with regard to aspects of intuition, integrity and exclusivity, structural reliability, and elegance of concept, since the MIT model classified the business models in a simple matrix, and has a greater integrity and exclusivity, this model was selected as the base model for the research.

This study seeks to evaluate the performance of the business model in the top one hundred Iranian companies in 2010. After identifying the distribution of business models, the impact of the business model on shareholders' rights is investigated using the official statistics and data taken from the website of Tehran Securities Exchange company, the website of Stock Exchange Organization, and corporate documents of Industrial Management Institute with regard to the top one hundred Iranian companies. The following outlines the basic model of the research.

Table 1-The Sixteen Detailed Business Model

Business Model Types		Asset Types			
		Financial	**Physical**	**Intangible**	**Human**
Asset Right	Creator	Entrepreneur	Manufacturer	Inventor	~~Human Creator*~~
	Distributor	Financial Trader	Wholesaler/ Retailer	IP Trader	~~Human Distributor*~~
	Landlord	Financial Landlord	Physical Landlord	Intellectual Landlord	Contractor**
	Broker	Financial Broker	Physical Broker	IP Broker	HR Broker**

Ref: [7]
* Illegal in Iran and most places today because they involve selling human beings.
** Human means human capital (based on the amount of time the service requires).

The basis of this research follows that of the MIT's atomic business model which was introduced by Malone and Weill on US companies. According to this model, business models have two fundamental dimensions. The preliminary dimension – type of right being sold – creates four basic business models: manufacturer, supplier, land lord, and agent. The second dimension – the type of assets that is included – has recognized four main types of assets among this: financial, physical, intangible, and human. Such a definition led to four subcategories in each of the four basic business models, the result of which is sixteen business models. The archetypes is shown in Table1.

This study, at the stage of identifying the ontology of business models, attempts to categorize business models based on their revenue sectors. Since many companies have more than one business model (a company having multiple revenue stream, does not necessarily mean having multiple business models), by using the amount of revenue (Rial) from the sectors of the company, the business model was classified separately for revenue streams that the company had stated. These amounts are expressed in the report to the board of directors, the report of profits and losses of the companies and written description of the revenue sectors taken from official statistics from the Tehran Securities Exchange Technology Management company, and corporate documents of Industrial Management Institute with regard to the top one hundred Iranian companies. In each case of the study, the written description of the revenue sectors was investigated, and the revenue was classified using the definitions of business models mentioned above.

In order to design the model, it was attempted to identify set of factors affecting the performance, and to present them in the form of a conceptual model. Accordingly, the firm's performance, is defined as a dependent variable as follows,

$$P = \alpha + \beta_1(bm_1) + \beta_2(bm_2) + \ldots + \beta_{n-1}(bm_{n-1}) + \gamma_2\ln(E) + \delta_1 I_1 + \delta_2 I_2 + \ldots + \delta_{11} I_{11} + \varepsilon . \qquad (1)$$

In this model, the performance is shown by P and is also taken as the dependent variable of the study. Parameter α is constant and β_i is coefficient. The explanatory variables bm_i stands for the percentage of total firm revenue attributable to business model i and ε is the normally distributed error term. Two variables of industry and firm have been considered as control variables. E is the number of employees in the firm, and I_i is 1 if the firm is classified in industry group i and 0 otherwise.

One hundred top Iranian companies chosen by Industrial Management Institute in 2010 can be classified in 11 general categories(according to IMI classification), the largest number of which is related to banks and credit institutions .Table 2 provides an image of the combination of the observed companies according to the industries that they work in.

Table 2- combination of companies according to industry.

Industry	Banks and financial institutions	Investment companies	Vehicles and automobile parts	Petrochemical	Oil products	Commercial and Industrial services	insurance institute	Telecommunications	Construction companies	Basic metals	Pharmaceutical products	Exploration, mining	Transportation	Machinery, equipment and metal industry	Food & Beverage	others
share of sale	7	4	4	2												
share of number	4.1	1.7	0.9	.2	.4	.7		.3	.6	.6	.8	.8	.2	.7	.3	.6

Comparison of the share of industries from the number of observation and volume of revenue indicates a mismatch in different industries. The share of banks and credit institutions industry, vehicles and cars industry, oil products industry, telecommunications industry, as well as basic metals industry from the total sales of the top one hundred companies is less than their share from the number; thus, it seems that the average of the observed companies in these industries has been smaller than the average of other companies.

This study deals with two general issues in the classification. First, it should interpret the qualitative and written descriptions of each company in relation to the different business sectors which in some cases could be a personal and subjective judgment. In addition, when the written description is indicative of multiple business models which are specified in a revenue stream, the revenue should be allocated to the mentioned business models in an appropriate manner. For this purpose, firstly, all detailed information are specified for creating a revenue stream, and in the absence of sufficient information, personal judgment was used for the allocation of a revenue among the models. The revenue is attempted to be uniformly distributed in all models which are applied in that section, or if one of the models is much more important than others according to the written description, all the revenue is allocated to that sector. After this stage, with the help of distribution of business models of the top one hundred Iranian companies, and by using multiple regression models, the mentioned assumptions were estimated.

RESULTS

To identify the distribution of business models of the top one hundred Iranian companies, revenue streams of each company are identified and divided into one or several business models based on the definition of business models of each revenue stream. The dominated business model, with the highest share of total, is physical asset creator that has also allocated the highest number of companies to itself. However, such a correlation is not maintained when using other classification models.

Table3-Business models based on detailed comparison of the distribution of income and the number of companies (in percent)

business model Archetype			asset types				Total
			Financial	Physical	Intangible	Human	
asset right	Creator	Number of firms	2	47	2		51
		the share of total	1	25	1		27
	Distributor	Number of firms	33	11	15		59
		the share of total	17	6	8		30
	Land lord	Number of firms	24	21	5	29	79
		the share of total	13	11	3	15	42
Total		Number of firms	59	79	22	29	189
		the share of total	31	42	13	15	100

Investigating the performance of business models of Iranian companies is done using multiple regression models, and analyzing the relationship between independent and dependent variables by controlling the effects of other variables. Therefore, it can be investigated whether a significant statistical relationship can be seen between performance indicators and business models by controlling the effect of size, demand and industry. Moreover, if such a relationship is accepted, how severe it is. To this end, we have used two categories. In the models of the first category, the only explanatory variables of the logarithm are the number of employees and dummy variables of industry. This category of regressions are performed with the aim of becoming the basis for comparison in order to determine to what extent the explanatory capability of the dependent variable is increased by adding the related variables.

In the other category of regression equations, business models are also entered into the model as the explanatory variable. Thus, at the beginning, statistical validity of the performed regressions and the conclusions made on their basis, establishment of relevant assumptions (normality of the dependent variable, absence of outliers, existence of a linear relationship, variance heteroscedasticity, lack of co-linearity, and absence of residual autocorrelation) were ensured using appropriate statistical tests and diagrams. Then, through comparison of the two categories of regression equations and based on the performed analyses, it was revealed that applying the business model causes an increase in explanatory power of the performance. Summary of the results obtained from these analyses are shown below:

Table 4- Impact of business model on the explanatory models

Coefficient of Determination	Without Business Model	Atomic Business Model
Sale Growth	0. 24	0. 31
ROS	0. 28	0. 38
ROA	0. 28	0. 36

Table 4 shows that the coefficient rate of determination in cases where a business model is applied, has increased in all cases. Therefore, it can be generally stated that applying a business model increases the explanatory power of the performance.

As mentioned at the beginning, three factors of firm, industry and business model influence the performance. In this model, the number of employees was used as an indicator of the firm size and the industry classification was used as an indicator of the industry. The business model was also presented as atomic business model in sixteen categories. The results of investigating the performance are given in Table 5.

Table 5-business model impact on performance

	Sale Growth	ROS	ROA
physical asset creator (Manufacturer)	52.868** (2.238)	26.461** (2.286)	20.831*** (2.840)
financial asset distributor (Financial Trader)	56.588* (1.965)	25.312* (1.777)	15.038 (1.652)
physical asset distributor (Wholesaler/ Retailer)	38.009 (1.371)	13.896 (1.019)	15.717* (1.799)
intangible asset distributor (IP Trader)	636.559 (1.347)	55.618 (0.245)	9.591 (0.066)
Financial asset Landlord (Financial Landlord)	89.851** (2.170)	13.909 (0.858)	7.049 (0.670)
physical asset Landlord (Physical Landlord)	14.690 (0.404)	-6.692 (-0.377)	0.411 (0.036)
intangible asset Landlord (Intellectual Landlord)	-20.061 (-0.342)	10.285 (0.470)	10.573 (0.740)
human resource Landlord (Contractor)	-40.495 (-0.966)	9.123 (0.576)	13.897 (1.346)

As can be seen, IP trader and financial land lord in sales growth, manufacturer and financial trader in return on sales and manufacturer and retailer in return on assets have the greatest impact on performance in compare to other coefficients. For more explanation consider number 26.461 in first raw, 26.461 means that for every 1 percent increase in revenue of physical asset producer, 26.461% is added to the company's return on sales.

DISCUSSION

This article investigated the business models using financial ratios of the ability to earn adequate profit and return on investment. The difference in the distribution of business models in Iran and their performance creates investment opportunities in sectors models that despite their better performance, are still not considered, and are not yet among the business models with the highest number of companies. The results show that in the top Iranian companies, the business models are positively correlation with the financial performance assessment indicators of companies. Although, no model has the absolute dominance in all performance matrixes, some partial deduction can be made. For example, in investigating the effect of atomic business model, the models related to manufacturer, financial land lord, and distributor have a positive impact on the performance. In addition, regarding the business model based on the type of asset, intangible asset outperformed the other types of assets. Thus, the business model based on the delegated right cannot be commented on. Also, based on the obtained results, the companies in the telecommunications industry, investment firms, financial intermediaries, and basic metals, significantly outperform other industries. However, through applying the business models to the case, the effect is somewhat reduced. Possible explanation can be considered regarding the relatively low amount of data which in itself causes the limited number of companies in each category, either in classification of industry or in classification of business models.

According to the results and due to the fact that the return on assets (ROA) shows management efficiency in the use of resources to obtain benefit, it is possible for the manufacturing companies with combined business models to increase the contribution of production and distribution of physical assets through obtaining distribution system and changing the composition of models and to improve the performance. From the perspective of return on sales (ROS), the business models of financial trader and manufacturer have the largest role in improving the performance which can be evaluated in different ways. The better performance of these models can be due to the effects of pricing and combining the total cost

and efficiency of production in relation to the business models of the physical assets. Regarding the distribution of financial assets, it shows the high profitability of the revenues from this model. However, the results of the study are indicative of an inverse relationship between the number of employees and performance. These changes should be accompanied with workforce adjustment, to the extent deemed possible.

Finally, it should be mentioned that despite the applicability and the importance of ROE index and the indicators of market value, calculating the ratios of the market value was not possible for them because some of the companies surveyed have not been yet registered in the Tehran Stock Exchange. In addition, due to limited access to information, assessing the ROE index was not possible. Hence, only limited financial factors are researched in this study. However, through overcoming this limitation, the effect of combined business models can be investigated and the results with greater transparency would be achieved. Furthermore, with an increase in the number of research variables and the spatial and temporal range of the study, a detailed description of the performance of business models and investment opportunities can be obtained.

Conclusions

Adopted from atomic ontology of business model done by MIT Sloan, we have suggested a new approach for investment evaluation. This framework helps stakeholders and investors to find unheeded opportunities to invest and help managers to change their business model portfolio to gain better results and make their companies more profitable. In this paper, we have classified the 100 top Iranian companies and showed that some business models are more common than the others. In the next step, using regression equations, a positive impact of business model on performance was confirmed, which signifies a more improved performance of the corresponding business models compared to the others.

It should be noted that by being merely informed about successful business models, one cannot lead the firm to success. Hence, senior managers of a firm should consider the current business model and its changes over recent years to determine the investment opportunities. They should alter the business model to a value-creating model through comparing the current business model with ones showing success, particularly in comparison with competitors. The most important point is enabling the firm to change its business model and to employ useful strategic experiences of the past.

We believe that the field is young and has a significant potential for future impact. It is necessary to pave the way for more cumulative research on business models performance and its impact on investment opportunities.

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