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Business Model Innovation in the Digital Era: An IT Sector Perspective

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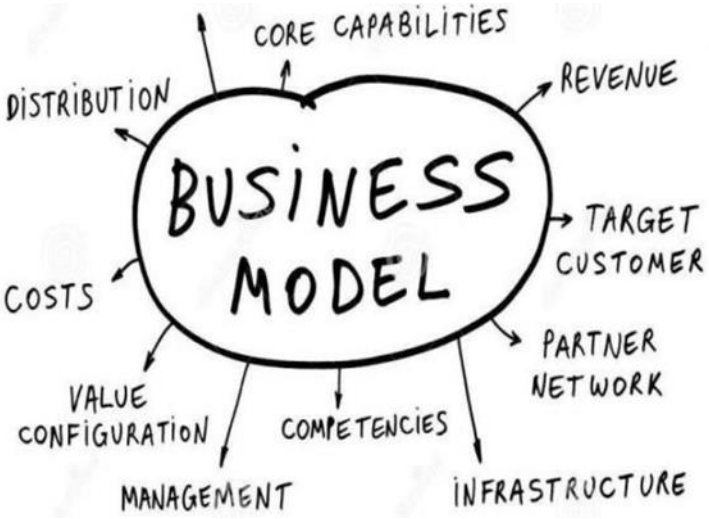
ABSTRACT

Over the past decade, practitioners and researchers gave few attention to business model innovation (BMI). An actual business model (BM) gives the platform which clearly recognize the commercial enterprise principles like: how the revenue and costs estimates, how to create competitive business, what sort of troubles solving for whom, who are the first-class provider and clients, and the way the customer value could be produced. BMI is in particular readdress the prevailing BM and its recognition at the need of businesses patron, with this new fee proposition it offers betterment of employer technique, resources and profit formulation. Most of the authors display the commercial enterprise fashions and describe business model innovation in one-of-a-kind approaches. In crux, the primary objective is to analyze the business version innovation in Changing Environment of Businesses (Small medium Enterprises (SMEs) of Information Technology (IT) Sector) in Pakistan. Questionnaire revolved around outside and inner antecedents of BMI, novelty and scope of BMI and results of BMI.

Introduction

The design of BM influences the business activities in organization sector. Zott(2011) stated that, BM was of major concern in electronic commerce, strategy and technology management, and George and Bock, 2011 claimed; BM is also used in different theories, and also the advancement of the Business Model term itself (Wirtz et al., 2016). According to Teece, (2010) BM has also been explained as the value creation, capture mechanism, management, value configuration, competencies, partner network and delivery models by designing or by architecture the models.



Business model

Problem statement

The terms Business model (BM) and Business model innovation (BMI) examined below because, after a few years of research in educational and commercial enterprise control, they have produced a number of theories that can be applied effectively to improve overall performance.

Despite that, some researchers do not longer consider the entire business models, about the existence and the truly use of the time period of BM (Zott et al. 2010). Based on the earlier revelation, on BM and BMI was compared to the strategic difficulties that today's SMEs face. It also identifies the BMI determinants that need to be arranged, chosen, modified, combined, or used in conjunction with the current BMI in order to achieve a successful BMI. In addition, multiple levels can be consider in order to understand higher and answer the main research questions, such as whether managers have standardised organisations, whether enterprises have information about BM and BMI, whether the ideas are important in their strategic processes and discussions regarding the extent to which BMI is popular or not, and whether the current role of antecedents and effects of BMI is effected by the groups or not.

Objective of the Study

The goals and objectives can be summarizing in the following way.

- To develop understanding of business model (BM) and business model innovation (BMI) concepts.
- To understand how mangers structure their strategic process by acknowledging model (BM) and business model innovation (BMI).
- To understand the current challenges for small medium enterprise (SMEs) in their strategic work in order to identify the role of business model innovation (BMI) in external and internal antecedents and outcomes of business.

Significance of the study

The study could provide information on the issues of business model innovation (BMI) existence in order to develop better business model (BM) in the research area and change the way of people to do their jobs in technology sector. Information technology (IT) companies will benefit from the

study's findings as business model innovation (BMI) antecedents and outcomes are essential for modern business models.

The greater use of technology, network position, change in competition, change in strategies, dynamic capabilities justifies the need for more effective business model innovation. Thus, businesses that apply the suggested approach derived from the study results will be able to operate their businesses effectively. The study will help to uncover critical areas in the business model innovation (BMI) process that many researchers were not work yet to explore. To the future researchers, this study can provide the way of further research on Moderators of BMI i.e. macro-level, firm-level and micro-level.

Literature Review

This study is structured in a manner that allows a successive reading experience to the viewer. The design of the literature review can be described as external and internal business environment. Business environment includes internal and external factors i.e. employees, customer, management, supply, demand and business regulations. All these factors effect on business operations. As external environment is always changing, some changes are easily identified because of their impressiveness and some are disregard for a long time. Changes create new challenges for the business for example variations in customer demand, modern technology, modern and emerging skills of employees, additional rules and regulations, up-to-date supply chain management (SCM), all challenges encouraging the businesses to choose an appropriate new product and take advantage of new technologies towards doing things in low cost and in short time as well as in accurate way. The most important role in changing external business environment is competitor, who may capture target market by hiring new skilled workers for producing better products by which they compete with other businesses (businesscasestudies.co).

Information technology (IT) environment involves trends and process. Business trends and process have been modified in well-organized manner. Technology cut the borders allowing businesses to communicate and deals beyond borders. Information is easily accessible at anywhere and anytime with the help of cloud computing storing system rather than PCs. The internet helps businesses to work like a unified organization by creating geographically apart teams. It also helps businesses for reducing costs, better client interaction, flexibility, increased productivity in more efficient way. Software like Webex, Instagram, twitter, facebook, video conferencing servers are widely used globally. Adopting new The concept of BM and BMI come across great attention in business field. The BM previous report focused mostly on business strategies, technology, and electronic commerce. Additionally, BM is employed in several theories and the development of the BM term itself (Zott et al., 2011). Many writers highlighted the BM as the value creation, capture mechanisms and delivery models by designing or by architecture the models (Teece, 2010). According to Wirtz et al.,(2016) the original definitions are related to operating tasks for organizational system models in the state of IT. On the other side, the term ‘business model’ has gained important use in the practice community, the scholastic literature on BM is mystified by inconsistent definitions and constructs boundaries (George and Bock, 2011).

Ricart (2013) and Zott et al., (2011) suggested that the study of BM have emphasize the utility of the BM construction in research of technology, strategy, and e-commerce. Furthermore, Saebi, Foss and Lien (2016) shows, the importance of BM by using different terminologies and they defines as, the businesses market segments and value proposition and for perceiving the value proposition the design of value chain is needed, the process of value capture that the businesses avails, and how the contact of elements with each other in an architecture. Chesbrough (2010) he

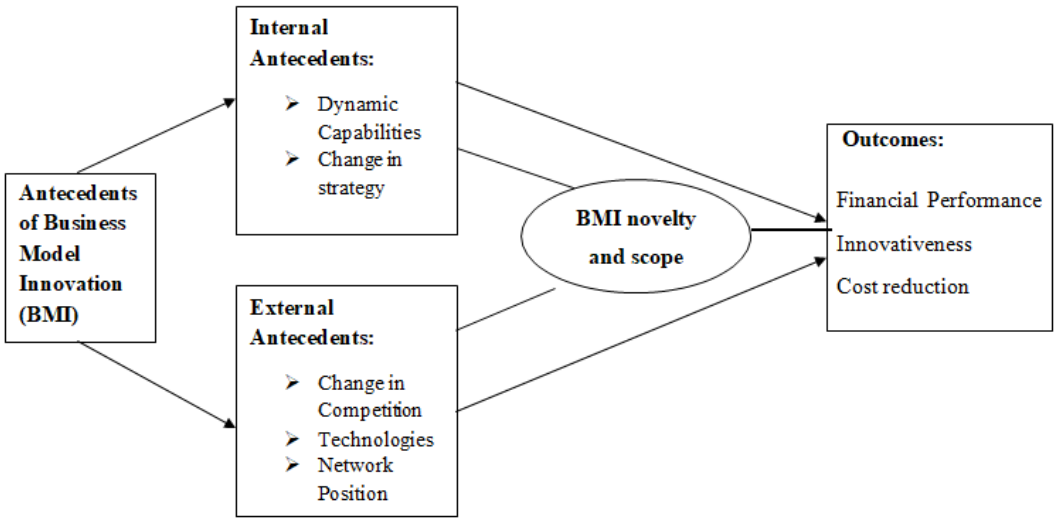
also suggested that a BM fulfils the value concepts, and he also describes the income generation mechanism that clarify the shape of value chain that is need to develop the assets in order to maintain position in the chain; and evaluate the profit, also describes the value of firm with in the value network linking customers or partners. Zott et al., (2011) states that, the revolution in models of businesses changes the services, products, process and firms innovation. BM and BMI are same but, most the researchers recommended that BMI is more important than BM. BMI should to be cleared and approach able on its own.

For better understanding the researchers simplify the organization framework by the help of antecedents, moderating and mediating influences of business model (J.Foss and Saebi., 2016). The advancement of BM literature has been divided widely categorized into three streams of research Firstly, BM sort out the problems for business classification: by the start of 21st century, e-businesses emerged (Amit and Zott, 2001; Margretta, 2002). Secondly, the BM are served as a most precious factor for contributing to businesses performance (Zott and Amit, 2010). Third is perceived as a future innovation unit (Zott et al., 2011).

Theoretical Framework and Hypothesis

The idea of BM is few decades old. It was only in the mid-1990s that entrepreneurship and strategy scholars construct as a firm's key business process and how they are linked (Zott et al., 2011). Spieth, 2014 presented the notion of BM and recently, BMI have become dominant in macro management research. According to literature review and finding gaps in BMI research, current study will high light to address the gaps as explained in model.

Figure



On the basis of research model for BMI research easily detect that how many the antecedents and outcomes are used by the SMEs and how much is the role of mediator i.e. novelty and scope in business process.

H_1: External antecedents is negatively associated with Financial Performance

H_2: External antecedents are positively associated with Innovativeness.

H_3: External relationship are positively relate with cost reduction

H_4: Internal relationship are positively relate with Financial Performance

H_5: Internal relationship are positively relate with Innovativeness

H_6: Internal relationship are positively relate with cost reduction.

H_7: BMI novelty and scope mediates the relationship between external antecedents and financial performance.

H_8: BMI novelty and scope mediates the relationship between external antecedents and Innovativeness.

H_9: BMI novelty and scope mediates the relationship between external antecedents and cost

H_{10}: BMI novelty and scope mediates the relationship between internal antecedents and financial performance.

H_{11}: BMI novelty and scope mediates the relationship between internal antecedents and innovativeness.

H_{12}: BMI novelty and scope mediates the relationship between internal antecedents and cost reduction

Data and Methodology

In this study, primary data will be collected through survey method. The independent external and internal variables are change in competition, technologies, network position, dynamic capabilities, change in strategy and mediating variable are BMI Novelty and Scope and the dependent variable are financial performance, Innovativeness and Cost reduction of IT sector.

Sampling Techniques and Sample Size

In this study questionnaire will be used to collect the data. The population of research is small medium enterprises (SMEs) of information technology (IT) sector from where 100 units will be selected; one IT organization is a single sample. We use SPSS test software for data analysis.

Variable Description

List of Variables

Variables	Scale	Items	Author's
Independent variables (Antecedent's)			
Changes in competition	Questionnaire(Likert scale)	7	(Bodell, 2014)
Changes in Technologies	Questionnaire(Nominal and Likert scale)	28	Sher, P. J., & Lee, V. C. (2004).
Changes network in position	Questionnaire(Likert scale)	2	Suh, Ayoung, Kyung-shik Shin, and Manju Ahuja -2011
Changes in dynamic Capabilities	Questionnaire(Likert scale)	10	Sher, P. J., & Lee, V. C. (2004).
Changes in strategy	Questionnaire(Nominal measures)	8	Segars, Albert H., and Varun Grover (1998)

Mediating variables (BMI)			
Novelty and Scope	Questionnaire(Likert scale)	25	Amit, (2003)
Dependent Variable (Outcomes)			
Financial performance	Questionnaire(Nominal measure)	6	Chan, Yolande E., Sid L. Huff, and Donald W. Barclay (1997)
Innovativeness	Questionnaire(Nominal measure)	3	Hurley, R.F., and T.M. Hult (1998)
Cost reduction	Questionnaire (Nominal measure)	2	Ghosh, Mrinal, and George John (2005)

Results and Discussions

H1: External relationship with Financial Performance

Correlations	FinPerf	Technolgy1	ChngCom	NetPositn
FinPerf	1	0.835	0.892	0.905
Technolgy1	0.835	1	0.974	0.972
ChngCom	0.892	0.974	1	0.977
NetPositn	0.905	0.972	0.977	1

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change Statistics				
					R^2	F Change	df1	df2	Sig.
1	.937[a]	.878	.875	.09729	.878	231.054	3	96	.000

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	6.561	3	2.187	231.054	.000[b]
1	Residual	0.909	96	0.009		
	Total	7.47	99			

H2: External relationship with Innovativeness

	Innovativeness	Technolgy	ChngCom	NetPositn
Innovativeness	1	0.757	0.795	0.811
Technolgy1	0.757	1	0.974	0.972
ChngCom	0.795	0.974	1	0.977
NetPositn	0.811	0.972	0.977	1

Model	R	R Square	Adjusted R2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.826[a]	.682	.672	.15848	.682	68.611	3	96	.000

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	5.17	3	1.723	68.611	.000[b]
1	Residual	2.411	96	0.025		
	Total	7.581	99			

H3: External relationship with cost reduction

	cstRed	Technology1	ChngCom	NetPositn
cstRed	1	0.758	0.83	0.788
Technology1	0.758	1	0.974	0.972
ChngCom	0.83	0.974	1	0.977
NetPositn	0.788	0.972	0.977	1

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Change Statistics				
					R^2	F	df1	df2	Sig.F
1	.860[a]	.740	.732	.12872	.740	91.27	3	96	.000

Model		Sum of square	Df	Mean Square	F	Sig.
	Regression	4.537	3	1.512	91.273	.000[b]
1	Residual	1.591	96	0.017		
	Total	6.127	99			

H4: Internal relationship with financial performance

	FinPerf	DaynamicCa	ChangeinStrateg y
FinPerf	1	0.878	0.894
DaynamicCap	0.878	1	0.684
ChangeinStrateg y	0.894	0.684	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.965[a]	.932	.931	.07230	.932	665.97	2	97	.000

Model		Sum of square	Df	Mean Square	F	Sig.
	Regression	6.963	2	3.481	665.977	.000[b]
1	Residual	0.507	97	0.005		
	Total	7.47	99			

H5: Internal relationship with innovativeness

	Innovativeness	DaynamicCap	ChangeinStrategy
Innovativeness	1	0.797	0.848
DaynamicCap	0.797	1	0.684
ChangeinStrategy	0.848	0.684	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.898[a]	.807	.803	.12273	.807	203.1	2	97	.000

Model		Sum of square	Df	Mean Square	F	Sig.
	Regression	6.119	2	3.06	203.12	.000[b]
1	Residual	1.461	97	0.015		
	Total	7.581	99			

H6: Internal relationship with cost reduction

	cstRed	DaynamicCap	ChangeinStRategy
cstRed	1	0.779	0.612
DaynamiCap	0.779	1	0.684
ChangeinStRategy	0.612	0.684	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.787a	.619	.611	.15521	.619	78.68	.787a	.619	.611

Model		Sum of square	Df	Mean Square	F	Sig.
	Regression	3.791	2	1.895	78.684	.000[b]
1	Residual	2.337	97	0.024		
	Total	6.127	99			

H7: External and Financial Performance effects on BMI novelty and scope

	BMINoveltyScope	ChngCom	Technolgy1	NetPositn	FinPerf
BMINoveltyScope	1				
ChngCom	0.977	1			
Technolgy1	0.941	0.974	1		
NetPositn	0.977	0.977	0.972	1	
FinPerf	0.944	0.892	0.835	0.905	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F

1	.992[a]	0.984	0.984	0.14574	0.984	1502.7	4	95	.000

Model		Sum of square	Df	Mean Square	F	Sig.
	Regression	127.679	4	31.92	1502.74	.000[b]
1	Residual	2.018	95	0.021		
	Total	129.697	99			

H8: External and Innovativeness effects on BMI novelty and scope

	BMINoveltyScope	ChngCom	Technolgy1	NetPositn	Innovativeness
BMINoveltyScope	1				
ChngCom	0.977	1			
Technolgy1	0.941	0.974	1		
NetPositn	0.977	0.977	0.972	1	
Innovativeness	0.83	0.795	0.757	0.811	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.989[a]	0.978	0.977	0.17466	0.978	1039.1	4	95	.000

Model		Sum of square	Df	Mean Square	F	Sig.
1	Regression	126.799	4	31.7	1039.13	.000[b]
	Residual	2.898	95	0.031		
	Total	129.697	99			

H9: External and cost reduction effects on BMI novelty and scope

	BMINoveltyScope	ChngCom	Technolgy1	NetPositn	cstRed
BMINoveltyScope	1	0.977	0.941	0.977	0.827
ChngCom	0.977	1	0.974	0.977	0.83
Technolgy1	0.941	0.974	1	0.972	0.758
NetPositn	0.977	0.977	0.972	1	0.788
cstRed	0.827	0.83	0.758	0.788	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.988[a]	0.977	0.976	0.17893	0.977	989.02	4	95	.000

Model		Sum of square	Df	Mean Square	F	Sig.
1	Regression	126.656	4	31.664	989.02	.000[b]
	Residual	3.041	95	0.032		

	Total	129.697	99			

H10: Internal and Financial Performance effects on BMI novelty and scope

	BMINoveltyScope	Daynamiccap	ChangeinStrategy	FinPerf
BMINoveltyscope	1	0.966	0.772	0.944
Daynamicsap	0.966	1	0.684	0.878
Changeinstrategy	0.772	0.684	1	0.894
FinPerf	0.944	0.878	0.894	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.987[a]	0.97	0.974	0.18498	0.975	1231.4	3	96	.000

Model		Sum of square	Df	Mean Square	F	Sig.
1	Regression	126.412	3	42.137	1231.45	.000[b]
	Residual	3.285	96	0.034		
	Total	129.697	99			

H11: Internal and Innovativeness effects on BMI novelty and scope

	BMINoveltyScope	DaynamicCap	ChangeinStrategy	Innovativeness
BMINoveltyScope	1	0.966	0.772	
DaynamicCap	0.966	1	0.684	
ChangeinStrategy	0.772	0.684	1	
Innovativenes s	0.83	0.797	0.848	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.978[a]	0.957	0.955	0.24197	0.957	706.39	3	96	.000

Model		Sum of square	Df	Mean Square	F	Sig.
1	Regression	124.076	3	41.359	706.39	.000[b]
	Residual	5.621	96	0.059		
	Total	129.697	99			

H12: Internal and cost reduction effects on BMI novelty and scope

	BMINoveltyScope	Daynamiccap	ChangeinStrategy	Cst Red

BMINoveltyScope	1	0.966	0.772	0.827
Daynamic Cap	0.966	1	0.684	0.779
Changeinstrategy	0.772	0.684	1	0.612
Cst Red	0.827	0.779	0.612	1

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2	F	df1	df2	Sig. F
1	.983[a]	0.965	0.964	0.21591	0.965	895.36	3	96	.000

Model		Sum of square	Df	Mean Square	F	Sig.
1	Regression	125.222	3	41.741	895.36	.000[b]
	Residual	4.475	96	0.047		
	Total	129.697	99			

Interpretation of Results of Multiple Linear Regression Analysis Output M-12: (Output Model Summary)

In this part shows that R = 0.983 and the coefficient of determination (R2) of 0.965. This suggests the notion that BMI novelty and scope is influenced by 96.5% by change in strategy, dynamic capabilities and cost reduction, while the rest (100% - 96.5% = 3.5%) is explained by other causes.

(Output ANOVA)

In this part showed a probability level of significance value of 0.000. Therefore the probability (0.000) is much smaller than 0.05, then the multiple regression models can be used to predict the BMI novelty and scope of organization. Or in other words change in strategy, dynamic capabilities and cost reduction simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant change in strategy, dynamic capabilities and cost reduction of 0.000 < 0.05, then the appropriate basis for decision making in the regression analysis concluded that the change in strategy, dynamic capabilities and cost reduction partially significant effect on BMI novelty and scope. Thus, increasing the change in strategy, dynamic capabilities and cost reduction of organization it will also improve BMI novelty and scope..

Conclusion and Policy Recommendation

Innovation in business model is important for IT sector of all small medium enterprises. Because of future distribution to the current business it is very risky to change the BM. The study examines the importance of BMI in SMEs of IT sector and the reasons which drive the businesses to choose BM. Along with this, the role played by BM in IT business is very important for innovation in BM. This study shows the preference of BM in IT sector.

The impact of antecedent is estimated by firstly evaluating questions of questionnaire in the regression and then it's measured with outcomes of the businesses. In order to see the most use of outcomes of business, this variable is categorized into financial performance, innovativeness and cost reduction.

Therefore, it can be concluded that the both external antecedents (technology, change in competition, network position) and internal antecedents (change in strategy and dynamic capabilities) is highly effected to the financial performance of the businesses. Furthermore, the external antecedents (technology and network position except change in competition) and internal antecedents (change in strategy and dynamic capabilities) is also highly effected to the innovativeness of the businesses. More, external antecedents (technology and change in competition except network position) and internal antecedents (dynamic capabilities except change in strategy) is highly effected to the cost reduction of the businesses.

Whereas, financial performance with external antecedents (technology, change in competition, network position) and internal antecedents (dynamic capabilities except change in strategy) is highly affected to the BMI novelty and scope of the businesses. Also, Innovativeness with external antecedents (technology, change in competition, network position) is highly affected to the BMI novelty and scope but innovative with internal antecedents (dynamic capabilities, change in strategy) is unfavorably affected to the BMI novelty and scope of the businesses. At last, Cost Reduction with external antecedents (technology, change in competition, network position) is unfavorably affected to the BMI novelty and scope but cost reduction with internal antecedents (dynamic capabilities, change in strategy) is highly effected to the BMI novelty and scope of the businesses.

Policy Recommendation

Following Policies are designed after findings of the study:

- Organizations should conduct workshops on Business Model Innovation (BMI) to improve financial performance, innovation, and cost reduction.
- Entrepreneurs in Pakistan should prioritize BM antecedents to better compete in the international market.
- IT businesses should develop innovative business models to support small and medium enterprises (SMEs) in adopting them.
- Small and medium businesses should prioritize BM innovation to gain a competitive edge, clarify revenue and cost estimation, and solve key business problems.

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