Business model innovation (BMI) in changing environment of business: A case study of SMEs of information technology sector

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Abstract

Over the past decade, practitioners and researchers attained a lot of attention of business model innovation (BMI). The arising of business model innovation publications has insufficient theoretical support but it directs an important circumstances. A real business model (BM) gives the platform where clearly know the business concepts like: how the revenue and costs estimates; or to create competitive business; or what kind of problems solving for whom; or how the best service and product deliver to the customers; and how the customer value will be produced. BMI is mainly readdress the existing BM and its focus on the need of organizations customer, with this new value proposition it gives betterment of organization process, resources and profit formula. Most of the authors show the business models and describe business model innovation in different ways. In current study, the main objective is to investigate the business model innovation in Changing Environment of Businesses (Small medium enterprises (SMEs) of Information Technology (IT) Sector) in Pakistan. Questionnaire is developed about external and internal antecedents of BMI, novelty and scope of BMI and outcomes of BMI. Positive outcomes will be expected which will give better outcomes in future. In this study; questionnaire technique will be use; likert and nominal scale use for the questionnaire; and 91 items will be used for collecting the data. This study will also show how the innovation can solve problems in the BM and it's also identifying important direction for future research.

Chapter 1

Introduction

Unlike other types of innovation, changes in business model (BM) are the basic decisions upon which the business runs. Therefore, business model innovation (BMI) is important. Almost all innovation is stepped, for example product innovation, where boosting in technology is regularly included in updates of product just for the increasing performance and reducing costs. Because of future distribution to the current business it is very risky to change the BM. Despite this, many researchers innovates the BM in order to gain advantage of new technology by making changes of the key strategic decision under which the businesses runs. The current study describes the methods used for information inspects about BMI and its important in this era and relating study to small medium enterprises (SMEs) of information technology (IT) sector. Moreover, its introduce problem statement of the thesis and the problem statement translate into research goals and help to design the thesis in order to gain those objective of the businesses.

1.1 Importance of BM

Assertively, 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.

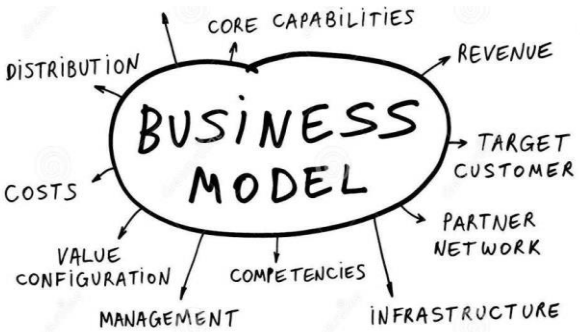

Figure:1 “Business model”

1.2 Problem statement

The terms business model (BM) and business model innovation (BMI) have been under examine since past few years in business management and academic research, and in the field of the business its creates excess theories; that helps to be successfully applying these concepts to increase activity of performance. Despite that, some researchers do not agree with the entire business models, about the existence and the really use of the term BM (Zott *et al.* 2010). A useful pattern for information technology (IT) of small medium enterprises (SMEs) in the past studies field that can be help to understand about appliance of these concepts successfully is not emerged yet. On the basis of above said statement current research on BM and BMI contrasted against the strategic challenges faced by today’s SMEs. It’s also spots the antecedents of BMI which should be organized, selected, adapted, amalgam or in corporate with existing BMI to help accomplish successful BMI. Besides this, stages will be focus; in order to understand better and answer the main research questions, for example: do managers standardized the businesses, organization have information of BM and BMI or not, importance the concepts in their strategic processes and discussion to the quality of BMI that BM accepted or not and existing role of antecedents and outcomes of BMI is effected the businesses or not.

1.3 Objective of the Study

The goals and objectives can be condensing in the following way, by giving our problem statements and approach

- 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.

Main interest in this study comes from literature review on BMI in different industries, where primarily research into the concept (Breiby, Wanberg *et al*. 2010). After reviews different papers on BMI, found that BMI to be a interesting topic.It is therefore, intention through this thesis to contribute on business model external and internal antecedents and to produce a good relation between antecedents and outcomes for accomplish novelty and scope of the businesses successfully.

1.4 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 people do their jobs in technology sector businesses. The study findings will redound to the benefit of information technology (IT) businesses considering that business model innovation (BMI) antecedents and outcomes play an important role in businesses models today. 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 run and complete business better. The study will helps 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.

1.5 Organization of Study

The rest of the study reflects the planned as follows: Chapter two; provides the detail of literature review regarding the impact of BMI in businesses. Chapter three; discusses the theoretical channel by which the BMI may possibly have an impact on the SMEs of IT sector. Chapter four; briefly presents the data, variables, and econometric methodology which are being used for empirical analysis. Chapter five; details the results, while chapter six concludes the study.

Chapter 2

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 business environment and internal business environment. Business environment includes internal and external factors i.e. employees, customer, and management, supply and demand and business regulations. All these factors affect how the company is functioning. Business 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 customer demand become different, new technologies accepted, modern employees skilled emerged, supplementary rules and regulations are signed, up-to-date supply chain management (SCM) start, all are stir up the businesses to choose an appropriate new products and take advantage of new technologies in order to doing things in low cost and in short time and the most useful is; in accurate way. Also 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 in which they compete with other businesses (businesscasestudies.co).

Information technology (IT) environment involves trends and process.The technology has changed businesses in startle way.Business trends, process and way of doing businesses have been modified and in well organized manner. Technology cut the borders allowing businesses to communicate and deals beyond borders. Smartphone's succor, to connect with business work even not present in office, also enables to respond quickly. 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 single 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, etc are widely used now-a-days by businesses globally. Adopting new technologies is becoming a vital mechanism in this business era (linkedin.co).

The concept of BM and BMI come across great attention in business field. Past paper of the BM mainly discusson technology, businesses strategies and electronic commerce.BM also used in different theories and the advancement 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).The concept of Business models is several years ago. According to Wirtz *et al.*,(2016) the original definitions are related to operating tasks for organizational system modelsin 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 burst and confounded by inconsistent definitions and constructs boundaries (George and Bock, 2011).

Ricart (2013) and Zott *et al.*,(2011) suggested thatthe study of BM have emphasize the utility of the BM construction in research on 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, H. (2010) he also suggested that a BM fulfils the value concepts, and he also describes the income generation mechanism that support the businesses will be invest for the offering; and 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 and; also describes value of firm with in the value network linking customers orpartners; also generates the edge of competitive will gain competitors.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 process than BM. BMI should to be cleared and approach able on its own. BMI opens new doors towards new inventions and able to ask is BMI give competitive advantage? Therefore right now more work on BMI is needed for clarity in different reviews.

Collect the material on BMI assess it, and suggestions for future work mainly focus on BM as firms process or discover new category of businesses also standardized research on BMI valued by studying the antecedents, outcomes and moderators of BMI. 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,so the understanding and arrange value propositions of e-businesses BM engaging on high peak (Amit and Zott, 2001; Margretta, 2002). Secondly, the BM are served as a most precious factor for contributing to businesses performance. As some kind of BM is outperform others (Zott and Amit, 2010). According to Teece(2010) successful BM is taking as a model. Third is perceived as a future innovation unit (Zott *et al.*, 2011).

First time innovation in BM was discussed in 2003 by Mitchell and Coles, the idea that mangers can purposefully innovate their BM. From now on, a lot of studies focused on innovation of BM and investigate BMI from different aspects.Afterwards most of the researchers attentive on the

innovation aspect studies related of the BM. Surprisingly, the research work on BM is comparatively is higher than BMI, the BMI published paper is still low at 349.

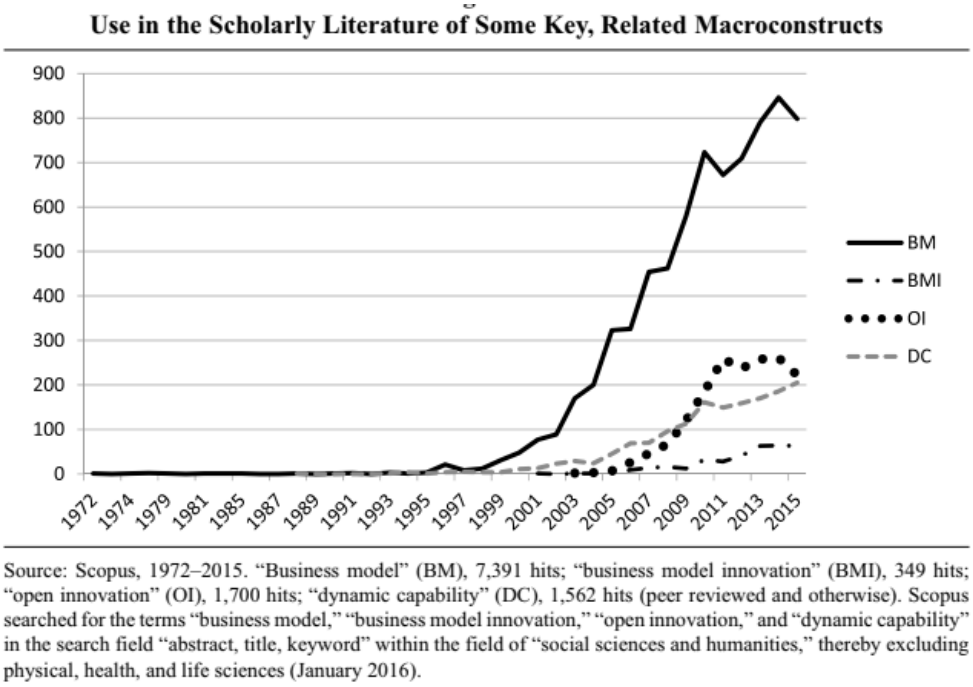

Figure 2.1

In Figure 2.1, the scopus source explain that over the last 2 decade, work on BM is higher than the BMI. Almost 7391 publications are done on the topic of BM for the duration of 1980-2015. On the other hand, work on BMI is relatively low. The study of BMI is a new process of the BM literature. While according to Mitchell and Coles(2003) BM can be innovated dates back to at least. There is now number of articles on BM. Yet, few articles mainly focus on the BMI literature and one of the well known Schneider and Spieth; which reviews BMI 35 papers in 2013; In the BMI literature both focus three leading themes that is process, prerequisites and effects of innovation in BM.

In order to gain advantage of competitive edge, and firms should to quickly change according to their competitor in maket environment (DeGeus, 1988; Senge, 1990; Day, 1991). Firms profitability is effected by different types of competition and the competitions like price of the product, quality of product and marketing channel competition are negatively correspond with profitability (Khandwal, 1972). The effect of technological trends, most importantly IT sector, many current organizational business are faced changing in BM and they set under this model. Although, it's a hazard strategy to create a radically new business model because there are low chances of getting the perfect model as the business want (Kalakota and Robinson, 2001). Kulatilaka and Vankatramen in 2001 proposed to invest new technology with the help of three step. First, assessment of opportunities, secondly, acquisition of options, and the campany and market place with future plan, thirdly, restructures the company by planning again its partnership and in order to achieve opportunities advantage makes the necessary adjustments. If the organizations are engaged with central network position in result it can innovate more and performed better because it's give access to develop new technology by other units of organization. According to Tsai, 2001 this effect, is based on absorptive capacity of units, or success ability which replicate the new knowledge.Gelderen, Frese and Thurik, 2000 states that; businesses leads to increased use of inactive behavior if owners of the businesses perform badly employ inactive strategy; on the other hand businesses lead to complete planning approach if the owners of the businesses focus and start critical point strategy. Dynamic capabilities as incorporate of specific strategic and organizational process that manipulate resources into new competencies and that replace old ones (Martin, 2000). According to McEvily *et al.,* 2004, dynamic capabilities not only internal processes, but also collaboration with other organizational as a means of extending each firms competencies. The firms achieve new resource arrangement if they adopt dynamic

capabilities as the organizational and strategic routines. (Eisenhardt and Martin, 2000).For small firms the strategic planning is a beneficial activity (Schwenk and Shrader, 1993). Different alternative goals like action and skills are eesential for attaining high quality in low relative cost (Hall 1980. Porter 1980, Kiechel 1981).

Chapter 3

Theoretical Framework and Hypothesis

A Business Model (BM) becomes mandatory for the success of any company, as it describes how that business will earn profit. For entrepreneurs, a business model helps in grab investors and creating partnerships. 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.

Moreover, Zott, 2011 focus on the BM usefulness in the study of technology management, strategies and e-businesses. 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, so the understanding and arrange value propositions of e-businesses BM engaging on high peak (Amit and Zott, 2001; Margretta, 2002). Secondly, the BM are served as a most precious factor for contributing to businesses performance. As some kind of BM is outperform others (Zott and Amit, 2010). According to Teece, (2010) successful BM is take as a model. Third is perceived as a future innovation unit (Zott *et al.*, 2011).BM is the design or architecture of the value creation, delivery, and capture mechanism of a firm (Teece, 2010). In contrast, the BMI is a new source of innovation that complements the traditional subusinessects of process, product, and organizational innovation (Zott, 2011). Mitchell and Coles in 2003, discussed first time about the idea that mangers can purposefully innovate their BM. Furthermore, reviews on BMI are limited and do not help for the

phenomenon of the systematic study and the challenges for more research on the antecedents, outcomes, and implications of BMI in IT sector. The study tells that the literature is not enough in all dimensions. To research the question, the survey technique is used; questionnaire is developed; which is about changes in competition, technologies, network position, stakeholder demands, dynamics capabilities, changes in strategy, financial performance, innovation, cost reduction, BMI novelty and BMI scope. As study shows the importance of each component of BMI architecture, we suggest important avenues for future research on moderators that is: macro-level, firm level, micro-level.

According to literature review and finding gaps in BMI research, current study will highlights to address and handled the gaps as explained in model.

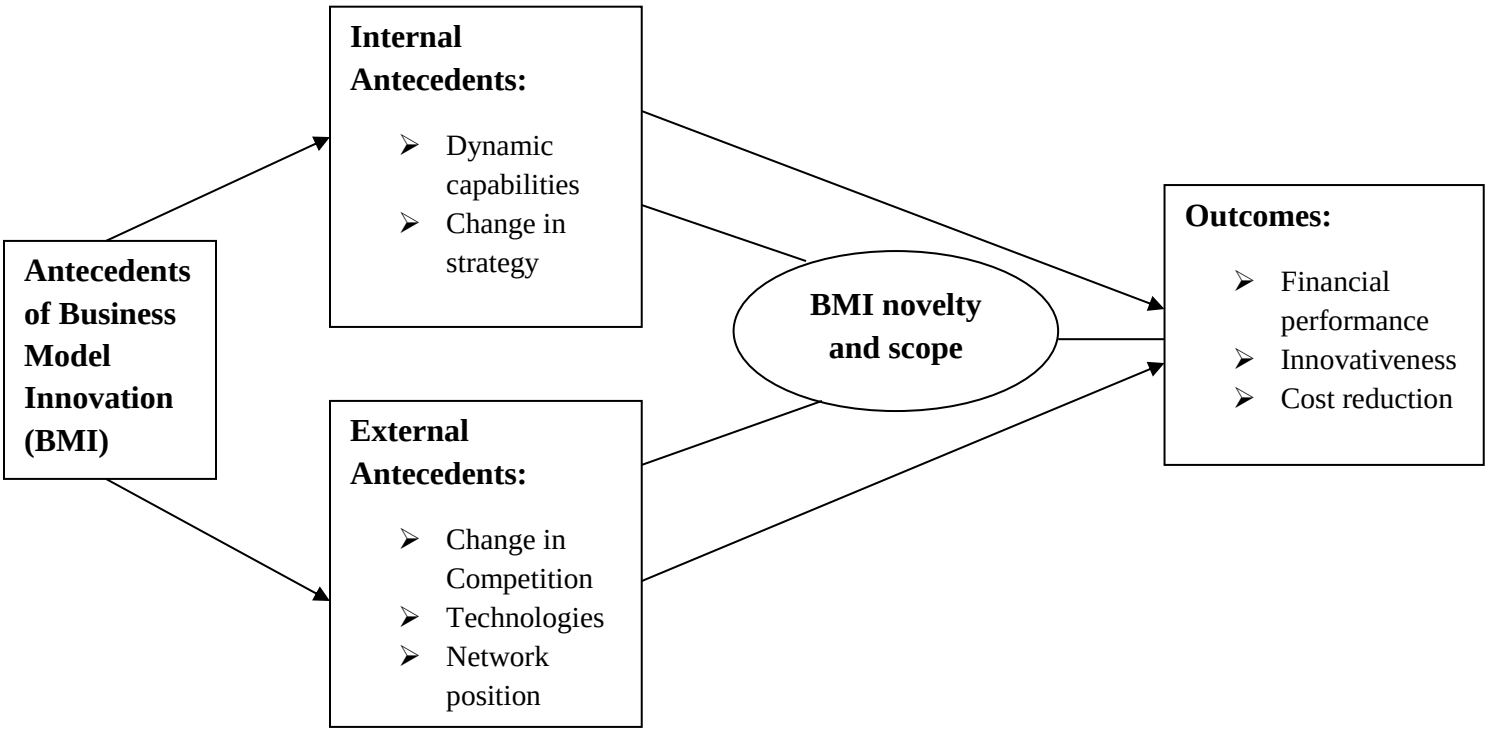

Figure 3

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 mediators part that is BMI i.e. novelty and scope in business process.

3.1 Competition, technology and network position relationship with financial performance:

Firms performance and profitability effected by different types of competition and the competitions like price of the product, quality of product and marketing channel competition are negatively correspond with profitability (Khandwal, 1972). On the other hand, Kulatilaka and Vankatramen in 2001 proposed to invest new technology with the help of three step. First, assessment of opportunities, secondly, acquisition of options, and the campany and market place with future plan, thirdly, restructures the company by planning again its partnership and in order to achieve opportunities advantage makes the necessary adjustments. Also if the organizations are engaged with central network position in result it can innovate more and performed better because it's give access to develop new technology by other units of organization. According to Tsai, 2001 this effect, is based on absorptive capacity of units, or success ability which replicates the new knowledge. In line with these previous findings, the following is hypothesized:

H1: External antecedents is negatively associated with Financial Performance

3.2 Competition, technology and network position relationship with innovativeness:

A closed innovation was observed in past decades, where businesses generates, develops, and commercialized their own ideas towards an open innovation model to the market by utilizing pathways outside their current businesses (Chesbrough, 2003). Past study briefs that achieving innovative outcome in SMEs depends on IT capabilities and IT resource (Hadjimanolis, 2000).

The technology collaborates positively with different kinds of external partners (e.g., suppliers, competitors) on innovation performance (Nieto and Santamaria, 2007). Specifically, the above statements of research provides the information that change in technology has a significant positive impact on the ability of a firm to be the first launch new and innovative products onto the market. These findings helps to clear the resource- based declaration that as businesses access a wide range of variety of technological capabilities by collaborating with different types of partners, which in order to improve a firm's innovation capabilities (at the same time collaborate (Eisenhardt and Schoonhoven, 1996). Therefore, to acknowledge the relationship between external antecedents on innovativeness, it is suggested that:

H2: External antecedents are positively associated with Innovativeness.

3.3 Competition, technology and network position relationship with cost reduction:

Soto-acosta and Cegarran-navarro, 2016, describing knowledge as the most strategic resource through knowledge based view, also its generates sustainable advantage to perform excellent because its hard to imitate and socially complex in nature.Barney, 1991 claims that a resource own by a business may be a source of competitive advantage because of hard to imitate, rare to find, valuable, and non-substitutable by other resources. In order to gain advantage of competitive edge, firms should to quickly change according to their competitor in market environment (Degeus, 1988). Expanding on technological management skills and hiring the dedication managers is likely to change the internal cost structure of the businesses (Kale and Singh, 2009). Therefore, the change in technology increased the cost of businesses .Gelderen, Frese and Thurik, 2000 states that; businesses leads to increased use of inactive behavior if owners

of the businesses perform badly employ inactive strategy; on the other hand businesses lead to complete planning approach if the owners of the businesses focus and start critical point strategy. Based on these arguments, this study hypothesized that;

H3: External relationship are positively relate with cost reduction.

3.4 Dynamic capabilities and change in strategy relationship with financial performance:

Tanriverdi, 2005 defines that it's the important research issue on relation between information technology capabilities and financial performance which is symbolize the value of information system research. The firms achieve new resource arrangement if they adopt dynamic capabilities as the organizational and strategic routines. (Eisenhardt and Martin, 2000). For small firms the strategic planning is a beneficial activity (Schwenk and Shrader, 1993). It's hypothesized that;

H4: Internal relationship are positively relate with Financial Performance

3.5 Dynamic capabilities and change in strategy relationship with innovativeness:

Dynamic capabilities as incorporate of specific strategic and organizational process that manipulate resources into new competencies and that replace old ones (Martin, 2000). According to McEvily *et al.*, 2004, dynamic capabilities not only internal processes, but also collaboration with other organizational as a means of extending each firms competencies. According to Hill and Roethermel, 2003 technology, either newly finds or in distinctive linking, typically enables the innovation and on the basis of competitive edge it is acknowledge highly. Chen *et al.*, 2011

suggested that information technology capability is the ability of the businesses to rally and deploy information technology in contrsast of other resources and capabilities. Chaudhuri *et al*., 2011 defines that IT capabilities is used to increase and identify new business opportunities by collecting and processing timely to market changes. Based on these arguments, the following hypothesis is proposed:

H5: Internal relationship are positively relate with Innovativeness

3.6 Dynamic capabilities and change in strategy relationship with cost reduction:

Dynamic capabilities as incorporate of specific strategic and organizational process that manipulate resources into new competencies and that replace old ones (Martin, 2000). Different alternative goals like action and skills strategy are essential for attaining high quality in low relative cost (Hall 1980, Porter 1980, Kiechel 1981). Hence, based on the above study it's hypothesized that;

H6: Internal relationship are positively relate with cost reduction.

3.7 The mediator role of business model innovation (BMI) novelty and scope between external antecedents and financial Performance:

Dunford *et al*., 2010 put in to words that many articles of the BMI literature focused on businesses performance which is important and based on business models. The literature suggests that BMI refers new ways to create and capture value for its stakeholders and to the search for new logics of the businesses; generate income and defining value propositioins for partner, suuplier and customer is the primarily focus of business model innovation (Casadesus-masanell and Zhu,

2013). On the report of Doz and Kosonen, 2010 BMI is suppose to be vital role to strategic interference and discontinuities, intense global competition and convergence, furthermore, Johonson *et al*., 2008 briefs its important for competitive pressure and shifting base competition.

H7: BMI novelty and scope mediates the relationship between external antecedents and financial performance.

3.8 The mediator role of business model innovation (BMI) novelty and scope between external antecedents and innovativeness:

Aspara *et al*., 2013 expressed corporate level business model transformation which is explained as a change in value which is created by the corporation, when corporation's portfolio of businesses create value links, from one point of time to another. Moreover, the purposely changes and innovate the main elements of a business and business logic is the process of BMI (Bucherer *et al*.,2012). Moreover, some literatures describe BMi is a key for grabbing new opportunities by the development of technologies like digital technologies etc. Sabatier, craig-kennard and Management, 2012 express in words that in the condition of e-commerce, BM influence the information and communication technologies. Also, BMI is a rearrangement of activities in the existing BM of an organization in order to competes with different firms by adopting new product and service (Santos *et al*., 2009).Markides, 2006 explains BMI is the finding and organizing different BM in an existing business. The effect of technological trends, most importantly IT sector, many current organizational business are faced changing in BM and they set under this model. Although, it's a hazard strategy to create a radically new business model because there are low chances of getting the perfect model as the business want (Kalakota and Robinson, 2001). Hence, based on the above literatures this study hypothesized that;

H8: BMI novelty and scope mediates the relationship between external antecedents and Innovativeness.

3.9 The mediator role of business model innovation (BMI) novelty and scope between external antecedents and cost reduction:

In the opinion of Weill *et al*., 2005 some types of BMI outperform others, successful business models are observe as best example to be imitated (Teece, 2010) and also it may be replicated (Doz and Kosonen, 2010). Barney, 1991 through light on resource based view theory and links that the competitive advantage gain from complexity of social that may be links with a business model and business model innovation. Moreover, sustained competitive advantage is gained through several tightly elements of Business model innovation as loosely coupled BMI, because the uncertainty is higher than in the latter case. On the other side, according to Rivkin, 2000 BMI also increase a number of disputes because interacting elements represents inherent complexity which makes hurdles to forecast the true performance implications of internal changes. Also, BMI can't be imitated for an equitable cost because it is vulnerable inaction in long run and even it become obsolete as rival's implements more successful BMI so, if firms are burden with coupled BMs they should keep in touch in the competitive game. In contrast, loosely couple firms are change but vulnerable to imitation and introduce important managerial tradeoffs (Rivkin, 2000).

H9: BMI novelty and scope mediates the relationship between external antecedents and cost.

3.10 The mediator role of business model innovation (BMI) novelty and scope between internal antecedents and financial Performance:

Sorescu *et al*., 2011 explains changing in one element of activities, format and governance retailing BM and their interdependencies, in consequence of that changing logic of retailer organization for repossession and creation of value. Furthermore, BMI is finding novel value proposition and value constellation combinations for generating new sources of profits (Yunus *et al*., 2010). Therefore, to acknowledge the scope of BMI relationship between internal and financial performance, it is suggested that:

H10: BMI novelty and scope mediates the relationship between internal antecedents and financial performance.

3.11 The mediator role of business model innovation (BMI) novelty and scope between internal antecedents and innovativeness:

Berglund and sandstorm 2013, describes that BMI is defined as introduction new BM pursue to create commercial value. Additionally, Abdelkafi *et al*., 2013 expressed BMI occurs when the firms change or improve at least one of the value dimensions. According to Mitchell and Coles 2004, BMI is the replacements of business model that provide product and service providing to end users or customers that were not previously available; also business model innovation refers developing these novel replacements by the process and procedure.

As stated by Voelpel *et al*., 2004 BMI is rapidly increasing value-creating attributes of knowledge and innovation, arbitrary changes in the business environment, and the momentum change of business environment but such antecedents are not liked systematically to the innovation of business model they are seen as forth. In addition, the effect of different drivers on the tendency to link BMI is tested by few studies (Reuver, Bouwman and Maclnnes, 2009).

H11: BMI novelty and scope mediates the relationship between internal antecedents and innovativeness.

3.12 The mediator role of business model innovation (BMI) novelty and scope between internal antecedents and cost reduction:

Redefining the business model by put on new activities of list, linking structure activities differently and changing governance parties that do the activities all are help to innovate BM (Amit and Zott, 2012). On the report of Doz and Kosonen, 2010 BMI is suppose to be vital role to strategic interference and discontinuities, intense global competition and convergence. Makes changes in BM due to change in external environment its may be a key source of dynamic capabilities (Zot et al., 2011). According to Gambardella and Mcgahan, 2010 explain BMI as, BMI happen when a corporate commercializing its underlying assets through novel approach.

H12: BMI novelty and scope mediates the relationship between internal antecedents and cost reduction.

Chapter 4

Data and Methodology

4.1 Data of the Study

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.

4.2 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.

4.3 Variable Description

Table: 4.3.1 List of Variables

Variables	Scale	Items	Author's
Independent variables (Antecedent's)			
Changes in competition	Questionnaire(Likert scale)	07	(Bodell, 2014)
Changes in technologies	Questionnaire(Nominal and Likert scale)	28	Sher, P. J., & Lee, V. C. (2004).
Changes in network position	Questionnaire(Likert scale)	02	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)	08	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)	06	Chan, Yolande E., Sid L. Huff, and Donald W. Barclay (1997)
Innovativeness	Questionnaire(Nominal measure)	03	Hurley, R.F., and T.M. Hult (1998)
Cost reduction	Questionnaire (Nominal measure)	02	Ghosh, Mrinal, and George John (2005)

Table 3.1, explains the list of variables (independent variable, dependent variable and mediating variable), and 91 items, that are used for making the questionnaire and it's tell us the material from where the questions are adopted and scales (likert and nominal) which has been used for measuring the results.

4.3.2 Explanation of Variables

Outcome is the dependent variable, consisting three variables i.e., financial performance, cost reduction and innovativeness. For small firms the strategic planning is a beneficial activity (Schwenk and Shrader, 1993).Different alternative goals like action and skills are eesential for attaining high quality in low relative cost (Hall 1980. Porter 1980, Kiechel 1981).Innovativeness definition formulated by the management association and product development, which explains

innovation as a new idea, method or device, or it's an act of developing a new product, system, process and services (Garcia-Morales *et al.,* 2008).

Antecedent's is the independent variable, consisting two variables i.e. external antecedents and internal antecedents. ,In order to gain advantage of competitive edge, and firms should to quickly change according to their competitor in maket environment (DeGeus, 1988; Senge, 1990; Day, 1991). The effect of technological trends, most importantly IT sector, many current organizational business are faced changing in BM and they set under this model. Although, it's a hazard strategy to create a radically new business model because there are low chances of getting the perfect model as the business want (Kalakota and Robinson, 2001). Kulatilaka and Vankatramen in 2001 proposed to invest new technology with the help of three step. First, assessment of opportunities, secondly, acquisition of options, and the campany and market place with future plan, thirdly, restructures the company by planning again its partnership and in order to achieve opportunities advantage makes the necessary adjustments.If the organizations are engaged with central network position in result it can innovate more and performed better because it's give access to develop new technology by other units of organization. According to Tsai, 2001 this effect, is based on absorptive capacity of units, or success ability which replicate the new knowledge. Gelderen, Frese and Thurik, 2000 states that; businesses leads to increased use of inactive behavior if owners of the businesses perform badly employ inactive strategy; on the other hand businesses lead to complete planning approach if the owners of the businesses focus and start critical point strategy.Dynamic capabilities as incorporate of specific strategic and organizational process that manipulate resources into new competencies and that replace old ones (Martin, 2000). According to McEvily *et al.*, 2004, dynamic capabilities not only internal processes, but also collaboration with other organizational as a means of extending each firms competencies. The

firms achieve new resource arrangement if they adopt dynamic capabilities as the organizational and strategic routines. (Eisenhardt and Martin, 2000). According to Teece (2010) BMI is the value creation, capture mechanisms and delivery models by designing or by architecture the models.

Chapter 5

Empirical Result and Discussions

5.1 Introduction

After choosing the appropriate specification of the model and discussing the methodology in detailed in previous chapter, we now estimates the effect of antecedents on outcomes and on BMI of SMEs of information technology sector by utilizing the multiple linear regression technique. Multiple linear regression analysis to determine the effect of independent variables (there are more than one) to the dependent variables. To test multiple regression first necessary to test the classical assumption. Classical assumption does this because independent variables studied amounted to more than one.

5.1.1 Decision making process in Multiple Linear Regressions

1. If the value significance <0.05, significant effect of independent variables on the dependent variable.
2. If the value significance >0.05, then the independent variable has no significant effect on the dependent variable.

5.2 Regression results

For estimating the results of SMEs models on the choice of BMI we make 12 models which tell us first, separately relation between antecedents with outcomes and secondly, relationship between antecedent and outcomes with BMI. The relationship between antecedents with outcomes and then with BMI is given below; each relation is discussed individually; which are as follows.

5.2.1 Model: 1 (M-1)

Table # 1: H1: External relationship with Financial Performance

Correlations		FinPerf	Technolgy1	ChngCom	NetPositn
Pearson Correlation	FinPerf	1.000	.835	.892	.905
	Technolgy1	.835	1.000	.974	.972
	ChngCom	.892	.974	1.000	.977
	NetPositn	.905	.972	.977	1.000

Table # 1.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.937[a]	.878	.875	.09729	.878	231.054	3	96	.000

a. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 1.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.561	3	2.187	231.054	.000[b]
	Residual	.909	96	.009		
	Total	7.470	99			

a. Dependent Variable: FinPerf

b. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 1.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.674	.167		10.051	.000
	Technolgy 1	-.711	.106	-1.172	-6.739	.000
	ChngCom	.150	.037	.783	4.081	.000
	NetPositn	.226	.033	1.279	6.910	.000

a. Dependent Variable: FinPerf

Table # 1.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-1:

(Output Model Summary)

In this part shows that R = 0.937 and the coefficient of determination (R square) of 0.878. This suggests the notion that financial performance is influenced by 87.8% by Network position,

Technology, and Change in Competition, while the rest (100% - 87.8% = 12.2%) 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 performance of organization. Or in other words, Network position, Technology, and Change in Competition simultaneously significant effect on performance of organization.

(Output Coefficients a)

In this part shows significant value Network position, Technology, and Change in Competition of 0.000 < 0.05, then the appropriate basis for decision making in the regression analysis concluded that the Network position, Technology, and Change in Competition partially significant effect on financial performance. Thus, increasing the Network position, Technology, and Change in Competition of organization it will also improve financial performance.

5.2.2 Model: 2 (M-2)

Table # 2: H2: External relationship with Innovativeness

Correlations

		Innovativeness	Technolgy1	ChngCom	NetPositn
Pearson Correlation	Innovativeness	1.000	.757	.795	.811
	Technolgy1	.757	1.000	.974	.972
	ChngCom	.795	.974	1.000	.977
	NetPositn	.811	.972	.977	1.000

Table # 2.1

Model Summary

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

a. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 2.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.170	3	1.723	68.611	.000[b]
	Residual	2.411	96	.025		
	Total	7.581	99			

a. Dependent Variable: Innovativeness

b. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 2.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.349	.271		4.973	.000
	Technolgy 1	-.468	.172	-.766	-2.724	.008
	ChngCom	.089	.060	.462	1.487	.140
	NetPositn	.197	.053	1.104	3.689	.000

a. Dependent Variable: Innovativeness

Table # 2.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-2:

(Output Model Summary)

In this part shows that R = 0.826 and the coefficient of determination (R square) of 0.682. This suggests the notion that Innovativeness is influenced by 68.2% by Network position, Technology, and Change in Competition, while the rest (100% - 68.2% = 31.8%) 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 Innovativenessof organization. Or in other words, Network position, Technology, and Change in Competition simultaneously significant effect on Innovativeness of organization.

(Output Coefficients a)

In this part shows significant value Network position of 0.000 < 0.05 and Technology of 0.008 > 0.05, and Change in Competition of 0.140 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the Network position and technology partially significant effect on Innovativeness whereas, Change in Competition partially insignificant effect on Innovativeness. Thus, increasing the Network position and Technology of organization it will also improve Innovativeness and on the other hand Change in Competition of organization it will badly effect on Innovativeness.

5.2.3 Model: 3 (M-3)

Table # 3: H3: External relationship with cost reduction

Correlations

		cstRed	Technolgy 1	ChngCom	NetPositn
Pearson Correlation	cstRed	1.000	.758	.830	.788
	Technolgy 1	.758	1.000	.974	.972
	ChngCom	.830	.974	1.000	.977
	NetPositn	.788	.972	.977	1.000

Table # 3.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.860[a]	.740	.732	.12872	.740	91.273	3	96	.000

a. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 3.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.537	3	1.512	91.273	.000[b]
	Residual	1.591	96	.017		
	Total	6.127	99			

a. Dependent Variable: cstRed

b. Predictors: (Constant), NetPositn, Technolgy1, ChngCom

Table # 3.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.393	.220		6.322	.000
	Technolgy 1	-.531	.140	-.966	-3.804	.000
	ChngCom	.321	.049	1.853	6.610	.000
	NetPositn	-.013	.043	-.084	-.309	.758

a. Dependent Variable: cstRed

Table #3.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-3:

(Output Model Summary)

In this part shows that R = 0.860 and the coefficient of determination (R square) of 0.740. This suggests the notion that Cost Reduction is influenced by 74.0% by Network position,

Technology, and Change in Competition, while the rest (100% - 74.0% = 26.0%) 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 Cost Reduction of organization. Or in other words, Network position, Technology, and Change in Competition simultaneously significant effect on Cost Reduction of organization.

(Output Coefficients a)

In this part shows significant value Technology and Change in Competition of 0.000 < 0.05 and Network position of 0.758 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the Technology and Change in Competition partially significant effect on Cost Reduction whereas, Network position partially insignificant effect on Cost Reduction. Thus, increasing the Technology and Change in Competition of organization it will also improve Cost Reduction and on the other hand Network position of organization it will badly effect on Cost Reduction.

5.2.4 Model: 4 (M-4)

Table # 4: H4: Internal relationship with financial performance

Correlations

		FinPerf	DaynamicCap	ChangeinStrategy
Pearson Correlation	FinPerf	1.000	.878	.894
	DaynamicCap	.878	1.000	.684

	ChangeinStrategy	.894	.684	1.000

Table # 4.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.965[a]	.932	.931	.07230	.932	665.977	2	97	.000

a. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 4.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.963	2	3.481	665.977	.000[b]
	Residual	.507	97	.005		
	Total	7.470	99			

a. Dependent Variable: FinPerf

b. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 4.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.096	.040		-2.380	.019
	DaynamicCap	.126	.009	.501	13.817	.000
	ChangeinStrategy	.703	.046	.550	15.169	.000

a. Dependent Variable: FinPerf

Table # 4.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-4:

(Output Model Summary)

In this part shows that R = 0.965 and the coefficient of determination (R square) of 0.932. This suggests the notion that financial performance is influenced by 93.2% by change in strategy and dynamic capabilities, while the rest (100% - 93.2% = 6.8%) 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 financial performance of organization. Or in other words change in strategy and dynamic capabilities simultaneously significant effect on financial performance of organization.

(Output Coefficients a)

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

5.2.5 Model: 5 (M-5)

Table # 5: H5: Internal relationship with innovativeness

Correlations

		Innovativeness	Daynamic Cap	ChangeinStrategy
Pearson Correlation	Innovativeness	1.000	.797	.848
	DaynamicCap	.797	1.000	.684
	ChangeinStrategy	.848	.684	1.000

Table # 5.1

Model Summary

	R				Change Statistics

Model		R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.898[a]	.807	.803	.12273	.807	203.128	2	97	.000

a. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 5.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.119	2	3.060	203.128	.000[b]
	Residual	1.461	97	.015		
	Total	7.581	99			

a. Dependent Variable: Innovativeness

b. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 5.3

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.

		B	Std. Error	Beta		
1	(Constant)	-.051	.069		-.738	.462
	DaynamicCap	.103	.015	.409	6.682	.000
	ChangeinStrategy	.731	.079	.568	9.289	.000

a. Dependent Variable: Innovativeness

Table # 5.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-5:

(Output Model Summary)

In this part shows that R = 89.8 and the coefficient of determination (R square) of 0.807. This suggests the notion that Innovativeness is influenced by 80.7% by change in strategy and dynamic capabilities, while the rest (100% - 80.7% = 19.3%) 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 Innovativeness of organization. Or in other words change in strategy and dynamic capabilities simultaneously significant effect on Innovativeness of organization.

(Output Coefficients a)

In this part shows significant value strategy and dynamic capabilities of 0.000 < 0.05, then the appropriate basis for decision making in the regression analysis concluded that the strategy and

dynamic capabilities partially significant effect on Innovativeness. Thus, increasing the strategy and dynamic capabilities of organization it will also improve Innovativeness.

5.2.6 Model: 6 (M-6)

Table # 6: H6: Internal relationship with cost reduction

Correlations

		cstRed	DaynamicCap	ChangeinStrategy
Pearson Correlation	cstRed	1.000	.779	.612
	DaynamicCap	.779	1.000	.684
	ChangeinStrategy	.612	.684	1.000

Table # 6.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.787[a]	.619	.611	.15521	.619	78.684	2	97	.000

a. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 6.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.791	2	1.895	78.684	.000[b]
	Residual	2.337	97	.024		
	Total	6.127	99			

a. Dependent Variable: cstRed

b. Predictors: (Constant), ChangeinStrategy, DaynamicCap

Table # 6.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.325	.087		3.739	.000
	DaynamicCap	.153	.019	.677	7.871	.000
	ChangeinStrategy	.172	.099	.149	1.733	.086

a. Dependent Variable: cstRed

Table # 6.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-6:

(Output Model Summary)

In this part shows that R = 0.787 and the coefficient of determination (R square) of 0.619. This suggests the notion that Cost reduction is influenced by 61.9% by change in strategy and dynamic capabilities, while the rest (100% - 61.9% = 38.1%) 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 Cost reduction of organization. Or in other words change in strategy and dynamic capabilities simultaneously significant effect on Cost reduction of organization.

(Output Coefficients a)

In this part shows significant value dynamic capabilities of 0.000 < 0.05 and insignificant value change in strategy of 0.086 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the dynamic capabilities partially significant effect on Cost Reduction whereas, change in strategy partially insignificant effect on Cost Reduction. Thus, increasing the dynamic capabilities of organization it will also improve Cost Reduction and on the other hand change in strategy of organization it will badly effect on Cost Reduction.

5.2.7 Model: 7 (M-7)

Table # 7: H7: External and Financial Performance effects on BMI novelty and scope

Correlations

	BMINoveltyScope	ChngCom	Technolgy1	NetPosition	FinPerf

Pearson Correlation	BMINoveltyScope	1.000	.977	.941	.977	.944
	ChngCom	.977	1.000	.974	.977	.892
	Technolgy1	.941	.974	1.000	.972	.835
	NetPositn	.977	.977	.972	1.000	.905
	FinPerf	.944	.892	.835	.905	1.000

Table # 7.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.992[a]	.984	.984	.14574	.984	1502.744	4	95	.000

a. Predictors: (Constant), FinPerf, Technolgy1, ChngCom, NetPositn

Table # 7.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	127.679	4	31.920	1502.744	.000[b]
	Residual	2.018	95	.021		

	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), FinPerf, Technolgy1, ChngCom, NetPositn

Table # 7.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.365	.358		3.818	.000
	ChngCom	.449	.060	.564	7.540	.000
	Technolgy1	-.509	.192	-.201	-2.651	.009
	NetPositn	.286	.060	.388	4.768	.000
	FinPerf	1.075	.153	.258	7.030	.000

a. Dependent Variable: BMINoveltyScope

Table # 7.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-7:

(Output Model Summary)

In this part shows that R = 0.992 and the coefficient of determination (R square) of 0.984. This suggests the notion that BMI novelty and scope is influenced by 98.4% by change in competition, technology, network position and financial performance, while the rest (100% - 98.4% = 1.6%) 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 competition, technology, network position and financial performance simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant value change in competition, technology network position and financial performance of 0.009 < 0.05, then the appropriate basis for decision making in the regression analysis concluded that the competition, technology network position and financial performance partially significant effect on BMI novelty and scope. Thus, increasing the competition, technology network position and financial performance of organization it will also improve BMI novelty and scope.

5.2.8 Model: 8 (M-8)

Table # 8: H8: External and Innovativeness effects on BMI novelty and scope

Correlations

		BMINoveltyScope	ChngCom	Technolgy1	NetPositn	Innovativeness
Pearson Correlation	BMINoveltyScope	1.000	.977	.941	.977	.830
	ChngCom	.977	1.000	.974	.977	.795
	Technolgy1	.941	.974	1.000	.972	.757
	NetPositn	.977	.977	.972	1.000	.811
	Innovativeness	.830	.795	.757	.811	1.000

Table # 8.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.989[a]	.978	.977	.17466	.978	1039.136	4	95	.000

a. Predictors: (Constant), Innovativeness, Technolgy1, ChngCom, NetPositn

Table # 8.2

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	126.799	4	31.700	1039.136	.000[b]
	Residual	2.898	95	.031		
	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), Innovativeness, Technolgy1, ChngCom, NetPositn

Table # 8.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.807	.335		8.369	.000
	ChngCom	.587	.067	.736	8.801	.000
	Technolgy1	-1.149	.197	-.454	-5.843	.000
	NetPositn	.477	.063	.647	7.597	.000
	Innovativeness	.265	.112	.064	2.358	.020

a. Dependent Variable: BMINoveltyScope

Table # 8.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-8:

(Output Model Summary)

In this part shows that R = 0.989 and the coefficient of determination (R square) of 0.978. This suggests the notion that BMI novelty and scope is influenced by 97.8% by change in competition, technology, network position and innovativeness, while the rest (100% - 97.8% = 2.2%) 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 competition, technology, network position and innovativeness simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant value change in competition, technology network position and innovativeness of 0.020 < 0.05, then the appropriate basis for decision making in the regression analysis concluded that the competition, technology network position and innovativeness partially significant effect on BMI novelty and scope. Thus, increasing the competition, technology network position and innovativeness of organization it will also improve BMI novelty and scope.

5.2.9 Model: 9 (M-9)

Table # 9: H9: External and cost reduction effects on BMI novelty and scope

Correlations

		BMINoveltyScope	ChngCom	Technolgy1	NetPositn	cstRed
Pearson Correlation	BMINoveltyScope	1.000	.977	.941	.977	.827
	ChngCom	.977	1.000	.974	.977	.830
	Technolgy1	.941	.974	1.000	.972	.758
	NetPositn	.977	.977	.972	1.000	.788
	cstRed	.827	.830	.758	.788	1.000

Table # 9.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.988[a]	.977	.976	.17893	.977	989.029	4	95	.000

a. Predictors: (Constant), cstRed, Technolgy1, NetPositn, ChngCom

Table # 9.2

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	126.656	4	31.664	989.029	.000[b]
	Residual	3.041	95	.032		
	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), cstRed, Technolgy1, NetPositn, ChngCom

Table # 9.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.986	.365		8.189	.000
	ChngCom	.569	.081	.714	6.987	.000
	Technolgy1	-1.205	.208	-.477	-5.787	.000
	NetPositn	.531	.060	.721	8.814	.000
	cstRed	.128	.142	.028	.904	.368

a. Dependent Variable: BMINoveltyScope

Table # 9.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-9:

(Output Model Summary)

In this part shows that R = 0.988 and the coefficient of determination (R square) of 0.977. This suggests the notion that BMI novelty and scope is influenced by 97.7% by change in competition, technology, network position and cost reduction, while the rest (100% - 97.7% = 2.3%) 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 competition, technology, network position and cost reduction simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant value change in competition, technology, network position of 0.000 < 0.05 and insignificant value cost reduction of 0.368 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the change in competition, technology, network position partially significant effect on BMI novelty and scope whereas, cost reduction partially insignificant effect on BMI novelty and scope. Thus, increasing the change in competition, technology, network position of organization it will also improve BMI novelty and scope and on the other hand cost reduction of organization it will badly effect on BMI novelty and scope.

5.2.10 Model: 10 (M-10)

Table # 10: H10: Internal and Financial Performance effects on BMI novelty and scope

Correlations

		BMINoveltyScope	DaynamicCap	ChangeinStrategy	FinPerf
Pearson Correlation	BMINoveltyScope	1.000	.966	.772	.944
	DaynamicCap	.966	1.000	.684	.878
	ChangeinStrategy	.772	.684	1.000	.894
	FinPerf	.944	.878	.894	1.000

Table # 10.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.987[a]	.975	.974	.18498	.975	1231.452	3	96	.000

a. Predictors: (Constant), FinPerf, DaynamicCap, ChangeinStrategy

Table # 10.2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	126.412	3	42.137	1231.452	.000[b]
	Residual	3.285	96	.034		
	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), FinPerf, DaynamicCap, ChangeinStrategy

Table # 10.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.577	.107		-5.420	.000
	DaynamicCap	.590	.040	.566	14.741	.000
	ChangeinStrategy	-.408	.218	-.077	-1.875	.064
	FinPerf	2.150	.260	.516	8.275	.000

a. Dependent Variable: BMINoveltyScope

Table # 10.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-10:

(Output Model Summary)

In this part shows that R = 0.987 and the coefficient of determination (R square) of 0.975. This suggests the notion that BMI novelty and scope is influenced by 97.5% by change in strategy, dynamic capabilities and financial performance, while the rest (100% - 97.5% = 2.5%) 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 financial performance simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant value dynamic capabilities and financial performance of 0.000 < 0.05 and insignificant value change in strategy of 0.64 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the dynamic capabilities and financial performance partially significant effect on BMI novelty and scope whereas, change in strategy partially insignificant effect on BMI novelty and scope. Thus, increasing dynamic capabilities and financial performance of organization it will also improve BMI novelty and scope and on the other hand change in strategy of organization it will badly effect on BMI novelty and scope.

5.2.11 Model: 11 (M-11)

Table # 11: H11: Internal and Innovativeness effects on BMI novelty and scope

Correlations

		BMINoveltyScope	DaynamicCap	ChangeinStrategy	Innovativeness
Pearson Correlation	BMINoveltyScope	1.000	.966	.772	.830
	DaynamicCap	.966	1.000	.684	.797
	ChangeinStrategy	.772	.684	1.000	.848
	Innovativeness	.830	.797	.848	1.000

Table # 11.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.978[a]	.957	.955	.24197	.957	706.395	3	96	.000

a. Predictors: (Constant), Innovativeness, DaynamicCap, ChangeinStrategy

Table # 11.2

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	124.076	3	41.359	706.395	.000[b]
	Residual	5.621	96	.059		
	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), Innovativeness, DaynamicCap, ChangeinStrategy

Table # 11.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.788	.136		-5.802	.000
	DaynamicCap	.867	.037	.831	23.607	.000
	ChangeinStrategy	1.154	.213	.217	5.413	.000
	Innovativeness	-.070	.200	-.017	-.350	.727

a. Dependent Variable: BMINoveltyScope

Table # 11.4

Interpretation of Results of Multiple Linear Regression Analysis Output M-11:

(Output Model Summary)

In this part shows that R = 0.978 and the coefficient of determination (R square) of 0.957. This suggests the notion that BMI novelty and scope is influenced by 95.7% by change in strategy, dynamic capabilities and innovativeness, while the rest (100% - 95.7% = 4.3%) 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 innovativeness simultaneously significant effect on BMI novelty and scope of organization.

(Output Coefficients a)

In this part shows significant value change in strategy and dynamic capabilities of 0.000 < 0.05 and insignificant value innovativeness of 0.727 > 0.05, then the appropriate basis for decision making in the regression analysis concluded that the change in strategy and dynamic capabilities partially significant effect on BMI novelty and scope whereas, innovativeness partially insignificant effect on BMI novelty and scope. Thus, increasing change in strategy and dynamic capabilities of organization it will also improve BMI novelty and scope and on the other hand innovativeness of organization it will badly effect on BMI novelty and scope.

5.2.12 Model: 12 (M-12)

Table # 12: H12: Internal and cost reduction effects on BMI novelty and scope

Correlations

		BMI Novelty Scope	Daynamic Cap	Change in Strategy	Cst Red
Pearson Correlation	BMINoveltyScope	1.000	.966	.772	.827
	DaynamicCap	.966	1.000	.684	.779
	ChangeinStrategy	.772	.684	1.000	.612
	cstRed	.827	.779	.612	1.000

Table # 12.1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.983[a]	.965	.964	.21591	.965	895.365	3	96	.000

a. Predictors: (Constant), cstRed, ChangeinStrategy, DaynamicCap

Table # 12.2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	125.222	3	41.741	895.365	.000[b]
	Residual	4.475	96	.047		
	Total	129.697	99			

a. Dependent Variable: BMINoveltyScope

b. Predictors: (Constant), cstRed, ChangeinStrategy, DaynamicCap

Table # 12.3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.013	.129		-7.833	.000
	DaynamicCap	.752	.035	.721	21.662	.000
	ChangeinStrategy	.982	.141	.184	6.986	.000
	cstRed	.702	.141	.153	4.972	.000

a. Dependent Variable: BMINoveltyScope

Table # 12.4

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 (R square) 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.

Chapter 6

Conclusion and Policy Recommendation

6.1 Conclusion

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. Despite this, many researchers innovates the BM in order to gain advantage of new technology by making changes of the key strategic decision under which the businesses runs. 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.

In present study, the impact of BMI on SMEs of IT choice is determined by using the multiple linear regressions. For this analysis, the primary data will be collected through questionnaire survey method. Apart from this, the relationship between external and internal variables and outcomes variables are also analyzed. The external variables includes: change in competition, technologies, and network position and in the internal variables includes: dynamic capabilities, and change in strategy, and the dependent variable includes: Financial performance, Innovativeness, and Cost reduction of IT sector. In addition to this, novelty and scope are also added for seeing the mediating role in SMEs of IT sector.

The impact of antecedent is estimated by firstly sum the 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.

Therefore, it can be concluded that change in external and internal antecedent's effect to financial performance and also, change in external (excluding change in competition) and internal

antecedent's effect to innovativeness and also, change in external (excluding network position) and internal antecedent (excluding change in strategy) effect to cost reduction. At last, change in financial performance with external and internal (excluding change in strategy) antecedent's effect to BMI novelty and scope on the other side innovativeness with internal antecedent's and cost reduction with external antecedent's is not effect to BMI novelty and scope of the businesses.

6.2 Policy Recommendation

Following polices are suggest after findings of the study;

- Department of BMI in organization are rare to see who worked and trained employees about the BM effect on performance of organization so organization should create workshops on BMI for the upper management in order to gain better financial performance, innovations and cost reduction outcome of businesses.
- In Pakistan entrepreneurs neglect the importance of BM antecedents which makes incapable to compete with international market. Therefore, business sector should value to BM antecedents so that they can compete internationally.
- IT businesses should innovate the businesses model which encourages to the small medium enterprise to adopt the models.
- The effects of business models of IT sector suggest that model is giving the competitive advantage among the competitors in the market. Therefore, entrepreneurs of small and medium business should focus on innovation in BM which gives you the platform where you clearly know the business concepts like: how you can estimate all the revenue and costs; or how you create competitive business; or what kind of problems are you solving

for whom; or how you deliver the best service and product to customers; and how you will produce customer value.

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